CONTRACT #12
RFS # 317.01-03036
FA # 09-25220
Edison # 2904

Finance & Administration Office for Information Resources (OIR)

VENDOR:
AT&T Corp.

STATE OF TENNESSEE
DEPARTMENT OF FINANCE AND ADMINISTRATION
OFFICE FOR INFORMATION RESOURCES
312 EIGHTH AVENUE NORTH
SUITE 1600, TENNESSEE TOWER
NASHVILLE, TENNESSEE 37243-0288
(615) 741-3700
FAX (615) 532-0471

MARK EMKES
COMMISSIONER

MARK BENGEL
CHIEF INFORMATION OFFICER

October 6, 2011

Mr. David Thurman
Executive Director
Fiscal Review Committee
8th Floor, Rachel Jackson Bldg.
Nashville, TN

Dear Sir:

Please find attached, for the Fiscal Review Committee's consideration, documentation of a Non-Competitive Amendment request pertaining to the State's contract with AT&T for the provision of Network Tennessee (NetTN) services. The Department of Finance and Administration respectfully requests to be placed on the agenda to present this request at the next Fiscal Review Committee meeting.

The purpose of the amendment is additional in-scope line items, rate reductions and Flat Rate Business (1FB) services to the NetTN catalog of services. To facilitate the committee's review, the amendment summary is attached.

Thank you for your consideration of this request. We look forward to appearing before the Committee at its next scheduled meeting. Please see attached NetTN amendment summary.

Sincerely,

Mark Bengel (BF)

Mark Bengel
Chief Information Officer

Summary of NetTN Amendment 5 changes to the Contract and Contract Attachment B

1. **Contract section E.17.d.ix.**
   a. Currently the State's receives a credit for the consulting charge applied to the OIR NetTN bill. The NetTN bill is approximately 1-2 months in arrears which results in OIR paying for the service and waiting a month or two for the credit to appear. The following amended E.17.d.ix language, results in a cleaner approach, with less administrative work required by OIR staff.

      E.17.d.ix. the cost of the independent benchmark analysis shall be paid by the NetTN contractor directly to the State's benchmarking telecommunications consulting contractor.

2. **NetTN Catalog of Services pages 2 through 15**
   a. Managed NetTN WAN Services
      I. Additional protection features added for Managed Ethernet services.
      II. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. This means that Tennessee's rates are effectively 2% lower than the rates for Contract Attachment B. These actual rates are comparable to or lower than the rates for similarly positioned contracts.

3. **NetTN Catalog of Services page 16**
   a. Sonet
      I. Removed OC12, 48 and 192 options that are no longer applicable.

4. **NetTN Catalog of Services page 31**
   a. Broadband Internet Services-DSL
      I. DSL is to be provided statewide with independents Local Exchange Providers (LECs) where available.

5. **NetTN Catalog of Services page 33**
   a. Remote Access User
      I. SSL options removed, no longer applicable,

6. **NetTN Catalog of Services page 39**
   a. Primary Rate ISDN Services
      I. Flat rate business line added – Local Exchange providers are no longer regulated by the Tennessee Regulatory Administration.

         The advantages of amending the current NetTN Contract are as follows:

         (a) The 1FB services are within the current scope of the NetTN contract.

(b) The NetTN Contract already provides a 1FB at 1800 network end-sites for monitoring of the end site router. These 1FBs are provided either directly or through ILECs.

(c) AT&T already has the requisite ILEC relationships and technical infrastructure in place.

(d) AT&T is the only vendor capable of providing 1FB service in all areas of the State, either directly or through ILECs, under a single-contract, Prime-Contractor arrangement.

(e) AT&T's help desk is already operational and can handle inquiries and requests related to 1FB services.

(f) The NetTN billing process is already well coordinated with the State's billing system.

(g) The NetTN Contract is already set up to allow local governments to purchase from it.

7. NetTN Catalog of Service page 48

a. Managed end site Firewall and Managed end site Switch

I. Deleted items no longer applicable

II. Rates reduced for all end site managed firewalls. NG911 will save $3.2M over the remaining 7 years of the NetTN contract.

III. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. This means that Tennessee's rates are effectively 2% lower than the rates for Contract Attachment B. These actual rates are comparable to or lower than the rates for similarly positioned contracts.

8. NetTN Catalog of Services page 51

a. Hosted Identity Management removed, no longer applicable.

9. NetTN Catalog of Service pages 52 - 55

a. Next Generation 9-1-1

I. Features added to support Phase 3 of the NG9-1-1 project to support State owned Automatic Location Identifier Database (ALI) Database as part of moving existing analog infrastructure to IP. The Tennessee Emergency Management Board's Management Company (TCS) will manage and administer the ALI Database..

II. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. This means that Tennessee's rates are effectively 2% lower than the rates for Contract Attachment B. These actual rates are comparable to or lower than the rates for similarly positioned contracts.

The State of Tennessee's statewide network (NetTN) provides communication services for all branches of state government, higher education, ehealth, many K12 districts, and ultimately 911. The NetTN vision is a single, universal service network that leverages

the buying power of all government stakeholders to drive down the cost of technology and help drive the deployment of broadband to all urban and rural Tennessee communities. The more sites we add to this network the better our ability to negotiate even further rate reductions for the State.

STATE OF TENNESSEE
DEPARTMENT OF FINANCE AND ADMINISTRATION
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MARK A. EMKES
COMMISSIONER

MARK BENGEL
CHIEF INFORMATION OFFICER

MEMORANDUM

TO: Robert Barlow

FROM: Vickie Stanfill

SUBJECT: Waiver of 60-Day Lead-Time

DATE: October 11, 2011

The Office for Information Resources (OIR) currently maintains a Contract Service Arrangement (CSA) with AT&T and utilizes tariff rates for the 24 Independent Local Exchange Carriers (ILECs) for Flat-Rate Business Phone Lines (1FBs). Earlier this year, OIR discovered that, although tariff rates for local telephone service may be filed with the Tennessee Regulatory Board (TRA), the rates are no longer regulated. Therefore, the State must establish alternative means to obtain these services prior to the expiration date of the current CSA and/or tariff, which is December 6, 2011.

In August of this year, the Department of General Services (DGS) delegated permission to OIR to use the Request for Proposal (RFP) process to procure certain telephone related services, including the 1FBs. OIR published a Request for Information (RFI) to assess the breadth of the competitive market for such services. The resulting responses indicated that there is currently no competitive market to provide a single-contract solution for 1FBs.

OIR explored alternative ways of procuring the services, and has determined that it is in the State's best interest to leverage the existing NetTN contract between the State and AT&T by amending this contract to add the 1FB services. We continue to work closely with DGS, and have sought a memorandum from DGS approving our approach. We are late delivering the documentation pertaining to this effort due to these coordination efforts between OIR and DGS.

We apologize in advance for the tardiness of this request and thank you for your consideration.

Supplemental Documentation Required for Fiscal Review Committee

*Contact Name:	Vickie Stanfill	*Contact Phone:	615-253-5529
*Original Contract Number:	FA-09-25220-00	*Original RFS Number:	317.03-154-07
Edison Contract Number: (*if applicable*)	2904	Edison RFS Number: (*if applicable*)	
*Original Contract Begin Date:	July 1, 2008	*Current End Date:	June 30, 2018

Current Request Amendment Number: (*if applicable*)	5
Proposed Amendment Effective Date: (*if applicable*)	December 7, 2011
*Department Submitting:	Finance and Administration
*Division:	Office for Information Resources
*Date Submitted:	October 6, 2011
*Submitted Within Sixty (60) days:	Yes
If not, explain:	
*Contract Vendor Name:	AT&T
*Current Maximum Liability:	$603,472,521.00

*Current Contract Allocation by Fiscal Year:
(as Shown on Most Current Fully Executed Contract Summary Sheet)

FY: 2009	FY: 2010	FY: 2011	FY: 2012	FY 2013	FY 2014
$7,471,590	$27,400,000	$31,780,000	$38,336,800	$47,752,576	$67,854,095
FY: 2015	FY: 2016	FY: 2017	FY: 2018	FY	FY
$82,593,329	$93,933,039	$108,428,481	$97,922,611	$	$

*Current Total Expenditures by Fiscal Year of Contract:
(attach backup documentation from STARS or FDAS report) ***See attached summary.**

FY: 2009	FY: 2010	FY: 2011	FY: 2012	FY	FY
$3,037,426	$27,088,610	$27,795,698	$6,948,924	$	$

IF Contract Allocation has been greater than Contract Expenditures, please give the reasons and explain where surplus funds were spent:	The yearly contract allocations detailed above were estimates of the adoption rates of various NetTN services.
IF surplus funds have been carried forward, please give the reasons and provide the authority for the carry forward provision:	Surplus funds were not carried forward.
IF Contract Expenditures exceeded Contract Allocation, please give the reasons and explain how funding	Contract expenditures have not exceeded the Contract maximum liability.

Supplemental Documentation Required for Fiscal Review Committee

was acquired to pay the overage:				
*Contract Funding Source/Amount:	State:		Federal:	
Interdepartmental:		$167,000,023	*Other*:	$436,472,498
If "*other*" please define:				

Dates of All Previous Amendments or Revisions: (*if applicable*)	Brief Description of Actions in Previous Amendments or Revisions: (*if applicable*)
1 – June 5, 2009	Additional items within scope of contract and existing line item rate reductions.
2 – October 9, 2009	Additional items within scope of contract and existing line item rate reductions.
3 – June 5, 2010	Additional items within scope of contract and existing line item rate reductions.
4 – September 29, 2010	Additional items within scope of contract and existing line item rate reductions.

Method of Original Award: (*if applicable*)	RFP
*What were the projected costs of the service for the entire term of the contract prior to contract award?	$1,083,339,736 The projected costs were based on the previous TNII contract, California's CalNet, and Florida's MyFlorida contract rates for same of similar services. Fortunately the State's buying power drove competitive rates to $611,978,392, and further negotiations resulting in an additional reduction to $603,472,521.

Supplemental Documentation Required for Fiscal Review Committee

For all new non-competitive contracts and any contract amendment that changes Sections A or C.3. of the original or previously amended contract document, provide estimates based on information provided the Department by the vendor for determination of contract maximum liability. Add rows as necessary to provide all information requested.

If it is determined that the question is not applicable to your contract document attach detailed explanation as to why that determination was made.

Planned expenditures by fiscal year by deliverable. Add rows as necessary to indicate all estimated contract expenditures.

Deliverable description:	FY:2012	FY:2013	FY:2014	FY:2015	FY:2016
	$2,565160	$2,763,240	$2,161,920	$1,438,920	$1,438,920
	FY:2017	FY:2018			
	$1,438,920	$1,438,920			

Proposed savings to be realized per fiscal year by entering into this contract. If amendment to an existing contract, please indicate the proposed savings to be realized by the amendment. Add rows as necessary to define all potential savings per deliverable.

Deliverable description:	FY:	FY:	FY:	FY:	FY:
Utilizing the NetTN contract will result in cost avoidance of writing 24 RFP and managing 24 separate contracts with the Local Exchange providers across the state of Tennessee.					

Comparison of cost per fiscal year of obtaining this service through the proposed contract or amendment vs. other options. List other options available (including other vendors), cost of other options, and source of information for comparison of other options (e.g. catalog, Web site). Add rows as necessary to indicate price differentials between contract deliverables.

Proposed Vendor Cost: (name of vendor)	FY:	FY:	FY:	FY:	FY:

Local Exchange Carriers (LEC's) and Independent LEC's are no longer regulated by the Tennessee Regulatory Authority. The carriers have moved to market based competitive pricing. E.G. AT&T offered discounted tariff rates for 1FB's under special contract arrangements (CSA's). This same service under market based pricing is $75.00 per 1FB vs. $35.00 under the CSA or proposed NetTN contract line item.

	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09	Jan-10	Feb-10
Total Monthly Billed Charges	163,810.18	387,802.26	590,047.70	850,556.62	1,045,209.22	1,228,366.23	1,250,612.40	2,062,817.06	1,129,520.13	1,504,567.74	1,725,972.05	1,601,200.10	1,630,410.12
Multiply by	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Admin fee amount	3,276.20	7,756.05	11,800.95	17,011.13	20,904.18	24,567.32	25,012.25	41,256.34	22,590.40	30,091.35	34,519.44	32,024.00	32,608.20
AT&T NetTN Check	3,276.20	7,756.05	11,800.95	17,165.99	20,902.23	20,902.23	28,652.64	41,409.77	22,651.88	34,528.92	34,528.92	32,024.00	32,608.20
Adjustment	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total	3,276.20	7,756.05	11,800.95	17,165.99	20,902.23	20,902.23	28,652.64	41,409.77	22,651.88	34,528.92	34,528.92	32,024.00	32,608.20
over/under	(0.00)	0.00	(0.00)	154.86	(1.95)	(3,665.09)	3,640.39	153.43	61.48	4,437.57	9.48	(0.00)	(0.00)
CHN	0.00	0.00	2,739.35	11,431.19	30,946.74	33,865.99	31,789.99	36,325.40	21,221.13	29,155.50	38,653.64	34,887.81	33,935.54
NG911	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EHE	0.00	0.00	0.00	0.00	0.00	1,190.00	1,519.99	0.00	0.00	1,519.99	6,249.90	4,774.63	5,209.98
LLG	0.00	0.00	107.66	1,545.00	2,556.50	7,905.15	6,469.23	15,828.09	13,768.44	14,822.60	15,843.63	16,763.21	30,684.06
OIR	94,231.67	297,861.65	486,232.75	738,421.00	894,696.68	913,458.27	879,394.26	934,208.43	882,575.26	909,003.31	1,006,773.83	981,448.66	979,327.71
PBS	0.00	0.00	0.00	0.00	0.00	4,918.40	3,920.00	14,900.70	8,861.00	8,861.00	11,269.82	10,012.53	10,206.50
PCU	4,479.61	4,396.45	6,426.94	10,266.62	13,518.25	15,024.60	14,530.56	30,235.46	25,552.00	28,047.00	32,200.63	71,081.51	71,172.22
K12	0.00	0.00	0.00	0.00	0.00	146,156.11	206,780.57	846,658.05	33,611.22	376,876.71	479,499.65	341,327.98	351,978.51
TBR	65,098.90	85,544.16	94,541.00	87,126.86	94,826.05	94,468.62	95,487.80	135,002.43	114,030.58	107,199.91	106,318.13	111,650.48	116,895.78
TEMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UTS	0.00	0.00	0.00	1,765.95	8,665.00	11,379.09	10,720.00	49,658.50	29,900.50	29,081.72	29,162.82	29,253.29	30,999.82
OTHER	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	163,810.18	387,802.26	590,047.70	850,556.62	1,045,209.22	1,228,366.23	1,250,612.40	2,062,817.06	1,129,520.13	1,504,567.74	1,725,972.05	1,601,200.10	1,630,410.12
Percentage													
CHN	0.00%	0.00%	0.46%	1.34%	2.96%	2.76%	2.54%	1.76%	1.88%	1.94%	2.24%	2.18%	2.08%
NG911	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
EHE	0.00%	0.00%	0.00%	0.00%	0.00%	0.10%	0.12%	0.00%	0.00%	0.10%	0.36%	0.30%	0.32%
LLG	0.00%	0.00%	0.02%	0.18%	0.24%	0.64%	0.52%	0.77%	1.22%	0.99%	0.92%	1.05%	1.88%
OIR	57.52%	76.81%	82.41%	86.82%	85.60%	74.36%	70.32%	45.29%	78.14%	60.42%	58.33%	61.29%	60.07%
PBS	0.00%	0.00%	0.00%	0.00%	0.00%	0.40%	0.31%	0.72%	0.78%	0.59%	0.65%	0.63%	0.63%
PCU	2.73%	1.13%	1.09%	1.21%	1.29%	1.22%	1.16%	1.47%	2.26%	1.86%	1.87%	4.44%	4.37%
K12	0.00%	0.00%	0.00%	0.00%	0.00%	11.90%	16.53%	41.04%	2.98%	25.05%	27.78%	21.32%	21.59%
TBR	39.74%	22.06%	16.02%	10.24%	9.07%	7.69%	7.64%	6.54%	10.10%	7.12%	6.16%	6.97%	7.17%
TEMA	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
UTS	0.00%	0.00%	0.00%	0.21%	0.83%	0.93%	0.86%	2.41%	2.65%	1.93%	1.69%	1.83%	1.90%
OTHER	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

TOTAL EXPENDITURES

Jun-11	Total Feb-2009 thru June-2009	Total Jul-2009 thru June-2010	Total Jul-2010 thru June-2011	Total
2,423,979.14	3,037,425.98	27,088,610.07	27,795,698.35	57,921,734.40
2%	2%	2%	2%	2%
48,479.58	60,748.52	541,772.20	555,913.97	1,158,434.69
48,479.58	60,901.42	548,529.92	556,906.98	1,166,338.32
0.00	0.00	0.00	0.00	0.00
48,479.58	60,901.42	548,529.92	556,906.98	1,166,338.32
(0.00)	152.90	6,757.72	993.01	7,903.63
22,673.36	45,117.28	369,558.52	321,367.35	736,043.15
38,180.47	0.00	7,672,069.97	46,321.86	7,718,391.83
81,292.17	0.00	60,000.24	754,035.63	814,035.87
208,561.59	4,209.16	338,576.08	2,062,519.34	2,405,304.58
1,296,732.68	2,511,443.75	12,050,873.71	15,481,695.21	30,044,012.67
10,421.50	0.00	113,775.95	114,337.26	228,113.21
94,912.83	39,087.87	598,914.70	986,911.80	1,624,914.37
391,361.20	0.00	4,200,080.41	4,658,456.09	8,858,536.50
214,628.88	427,136.97	1,327,217.78	2,648,773.03	4,403,127.78
14,679.46	0.00	4,023.84	169,709.41	173,733.25
50,535.00	10,430.95	353,518.87	551,571.37	915,521.19
0.00	0.00	0.00	0.00	0.00
2,423,979.14	3,037,425.98	27,088,610.07	27,795,698.35	57,921,734.40
0.94%	1.49%	1.36%	1.16%	1.27%
1.58%	0.00%	28.32%	0.17%	13.33%
3.35%	0.00%	0.22%	2.71%	1.41%
8.60%	0.14%	1.25%	7.42%	4.15%
53.50%	82.68%	44.49%	55.70%	51.87%
0.43%	0.00%	0.42%	0.41%	0.39%
3.92%	1.29%	2.21%	3.55%	2.81%
16.15%	0.00%	15.50%	16.76%	15.29%
8.85%	14.06%	4.90%	9.53%	7.60%
0.61%	0.00%	0.01%	0.61%	0.30%
2.08%	0.34%	1.31%	1.98%	1.58%
0.00%	0.00%	0.00%	0.00%	0.00%
100.00%	100.00%	100.00%	100.00%	100.00%

ATTACHMENT 6.15

Bond #08910671

PERFORMANCE BOND

The Surety Company issuing bond shall be licensed to transact business in the State of Tennessee by the Tennessee Department of Commerce and Insurance. Bonds shall be certified and current Power-of-Attorney for the Surety's Attorney-In-Fact attached.

KNOW ALL BY THESE PRESENTS:

That we,

AT&T Corp.

(Name of Principal)

333 Commerce Street, Nashville, TN 37067

(Address of Principal)

as Principal, hereinafter called the Principal, and

Fidelity and Deposit Company of Maryland

(Name of Surety)

1400 American Lane, Tower 1, Schaumburg, IL 60196

(Address of Surety)

as Surety, hereinafter call the Surety, do hereby acknowledge ourselves indebted and securely bound and held unto the State of Tennessee as Obligee, hereinafter called the Obligee, and in the penal sum of

Six Million Dollars ($6,000,000.00) for year four

(Dollar Amount of Bond)

good and lawful money of the United States of America, for the use and benefit of those entitled thereto, for the payment of which, well and truly to be made, we bind ourselves, our heirs, our administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

BUT THE CONDITION OF THE FOREGOING OBLIGATION OR BOND IS THIS:

WHEREAS, the Obligee has engaged the Principal for a sum not to exceed

Six Hundred Fifty Million Dollars ($650,000,000.00)

(Contract Maximum Liability)

to complete Work detailed in the Scope of Services detailed in the State of Tennessee Request for Proposals bearing the RFP Number: 317.03-154-07

317.03-154-07 year (four) effective 01/01/2011 through 12/31/2011

(RFP Number)

a copy of which said Request for Proposals and the resulting Contract are by reference hereby

made a part hereof, as fully and to the same extent as if copied at length herein.

WHEREAS, this bond is effective 01/01/2011 and expires 12/31/2011 This bond is non-cumulative and in no event shall the Surety be liable for a greater sum than the penalty of this bond. Neither non-renewal by the surety, nor failure, nor inability of the principal to file a replacement bond shall constitute a loss to the obligee, which is recoverable under this bond.

NOW, THEREFORE, if the Principal shall fully and faithfully perform all undertakings and obligations under the Contract hereinbefore referred to and shall fully indemnify and hold harmless the Obligee from all costs and damage whatsoever which it may suffer by reason of any failure on the part of the Principal to do so, and shall fully reimburse and repay the Obligee any and all outlay and expense which it may incur in making good any such default, and shall fully pay for all of the labor, material, and Work used by the Principal and any immediate or remote sub-contractor or furnisher of material under the Principal in the performance of said Contract, in lawful money of the United States of America, as the same shall become due, then this obligation or bond shall be null and void, otherwise to remain in full force and effect.

AND for value received, it is hereby stipulated and agreed that no change, extension of time, alteration, or addition to the terms of the Contract or the Work to be performed there under or the specifications accompanying the same shall in any wise affect the obligation under this bond, and notice is hereby waived of any such change, extension of time, alteration, or addition to the terms of the Contract or the Work or the specifications.

IN WITNESS WHEREOF the Principal has hereunto affixed its signature and Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers, on this

12th day of November 2010

WITNESS:

AT&T Corp.	Fidelity and Deposit Company of Maryland
(Name of Principal)	(Name of Surety)
Jeston B. Dumas	Debra C. Schneider
(Authorized Signature of Principal)	(Signature of Attorney-in-Fact)
JESTON B. DUMAS	Debra C. Schneider, TN Lic #0000957566
(Name of Signatory)	(Name of Attorney-in-Fact)
ASST TREASURER	FEIN #13-3046577 NAIC #39306
(Title of Signatory)	(Tennessee License Number of Surety)

INCORPORATED 1885

SEAL

ACKNOWLEDGMENT BY SURETY

STATE OF Missouri
City of St. Louis } ss.

On this 12th day of November, 2010, before me personally appeared Debra C. Schneider, known to me to be the Attorney-in-Fact of Fidelity and Deposit Company of Maryland, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the aforesaid County, the day and year in this certificate first above written.

JoAnn R. Frank
JoAnn R. Frank
Notary Public in the State of Missouri
City of St. Louis

My Commission Expires: June 20, 2014
(Seal)

JOANN R. FRANK
Notary Public - Notary Seal
State of Missouri
Commissioned for St. Louis City
My Commission Expires: June 20, 2014
Commission Number: 10395672

S-0230/GEEF 2/98

Power of Attorney
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by WILLIAM J. MILLS, Vice President, and GERALD F. HALEY, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint **Pamela A. BEELMAN, Cynthia L. CHOREN, Heidi A. NOTHEISEN, JoAnn R. FRANK, Karen L. ROIDER, Debra C. SCHNEIDER and Sandra L. HAM, all of St. Louis, Missouri, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney revokes that issued on behalf of Pamela A. BEELMAN, Cynthia L. HANAK, Heidi A. NOTHEISEN, JoAnn R. FRANK, Karen L. ROIDER, Debra C. SCHNEIDER, Sandra L. HAM, dated December 12, 2007.

FOR YOUR PROTECTION LOOK FOR THE ZURICH WATERMARK

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 3rd day of December, A.D. 2009.

ATTEST: **FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

FIDELITY AND DEPOSIT COMPANY INCORPORATED 1890 OF MARYLAND

Gerald F. Haley By: [signature]

Gerald F. Haley *Assistant Secretary* *William J. Mills* *Vice President*

State of Maryland }
City of Baltimore } ss:

On this 3rd day of December, A.D. 2009, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came WILLIAM J. MILLS, Vice President, and GERALD F. HALEY, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself deposeth and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

CONSTANCE A. DUNN NOTARY PUBLIC BALTIMORE COUNTY

Constance A. Dunn

Constance A. Dunn *Notary Public*
My Commission Expires: July 14, 2011

OIR Pre-Approval Endorsement Request
E-Mail Transmittal

TO : Jane Chittenden, OIR Procurement & Contract Management Director
Department of Finance & Administration
E-mail : Jane.Chittenden@tn.gov

FROM : Vickie Stanfill, NetTN Executive Director
Department of Finance & Administration
E-mail : Vickie.Stanfill@tn.gov

DATE : October 6, 2011

RE : Request for OIR Pre-Approval Endorsement

Applicable RFS #	**31701-03036**
OIR Endorsement Signature & Date:	
Mark Bengel (JB)	10/6/11
Chief Information Officer	
NOTE: Proposed contract/grant support is applicable to the subject IT service technical merit.	

Office for Information Resources (OIR) pre-approval endorsement appears to be required pursuant to professional service contracting regulations pertaining to procurements with information technology as a component of the scope of service. This request seeks to ensure that OIR is aware of and has an opportunity to review the procurement detailed below and in the attached documents.

Please document OIR endorsement of the described procurement (with the appropriate signature above), and return this document via e-mail at your earliest convenience.

Contracting Agency	**OIR**
Agency Contact (name, phone, e-mail)	**Vickie Stanfill, NetTN Executive Director** **615-253-5529** **Vickie.Stanfill@tn.gov**

Subject Procurement Document (mark one)

- ☐ RFP
- ☐ Competitive Negotiation Request
- ☐ Alternative Procurement Method Request
- ☐ Non-Competitive Contract Request
- ☐ Non-Competitive Amendment Request
- ☐ Contract
- ☒ Contract Amendment
- ☐ Grant
- ☐ Grant Amendment

Information Systems Plan (ISP) Project Applicability

☒ Not Applicable to this Request

Non-Competitive Amendment Request

NOT required for a contract with a federal, Tennessee, or Tennessee local government entity or a grant.
Route a completed request, as one file in PDF format, via e-mail attachment sent to: Agsprs.Agsprs@state.tn.us

APPROVED
COMMISSIONER OF FINANCE & ADMINISTRATION

Request Tracking #	31701-03066
1. Procuring Agency	Finance and Administration
2. Contractor	AT&T
3. Contract #	FA-09-25220-00 / Edison 2904
4. Proposed Amendment #	5
5. Edison ID #	2904
6. Contract Begin Date	July 1, 2008
7. Current Contract End Date *– with ALL options to extend exercised*	June 30, 2018
8. Proposed Contract End Date *– with ALL options to extend exercised*	June 30, 2018
9. Current Maximum Contract Cost *– with ALL options to extend exercised*	$ 603,472,521,00
10. Proposed Maximum Contract Cost *– with ALL options to extend exercised*	$ 603,472,521.00
11. Office for Information Resources Endorsement *– information technology service (N/A to THDA)*	☐ **Not Applicable** ☒ **Attached**
12. eHealth Initiative Support *– health-related professional, pharmaceutical, laboratory, or imaging*	☒ **Not Applicable** ☐ **Attached**
13. Human Resources Support *– state employee training service*	☒ **Not Applicable** ☐ **Attached**

14. Explanation Need for the Proposed Amendment

The Office for Information Resources (OIR) currently maintains a Contract Service Arrangement (CSA) with AT&T and utilizes tariff rates for the 24 Independent Local Exchange Carriers (ILECs) for Flat-Rate Business Phone Lines (1FBs). Earlier this year, OIR discovered that, although tariff rates for local telephone service may be filed with the Tennessee Regulatory Board (TRA), the rates are no longer regulated. Therefore, the State needs to establish an alternative means to obtain these services prior to the expiration date of the current CSA and/or tariff, which is December 6, 2011.

15. Name & Address of the Contractor's Principal Owner(s)

Request Tracking #	31701-03066

– NOT required for a TN state education institution

AT&T, 333 Commerce, Suite 2101, Nashville, TN 37201

16. Evidence Contractor's Experience & Length Of Experience Providing the Service

Through the current NetTN Contract, AT&T already provides a 1FB at 1800 network end-sites for monitoring of the end site router. These 1FBs are provided either directly or through ILECs. In addition, AT&T already has the requisite ILEC relationships and technical infrastructure in place.

17. Efforts to Identify Reasonable, Competitive, Procurement Alternatives

OIR published a Request for Information (RFI) to assess the breadth of the competitive market for such services. The resulting responses indicated that there is currently no competitive market to provide a single-contract solution for 1FBs.

18. Justification *– specifically explain why non-competitive negotiation is in the best interest of the state*

OIR explored alternative ways of procuring the services, and has determined that it is in the State's best interest to leverage the existing NetTN contract between the State and AT&T by amending this contract to add the 1FB services.

The advantages of amending the current NetTN Contract are as follows:

- The 1FB services are within the current scope of the NetTN contract.
- The NetTN Contract already provides a 1FB at 1800 network end-sites for monitoring of the end site router. These 1FBs are provided either directly or through ILECs.
- AT&T already has the requisite ILEC relationships and technical infrastructure in place.
- AT&T is the only vendor capable of providing 1FB service in all areas of the State, either directly or through ILECs, under a single-contract, Prime-Contractor arrangement.
- AT&T's help desk is already operational and can handle inquiries and requests related to 1FB services.
- The NetTN billing process is already well coordinated with the State's billing system.
- The NetTN Contract is already set up to allow local governments to purchase from it.

Agency Head Signature and Date *– MUST be signed by the ACTUAL agency head as detailed on the current Signature Certification. Signature by an authorized signatory is acceptable only in documented exigent circumstances*

CONTRACT AMENDMENT

Agency Tracking #	Edison ID	Contract #	Amendment #
31701-03036	2904	FA-09-25220	5

Contractor Legal Entity Name	Edison Vendor ID
AT&T Corp.	7452

Amendment Purpose & Effect(s)

Expanded services within the scope of the contract.

Amendment Changes Contract End Date: ☐ YES ☒ NO **End Date:** June 30, 2018

Amount of the TOTAL Contract Amount INCREASE or DECREASE per this Amendment: **$ 0.00**

Funding —

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,000,023.00	$471,567.00	$7,471,590.00
2010			$14,500,000.00	$12,900,000.00	$27,400,000.00
2011			$16,500,000.00	$15,280,000.00	$31,780,000.00
2012			$16,500,000.00	$21,836,800.00	$38,336,800.00
2013			$17,500,000.00	$30,252,576.00	$47,752,576.00
2014			$18,500,000.00	$49,354,095.00	$67,854,095.00
2015			$19,000,000.00	63,593,329.00	$82,593,329.00
2016			$19,500,000.00	$74,433,039.00	$93,933,039.00
2017			$21,500,000.00	$86,928,481.00	$108,428,481.00
2018			$16,500,000.00	$81,422,611.00	$97,922,611.00
TOTAL:			$167,000,023.00	$436,472,498.00	**$603,472,521.00**

American Recovery and Reinvestment Act (ARRA) Funding: ☐ YES ☒ NO

Budget Officer Confirmation: There is a balance in the appropriation from which obligations hereunder are required to be paid that is not already encumbered to pay other obligations.

OCR USE

Speed Chart (optional)	**Account Code** (optional)
FA00000048	70600000

AMENDMENT FIVE
OF CONTRACT FA-09-25220-00 / 2904

This Amendment is made and entered by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corp., hereinafter referred to as the "Contractor." It is mutually understood and agreed by and between said, undersigned contracting parties that the subject Contract is hereby amended as follows:

1. Contract section E.17.d.ix. is deleted in its entirety and replaced with the following:

   E.17.d.ix. The cost of the independent benchmark analysis shall be paid by the Contractor directly to the State's benchmarking telecommunications consultation contractor.

2. Attachment B is deleted in its entirety and replaced with the new Attachment B attached hereto.

The revisions set forth herein shall be effective December 7, 2011. All other terms and conditions of this Contract not expressly amended herein shall remain in full force and effect.

IN WITNESS WHEREOF,

AT&T CORP.

SIGNATURE **DATE**

PRINTED NAME AND TITLE OF SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

MARK EMKES, COMMISSIONER **DATE**

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45
	DSL (3M x 384k)	/month	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50
	DSL (6M x 384k)	/month	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01
	384kbps	/month	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00
	1.544 Mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	9 Mbps	/month	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00

Mbps											
Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
Monday -- Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$0.00
Metro Ethernet Protection -- Note 1											
Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month				$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
Automatic Protection Switching Feature (APS), Route protection, per APS -- 10 to 25 route miles	/month				$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56

	Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month				$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
	Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month				$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10
	Automatic Protection Switching Feature (APS), Structural protection, per APS -- 10 to 25 route miles	/month				$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection Switching Feature (APS), Structural protection, per APS -26 to 35 route miles	/month				$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month				$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month				$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month				$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Note 1 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF).

ATT installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered as a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12	1.544 Mbps	/month	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00

	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Incremental 50Mbps upgrade to existing 50Mbps circuit	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
	Metro Ethernet Protection – Note 2											
	Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month				$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
	Automatic Protection Switching Feature (APS), Route protection, per APS – 10 to 25 route miles	/month				$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56
	Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month				$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
	Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month				$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10
	Automatic Protection Switching Feature (APS), Structural protection, per APS – 10 to 25 route miles	/month				$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection	/month										

	Switching Feature (APS), Structural protection, per APS -26 to 35 route miles					$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month				$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month				$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month				$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80
K12 WAN Circuit Managed point to point without Internet access- Note 1	1.544 Mbps	/month		$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month		$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month		$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month		$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month		$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month		$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	Metro Ethernet 10 Mbps	/month		$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	Metro Ethernet 100 Mbps	/month	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00
	Metro Ethernet 1 Gbps	/month	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Note1: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, site connectivity, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday. This pricing is contingent upon a design ratio of 8:1 Metro Ethernet connections ("Spoke" sites) to a Metro Ethernet Hub site. All configurations must be approved by the State and the Contractor on an individual case basis. "Spoke" sites receive NetTN SLAs A.14, A.15, and A.16 only.

Note 2 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF).

ATT installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered as a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50
	384kbps	/month	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50
	1.544 Mbps	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74
	4.5 Mbps	/month	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49
	6 Mbps	/month	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49
	7.5 Mbps	/month	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49
	9 Mbps	/month	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49
	16 Mbps	/month	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 2 Mbps	/month	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74
	Metro Ethernet 4 Mbps	/month	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00
	Metro Ethernet 8 Mbps	/month	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00
	Metro Ethernet 10 Mbps	/month	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50

Metro Ethernet 20 Mbps	/month	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00
Metro Ethernet 50 Mbps	/month	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50
Metro Ethernet 100 Mbps	/month	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50
Metro Ethernet 200 Mbps	/month	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00
Metro Ethernet 600 Mbps	/month	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00
Metro Ethernet 1 Gbps	/month	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00
Monday -- Sunday 24 X 7 Coverage	/month	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00
Metro Ethernet Protection -- Note 1											
Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month				$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
Automatic Protection Switching Feature (APS), Route protection, per APS -- 10 to 25 route miles	/month				$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56
Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month				$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month				$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10

	Automatic Protection Switching Feature (APS), Structural protection, per APS – 10 to 25 route miles	/month				$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection Switching Feature (APS), Structural protection, per APS -26 to 35 route miles	/month				$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month				$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month				$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month				$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Note 1 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF).

ATT installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered as a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	Metro Ethernet 1 Gbps	/month	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
	Wavelength 1.25Gbps	/month	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
	Wavelength 2.5Gbps	/month	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
	Wavelength OC3	/month	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39
	Wavelength OC12	/month	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18
	Wavelength OC48	/month	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00
	Wavelength OC192	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Wavelength 10 Gbps	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Metro Ethernet Protection – Note 1											
	Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month				$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
	Automatic Protection Switching Feature (APS), Route protection, per APS – 10 to 25 route miles	/month				$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56
	Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month				$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
	Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month				$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10
	Automatic Protection Switching											

	Feature (APS), Structural protection, per APS – 10 to 25 route miles	/month				$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection Switching Feature (APS), Structural protection, per APS -26 to 35 route miles	/month				$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month				$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month				$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month				$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Note 1 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF).

ATT installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered as a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET												
	OC12 - Note 1	/month	$210.00	$210.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OC48 - Note 1	/month	$840.00	$840.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	OC192 - Note 1	/month	$5,750.00	$5,750.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Local Channel per quarter mile	/month	$245.00	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel per air mile	/month	$125.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Customer node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Interoffice Channel Fixed – OC3 capacity	/month		$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58
	Interoffice Channel Fixed – OC12 capacity	/month		$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20
	Interoffice Channel per quarter mile –OC3	/month	$125.00	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Interoffice Channel per quarter mile –OC12	/month		$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70
	Customer Node OC-3 capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Customer Node OC-12 capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Central office node –OC3 Capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Central office node –OC12 Capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Customer Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	Customer Channel Interface- per DS3	/month		$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46
	Customer Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	Customer Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	CO Channel Interface- per DS3	/month		$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54
	CO Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	CO Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface – per 28 DS1 Channel System (DS3) per node	/month		$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44
	CO Channel Interface – per DS1 on 28 DS1 Channel System (DS3) per node	/month		$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Note 1 – The State has discontinued OC 12, OC48 and OC 192 in contract Amendment 5, therefore there are no costs in the table above for contract years 3 through 10.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 100 Mbps	/month	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49
	Metro Ethernet 1 Gbps	/month	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00
	Metro Ethernet 600 Mbps	/month	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46
	Metro Ethernet 1 Gbps	/month	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00
	TDOT ITS 9.6 Synchronet per end point	/month	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	DS1 - 5 miles or less	/mileage	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00
	DS1 – 6 miles and over Interoffice mileage – Note 1	/mileage	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
	DS1 – 6 miles and over Local channels – Note 1	/month	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91
	Flat Rate DS1 IntraLATA/InterLATA – Note 2	/month	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00
	Intralata DS3	/mileage	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
	Interlata DS3	/mileage	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00
	Interstate DS1	/mileage	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00
	Interstate DS3	/mileage	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	Metro Ethernet 2 Mbps Basic IntraLATA/IntraState –Note 3	/month	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00
	Metro Ethernet 2 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64
	Metro Ethernet 4 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26
	Metro Ethernet 8 Mbps Basic IntraLATA/IntraState -Note 3	/month	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00
	Metro Ethernet 8 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96
	Metro Ethernet 10 Mbps Basic IntraLATA/IntraState - note 3	/month	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33
	Metro Ethernet 10 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72
	Metro Ethernet 10 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96
	Metro Ethernet 20 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24
	Metro Ethernet 20 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64

Metro Ethernet 50 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08
Metro Ethernet 50 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76
Metro Ethernet 100 Mbps Basic IntraLATA/IntraState -Note 3	/month	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00
Metro Ethernet 100 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44
Metro Ethernet 100 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28
Metro Ethernet 250 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36
Metro Ethernet 250 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96
Metro Ethernet 500 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28
Metro Ethernet 500 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64
Metro Ethernet 1Gbps Basic IntraLATA/IntraState –Note 3	/month		$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40
Metro Ethernet 1Gbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32
Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00
Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00
Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75
Metro Ethernet Premium 2- 9 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50
From 26 to 35 miles per connection	/month	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35
From 36 to 50 miles per connection	/month	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75
Metro Premium Ethernet 10- 99 Mbps additional mileage charge – Note 6											

From 10 to 25 miles per connection	/month	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70
From 26 to 35 miles per connection	/month	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20
From 36 to 50 miles per connection	/month	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70
Metro Ethernet Premium 100- 499 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60
From 26 to 35 miles per connection	/month	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80
From 36 to 50 miles per connection	/month	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10
Metro Ethernet Premium 500-1000 Mbps and Basic Ethernet 1Gbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60
From 26 to 35 miles per connection	/month	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30
From 36 to 50 miles per Connection	/month	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60
Premium Ethernet optional Features											
Priority Plus – NOTE 7	/month	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08
Q-Forwarding – NOTE 8	/month	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84
Q-Forwarding- Service Establishment Charge	/incident	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00
Metro Ethernet Reporting Charge per connection-Note 9	month	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90
Metro Ethernet Web Interface Charge –Note 9	month	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36
Metro Ethernet Web Interface Charge – 1x charge	Per/Acct	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50
Metro Ethernet Reporting Security Card -Note 10	Per/Acct	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
Metro Ethernet Reporting Service Establishment – 1x charge – Note 10	Per/Acct	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
Metro Ethernet Protection – Note 11											
Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month			$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
Automatic Protection Switching Feature (APS), Route protection, per APS – 10 to 25 route miles	/month			$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56
Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month			$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month			$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10

	Automatic Protection Switching Feature (APS), Structural protection, per APS – 10 to 25 route miles	/month			$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection Switching Feature (APS), Structural protection, per APS -26 to 35 route miles	/month			$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month			$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month			$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month			$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Note 1 – DS1 circuits that are a total of 6 miles or more require 2 Local Channels and Interoffice Channel Mileage for the distance between Central Offices for the two end site locations. For example:

Site 1 – Franklin, TN – LOCAL CHANNEL ($88.91)
Site 2 - Brentwood, TN – LOCAL CHANNEL ($88.91)
Interoffice Mileage from Franklin Central Office to Brentwood Central Office is 8.6 miles. $10.50 x 9 miles = $94.50
Total monthly service cost - $272.32
DS1 mileages are rounded up to the next whole number; e.g. 8.1 up to 8.9 miles are rounded up to 9 miles.

Note 2 – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon transition. Orders for additional circuits must be approved by CONTRACTOR on availability basis.

Note 3- Basic Ethernet provides full-duplex transmission of port connections. This service arrangement provides best effort, high speed connection for customer premise to another premise with Basic metro Ethernet.

Note 4 – Premium Fixed Ethernet provides the Committed Bandwidth speed.

Note 5 – Premium Burst Ethernet provides the ability to burst above the committed bandwidth rate when excess bandwidth is available.

Note 6 – Metro Ethernet Additional Mileage applies to all Ethernet 1Gbps and/or Premium connections that are 10 miles or more from the serving Metro-E central office. Mileage does not apply to Basic Ethernet services except for 1Gbps.

Note 7 – Metro Ethernet Priority Plus dedicates 25% of the circuit bandwidth as high-priority traffic e.g. VoIP. This is statically assigned and cannot be dynamically reallocated when the high-priority traffic volume is less than 25% of the total traffic in use at a particular time.

Note 8 – Metro Ethernet Q-Forwarding – This feature provides the ability to stack Virtual Local Area Networks (VLANs) onto one Metro Ethernet Premium connection port utilizing IEEE 802.1Q protocol and transporting multiple customer LAN traffic to a single location.

Note 9 – Metro Ethernet Reporting (MER) is a tariff service that provides alarm surveillance, performance reporting and SLA reporting for Metro Ethernet network components. It is only available to customers who subscribe to premium service.

Note 10 - ME Security Card – MER offers a web-enabled GUI. To access reports, the customer logs into the MER server. Log-ins, passwords and secure ID cards are provided to the customer.

Note 11 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF).

ATT installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
(AVPN) AT&T's Virtual Private Network Port Only	LD Domestic AVPN Flat Rate 1.544Mpbs/ Port/FR,ATM	/month	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69
	LD Domestic AVPN Flat Rate 10Mpbs/ Port/Ethernet or ATM	/month	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54
	LD Domestic AVPN Flat Rate 15Mpbs/ Port/FR,ATM	/month	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05
	LD Domestic AVPN Flat Rate 20Mpbs/ Port/FR,ATM	/month	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58
	LD Domestic AVPN Flat Rate 25Mpbs/ Port/FR,ATM	/month	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12
	LD Domestic AVPN Flat Rate 30Mpbs/ Port/FR,ATM	/month	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24
	LD Domestic AVPN Flat Rate 45Mpbs/ Port/FR,ATM	/month	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88
	LD Domestic AVPN Flat Rate 100Mpbs/Port/Ethernet or ATM	/month	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62
	CoS Pkg Multimedia Std/1.544Mbps	/month	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16
	CoS Pkg Multimedia Std/10Mbps	/month	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29
	CoS Pkg Multimedia Std/15Mbps	/month	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88
	CoS Pkg Multimedia Std/20Mbps	/month	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94
	CoS Pkg Multimedia Std/25Mbps	/month	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89
	CoS Pkg Multimedia Std/30Mbps	/month	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40
	CoS Pkg Multimedia Std/45Mbps	/month	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23
	CoS Pkg Multimedia Std/100Mbps	/month	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58

Explanation: This section for ordering port access to AT&T's Virtual Private Network for global reach. The AVPN access circuits are ordered separately. The CoS package allows traffic prioritization, the term "Multimedia Standard CoS" refers to specific set of prioritization profiles which will be selected at time of order.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
AVPN Local Access	AVPN 1.544 Mbps Circuit and mileage – 0 up to 10 miles fixed rate	/month	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18
	AVPN 1.544 Mbps Circuit and mileage – 11 miles up to 20 miles fixed rate	/month		$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44
	AVPN 1.544 Mbps Circuit and mileage – 21 miles up to 50 miles fixed rate	/month		$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78
	AVPN 1.544 Mbps Circuit – 51 and over miles -Note 1	/month		$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80
	Additional per mile charge for AVPN 1.544 Mbps Circuit - 51 miles and over – Note 1	/per mile		$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51
	AVPN DS3 Access	/month	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14
	AVPN 100 Mbps Ethernet Access	/month	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73

Explanation: This section is for ordering local access circuits within AT&T LEC network to AT&T's Virtual Private Network for NetTN global reach outside the State of Tennessee. AVPN DS3 and 100 Mbps Ethernet Access Circuits greater than 10 miles or outside AT&T LEC network are priced on a case-by-case basis and must be approved by the State and the Contractor. The Mileage is rounded up to the next whole number; e.g. 10.1 up to 10.9 miles are rounded up to 11 miles. AVPN port is ordered separately.

Note 1 – The additional per mile and per month charges apply to AVPN 1.544 Mbps circuits >=51 miles. For instance: circuit that is 60 miles is charged $346.80 per month plus 60 miles times $4.51 ($270.60) for a total circuit cost of $617.40 per month.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR – Note 2	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40
	Primary System Single Bay	/month	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70
	Wavelength WAN 10 Gbps Transparent Optical Network Protected - IntraLATA	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Wavelength LAN 10 Gbps Transparent Optical Network	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Optical Signal Amplification	/month		$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00
	Wavelength Channel Per Gigabit Ethernet At 1Gbps Wavelength Transport Protected	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Fibre Connection, Channel Wavelength Transport Optical Network	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Enterprise System Connection – SBCON Channel Wavelength Protected	/month		$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82
	Per OC-3 Wavelength protected	/month		$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16
	Per OC-12 Wavelength Protected	/month		$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40
	Per OC-48 Wavelength protected	/month		$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86
	Per OC-192 Wavelength protected	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Per Fibre Channel 100 Wavelength Protected	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Fibre Channel 200 Wavelength Protected	/month		$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53
	Per Fast Ethernet 100 Wavelength Protected	/month		$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16

	Dedicated Ring Expansion System	/month		$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00
Channelized DS3 - OIR	Central Office DS1 Channel Interface per DS1 Interface	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Channelized DS3 (Note 1) – per DS3-Note 1	/month		$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18
SmartRing Service-OIR-Note 2	Customer Node OC-192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Central Office Node –OC192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Local Channel per quarter mile	/month		$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel Fixed – OC192	/month		$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36
	Interoffice Channel per quarter mile –OC192	/month		$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12
	Alternate Central Office Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Alternate Central Office Local Channel per Quarter mile	/month		$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91
	Customer Channel Interface – per Fractional 1000 Mbps-single mode	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	Customer Channel Interface – per 1000 Mbps-ME backbone, per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	Customer Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
	CO Channel Interface – per 1000 Mbps ME Backbone	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	CO Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88

	CO Channel Interface – per Fractional 1000 Mbps 1000 Mbps per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	CO Channel Interface – per Fractional 1000 Mbps 600 Mbps per node	/month		$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44
	CO Channel Interface – per Fractional 1000 Mbps 600 Mbps ME Backbone 600 Mbps per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
OIR Diversity Circuit – Note **3**	100Mbps TNTower to Chattanooga NetTN NAP – Note 4	/month		$18,235.00	$18,235.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Note 1 - Service includes the DS3 Channel system at the CO, the Local channel up to 1 mile, 28 DS1 interfaces at the CO and a DS3 Interface at the customer site. Customer is responsible for end-site equipment to terminate this service.

Note 2 – Wavelength and SmartRing services to provide necessary bandwidth and route diversity between the 2 OIR data centers per NetTN contract Attachment E, Section.4.

Note 3 – NetTN Solution to replace the TNII diversity circuit under the TNII contract.

Note 4 – The State has discontinued the OIR Diversity Circuit in contract Amendment 5, therefore there are no costs in the table above for contract years 3 through 10.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00
	DSL (3M x 384k)	/month	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30
	DSL (6M x 384k)	/month	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31

Explanation: This section is used for ordering Statewide DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95
	Interstate 800 services for RA access	/minute	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
	3G/4G Wireless Air Card User, per Account, with static IP addresses	/month	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78
	SSL VPN Server implementation/installation-2000 users – Note 1	/1x install	$8,464.00	$8,464.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SSL monthly fee w/ browser for web applications-1000 users – Note 1	/month	$3,875.00	$3,875.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	SSL monthly fee w/ browser for web applications-2000 users – Note 1	/month	$6,629.00	$6,629.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Multi-factor Hard Token	per user/mth	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81
	Multi-factor server license & token with 3-yr battery	/annually per user	$62.12	$62.12	$62.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12
	Multi-factor server license maintenance	/annually per user	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36

Explanation: This section is for dial-up and broadband remote access, SSL and multi-factor authentication for an individual.

Note 4 – The State has discontinued SSL Service in contract Amendment 5, therefore there are no costs in the table above for contract years 3 through 10.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Multipoint Audio Service	/30min	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03
	H.323 Directory Listing Service	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80
	Unlimited Video Usage – Note 1	/month	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60
	Video Bridge Subscription to Video Control Panel – Note 1	/month	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20
	Unlimited Video Bridge 3 Year Maintenance – Note 1	/month	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88
	Video Bridge Call Launch Fee Note 2	/per call	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11

Explanation: This section is for ordering video conferencing service. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Note 1 – This service is for ordering unlimited video service utilizing a dedicated MCU with a web-scheduler within the NetTN network. Read-only access will be provided to NetTN Partners for management and trouble shooting fault management tickets. This is Basic service only, providing 384 up to 1.544Mbps speeds, no encryption. AT&T will provide maintenance, management, monitoring and help-desk support. All applicable NetTN SLAs apply. All three components are required, unlimited video usage, video bridge subscription to video control panel and unlimited video Bridge 3 yr maintenance.

Note 2 – This is an optional component for having AT&T manually schedule the conference instead of using web-scheduler.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00
	6 Mbps	/month	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00
	Metro Ethernet 10Mbps	/month	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00
	Metro Ethernet 20Mbps	/month	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00
	Metro Ethernet 50Mbps	/month	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00
	Metro Ethernet 100Mbps	/month	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00
	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 500Mbps	/month	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00
	Alternate ISP ME 1 Gbps	/month		$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/Intranet	Name Space Management, per zone	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Email, per account (100 Mbps storage)	/month	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
	Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
	K-12 Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100Mbps Connection	/month	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00
	Metro E 1 Gbps Connection	/month	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00
	B-Channels-Voice/Data-each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Primary Rate Installation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (Surcharges) – Note 1	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Remove Primary Rate ISDN Screening Table, per central office, per trunk group – Note 2	/per incident			$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80
	Remove CLI Option from Screening Table, Per PRI trunk group (DMS only) – note 2	/per incident			$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80
	Remove Primary Rate telephone numbers from DMS screening table, Per TN or block of TN's (DMS only) – Note 2	/per incident			$3.06	$3.06	$3.06	$3.06	$3.06	$3.06	$3.06	$3.06
Flat Rate Business Line (1FB)	Flat Rate Main Station Line, Business, within CONTRACTOR serving area, including Single Point of Contact	/month			$30.97	$30.97	$30.97	$30.97	$30.97	$30.97	$30.97	$30.97
	Flat Rate Main Station Line, Business, outside CONTRACTOR serving area, including Single Point of Contact	/month			$51.25	$51.25	$51.25	$51.25	$51.25	$51.25	$51.25	$51.25
	End User Common Line Charge	/month			$7.50	$7.50	$7.50	$7.50	$7.50	$7.50	$7.50	$7.50
	Universal Service Funding Fee	/month			$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50	$1.50

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Note 1 – The E911 surcharge rate allows collection of E911 surcharges at the county established rate. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).

Note 2 – Primary rate feature to strip out number displayed when scheduling appointments and replacing with number selected by the agency.

Note 3 – AT&T will provide a help desk, which is a single point of contact, with a specific 800 number for end-users to call for the following services:

Ordering- New, moves, Adds, Changes, Disconnect/Cancel Services, Fault Management and billing inquires

Normal Help Desk hours are 8 a.m. to 5 p.m., Monday through Friday, customer site local time, excluding Customer Holidays. Service orders, i.e., Move, Add, Change, and Delete (MACD) are handled during these normal hours.

On the Customer's behalf, AT&T will be the single point of contact to coordinate Customer's Fault Management, Carrier order activities and other Services, as applicable, with Customer service vendors under Third Party Agreements, and any local carrier provider (LEC's and CLEC)

Consolidated Billing/Invoicing - On a monthly basis, AT&T will create for the customer a consolidated invoice.

Customer responsibilities:

- Customer will provide all letters of agency, transfer of service authorizations, or any other documentation required by any third party vendor, including any IXC's, LEC's and CLEC's to the extent permitted by State or Local laws, regulations, or policies..
- Customer will provide a current electronic copy of site and station detail in AT&T specified file/format with a minimum accuracy level of 95%. Where Customer cannot provide this data in AT&T's specified file format or meet the accuracy level, AT&T may separately charge for the added time and material for data conversion.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00
	B-Channels-Voice/Data-Each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (per number)	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site Router 10/100 48 Switch Ports	/month	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00
	End Site Router PoE 802.af	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00
	End Site Router Wireless Option (802.11b/g)	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90
	Ethernet 100 Mbps	/month	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	New services	/incident	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	On-site work order hardware configuration change	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Consulting Services											
	Principal Architect Consulting Services- Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Program Manager Consulting Services – Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Sr. Consultant Consulting Services – Note 1	/hour		$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Technology/Security Consulting Services – Note 1	/hour		$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00
	Senior Engineer Consulting Service – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager II Consulting Services – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager I Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Engineer Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Technician Consulting Services – Note 1	/hour		$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00
	Site Survey	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	Load Testing Point-to-Point Circuits	/incident	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Migration end site order processing	/order	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Expedite charges/per WAN Circuit	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	TACACS Additional user accounts 7-12 users –Note 2	/incident		$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
	TACACS Additional user accounts 13-25 users – Note 2	/incident		$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00

	Telecommunications Service Priority (TSP) – per circuit – Note 3	/Monthly		$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.
Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.
Note 1 – A statement of work will be developed and agreed upon between the State and the Contractor for specific categories of consulting services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Note 2 - TACACS - Read only access for up to 3000 NetTN managed routers via Telnet. If the number of concurrent sessions is exceeded the State will ensure that Enabled Employees log off the sessions if requested to do so by CONTRACTOR personnel.

Note 3 - Telecommunications Service Priority – FEMA telecommunications restoral priority.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Enhanced Firewall-IDS	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS – Note 8	/month	$200.00	$200.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Site 24 Port Integrated Switch	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	End Site 48 Port Integrated Switch	/month	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00
	End Site Integrated FW IOS / 24 Port Integrated Switch – Note 8	/month	$750.00	$750.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Site Integrated FW IOS / 48 Port Integrated Switch – Note 8	/month	$850.00	$850.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Site Cisco ASA 5510, Note 1 & 2	/month	$459.00	$459.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	End Site Cisco ASA 5520, Note 1& 3	/month	$1,387.20	$1,387.20	$760.00	$760.00	$760.00	$760.00	$760.00	$760.00	$760.00	$760.00
	End Site Cisco ASA 5520 High Availability-Note 1 & 4	/month	$2,774.40	$2,774.40	$1,520.00	$1,520.00	$1,520.00	$1,520.00	$1,520.00	$1,520.00	$1,520.00	$1,520.00
	End Site Cisco ASA 5540 -Note 1 & 5 See Note 8	/month	$4,855.20	$4,855.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	End Site Cisco ASA 5540HA GigE - Note 1 & 6	/month	$5,202.00	$5,202.00	$2,660.00	$2,660.00	$2,660.00	$2,660.00	$2,660.00	$2,660.00	$2,660.00	$2,660.00
	End Site Cisco ASA 5550HA GigE - Note 1 & 7	/month	$10,404.00	$10,404.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Note 1 - This is a premise-based firewall, fully managed and monitored by CONTRACTOR. CONTRACTOR provides the following support for this managed firewall:

- Proactive 7x24 monitoring and management, maintenance and updates.
- Initial consultation for the activation of the firewall service, and testing at customer location.
- Change/configuration Management – Customers may request up to 6 change requests per month, per device.
- On-site maintenance response is available 7 days/week, 24 hours/day. NetTN SLAs A.14, A.15, A.18, A.19 and A.21 apply.

Note 2 – Small Office with approved Throughput = 2 x T1
Note 3 – Medium Office with approved Throughput = T1 / DS3
Note 4 – Medium Office, high availability* with approved Throughput = T1 / DS3
Note 5 - Large Office, high availability* with approved Throughput = OC-3
Note 6 - Large Office, high availability* with approved Throughput = OC-3
Note 7 - X-large Office, high availability* with approved Throughput = OC-3 plus

Note 8 – The State has discontinued these services in contract Amendment 5, therefore there are no costs in the table above for contract years 3 through 10.

* High Availability option can be configured as a two-Firewall cluster including Active/Standby mode with automatic failover in the case of hardware failure.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	19" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	23" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	Cabinet	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Cage/Square Footage	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Power - 48v DC 20 Amps A/B	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Power - 48v DC 30 Amps A/B	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Power - 48v DC 40 Amps A/B	/month	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
	Power - 48v DC 50 Amps A/B	/month	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Power – 48v DC 60 Amps A/B	/month	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00
	Cross Connect – DS1	/incident	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Cross Connect – DS1	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – DS3/Coax	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – DS3/Coax	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – Ethernet/Cat 5	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – Ethernet/Cat 5	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect - Fiber	/incident	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Cross Connect - Fiber	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost is the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication – Note 1 & 4	Per user /month	$10.80	$10.80	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Authentication – Note 2 & 4	Per user /month	$4.05	$4.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Authentication – Note 3 & 4	Per user /month	$0.0000	$0.0000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Explanation: This section is for ordering Hosted Identity Management for eHealth and future defined NetTN Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – This includes all users that require identity authentication through the Trusted Authentication Manager (Log directly into the TN eHealth Network portal). All users will be eligible for Customer support levels one through three as defined below.

Note 2 – This includes all users that authenticate their identity through their organization's Web Identity and Access Management system and then federate the user's credentials to the CONTRACTOR Trusted Identity Broker. CONTRACTOR is responsible to transform the federation protocol of the user's credentials to whatever protocol required by the relying endpoint and then pass on the user's credentials to the relying party endpoint. Users in this scenario are eligible for customer support levels two and three as defined below, whereas the Identity provider organization is responsible for level one customer support.

CONTRACTOR, through its subcontractor relationship(s) shall provide access to Help Desk services for the purposes of reporting TN eHealth Network-related problems, as described below:

Definition of Customer Support Levels:

Support Level 1 – The problem is affecting time-critical applications with production work at a standstill. The TN eHealth Portal is completely unusable and no work- around is currently known. The Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 2 - The Trusted Broker Platform does not function properly, but key business processes are not interrupted. The TN eHealth Portal is significantly impaired such that key business processes cannot be conducted and no known workaround is currently available. The CONTRACTOR Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 3 – The Trusted Broker Platform is functioning, but specific User (s) is affected and cannot conduct work as needed.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

Note 4 – The State has discontinued Hosted Identity Management in contract Amendment 5, therefore there are no costs in the table above for contract years 3 through 10.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Next Generation 9-1-1 (NG -911)	Aggregation Point – NHVL,Knox, Chatt & Memphis Facilities	/incident		$137,634.88	$137,634.88	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Hardware	/incident		$272,939.82	$272,939.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Installation	/incident		$234,666.00	$234,666.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Control Center – Facilities & Build out	/incident		$137,634.88	$137,634.88	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC-Hardware -	/incident		$667,186.22	$667,186.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC -Installation	/incident		$572,473.35	$572,473.35	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Call delivery & Monitoring Software	/incident		$1,166,725.34	$1,166,725.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Hardware	/incident		$10,487.44	$10,487.44	$10,487.44	$10,487.44	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Installation	/incident		$6,991.62	$6,991.62	$6,991.62	$6,991.62	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Usage Information, Traffic reports per measurement ID, per report	/incident		$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40
	E-911 SS7 Trunk group – per one way trunk group	/incident		$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86
	E-911 SS7 Trunk group – per one way trunk group	/month		$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/incident		$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22
	E-911 SS7 DSO Trunk – ea. additional mile per Trunk	/month		$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06

E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial group setup	/incident		$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74
E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial group setup	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22
Custom Routing, Per PSAP Routing Number	/incident		$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32
Speed Call List, Per EMNT trunk, initial or rearrangement	/incident		$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02
Core hardware Maintenance	/month		$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96
Software Maintenance-Call delivery & monitoring	/month		$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98
Edge PSAP Hardware Mtc.	/month		$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14
NetTN 9-1-1 Support Services	/month		$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68
ALI and DBMS Application-Note 1	/month				$1,672.52	$1,672.52	$1,672.52	$1,672.52	$1,672.52	$1,672.52	$1,672.52
ALI and DBMS Application installation	/incident				$95,308.80	$95,308.80	$95,308.80	$95,308.80	$95,308.80	$95,308.80	$95,308.80
ALI and DBMS Infrastructure-Note2	/month				$618.60	$618.60	$618.60	$618.60	$618.60	$618.60	$618.60
ALI and DBMS Infrastructure installation -Note2	/incident				$35,251.20	$35,251.20	$35,251.20	$35,251.20	$35,251.20	$35,251.20	$35,251.20
PSAP Connections (per PSAP)-Note 3	/incident				$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
PSAP Connections (per PSAP	/month				$36.72	$36.72	$36.72	$36.72	$36.72	$36.72	$36.72
IP to Serial ALI Connections (per PSAP)-Note 4	/incident				$521.22	$521.22	$521.22	$521.22	$521.22	$521.22	$521.22
GIS Management Application – Note 5	/month				$517.75	$517.75	$517.75	$517.75	$517.75	$517.75	$517.75
GIS Management Application installation - Note 5	/incident				$11,750.60	$11,750.60	$11,750.60	$11,750.60	$11,750.60	$11,750.60	$11,750.60
GIS Management Infrastructure – Note 6	/month				$201.35	$201.35	$201.35	$201.35	$201.35	$201.35	$201.35
GIS Management Infrastructure installation – Note 6	/incident				$4,569.60	$4,569.60	$4,569.60	$4,569.60	$4,569.60	$4,569.60	$4,569.60
Lost Routing Application –Note 7	/month				$919.40	$919.40	$919.40	$919.40	$919.40	$919.40	$919.40

Lost Routing Application installation –Note 7	/incident				$44,123.32	$44,123.32	$44,123.32	$44,123.32	$44,123.32	$44,123.32	$44,123.32
Lost Routing Infrastructure –Note 8	/month				$201.82	$201.82	$201.82	$201.82	$201.82	$201.82	$201.82
Lost Routing Infrastructure installation –Note 8	/incident				$9,685.61	$9,685.61	$9,685.61	$9,685.61	$9,685.61	$9,685.61	$9,685.61

Explanation: **This section is for NG-9-1-1 over NetTN.** This service is subject to NetTN Service Level Agreements. **This project will be implemented in three stages as described below:**

Stage 1: The Aggregation Points and NetTN Control Centers will be deployed. Wireless Carriers and VoIP Providers will move their 9-1-1 call traffic from the legacy 9-1-1 selective routers to the Aggregation Points. 9-1-1 Calls will be delivered from the 9-1-1 Over NetTN Control Centers (NCC) to the appropriate legacy selective router for delivery to the PSAP. This places the Aggregation Points and NCCs into service without making any changes that will directly impact the PSAPs.

Stage 2: NetTN Call Delivery to the PSAPs. Edge devices and firewalls will be deployed at the PSAPs and NetTN connections will be installed. 9-1-1 Calls will be delivered from the NCC directly to the PSAP over NetTN.

Stage 3: All remaining originating 9-1-1 call traffic (landline 9-1-1 calls) will be migrated off the legacy selective routers and connected to the managed IP network at designated edge routers and the legacy 9-1-1- selective router may be decommissioned.

Note 1: ALI and DBMS Application Software –is required to tightly integrate the ALI (Automatic Location Identifier) Database Management and ALI Response platform. The software provides real time updates from the Data Management platform to the ALI Response platform. Features include Service Order Update, MSAG and ALI management software, and full suite of features to import and export data with the ability to manage, view and update data. The software complies with NENA Data Technical Standards & is engineered for 5 million records with scalability. This software provides standard and custom reports with multiple export options along with ALI steering for VPC's and MPC's.
Also included are configuration, installation, all new releases and software upgrades with application training for the Tennessee Emergency Communications Board's management company TCS.

Note 2: The ALI and DBMS Management infrastructure is housed in CONTRACTOR Network Control Centers (NCC) in Tennessee with (2) fully redundant Servers, supports up to 8.5M records and over 300 clients. The ALI Response Platform - (4) fully redundant Servers – 2 in each NCC and supports 200+ PSAP locations with staging, configuration, installation, 7x24x365 surveillance, maintenance and repair.

Note 3: PSAP Connections - Application support for dual links to each PSAP or PSAP Host On-Site visit for installation, initial configuration and testing.

Note 4: IP to Serial PSAP connections, where required by ANI/ALI Controller; (2) IP to serial connections to support dual ALI links, installation and testing (with Site visit for PSAP Connections).

Note 5: GIS Management Application: Synchronizes GIS data with ALI and MSAG, seamlessly Integrates GIS data across ALI, MSAG and LoST Routing databases, built on ESRI ArcGIS 9.x platform and uses all the functionality of ArcMap, supports multiple users editing/using data simultaneously, provides quality assurance with a variety of auditing tools, configuration and installation, application training for TECB (TCS), New releases and software upgrades included.

Note 6: GIS Management Infrastructure housed in CONTRACTOR Network Control Centers in Tennessee - (2) fully redundant Servers, Relational Databases with Spatial Data replication
Staging, configuration and installation, 7x24x365 surveillance, maintenance and repair included.

Note 7: LoST Application: Uses caller location (PIDF-LO) for Location Based Routing -GIS layers determine call destination, Routing changes made by changing polygon boundaries. Fast, efficient routing changes in time critical situations, based on 6.5M Population (scalable as required)
Configuration and installation, training, new releases and software upgrades included

Note 8: LoST Infrastructure housed in CONTRACTOR Network Control Centers in Tennessee, (2) fully redundant Servers, Relational Databases with Spatial Data replication, staging, configuration and installation, 7x24x365 surveillance, maintenance and repair.

CONTRACT AMENDMENT

Agency Tracking #	Edison ID	Contract #	Amendment #
31701-03036	2904	FA-09-25220-00	4

Contractor Legal Entity Name	Registration ID
AT&T Corp.	7452

Amendment Purpose & Effect(s)

Expands services within the scope of the contract, as provided for in Contract Sections E.18 and E.24.

Amendment Changes Contract End Date: ☐ YES ☒ NO **End Date:** June 30, 2018

Maximum Liability (TOTAL Contract Amount) Increase/Decrease per this Amendment: 0

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,000,023.00	$471,567.00	$7,471,590.00
2010			$14,500,000.00	$12,900,000.00	$27,400,000.00
2011			$16,500,000.00	$15,280,000.00	$31,780,000.00
2012			$16,500,000.00	$21,836,800.00	$38,336,800.00
2013			$17,500,000.00	$30,252,576.00	$47,752,576.00
2014			$18,500,000.00	$49,354,095.00	$67,854,095.00
2015			$19,000,000.00	63,593,329.00	$82,593,329.00
2016			$19,500,000.00	$74,433,039.00	$93,933,039.00
2017			$21,500,000.00	$86,928,481.00	$108,428,481.00
2018			$16,500,000.00	$81,422,611.00	$97,922,611.00
TOTAL:			$167,000,023.00	$436,472,498.00	**$603,472,521.00**

American Recovery and Reinvestment Act (ARRA) Funding: ☐ YES ☒ NO

Budget Officer Confirmation: There is a balance in the appropriation from which obligations hereunder are required to be paid that is not already encumbered to pay other obligations.

Maureen Abbey/ok

Speed Code	Account Code
FA00000048	70600000

OCR USE

AMENDMENT FOUR
TO FA-09-25220-00 / 2904

This Contract Amendment is made and entered by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corp., hereinafter referred to as the "Contractor." It is mutually understood and agreed by and between said, undersigned contracting parties that the subject Contract is hereby amended as follows:

1. Attachment B is deleted in its entirety and replaced with the new Attachment B attached hereto.

The revisions set forth herein shall be effective September 29, 2010. All other terms and conditions not expressly amended herein shall remain in full force and effect.

IN WITNESS WHEREOF,

AT&T CORP.

Xavier D Williams 9/24/10

SIGNATURE **DATE**

Xavier D. Williams, SVP - Government, Education and Medical Markets

PRINTED NAME AND TITLE OF SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

M. D. Goetz, Jr. 9-24-10

M. D. GOETZ, JR., COMMISSIONER **DATE**

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45
	DSL (3M x 384k)	/month	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50
	DSL (6M x 384k)	/month	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01
	384kbps	/month	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00
	1.544 Mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	9 Mbps	/month	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00

	Mbps											
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$0.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12	1.544 Mbps	/month	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00

	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Incremental 50Mbps upgrade to existing 50Mbps circuit	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
K12 WAN Circuit Managed point to point without Internet access-Note 1	1.544 Mbps	/month		$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month		$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month		$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month		$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month		$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month		$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	Metro Ethernet 10 Mbps	/month		$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	Metro Ethernet 100 Mbps	/month	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00
	Metro Ethernet 1 Gbps	/month	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Note1: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, site connectivity, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday. This pricing is contingent upon a design ratio of 8:1 Metro Ethernet connections ("Spoke" sites) to a Metro Ethernet Hub site. All configurations must be approved by the State and the Contractor on an individual case basis. "Spoke" sites receive NetTN SLAs A.14, A.15, and A.16 only.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50
	384kbps	/month	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50
	1.544 Mbps	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74
	4.5 Mbps	/month	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49
	6 Mbps	/month	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49
	7.5 Mbps	/month	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49
	9 Mbps	/month	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49
	16 Mbps	/month	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 2 Mbps	/month	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74
	Metro Ethernet 4 Mbps	/month	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00
	Metro Ethernet 8 Mbps	/month	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00
	Metro Ethernet 10 Mbps	/month	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50

	Metro Ethernet 20 Mbps	/month	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00
	Metro Ethernet 50 Mbps	/month	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50
	Metro Ethernet 100 Mbps	/month	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50
	Metro Ethernet 200 Mbps	/month			$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00	$4,541.00
	Metro Ethernet 600 Mbps	/month	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00
	Metro Ethernet 1 Gbps	/month	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00
	Monday – Sunday 24 X 7 Coverage	/month	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	Metro Ethernet 1 Gbps	/month	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
	Wavelength 1.25Gbps	/month	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
	Wavelength 2.5Gbps	/month	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
	Wavelength OC3	/month	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39
	Wavelength OC12	/month	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18
	Wavelength OC48	/month	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00
	Wavelength OC192	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Wavelength 10 Gbps	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET	OC12	/month	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	OC48	/month	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00
	OC192	/month	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Local Channel per quarter mile	/month	$245.00	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel per air mile	/month	$125.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Customer node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Interoffice Channel Fixed – OC3 capacity	/month		$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58
	Interoffice Channel Fixed – OC12 capacity	/month		$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20
	Interoffice Channel per quarter mile –OC3	/month	$125.00	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Interoffice Channel per quarter mile –OC12	/month		$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70
	Customer Node OC-3 capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Customer Node OC-12 capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Central office node –OC3 Capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Central office node –OC12 Capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Customer Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	Customer Channel Interface- per DS3	/month		$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46
	Customer Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	Customer Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	CO Channel Interface- per DS3	/month		$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54
	CO Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	CO Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface – per 28 DS1 Channel System (DS3) per node	/month		$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44
	CO Channel Interface – per DS1 on 28 DS1 Channel System (DS3) per node	/month		$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 100 Mbps	/month	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49
	Metro Ethernet 1 Gbps	/month	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00
	Metro Ethernet 600 Mbps	/month	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46
	Metro Ethernet 1 Gbps	/month	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00
	TDOT ITS 9.6 Synchronet per end point	/month	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	DS1 - 5 miles or less	/mileage	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00
	DS1 – 6 miles and over Interoffice mileage – Note 1	/mileage	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
	DS1 – 6 miles and over Local channels – Note 1	/month	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91
	Flat Rate DS1 IntraLATA/InterLATA – Note 2	/month	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00
	Intralata DS3	/mileage	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
	Interlata DS3	/mileage	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00
	Interstate DS1	/mileage	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00
	Interstate DS3	/mileage	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	Metro Ethernet 2 Mbps Basic IntraLATA/IntraState –Note 3	/month	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00
	Metro Ethernet 2 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64
	Metro Ethernet 4 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26
	Metro Ethernet 8 Mbps Basic IntraLATA/IntraState -Note 3	/month	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00
	Metro Ethernet 8 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96
	Metro Ethernet 10 Mbps Basic IntraLATA/IntraState - note 3	/month	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33
	Metro Ethernet 10 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72
	Metro Ethernet 10 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96
	Metro Ethernet 20 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24
	Metro Ethernet 20 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64

Metro Ethernet 50 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08
Metro Ethernet 50 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76
Metro Ethernet 100 Mbps Basic IntraLATA/IntraState -Note 3	/month	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00
Metro Ethernet 100 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44
Metro Ethernet 100 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28
Metro Ethernet 250 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36
Metro Ethernet 250 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96
Metro Ethernet 500 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28
Metro Ethernet 500 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64
Metro Ethernet 1Gbps Basic IntraLATA/IntraState –Note 3	/month		$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40
Metro Ethernet 1Gbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32
Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00
Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00
Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75
Metro Ethernet Premium 2-9 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50
From 26 to 35 miles per connection	/month	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35
From 36 to 50 miles per connection	/month	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75
Metro Premium Ethernet 10-99 Mbps additional mileage charge – Note 6											

From 10 to 25 miles per connection	/month	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70
From 26 to 35 miles per connection	/month	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20
From 36 to 50 miles per connection	/month	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70
Metro Ethernet Premium 100- 499 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60
From 26 to 35 miles per connection	/month	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80
From 36 to 50 miles per connection	/month	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10
Metro Ethernet Premium 500-1000 Mbps and Basic Ethernet 1Gbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60
From 26 to 35 miles per connection	/month	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30
From 36 to 50 miles per Connection	/month	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60
Premium Ethernet optional Features											
Priority Plus – NOTE 7	/month	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08
Q-Forwarding – NOTE 8	/month	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84
Q-Forwarding- Service Establishment Charge	/incident	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00
Metro Ethernet Reporting Charge per connection-Note 9	month	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90
Metro Ethernet Web Interface Charge –Note 9	month	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36
Metro Ethernet Web Interface Charge – 1x charge	Per/Acct	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50
Metro Ethernet Reporting Security Card -Note 10	Per/Acct	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
Metro Ethernet Reporting Service Establishment – 1x charge – Note 10	Per/Acct	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
Metro Ethernet Protection – Note 11											
Automatic Protection Switching Feature (APS), Route protection, per APS less than 10 miles	/month			$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40	$785.40
Automatic Protection Switching Feature (APS), Route protection, per APS – 10 to 25 route miles	/month			$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56	$946.56
Automatic Protection Switching Feature (APS), Route protection, per APS -26 to 35 route miles	/month			$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70	$1,208.70
Automatic Protection Switching Feature (APS), Structional Protection, per APS less than 10 route miles	/month			$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10	$668.10

	Automatic Protection Switching Feature (APS), Structural protection, per APS – 10 to 25 route miles	/month			$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60	$795.60
	Automatic Protection Switching Feature (APS), Structural protection, per APS -26 to 35 route miles	/month			$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14	$1,027.14
	Core Trunk Automatic Failover Feature, per CTAF, less than 10 airline miles	/month			$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20	$265.20
	Core Trunk Automatic Failover Feature, per CTAF, 10 to 25 airline miles	/month			$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80	$448.80
	Core Trunk Automatic Failover Feature, per CTAF, 26 to 35 airline miles	/month			$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80	$652.80

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Note 1 – DS1 circuits that are a total of 6 miles or more require 2 Local Channels and Interoffice Channel Mileage for the distance between Central Offices for the two end site locations. For example:

Site 1 – Franklin, TN – LOCAL CHANNEL ($88.91)
Site 2 - Brentwood, TN – LOCAL CHANNEL ($88.91)
Interoffice Mileage from Franklin Central Office to Brentwood Central Office is 8.6 miles. $10.50 x 9 miles = $94.50
Total monthly service cost - $272.32
DS1 mileages are rounded up to the next whole number; e.g. 8.1 up to 8.9 miles are rounded up to 9 miles.

Note 2 – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon transition. Orders for additional circuits must be approved by AT&T on availability basis.

Note 3- Basic Ethernet provides full-duplex transmission of port connections. This service arrangement provides best effort, high speed connection for customer premise to another premise with Basic metro Ethernet.

Note 4 – Premium Fixed Ethernet provides the Committed Bandwidth speed.

Note 5 – Premium Burst Ethernet provides the ability to burst above the committed bandwidth rate when excess bandwidth is available.

Note 6 – Metro Ethernet Additional Mileage applies to all Ethernet 1Gbps and/or Premium connections that are 10 miles or more from the serving Metro-E central office. Mileage does not apply to Basic Ethernet services except for 1Gbps.

Note 7 – Metro Ethernet Priority Plus dedicates 25% of the circuit bandwidth as high-priority traffic e.g. VoIP. This is statically assigned and cannot be dynamically reallocated when the high-priority traffic volume is less than 25% of the total traffic in use at a particular time.

Note 8 – Metro Ethernet Q-Forwarding – This feature provides the ability to stack Virtual Local Area Networks (VLANs) onto one Metro Ethernet Premium connection port utilizing IEEE 802.1Q protocol and transporting multiple customer LAN traffic to a single location.

Note 9 – Metro Ethernet Reporting (MER) is a tariff service that provides alarm surveillance, performance reporting and SLA reporting for Metro Ethernet network components. It is only available to customers who subscribe to premium service.

Note 10 - ME Security Card – MER offers a web-enabled GUI. To access reports, the customer logs into the MER server. Log-ins, passwords and secure ID cards are provided to the customer.

Note 11 – Automatic Protection Switching Service-Automatic Protection Switching (APS) provides 1:1 fiber path protection between the customer premises and the serving Ethernet switch. This is access protection, as opposed to core network protection provided by Core Automatic Trunk Failure (CATF)..

AT&T installs a protection switch and optical splitter at both the customer premises and Ethernet equipped CO. A secondary fiber path, which can be diversely routed from the primary path, is provisioned between the customer location and the central office. Both fiber paths connect to the protection switches installed on each end of the fiber loop. The protection switch connects to a single port on the Metro Ethernet switch. The protection path is used only when a primary path failover occurs. When an outage occurs the protection switch will automatically switch the customer's traffic over to the secondary path.

APS only provides fiber route diversity. APS does not provide port diversity, switch diversity, or optical protection. APS is provisioned between the customer's premises and the Ethernet equipped central office. APS is available to a customer with Metro Ethernet Service connection of 10 Mbps or higher.

APS may be ordered a structurally diverse transport path (Structural Protection) or a route diverse transport path (Route Protection).

Structural Protection APS is defined as the APS secondary facility and the primary Metro Ethernet Connection facility being in separate sheaths that are in separate structures located along the same route.

Route Protection APS is defined as the APS secondary facility being in a separate sheath and in an alternate underground, aerial, or direct buried structure that runs along a separate physical path from the facility associated with the primary Metro Ethernet connection. Route protection provides physical route diversity from the Metro Ethernet-equipped central office to the customer's property line or servicing wire center.

Core Trunk Automatic Failover Feature - Core protection is configured using two (2) or more redundant and diverse trunks between two Metro Ethernet switch routers. The designed diversity between the two trunk paths will utilize separate IOF routes and separate Metro Ethernet switch ports (will also use separate interface cards where available). The automatic failover between trunks is supported by industry standard IEEE 802.3ad Link Aggregation Control Protocol (LACP). Link Aggregation allows the Metro Ethernet switch to combine several physical inter-switch trunks with diverse paths between two switches into a single logical trunk. If there is an outage with one of the physical trunks, the customer's traffic will continue over the unaffected trunk member. CATF provides core protection only; it does not provide access protection, defined as protection on the link between the serving Metro Ethernet switch and the customer premises.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
(AVPN) AT&T Virtual Private Network Port Only	LD Domestic AVPN Flat Rate 1.544Mpbs/ Port/FR,ATM	/month	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69
	LD Domestic AVPN Flat Rate 10Mpbs/ Port/Ethernet or ATM	/month	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54
	LD Domestic AVPN Flat Rate 15Mpbs/ Port/FR,ATM	/month	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05
	LD Domestic AVPN Flat Rate 20Mpbs/ Port/FR,ATM	/month	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58
	LD Domestic AVPN Flat Rate 25Mpbs/ Port/FR,ATM	/month	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12
	LD Domestic AVPN Flat Rate 30Mpbs/ Port/FR,ATM	/month	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24
	LD Domestic AVPN Flat Rate 45Mpbs/ Port/FR,ATM	/month	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88
	LD Domestic AVPN Flat Rate 100Mpbs/Port/Ethernet or ATM	/month	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62
	CoS Pkg Multimedia Std/1.544Mbps	/month	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16
	CoS Pkg Multimedia Std/10Mbps	/month	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29
	CoS Pkg Multimedia Std/15Mbps	/month	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88
	CoS Pkg Multimedia Std/20Mbps	/month	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94
	CoS Pkg Multimedia Std/25Mbps	/month	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89
	CoS Pkg Multimedia Std/30Mbps	/month	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40
	CoS Pkg Multimedia Std/45Mbps	/month	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23
	CoS Pkg Multimedia Std/100Mbps	/month	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58

Explanation: This section for ordering port access to AT&T's Virtual Private Network for global reach. The AVPN access circuits are ordered separately. The CoS package allows traffic prioritization, the term "Multimedia Standard CoS" refers to specific set of prioritization profiles which will be selected at time of order.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
AVPN Local Access	AVPN 1.544 Mbps Circuit and mileage – 0 up to 10 miles fixed rate	/month	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18
	AVPN 1.544 Mbps Circuit and mileage – 11 miles up to 20 miles fixed rate	/month		$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44
	AVPN 1.544 Mbps Circuit and mileage – 21 miles up to 50 miles fixed rate	/month		$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78
	AVPN 1.544 Mbps Circuit – 51 and over miles -Note 1	/month		$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80
	Additional per mile charge for AVPN 1.544 Mbps Circuit - 51 miles and over – Note 1	/per mile		$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51
	AVPN DS3 Access	/month	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14
	AVPN 100 Mbps Ethernet Access	/month	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73

Explanation: This section is for ordering local access circuits within AT&T LEC network to AT&T's Virtual Private Network for NetTN global reach outside the State of Tennessee. AVPN DS3 and 100 Mbps Ethernet Access Circuits greater than 10 miles or outside AT&T LEC network are priced on a case-by-case basis and must be approved by the State and the Contractor. The Mileage is rounded up to the next whole number; e.g. 10.1 up to 10.9 miles are rounded up to 11 miles. AVPN port is ordered separately.

Note 1 – The additional per mile and per month charges apply to AVPN 1.544 Mbps circuits >=51 miles. For instance: circuit that is 60 miles is charged $346.80 per month plus 60 miles times $4.51 ($270.60) for a total circuit cost of $617.40 per month.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR – Note 2	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40
	Primary System Single Bay	/month	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70
	Wavelength WAN 10 Gbps Transparent Optical Network Protected - IntraLATA	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Wavelength LAN 10 Gbps Transparent Optical Network	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Optical Signal Amplification	/month		$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00
	Wavelength Channel Per Gigabit Ethernet At 1Gbps Wavelength Transport Protected	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Fibre Connection, Channel Wavelength Transport Optical Network	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Enterprise System Connection – SBCON Channel Wavelength Protected	/month		$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82
	Per OC-3 Wavelength protected	/month		$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16
	Per OC-12 Wavelength Protected	/month		$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40
	Per OC-48 Wavelength protected	/month		$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86

	Per OC-192 Wavelength protected	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Per Fibre Channel 100 Wavelength Protected	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Fibre Channel 200 Wavelength Protected	/month		$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53
	Per Fast Ethernet 100 Wavelength Protected	/month		$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16
	Dedicated Ring Expansion System	/month		$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00
Channelized DS3 - OIR	Central Office DS1 Channel Interface per DS1 Interface	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Channelized DS3 (Note 1) – per DS3-Note 1	/month		$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18
SmartRing Service-OIR-Note 2	Customer Node OC-192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Central Office Node – OC192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Local Channel per quarter mile	/month		$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel Fixed – OC192	/month		$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36
	Interoffice Channel per quarter mile –OC192	/month		$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12
	Alternate Central Office Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Alternate Central Office Local Channel per Quarter mile	/month		$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91
	Customer Channel Interface – per Fractional 1000 Mbps-single mode	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	Customer Channel Interface – per 1000 Mbps-ME backbone, per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35

	Customer Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
	CO Channel Interface – per 1000 Mbps ME Backbone	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	CO Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
	CO Channel Interface – per Fractional 1000 Mbps 1000 Mbps per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	CO Channel Interface – per Fractional 1000 Mbps 600 Mbps per node	/month		$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44
	CO Channel Interface – per Fractional 1000 Mbps 600 Mbps ME Backbone 600 Mbps per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
OIR Diversity Circuit – Note 3	100Mbps TNTower to Chattanooga NetTN NAP	/month		$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Note 1 - Service includes the DS3 Channel system at the CO, the Local channel up to 1 mile, 28 DS1 interfaces at the CO and a DS3 Interface at the customer site. Customer is responsible for end-site equipment to terminate this service.

Note 2 – Wavelength and SmartRing services to provide necessary bandwidth and route diversity between the 2 OIR data centers per NetTN contract Attachment E, Section.4.

Note 3 – NetTN Solution to replace the TNII diversity circuit under the TNII contract.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00
	DSL (3M x 384k)	/month	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30
	DSL (6M x 384k)	/month	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31

Explanation: This section is used for ordering DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95
	Interstate 800 services for RA access	/minute	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
	3G/4G Wireless Air Card User, per Account, with static IP addresses	/month	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78
	SSL VPN Server implementation/installation-2000 users	/1x install	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00
	SSL monthly fee w/ browser for web applications-1000 users	/month	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00
	SSL monthly fee w/ browser for web applications-2000 users	/month	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00
	Multi-factor Hard Token	per user/mth	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81
	Multi-factor server license & token with 3-yr battery	/annually per user	$62.12	$62.12	$62.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12
	Multi-factor server license maintenance	/annually per user	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36

Explanation: This section is for dial-up and broadband remote access, SSL and multi-factor authentication for an individual.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Multipoint Audio Service	/30min	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03
	H.323 Directory Listing Service	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80
	Unlimited Video Usage – Note 1	/month	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60
	Video Bridge Subscription to Video Control Panel – Note 1	/month	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20
	Unlimited Video Bridge 3 Year Maintenance – Note 1	/month	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88
	Video Bridge Call Launch Fee Note 2	/per call	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11

Explanation: This section is for ordering video conferencing service. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Note 1 – This service is for ordering unlimited video service utilizing a dedicated MCU with a web-scheduler within the NetTN network. Read-only access will be provided to NetTN Partners for management and trouble shooting fault management tickets. This is Basic service only, providing 384 up to 1.544Mbps speeds, no encryption. AT&T will provide maintenance, management, monitoring and help-desk support. All applicable NetTN SLAs apply. All three components are required, unlimited video usage, video bridge subscription to video control panel and unlimited video Bridge 3 yr maintenance.

Note 2 – This is an optional component for having AT&T manually schedule the conference instead of using web-scheduler.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00
	6 Mbps	/month	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00
	Metro Ethernet 10Mbps	/month	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00
	Metro Ethernet 20Mbps	/month	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00
	Metro Ethernet 50Mbps	/month	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00
	Metro Ethernet 100Mbps	/month	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00
	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 500Mbps	/month	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00
	Alternate ISP ME 1 Gbps	/month		$45,000.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00	$34,995.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/Intranet	Name Space Management, per zone	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Email, per account (100 Mbps storage)	/month	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
	Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
	K-12 Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100Mbps Connection	/month	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00
	Metro E 1 Gbps Connection	/month	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00
	B-Channels-Voice/Data-each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Primary Rate Installation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (Surcharges) – Note 1	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Remove Primary Rate ISDN Screening Table, per central office, per trunk group – Note 2	/per incident			$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80
	Remove CLI Option from Screening Table, Per PRI trunk group (DMS only) – note 2	/per incident			$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80	$40.80
	Remove Primary Rate telephone numbers from DMS screening table, Per TN or block of TN's (DMS only) – Note 2	/per incident			$3.06	$3.06	$3.06	$3.06	$3.06	$3.06	$3.06	$3.06

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Note 1 – The E911 surcharge rate allows collection of E911 surcharges at the county established rate. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).

Note 2 – Primary rate feature to strip out number displayed when scheduling appointments and replacing with number selected by the agency.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00
	B-Channels-Voice/Data-Each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (per number)	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site Router 10/100 48 Switch Ports	/month	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00
	End Site Router PoE 802.af	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00
	End Site Router Wireless Option (802.11b/g)	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90
	Ethernet 100 Mbps	/month	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	New services	/incident	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	On-site work order hardware configuration change	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Consulting Services											
	Principal Architect Consulting Services-Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Program Manager Consulting Services – Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Sr. Consultant Consulting Services – Note 1	/hour		$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Technology/Security Consulting Services – Note 1	/hour		$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00
	Senior Engineer Consulting Service – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager II Consulting Services – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager I Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Engineer Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Technician Consulting Services – Note 1	/hour		$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00
	Site Survey	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	Load Testing Point-to-Point Circuits	/incident	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Migration end site order processing	/order	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Expedite charges/per WAN Circuit	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	TACACS Additional user accounts 7-12 users –Note 2	/incident		$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
	TACACS Additional user accounts 13-25 users – Note 2	/incident		$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00

	Telecommunications Service Priority (TSP) – per circuit – Note 3	/Monthly		$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.
Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.
Note 1 – A statement of work will be developed and agreed upon between the State and the Contractor for specific categories of consulting services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Note 2 - TACACS - Read only access for up to 3000 NetTN managed routers via Telnet. If the number of concurrent sessions is exceeded the State will ensure that Enabled Employees log off the sessions if requested to do so by AT&T personnel.

Note 3 - Telecommunications Service Priority – FEMA telecommunications restoral priority.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Enhanced Firewall-IDS	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site 24 Port Integrated Switch	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	End Site 48 Port Integrated Switch	/month	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00
	End Site Integrated FW IOS / 24 Port Integrated Switch	/month	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	End Site Integrated FW IOS / 48 Port Integrated Switch	/month	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00
	End Site Cisco ASA 5510, Note 1 & 2	/month	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00
	End Site Cisco ASA 5520, Note 1& 3	/month	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20
	End Site Cisco ASA 5520 High Availability-Note 1 & 4	/month	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40
	End Site Cisco ASA 5540 - Note 1 & 5	/month	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20
	End Site Cisco ASA 5540HA GigE - Note 1 & 6	/month	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00
	End Site Cisco ASA 5550HA GigE - Note 1 & 7	/month	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Note 1 - This is a premise-based firewall, fully managed and monitored by AT&T. AT&T provides the following support for this managed firewall:

- Proactive 7x24 monitoring and management, maintenance and updates.
- Initial consultation for the activation of the firewall service, and testing at customer location.
- Change/configuration Management – Customers may request up to 6 change requests per month, per device.
- On-site maintenance response is available 7 days/week, 24 hours/day. Technicians dispatched to customer location within 4 business hours of validated trouble

Note 2 – Small Office with approved Throughput = 2 x T1

Note 3 – Medium Office with approved Throughput = T1 / DS3

Note 4 – Medium Office, high availability* with approved Throughput = T1 / DS3

Note 5 - Large Office, high availability* with approved Throughput = OC-3

Note 6 - Large Office, high availability* with approved Throughput = OC-3
Note 7 - X-large Office, high availability* with approved Throughput = OC-3 plus
* High Availability option can be configured as a two-Firewall cluster including Active/Standby mode with automatic failover in the case of hardware failure.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	19" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	23" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	Cabinet	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Cage/Square Footage	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Power - 48v DC 20 Amps A/B	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Power - 48v DC 30 Amps A/B	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Power - 48v DC 40 Amps A/B	/month	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
	Power - 48v DC 50 Amps A/B	/month	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Power – 48v DC 60 Amps A/B	/month	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00
	Cross Connect – DS1	/incident	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Cross Connect – DS1	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – DS3/Coax	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – DS3/Coax	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – Ethernet/Cat 5	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – Ethernet/Cat 5	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect - Fiber	/incident	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Cross Connect - Fiber	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost is the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication – Note 1	Per user /month	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80
	Authentication – Note 2	Per user /month	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05
	Authentication – Note 3	Per user /month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This section is for ordering Hosted Identity Management for eHealth and future defined NetTN Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – This includes all users that require identity authentication through the Trusted Authentication Manager (Log directly into the TN eHealth Network portal). All users will be eligible for Customer support levels one through three as defined below.

Note 2 – This includes all users that authenticate their identity through their organization's Web Identity and Access Management system and then federate the user's credentials to the AT&T Trusted Identity Broker. AT&T is responsible to transform the federation protocol of the user's credentials to whatever protocol required by the relying endpoint and then pass on the user's credentials to the relying party endpoint. Users in this scenario are eligible for customer support levels two and three as defined below, whereas the Identity provider organization is responsible for level one customer support.

AT&T, through its subcontractor relationship(s) shall provide access to Help Desk services for the purposes of reporting TN eHealth Network-related problems, as described below:

Definition of Customer Support Levels:

Support Level 1 – The problem is affecting time-critical applications with production work at a standstill. The TN eHealth Portal is completely unusable and no work- around is currently known. The Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 2 - The Trusted Broker Platform does not function properly, but key business processes are not interrupted. The TN eHealth Portal is significantly impaired such that key business processes cannot be conducted and no known workaround is currently available. The AT&T Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 3 – The Trusted Broker Platform is functioning, but specific User (s) is affected and cannot conduct work as needed.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Next Generation 9-1-1 (NG -911)	Aggregation Point – NHVL,Knox, Chatt & Memphis Facilities	/incident		$137,634.88	$137,634.88	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Hardware	/incident		$272,939.82	$272,939.82	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Installation	/incident		$234,666.00	$234,666.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Control Center – Facilities & Build out	/incident		$137,634.88	$137,634.88	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC-Hardware -	/incident		$667,186.22	$667,186.22	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC -Installation	/incident		$572,473.35	$572,473.35	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Call delivery & Monitoring Software	/incident		$1,166,725.34	$1,166,725.34	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Hardware	/incident		$10,487.44	$10,487.44	$10,487.44	$10,487.44	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Installation	/incident		$6,991.62	$6,991.62	$6,991.62	$6,991.62	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Usage Information, Traffic reports per measurement ID, per report	/incident		$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40
	E-911 SS7 Trunk group – per one way trunk group	/incident		$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86
	E-911 SS7 Trunk group – per one way trunk group	/month		$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/incident		$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22
	E-911 SS7 DSO Trunk – ea. additional mile per Trunk	/month		$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06
	E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial group setup	/incident		$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74
	E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22

	group setup											
	Custom Routing, Per PSAP Routing Number	/incident		$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32
	Speed Call List, Per EMNT trunk, initial or rearrangement	/incident		$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02
	Core hardware Maintenance	/month		$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96
	Software Maintenance-Call delivery & monitoring	/month		$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98
	Edge PSAP Hardware Mtc.	/month		$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14
	NetTN 9-1-1 Support Services	/month		$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68

Explanation: **This section is for NG-9-1-1 over NetTN.** This service is subject to NetTN Service Level Agreements. **This project will be implemented in three stages as described below:**

Stage 1: The Aggregation Points and NetTN Control Centers will be deployed. Wireless Carriers and VoIP Providers will move their 9-1-1 call traffic from the legacy 9-1-1 selective routers to the Aggregation Points. 9-1-1 Calls will be delivered from the 9-1-1 Over NetTN Control Centers (NCC) to the appropriate legacy selective router for delivery to the PSAP. This places the Aggregation Points and NCCs into service without making any changes that will directly impact the PSAPs.

Stage 2: NetTN Call Delivery to the PSAPs. Edge devices and firewalls will be deployed at the PSAPs and NetTN connections will be installed. 9-1-1 Calls will be delivered from the NCC directly to the PSAP over NetTN.

Stage 3: All remaining originating 9-1-1 call traffic (landline 9-1-1 calls) will be migrated off the legacy selective routers and connected to the managed IP network at designated edge routers and the legacy 9-1-1- selective router may be decommissioned.

GENERAL ASSEMBLY OF THE STATE OF TENNESSEE
FISCAL REVIEW COMMITTEE

320 Sixth Avenue, North – 8th Floor
NASHVILLE, TENNESSEE 37243-0057
615-741-2564

Sen. Bill Ketron, Chairman
Senators
Douglas Henry
Doug Jackson
Brian Kelsey
Reginald Tate
Ken Yager
Randy McNally, *ex officio*
Lt. Governor Ron Ramsey, *ex officio*

Rep. Charles Curtiss, Vice-Chairman
Representatives
Harry Brooks
Curtis Johnson
Steve McManus
Mary Pruitt
Donna Rowland
Tony Shipley
Curry Todd
Eddie Yokley
Craig Fitzhugh, *ex officio*
Speaker Kent Williams, *ex officio*

MEMORANDUM

TO: The Honorable Dave Goetz, Commissioner
Department of Finance and Administration

FROM: Bill Ketron, Chairman, Fiscal Review Committee BK
Charles Curtiss, Vice-Chairman, Fiscal Review Committee CC

DATE: April 19, 2010

SUBJECT: **Contract Comments**
(Fiscal Review Committee Meeting 4/12/10)

RFS# 317.01-03036
Department: Finance & Administration/Office for Information Systems
Contractor: AT&T Corporation
Summary: The vendor is responsible for the provision of the design, construction, implementation, and management of the NetTN services. The proposed amendment makes various revisions to the scope of services, reflects a rate reduction for NetTN users of SONET Services, and provides the infrastructure for the Next Generation 911.
Maximum liability: $603,472,521
Maximum liability w/amendment: $603,472,521

After review, the Fiscal Review Committee voted to recommend approval of the contract amendment.

cc: Mr. Mark Bengel, Chief Information Officer, OIR
Mr. Robert Barlow, Director, Office of Contracts Review

911 WHEN LIFE IS ON THE LINE
Shelby County Emergency Communications District
3150 Lenox Park Blvd., Suite 108 Telephone (901) 380-E911
Memphis, Tennessee 38115-4260 Fax (901) 380-4707

Next Generation 911
Fact Sheet

- **Current 911 infrastructure is aging and must be upgraded to meet challenges of the internet protocol (IP) era**

- **Just as television was converted from analog to digital, Tennessee's 911 infrastructure must also be upgraded to digital -- Next Generation 911 (NG 911) in its first phases will essentially be digital 911 - more efficient, more options, more intelligent emergency communications**

- **The NG 911 upgrade will lead to significant improvements in public safety - call transfer capability will be greatly improved - calls from entire 911 call centers will be transferrable -- more information, photos, etc., can be shared more quickly**

- **The Tennessee Emergency Communications Board has been preparing for this upgrade for years - and has conserved funds for this purpose**

- **Of every dollar spent by the Board, over $.82 goes to local ECD operations, equipment and training.**

- **The Board recently initiated a $25 million NG911 equipment funding program for the ECDs**

- **With NG911, the Board will absorb trunking and selective routing costs currently paid for by the ECDs**

- **NG 911 deployment will improve emergency communications AND lead to lower overall infrastructure costs**

ATTACHMENT 6.15

Bond #08910671

PERFORMANCE BOND

The Surety Company issuing bond shall be licensed to transact business in the State of Tennessee by the Tennessee Department of Commerce and Insurance. Bonds shall be certified and current Power-of-Attorney for the Surety's Attorney-in-Fact attached.

KNOW ALL BY THESE PRESENTS:

That we,

AT&T Corp.

(Name of Principal)

333 Commerce Street, Nashville, TN 37067

(Address of Principal)

as Principal, hereinafter called the Principal, and

Fidelity and Deposit Company of Maryland

(Name of Surety)

1400 American Lane, Tower 1, Schaumburg, IL 60196

(Address of Surety)

as Surety, hereinafter call the Surety, do hereby acknowledge ourselves indebted and securely bound and held unto the State of Tennessee as Obligee, hereinafter called the Obligee, and in the penal sum of

Seven Million Dollars ($7,000,000.00) for year three

(Dollar Amount of Bond)

good and lawful money of the United States of America, for the use and benefit of those entitled thereto, for the payment of which, well and truly to be made, we bind ourselves, our heirs, our administrators, executors, successors, and assigns, jointly and severally, firmly by these presents.

BUT THE CONDITION OF THE FOREGOING OBLIGATION OR BOND IS THIS:

WHEREAS, the Obligee has engaged the Principal for a sum not to exceed

Six Hundred Fifty Million Dollars ($650,000,000.00)

(Contract Maximum Liability)

to complete Work detailed in the Scope of Services detailed in the State of Tennessee Request for Proposals bearing the RFP Number: 317.03-154-07

317.03-154-07 year (three) effective 01/01/2010 through 12/31/2010

(RFP Number)

a copy of which said Request for Proposals and the resulting Contract are by reference hereby

made a part hereof, as fully and to the same extent as if copied at length herein.

WHEREAS, this bond is effective 01/01/2010 and expires 12/31/2010 This bond is non-cumulative and in no event shall the Surety be liable for a greater sum than the penalty of this bond. Neither non-renewal by the surety, nor failure, nor inability of the principal to file a replacement bond shall constitute a loss to the obligee, which is recoverable under this bond.

NOW, THEREFORE, if the Principal shall fully and faithfully perform all undertakings and obligations under the Contract hereinbefore referred to and shall fully indemnify and hold harmless the Obligee from all costs and damage whatsoever which it may suffer by reason of any failure on the part of the Principal to do so, and shall fully reimburse and repay the Obligee any and all outlay and expense which it may incur in making good any such default, and shall fully pay for all of the labor, material, and Work used by the Principal and any immediate or remote sub-contractor or furnisher of material under the Principal in the performance of said Contract, in lawful money of the United States of America, as the same shall become due, then this obligation or bond shall be null and void, otherwise to remain in full force and effect.

AND for value received, it is hereby stipulated and agreed that no change, extension of time, alteration, or addition to the terms of the Contract or the Work to be performed there under or the specifications accompanying the same shall in any wise affect the obligation under this bond, and notice is hereby waived of any such change, extension of time, alteration, or addition to the terms of the Contract or the Work or the specifications.

IN WITNESS WHEREOF the Principal has hereunto affixed its signature and Surety has hereunto caused to be affixed its corporate signature and seal, by its duly authorized officers, on this

11th day of December, 2009

WITNESS: Diana Jimenez

AT&T Corp.	Fidelity and Deposit Company of Maryland
(Name of Principal)	(Name of Surety)
Thomas S. Clemens	Debra C. Schneider
(Authorized Signature of Principal)	(Signature of Attorney-in-Fact)
Thomas S. Clemens Assistant Treasurer	Debra C. Schneider, TN Lic #0000957566
(Name of Signatory)	(Name of Attorney-in-Fact)
	FEIN #13-3046577 NAIC #39306
(Title of Signatory)	(Tennessee License Number of Surety)

ACKNOWLEDGMENT BY SURETY

STATE OF Missouri
City of St. Louis } ss.

On this 11th day of December, 2009, before me personally appeared Debra C. Schneider, known to me to be the Attorney-in-Fact of Fidelity and Deposit Company of Maryland, the corporation that executed the within instrument, and acknowledged to me that such corporation executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, at my office in the aforesaid County, the day and year in this certificate first above written.

JoAnn R. Frank
JoAnn R. Frank
Notary Public in the State of Missouri
City of St. Louis

My Commission Expires: June 20, 2010
(Seal)

JoANN R. FRANK
NOTARY PUBLIC - NOTARY SEAL
STATE OF MISSOURI, ST. LOUIS CITY
MY COMMISSION EXPIRES 06-20-10
COMMISSION #06395672

Power of Attorney
FIDELITY AND DEPOSIT COMPANY OF MARYLAND

KNOW ALL MEN BY THESE PRESENTS: That the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, a corporation of the State of Maryland, by WILLIAM J. MILLS, Vice President, and GERALD F. HALEY, Assistant Secretary, in pursuance of authority granted by Article VI, Section 2, of the By-Laws of said Company, which are set forth on the reverse side hereof and are hereby certified to be in full force and effect on the date hereof, does hereby nominate, constitute and appoint **Pamela A. BEELMAN, Cynthia L. CHOREN, Heidi A. NOTHEISEN, JoAnn R. FRANK, Karen L. ROIDER, Debra C. SCHNEIDER and Sandra L. HAM, all of St. Louis, Missouri, EACH** its true and lawful agent and Attorney-in-Fact, to make, execute, seal and deliver, for, and on its behalf as surety, and as its act and deed: **any and all bonds and undertakings,** and the execution of such bonds or undertakings in pursuance of these presents, shall be as binding upon said Company, as fully and amply, to all intents and purposes, as if they had been duly executed and acknowledged by the regularly elected officers of the Company at its office in Baltimore, Md., in their own proper persons. This power of attorney revokes that issued on behalf of Pamela A. BEELMAN, Cynthia L. HANAK, Heidi A. NOTHEISEN, JoAnn R. FRANK, Karen L. ROIDER, Debra C. SCHNEIDER, Sandra L. HAM, dated December 12, 2007.

FOR YOUR PROTECTION LOOK FOR THE ZURICH WATERMARK

The said Assistant Secretary does hereby certify that the extract set forth on the reverse side hereof is a true copy of Article VI, Section 2, of the By-Laws of said Company, and is now in force.

IN WITNESS WHEREOF, the said Vice-President and Assistant Secretary have hereunto subscribed their names and affixed the Corporate Seal of the said FIDELITY AND DEPOSIT COMPANY OF MARYLAND, this 3rd day of December, A.D. 2009.

ATTEST: **FIDELITY AND DEPOSIT COMPANY OF MARYLAND**

FIDELITY AND DEPOSIT COMPANY INCORPORATED 1890 OF MARYLAND

Gerald F. Haley By: [signature]

Gerald F. Haley *Assistant Secretary* *William J. Mills* *Vice President*

State of Maryland }
City of Baltimore } ss:

On this 3rd day of December, A.D. 2009, before the subscriber, a Notary Public of the State of Maryland, duly commissioned and qualified, came WILLIAM J. MILLS, Vice President, and GERALD F. HALEY, Assistant Secretary of the FIDELITY AND DEPOSIT COMPANY OF MARYLAND, to me personally known to be the individuals and officers described in and who executed the preceding instrument, and they each acknowledged the execution of the same, and being by me duly sworn, severally and each for himself deposeth and saith, that they are the said officers of the Company aforesaid, and that the seal affixed to the preceding instrument is the Corporate Seal of said Company, and that the said Corporate Seal and their signatures as such officers were duly affixed and subscribed to the said instrument by the authority and direction of the said Corporation.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal the day and year first above written.

CONSTANCE A. DUNN NOTARY PUBLIC BALTIMORE COUNTY

Constance A. Dunn

Constance A. Dunn *Notary Public*
My Commission Expires: July 14, 2011

POA-F 079-0626

STATE OF TENNESSEE
DEPARTMENT OF FINANCE AND ADMINISTRATION
OFFICE FOR INFORMATION RESOURCES
312 EIGHTH AVENUE NORTH
SUITE 1600, TENNESSEE TOWER
NASHVILLE, TENNESSEE 37243-0288
(615) 741-3700
FAX (615) 532-0471

DAVE GOETZ
COMMISSIONER

MARK BENGEL
CHIEF INFORMATION OFFICER

March 31, 2010

RECEIVED
APR 01 2010
FISCAL REVIEW

Mr. James W. White
Executive Director
Fiscal Review Committee
8th Floor, Rachel Jackson Bldg.
Nashville, TN

Dear Sir:

Please find attached, for the Fiscal Review Committee's consideration, documentation of a Non-Competitive Amendment request pertaining to the State's contract with AT&T for the provision of Network Tennessee (NetTN) services. The Department of Finance and Administration respectfully requests to be placed on the agenda to present this request at the next Fiscal Review Committee meeting.

The purpose of the amendment is additional in-scope line items, rate reductions and Next Generation 9-1-1 services to the NetTN catalog of services. To facilitate the committee's review, the amendment summary is attached.

Thank you for your consideration of this request. We look forward to appearing before the Committee at its next scheduled meeting. Please see attached NetTN amendment summary.

Sincerely,

Mark Bengel (gc)

Mark Bengel

Chief Information Officer

Summary of NetTN Amendment 3

1. **Contractor name change due to errors (oversight) in original contract**
    a. AT&T Corporation changed to AT&T corp.
    b. Place of corporation changed from Delaware to New York
2. **NetTN Catalog of Services page 5**
    a. Managed WAN Circuit point to point without Internet access for K12 sites.
        i. Addition of Ethernet 10 Mbps bandwidth option
        ii. The industry is moving away from traditional T1 and/or multiple T1s bonded together in favor of less expensive Ethernet service which can be served over copper facilities up to 10 Mbps. The Ethernet 10 Mbps option is added to the catalog of services to serve the smaller school districts which require less bandwidth and more affordable options.
        iii. The current NetTN Ethernet option for hub and spoke arrangements (large pipe into the main school district with point to point circuits out to each individual school) is 100 Mbps and 1 Gbps, $1,187.00 and $2,037.00 monthly as compared to $750 monthly for a 10 Mbps Ethernet pipe.
        iv. Rates compared with similar contracts of size, scope and functionality.
3. **NetTN Catalog of Services page 10**
    a. SONET Services
        i. Local Channel per mile changed to per quarter mile, interoffice fixed charge added and Interoffice Channel per quarter mile added with overall rate reduction for NetTN users of SONET Services.
            1. Current contract rates
                a. Local Channel @ $245.00 plus Interoffice Channel @ $125 for total of $370 Per mile for OC3
                b. Local Channel @ $245.00 plus Interoffice Channel Fixed @ $125 for total of $370 Per mile for OC12
            2. Amended contract rates
                a. Local Channel @ $55.24*4 plus Interoffice Fixed Channel @ $25.58 plus Interoffice Channel per quarter mile @ $16.20*4 for total of $311.34 for OC3
                    i. **Savings of $58.66 monthly**
                b. Local Channel @ $55.24*4 plus Interoffice Fixed Channel @ $61.20 plus Interoffice Channel per quarter mile @ $20.70*4 for total of $364.96 for OC12
                    i. **Savings of $5.04 monthly**
        ii. Customer Node and Central Office OC3 and OC12 rate reduction
            1. Current contract rate for OC3 and OC12 Customer node and Central Office node - $1,750.00 each

2. Amended contract rate
    a. OC3 Customer Node and Central Office Node - $741.26
        i. **Savings of $1,008.74 monthly**
        ii. **Customer example - Memphis Light, Gas & Water will save $2,747.48 monthly**
    b. OC12 Customer Node and Central Office Node - $1,410.69 each
        i. **Savings of $339.31 monthly**
        ii. **Customer example – TDOT will save $1,047.60 monthly**

iii. Customer and Central Office Channel Interfaces added to the contract for services riding over the Sonet ring. Selected interfaces are based on existing and potential new customers.

iv. Rates compared with similar contracts of size, scope and functionality.

4. NetTN Catalog of Services pages 20-22

a. OIR Point to Point Services, additional services to enable disaster recovery between the two data centers.

i. Bandwidth options added for new data center protection as depicted in Contract Attachment E, Section 4 Network Host Requirements.

ii. SmartRing Service added for existing OIR data center protection as depicted in Contract Attachment E, Section 4 Network Host Requirements.

1. **OIR SmartRing monthly savings - $1,700.00**

iii. OIR Diversity Circuit added for TN Tower as depicted in Contract Attachment E, Section 4 Network Host Requirements.

1. **OIR Diversity Circuit savings as compared to current TNII rate - $8,647 monthly**
    a. **TNII rate - $26,882.00**
    b. **NetTN rate - $18,235.00**

iv. Rates compared with similar contracts of size, scope and functionality.

5. NetTN Catalog of Services page 28

a. OIR Direct Internet Access – Internet redundancy for disaster recovery and high availability with automatic fail-over between the two diverse internet service providers.

i. Alternate Internet Service Provider (LightCore) added for new OIR data center as depicted in Contract Attachment E, Section 9 Internet Connectivity Requirements E.9.b.i.

ii. LightCore is one of the two current ISPs for the NetTN network.

iii. Rates compared with similar contracts of size, scope and functionality.

6. NetTN Catalog of Services pages 42-43

a. This project will migrate Tennessee's aging analog 911 infrastructure to an IP based digital platform to enable emerging technology devices (like VoIP, telematics, text messaging, video relay, etc.) to deliver additional information to 911 dispatchers. The

project was authorized by the Tennessee Emergency Communications Board on November 20, 2008 and is fully funded by the 911 emergency telephone service charge collected pursuant to TCA 7-86-303. No revenue derived from taxes or from the General Fund will be used to fund this project.

b. The NG-911 network will be built using the NetTN private IP/MPLS network as its core infrastructure to connect the state's approximately 175 PSAPs to all wireless, VoIP, and ultimately (phase 3) wireline carriers operating in the state. Those carriers will deliver 911 calls to two Network Control Centers & 4 Aggregation points located in AT&T Central Offices to enhance reliability, improved survivability and facilitate information sharing across public safety agencies.

c. After several OIR meetings with the ECB and Kimball group, the ECB elected to research whether existing or planned infrastructure offered by NetTN was sufficiently robust and redundant for 9-1-1 in lieu of investing millions of dollars to stand up a separate network. Because we (OIR) were in the final stages of the NetTN RFP to replace the TNII network, the specific 9-1-1 requirements were not included in the RFP but the bidders were made aware NetTN would provide the fiber infrastructure for NG9-1-1 as noted under – Evolving and Emerging Technologies Requirements, EE.2 and EE.3 if immediate benefits could be achieved. Also, approximately 175 Public Safety Access Points (PSAPs) were included in the cost proposal as managed service with and without Internet to cover the cost to implement the NG-91-1 virtual private network (VPN) to avoid additional dollars to the NetTN contract. After the RFP was bid, the TECB completed its research and voted unanimously to utilize the NetTN network for the upgrade to the 9-1-1 infrastructure.

d. Initially, the NG-911 infrastructure will be used to route and deliver 911 calls from wireless and VoIP devices to the PSAPs. These PSAPs operate within 100 Emergency Communications Districts (ECDs) authorized by law.

e. The TECB is preparing an RFP for third party management service, which was determined to be more efficient and cost effective than hiring the staff required to support day-to-day operations, a 24x7x365 NOC for 911-specific issues and ALI database creation and maintenance. The third party management vendor will provide for the routing of 911 calls to the appropriate PSAP based on the caller's location, the delivery of a caller's location from an address database, 24x7 support to the PSAPs for changes and problem resolution, and other functions related to maintaining the total integrity of the network and other services necessary to ensure call delivery meets industry standards. TECB staff and its technical consultant are currently developing a scope of work that identifies those services and tasks to be performed by the third party manager.

f. Ultimately, the NG-911 infrastructure will route and deliver all 911 calls including those which utilize incumbent and competitive local exchange carriers for call processing. This will result in savings in excess of $5,000,000 annually to the 100 ECDs. It is estimated that the project will save approximately $5 million annually in trunking and selective routing costs that are currently borne by the TECB and by Emergency Communications Districts (ECD) throughout the state once the legacy 911 networks are replaced by the NG-911 network. For instance, the Shelby County ECD alone will save about $900,000 per year in selective routing and trunking costs.

g. Next Generation 9-1-1 line items added to the catalog of services as depicted in Contract Attachment M and RFP Attachment 6.3 – Technical Proposal EE – Evolving and Emerging Technologies Requirements, EE.2 and EE.3

h. Description and requirements of the NG-911 service is included in Amendment 3 as NetTN Contract Attachment T.

The State of Tennessee's statewide network (NetTN) provides communication services for all branches of state government, higher education, ehealth, many K12 districts, and ultimately 911. The NetTN vision is a single, universal service network that leverages the buying power of all government stakeholders to drive down the cost of technology and help drive the deployment of broadband to all urban and rural Tennessee communities. The more sites we add to this network the better our ability to negotiate even further rate reductions for the State.

*Contact Name:	Vickie Stanfill	*Contact Phone:	615-253-5529
*Original Contract Number:	FA-09-25220-00	*Original RFS Number:	317.03-154-07
Edison Contract Number: (*if applicable*)	2904	Edison RFS Number: (*if applicable*)	31701-03005 (31701-03005)
*Original Contract Begin Date:	July 1, 2008	*Current End Date:	June 30, 2018
Current Request Amendment Number: (*if applicable*)		FA-09-25220-03	
Proposed Amendment Effective Date: (*if applicable*)		June 5, 2010	
*Department Submitting:		Finance and Administration	
*Division:		Office for Information Resources	
*Date Submitted:		March 31, 2010	
*Submitted Within Sixty (60) days:		Yes	
If not, explain:			
*Contract Vendor Name:		AT&T	
*Current Maximum Liability:		$603,472,521.00	

*Current Contract Allocation by Fiscal Year:
(as Shown on Most Current Fully Executed Contract Summary Sheet)

FY: 2009	FY:2010	FY: 2011	FY: 2012	FY: 2013	FY: 2014
$7,471,591.00	$27,400,000.00	$31,780,000.00	$38,336,800.00	$47,752,576.00	$66,854,095.00
FY: 2015	FY: 2016	FY: 2017	FY: 2018	FY:	FY:
$81,593,329.00	$93,933,039.00	$108,428,481.00	$99,922,610.00		

*Current Total Expenditures by Fiscal Year of Contract:
(attach backup documentation from STARS or FDAS report)

FY: 2009	FY: 2010 (thru Dec. 2009)	FY:	FY:	FY	FY
$3,045,070.96	$9,019,901.84				

IF Contract Allocation has been greater than Contract Expenditures, please give the reasons and explain where surplus funds were spent:	Services under this contract are available to State agencies, K-20 education, local government, 911 public safety access points, eHealth including licensed health care professionals and health care stakeholders and non profit organizations. The allocations include entities outside of State government that will take advantage of this contract and when they will decide to make the conversion to NetTN is

	difficult to determine. The yearly allocations in the contract are estimates of the "take" rate prepared before the contract began. While the transition to NetTN might be slower than anticipated in the allocation estimates, OIR believes that the number of NetTN end sites will ultimately be four times greater than the number of end sites on the old contract TNII.
IF surplus funds have been carried forward, please give the reasons and provide the authority for the carry forward provision:	Although the maximum liability of the contract is not reduced if the contract allocation for a given fiscal year is greater than the contract expenditures, budgetary controls in place prevent an agency from spending more than the annual allocation.
IF Contract Expenditures exceeded Contract Allocation, please give the reasons and explain how funding was acquired to pay the overage:	N/A

*Contract Funding Source/Amount:	State:		Federal:	
Interdepartmental:		$167,000,023 (estimated)	*Other:*	$436,472,498.00 (estimated)
If "*other*" please define:				

Dates of All Previous Amendments or Revisions: (*if applicable*)	Brief Description of Actions in Previous Amendments or Revisions: (*if applicable*)
FA-09-25330-01-June 5, 2009	Additional scope items and existing line item rate reductions
FA-09-25330-02-October 9, 2009	Additional scope items and existing line item rate reductions

Method of Original Award: (*if applicable*)	RFP
*What were the projected costs of the service for the entire term of the contract prior to contract award?	$1, 083,339,735.64 The projected costs were based on the existing TNII contract, California's CalNet, and Florida's MyForida contract rates for same or similar services. Fortunately, the State's buying power drove competitive rates to $611,978,392 and further negotiations to $603,472,521.00

For all new non-competitive contracts and any contract amendment that changes Sections A or C.3. of the original or previously amended contract document, provide estimates based on information provided the Department by the vendor for determination of contract maximum liability. Add rows as necessary to provide all information requested.

If it is determined that the question is not applicable to your contract document attach detailed explanation as to why that determination was made

Planned expenditures by fiscal year by deliverable. Add rows as necessary to indicate all estimated contract expenditures.

Deliverable description:	FY:2010	FY:2011	FY:2012	FY:2013	FY:2014
NG 9-1-1	$10,727,838.00	$1,466,010.00	$4,019,831.00	$4,264,610.00	$4,264,610.00
Deliverable description:	FY:2015	FY:2016	FY:2017	FY:2018	
NG 9-1-1	$4,264,610.00	$4,264,610.00	$4,264,610.00	$2,132,305.00	

Proposed savings to be realized per fiscal year by entering into this contract. If amendment to an existing contract, please indicate the proposed savings to be realized by the amendment. Add rows as necessary to define all potential savings per deliverable.

Deliverable description:	FY:2010	FY:2011	FY:2012	FY:2013	FY:2014
NG 9-1-1 As provided by the Tennessee Emergency Communications Board (TEBC)	$0.00	$0.00	$0.00	$2,058,746.00	$2,058,746.00
Deliverable description:	FY:2015	FY:2016	FY:2017	FY:2018	
NG 9-1-1 As provided by the Tennessee Emergency Communications Board (TEBC)	$5,000,000.00	$5,000,000.00	$5,000,000.00	$5,000,000.00	

Comparison of cost per fiscal year of obtaining this service through the proposed contract or amendment vs. other options. List other options available (including other vendors), cost of other options, and source of information for comparison of other options (e.g. catalog, Web site). Add rows as necessary to indicate price differentials between contract deliverables.

Proposed Vendor Cost: (name of vendor)	FY:2010	FY:2011	FY:2012	FY:2013	FY:2014
AT&T	$10,727,838.00	$1,466,010.00	$4,019,831.00	$4,264,610.00	$4,264,610.00

NetTN Contract includes language supporting NG 9-1-1					
	FY:2015	FY:2016	FY:2017	FY:2018	
	$4,264,610.00	$4,264,610.00	$4,264,610.00	$2,132,305.00	
Other Vendor Cost: (name of vendor)	FY:2010	FY:2011	FY:2012	FY:2013	FY:2014
Any other vendor would require the development of an RFP and construction of a separate network The up-front CAPX for the construction of NetTN is estimated at $30M with additional expense of $8M.					

	Feb-09	Mar-09	Apr-09	May-09	Jun-09	Jul-09	Aug-09	Sep-09	Oct-09	Nov-09	Dec-09		Total Feb-2009 thru June-2009	Total Jul-2009 thru June-2010	Total
Community Health	0.00	0.00	2,739.35	11,431.19	30,946.74	33,865.99	31,789.99	36,325.40	21,221.13	38,653.64	35,605.50		45,117.28	197,461.65	242,578.93
eHealth	0.00	0.00	0.00	0.00	0.00	1,190.00	1,519.99	0.00	0.00	6,249.90	4,939.98		0.00	13,899.87	13,899.87
Library/Local Government	0.00	0.00	107.66	1,545.00	2,556.50	7,905.15	5,888.00	16,516.71	16,263.44	15,940.57	16,879.78		4,209.16	79,393.65	83,602.81
OIR	94,231.67	297,861.65	486,232.75	743,158.75	894,696.68	914,776.01	880,659.88	935,434.42	882,648.65	1,008,347.59	983,176.05		2,516,181.50	5,605,042.60	8,121,224.10
PBS	0.00	0.00	0.00	0.00	0.00	4,918.40	3,920.00	15,039.36	8,861.00	9,874.32	10,206.50		0.00	52,819.58	52,819.58
Public Colleges and Universities	4,479.61	4,396.45	6,426.94	10,432.13	13,518.25	15,024.60	14,530.56	30,235.46	25,552.00	32,200.63	71,593.35		39,253.38	189,136.60	228,389.98
Department of Education (K12)	0.00	0.00	0.00	0.00	0.00	146,156.11	206,780.57	852,101.54	34,101.32	479,559.40	349,297.65		0.00	2,067,996.59	2,067,996.59
Tennessee Board of Regents	65,098.90	85,544.16	94,541.00	89,966.28	94,728.35	91,923.77	94,795.48	135,012.45	114,046.20	106,318.13	111,650.48		429,878.69	653,746.51	1,083,625.20
TEMA	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.00
University of Tennessee System	0.00	0.00	0.00	1,765.95	8,665.00	11,379.09	10,720.00	49,823.24	29,900.50	29,301.96	29,280.00		10,430.95	160,404.79	170,835.74
	163,810.18	**387,802.26**	**590,047.70**	**858,299.30**	**1,045,111.52**	**1,227,139.12**	**1,250,604.47**	**2,070,488.58**	**1,132,594.24**	**1,726,446.14**	**1,612,629.29**		**3,045,070.96**	**9,019,901.84**	**12,064,972.80**

NON-AMD123008

NON-COMPETITIVE AMENDMENT REQUEST:

APPROVED
Commissioner of Finance & Administration

1) RFS #	31701-03036
2) Procuring Agency :	Finance and Administration
EXISTING CONTRACT INFORMATON	
3) Service Caption :	Network Tennessee (NetTN): Addition of Next Generation 911 Services
4) Contractor :	AT&T Corp. (formerly AT&T Corporation)
5) Contract #	FA-09-25220-00 / Edison 2904
6) Contract Start Date :	July 1, 2008
7) CURRENT Contract End Date : (if ALL options to extend the contract are exercised)	June 30, 2018
8) CURRENT Maximum Cost : (if ALL options to extend the contract are exercised)	$ 603,472,521.00
PROPOSED AMENDMENT INFORMATON	
9) Amendment #	3
10) Amendment Effective Date : (attached explanation required if < 60 days after F&A receipt)	June 5, 2010
11) PROPOSED Contract End Date : (if ALL options to extend the contract are exercised)	June 30, 2018
12) PROPOSED Maximum Cost : (if ALL options to extend the contract are exercised)	$ 603,472,521.00
13) Approval Criteria : (select one)	☒ use of Non-Competitive Negotiation is in the best interest of the state
	☐ only one uniquely qualified service provider able to provide the service

14) Description of the Proposed Amendment Effects & Any Additional Service :

AT&T will provide the infrastructure for Next Generation 9-1-1 services to all Tennessee PSAPs over the existing State of Tennessee statewide NetTN IP/MPLS network. The 9-1-1 services hosted in the core of the NetTN network will provide the aggregation and selective routing for wireless and VoIP calls that include the equipment, maintenance, connectivity to the existing analog 9-1-1 infrastructure, the existing Automatic Location Identification (ALI) database and all support. The additional items for the catalog of services include the equipment and routing functions to route existing wireless and VoIP calls as IP traffic over the NetTN infrastructure.

15) Explanation of Need for the Proposed Amendment :

The State of Tennessee Emergency Communications Board (TECB), and the 911 industry as a whole, has recognized that a faster and more efficient 9-1-1 system is required and provide for faster emergency response times and improved emergency service to the citizens of Tennessee in the routing and delivery of E9-1-1 calls throughout the state. To that end, the ECB commissioned L. Robert Kimball & Associates, Inc. to conduct a feasibility study to investigate the possibility of implementing a new state of the art E9-1-1 delivery network, known as Next Generation 9-1-1. The findings of the report indicated the need to build a state-wide fiber infrastructure to support the capabilities of NG9-1-1. The ECB and the Kimball Group were unaware that a state-wide fiber infrastructure known as TNII might be adequate for 9-1-1 purposes.

After several OIR meetings with the ECB and Kimball group, the ECB elected to research whether existing or planned infrastructure offered by TNII was sufficiently robust and redundant for 9-1-1 in lieu of investing millions of dollars to stand up a separate network. Because OIR was in the final stages of the NetTN RFP to replace the TNII network, the specific 9-1-1 requirements were not included in the RFP but the bidders were made aware NetTN would provide the fiber infrastructure for NG9-1-1 as noted under – Evolving and Emerging Technologies Requirements, EE.2 and EE.3 if immediate benefits could be achieved. Also, approximately 175 Public Safety Access Points (PSAPs) were included in the cost proposal as managed service with and without Internet to cover the cost to implement the NG-91-1 virtual private network (VPN) to avoid adding additional dollars to the NetTN contract. After the RFP was bid, the TECB completed its research and voted unanimously to utilize the NetTN network for the upgrade to the 9-1-1 infrastructure.

This project will migrate Tennessee's aging analog 911 infrastructure to an IP based digital platform to enable emerging technology devices (like VoIP, telematics, text messaging, video relay, etc.) to deliver additional information to 911 dispatchers. The project was authorized by the Tennessee Emergency Communications Board on November 20, 2008 and is fully funded by the 911 emergency telephone service charge collected pursuant to TCA 7-86-303. No revenue derived from taxes or from the General Fund will be used to fund this project.

The NG-911 network will be built using the NetTN private MPLS network as its core infrastructure to connect the state's approximately 175 public safety answering points (PSAP) to all wireless, VoIP, and ultimately (phase 3) wireline carriers operating in the state. Those carriers will deliver 911 calls to two Network Control Centers & 4 Aggregation points located in AT&T Central Offices to enhance reliability, improved survivability and facilitate information sharing across public safety agencies.

Initially, the NG-911 infrastructure will be used to route and deliver 911 calls from wireless and VoIP devices to approximately 175 public safety answering points (PSAPs) located in the 95 counties of Tennessee. These PSAPs operate within 100 Emergency Communications Districts (ECDs) authorized by law.

The TECB is preparing an RFP for third party management service, which was determined to be more efficient and cost effective than hiring the staff required to support day-to-day operations, a 24x7x365 NOC for 911-specific issues and ALI database creation and maintenance. The third party management vendor will provide for the routing of 911 calls to the appropriate PSAP based on the caller's location, the delivery of a caller's location from an address database, 24x7 support to the PSAPs for changes and problem resolution, and other functions related to maintaining the total integrity of the network and other services necessary to ensure call delivery meets industry standards. TECB staff and its technical consultant are currently developing a scope of work that identifies those services and tasks to be performed by the third party manager.

16) Name & Address of Contractor's Current Principal Owner(s) : (not required for a TN state education institution)

AT&T, 333 Commerce, Suite 2101, Nashville, TN 37201

17) Office for Information Resources Endorsement : (required for information technology service; n/a to THDA)

Documentation is ... ☐ **Not Applicable to this Request** ☒ **Attached to this Request**

18) eHealth Initiative Endorsement : (required for health-related professional, pharmaceutical, laboratory, or imaging service)

Documentation is ... ☒ **Not Applicable to this Request** ☐ **Attached to this Request**

19) Department of Human Resources Endorsement : (required for state employees training service)

Documentation is ... ☒ **Not Applicable to this Request** ☐ **Attached to this Request**

20) Description of Procuring Agency Efforts to Identify Reasonable, Competitive, Procurement Alternatives :

The State of Tennessee Next Generation 9-1-1 (NG9-1-1) project has been an on-going effort for six years. The intent of the project has gone through some modifications, but has always had one goal shared by the National Emergency Number Association (NENA) – to provide Emergency Help. The goal as defined by NENA is to create critical emergency communications systems that can provide help anytime, anywhere and to any device. The current Enhanced 9-1-1 networks have served the constituents well for many years and present a valuable framework to follow for next generation networking. However, there are limitations that must be addressed to allow the current systems to handle the advanced functionality of currently utilized devices. Society has embraced Smartphones, VoIP, and Wireless technology. The State has recognized that economic constraints exist and that funding for

additional services should be reviewed. Throughout this project, it has become apparent that utilizing an already existing network and contract with the current provider of services would be the most cost effective solution. The current network provider (AT&T) has worked with the State to determine the additional features required to enhance the NetTN network required to support NG9-1-1 functionality.

21) Justification for the Proposed Non-Competitive Amendment :

- Cost Efficiency by allowing more bandwidth into a common network instead of separate networks to deliver like services.
- Operational and Administration efficiency through one vendor and one solution.
- Flexibility with respect to the migration path for the services requested.
- Contractual arrangement already in place. AT&T is using present discount levels incorporated into the state's NetTN contract. The benchmarking / most favored nation clause in the contract provides ongoing price protection to the State of TN if in the future other state-based solutions are priced less than these rates.
- The NetTN contract will allow the 9-1-1 network services to meet public expectations as standards evolve to deliver video and data information from mobile and fixed location devices. There are state services on the NetTN network which will require secure interconnections with the Public safety 9-1-1 network (NCIC, state warning systems, etc.). Being on a shared infrastructure will reduce the integration effort between these services.
- The new network will use circuit pricing and equipment pricing from the current contract in place that was competitively bid. This leverages the states buying power from the vendor and provides integration between the 9-1-1 systems and other public agencies as required. The transport of 9-1-1 information will be completely over services that are already included in the current contract. Some of the equipment required for operation of the network is also already included in the current contract (routers) and state pricing will be used.

AGENCY HEAD SIGNATURE & DATE :
(must be signed & dated by the ACTUAL procuring agency head as detailed on the Signature Certification on file with OCR— signature by an authorized signatory will be accepted only in documented exigent circumstances)

OIR Pre-Approval Endorsement Request
E-Mail Transmittal

TO : Jane Chittenden, OIR Procurement & Contract Management Director
Department of Finance & Administration

E-Mail : Jane.Chittenden@tn.gov

FROM : Vickie Stanfill, NetTN Executive Director

Department of Finance & Administration

E-Mail : Vickie.Stanfill@tn.gov

DATE : March 31, 2010

RE : Request for OIR Pre-Approval Endorsement

APPLICABLE RFS # 317.03-154-07 ~~(31701-03005)~~ 31701-03036

OIR ENDORSEMENT SIGNATURE & DATE :

Mark Bengel (gw) 3/30/10

Chief Information Officer

NOTE: Proposed contract/grant support is applicable to the subject IT service technical merit.

Office for Information Resources (OIR) pre-approval endorsement appears to be required pursuant to professional service contracting regulations pertaining to procurements with information technology as a component of the scope of service. This request seeks to ensure that OIR is aware of and has an opportunity to review the procurement detailed below and in the attached documents.

Please document OIR endorsement of the described procurement (with the appropriate signature above), and return this document via e-mail at your earliest convenience.

1 **SUBJECT PROCUREMENT DOCUMENT TYPE** (mark one) :

- ☐ RFP
- ☐ Competitive Negotiation Request ☐ Alternative Procurement Method Request
- ☐ Non-Competitive Contract Request ☒ Non-Competitive Amendment Request
- ☐ Contract ☐ Contract Amendment ☐ Grant ☐ Grant Amendment

2 **INFORMATION SYSTEMS PLAN (ISP) PROJECT APPLICABLITY :**

☐ Not Applicable to this Request ☒ Applicable –ISP PROJECT # CI1001

RESPONSE CONFIRMED BY : Vickie Stanfill

APPLICABLE RFS # 317.03-154-07 (31701-03005)

3 **CONTRACTING AGENCY CONTACT :**

Vickie Stanfill, NetTN Executive Director

615-253-5529

Vickie.Stanfill@tn.gov

4 **SUBJECT INFORMATION TECHNOLOGY SERVICE DESCRIPTION :**

The nature and scope of service detailed in the attached service procurement document(s) appears to require Office for Information Resources (OIR) review and support, because the procurement involves information technology or information systems services.

This communication seeks to ensure that OIR is aware of the procurement and has an opportunity to review the matter. Please determine whether OIR is supportive of the procurement. If you have any questions or concerns about this matter, please call **Vickie Stanfill** at **615-253-5529**.

5 **REQUIRED ATTACHMENT(S) AS APPLICABLE** (copies without signatures acceptable) :

- ☐ **RFP, Competitive Negotiation Request, Alternative Procurement Method Request, or Non-Competitive Contract/Amendment Request**
- ☒ **proposed contract/grant or amendment**
- ☐ **original contract/grant & any prior amendments**

CONTRACT AMENDMENT

Agency Tracking #	Edison ID	Contract #	Amendment #
31701-03036	2904	FA-09-25220-00	3

Contractor
AT&T Corp. (formerly AT&T Corporation)

Contractor Federal Employer Identification or Social Security #
☐ C- or ☒ V- 13-4924710

Amendment Purpose/ Effects
Effects a contractor name/place of incorporation change; also expands services within the scope of the contract, as provided for in Contract Sections E.18 and E.24.

Contract Begin Date	Contract End Date	Subrecipient or Vendor	CFDA #(s)
July 1, 2008	June 30, 2018	☐ Subrecipient ☒ Vendor	

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,471,591.00		$7,471,591.00
2010			$27,400,000.00		$27,400,000.00
2011			$31,780,000.00		$31,780,000.00
2012			$38,336,800.00		$38,336,800.00
2013			$47,752,576.00		$47,752,576.00
2014			$66,854,095.00		$66,854,095.00
2015			$81,593,329.00		$81,593,329.00
2016			$93,933,039.00		$93,933,039.00
2017			$108,428,481.00		$108,428,481.00
2018			$99,922,610.00		$99,922,610.00
TOTAL:			**$603,472,521.00**		**$603,472,521.00**

American Recovery and Reinvestment Act (ARRA) Funding – ☐ **YES** ☒ **NO**

— COMPLETE FOR AMENDMENTS —

END DATE AMENDED? ☐ **YES** ☒ **NO**

FY	Base Contract & Prior Amendments	THIS Amendment ONLY
2009	$7,471,591.00	
2010	$27,400,000.00	
2011	$31,780,000.00	
2012	$38,336,800.00	
2013	$47,752,576.00	
2014	$66,854,095.00	
2015	$81,593,329.00	
2016	$93,933,039.00	
2017	$108,428,481.00	

Agency Contact & Telephone #
Vickie Stanfill 615-253-5529

Agency Budget Officer Approval (there is a balance in the appropriation from which this obligation is required to be paid that is not otherwise encumbered to pay obligations previously incurred)

2018	$99,922,610.00		**Speed Code**	**Account Code**
TOTAL:	**$603,472,521.00**	**$0.00**	FA00000192	70600000

— OCR USE —

Procurement Process Summary (non-competitive, FA- or ED-type only)

Refer to the attached "Summary of Amendment 3" for specific detail. The contract amendment was negotiated aggressively with the contractor, AT&T and each amended line item compared with contracts of similar size, scope and functionality.

AMENDMENT THREE
TO FA-09-25220-00 / 2904

This Contract Amendment is made and entered by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corporation, hereinafter referred to as the "Contractor." It is mutually understood and agreed by and between said, undersigned contracting parties that the subject Contract is hereby amended as follows:

1. The text of the preamble section "Contractor Place of Incorporation or Organization" is deleted in its entirety and replaced with the following:

   Contractor Place of Incorporation or Organization: New York

2. The following is added as Contract Section E.25:

   E.25. Contractor Name. All references to "AT&T Corporation" shall be deleted and replaced with "AT&T Corp."

3. Contract Attachment B is deleted in its entirety and replaced with the new Contract Attachment B attached hereto.

4. Contract Attachment T attached hereto is added as a new Contract Attachment.

The revisions set forth herein shall be effective March 15, 2010. All other terms and conditions not expressly amended herein shall remain in full force and effect.

IN WITNESS WHEREOF,

AT&T CORPORATION

Xavier D Williams — 02/15/2010

CONTRACTOR SIGNATURE — **DATE**

Xavier Williams, Sr. Vice President - GEM Markets

PRINTED NAME AND TITLE OF CONTRACTOR SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

M.D. Goetz Jr. — 2-18-10

M. D. GOETZ, JR., COMMISSIONER MDA — **DATE**

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45
	DSL (3M x 384k)	/month	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50
	DSL (6M x 384k)	/month	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01
	384kbps	/month	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00
	1.544 Mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	9 Mbps	/month	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00

	Mbps											
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$0.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12 Notes 1, 2 & 3	1.544 Mbps	/month	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00

	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Incremental 50Mbps upgrade to existing 50Mbps circuit	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
K12 WAN Circuit Managed point to point without Internet access-Note 1, 2 & 3	1.544 Mbps	/month		$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month		$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month		$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month		$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month		$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month		$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	Metro Ethernet 10 Mbps	/month		$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	Metro Ethernet 100 Mbps	/month	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00
	Metro Ethernet 1 Gbps	/month	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Note1: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, all associated end site and network hardware, appropriate LAN interfaces with minimum (2) 10/100 Mbps ports, site connectivity, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday. This pricing is contingent upon a design ratio of 8:1 Metro Ethernet connections ("Spoke" sites) to a Metro Ethernet Hub site. All configurations must be approved by the State and the Contractor on an individual case basis. "Spoke" sites receive NetTN SLAs A.14, A.15, and A.16 only.

Note 2: For new customers migrating to NetTN that provide a letter of agency to the State of Tennessee Department of Education to allow the State to file e-Rate paperwork on their behalf within 15 business days prior to the Erate filing deadline and later decide not to migrate to NetTN services, NetTN non-recurring installation charges will apply if NetTN services are installed prior to start of the new e-Rate year.

Note 3: For existing NetTN customers that provide a letter of agency to the State of Tennessee Department of Education to allow the State to file e-Rate paperwork on their behalf, and then later decide to use a provider other than NetTN, you must provide at least 60 days written notice prior to the start of the new e-Rate year or NetTN monthly billing charges will apply for a maximum of 60 days from the State's receipt of the disconnect notice.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50
	384kbps	/month	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50
	1.544 Mbps	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74
	4.5 Mbps	/month	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49
	6 Mbps	/month	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49
	7.5 Mbps	/month	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49
	9 Mbps	/month	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49
	16 Mbps	/month	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 2 Mbps	/month	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74
	Metro Ethernet 4 Mbps	/month	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00
	Metro Ethernet 8 Mbps	/month	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00
	Metro Ethernet 10 Mbps	/month	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50
	Metro Ethernet 20 Mbps	/month	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00

	Metro Ethernet 50 Mbps	/month	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50
	Metro Ethernet 100 Mbps	/month	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50
	Metro Ethernet 600 Mbps	/month	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00
	Metro Ethernet 1 Gbps	/month	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00
	Monday – Sunday 24 X 7 Coverage	/month	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	Metro Ethernet 1 Gbps	/month	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
	Wavelength 1.25Gbps	/month	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
	Wavelength 2.5Gbps	/month	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
	Wavelength OC3	/month	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39
	Wavelength OC12	/month	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18
	Wavelength OC48	/month	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00
	Wavelength OC192	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Wavelength 10 Gbps	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET	OC12	/month	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	OC48	/month	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00
	OC192	/month	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Local Channel per quarter mile	/month	$245.00	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel per air mile	/month	$125.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Customer node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Interoffice Channel Fixed – OC3 capacity	/month		$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58	$25.58
	Interoffice Channel Fixed – OC12 capacity	/month		$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20	$61.20
	Interoffice Channel per quarter mile –OC3	/month	$125.00	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Interoffice Channel per quarter mile –OC12	/month		$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70	$20.70
	Customer Node OC-3 capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Customer Node OC-12 capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Central office node –OC3 Capacity	/month		$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26	$741.26
	Central office node –OC12 Capacity	/month		$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69	$1,410.69
	Customer Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	Customer Channel Interface- per DS3	/month		$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46	$103.46
	Customer Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	Customer Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface- per DS1	/month		$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64	$17.64
	CO Channel Interface- per DS3	/month		$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54	$63.54
	CO Channel Interface – per 10Mbps	/month		$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95	$125.95
	CO Channel Interface – per Flex DS1	/month		$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80	$17.80
	CO Channel Interface – per 28 DS1 Channel System (DS3) per node	/month		$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44	$394.44
	CO Channel Interface – per DS1 on 28 DS1 Channel System (DS3) per node	/month		$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40	$5.40

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 100 Mbps	/month	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49
	Metro Ethernet 1 Gbps	/month	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00
	Metro Ethernet 600 Mbps	/month	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46
	Metro Ethernet 1 Gbps	/month	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00
	TDOT ITS 9.6 Synchronet per end point	/month	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	DS1 - 5 miles or less	/mileage	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00
	DS1 – 6 miles and over Interoffice mileage – Note 1	/mileage	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
	DS1 – 6 miles and over Local channels – Note 1	/month	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91
	Flat Rate DS1 IntraLATA/InterLATA – Note 2	/month	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00
	Intralata DS3	/mileage	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
	Interlata DS3	/mileage	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00
	Interstate DS1	/mileage	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00
	Interstate DS3	/mileage	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	Metro Ethernet 2 Mbps Basic IntraLATA/IntraState –Note 3	/month	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00
	Metro Ethernet 2 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64
	Metro Ethernet 4 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26
	Metro Ethernet 8 Mbps Basic IntraLATA/IntraState -Note 3	/month	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00
	Metro Ethernet 8 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96
	Metro Ethernet 10 Mbps Basic IntraLATA/IntraState - note 3	/month	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33
	Metro Ethernet 10 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72
	Metro Ethernet 10 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96
	Metro Ethernet 20 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24
	Metro Ethernet 20 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64
	Metro Ethernet 50 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08

Metro Ethernet 50 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76
Metro Ethernet 100 Mbps Basic IntraLATA/IntraState -Note 3	/month	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00
Metro Ethernet 100 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44
Metro Ethernet 100 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28
Metro Ethernet 250 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36
Metro Ethernet 250 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96
Metro Ethernet 500 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28
Metro Ethernet 500 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64
Metro Ethernet 1Gbps Basic IntraLATA/IntraState –Note 3	/month		$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40
Metro Ethernet 1Gbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32
Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00
Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00
Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75
Metro Ethernet Premium 2- 9 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50
From 26 to 35 miles per connection	/month	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35
From 36 to 50 miles per connection	/month	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75
Metro Premium Ethernet 10- 99 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70
From 26 to 35 miles per connection	/month	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20
From 36 to 50 miles per connection	/month	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70
Metro Ethernet Premium 100- 499 Mbps additional mileage charge – Note 6											

	From 10 to 25 miles per connection	/month	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60
	From 26 to 35 miles per connection	/month	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80
	From 36 to 50 miles per connection	/month	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10
	Metro Ethernet Premium 500-1000 Mbps and Basic Ethernet 1Gbps additional mileage charge – Note 6											
	From 10 to 25 miles per connection	/month	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60
	From 26 to 35 miles per connection	/month	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30
	From 36 to 50 miles per Connection	/month	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60
	Premium Ethernet optional Features											
	Priority Plus – NOTE 7	/month	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08
	Q-Forwarding – NOTE 8	/month	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84
	Q-Forwarding- Service Establishment Charge	/incident	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00
	Metro Ethernet Reporting Charge per connection-Note 9	month	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90
	Metro Ethernet Web Interface Charge –Note 9	month	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36
	Metro Ethernet Web Interface Charge – 1x charge	Per/Acct	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50
	Metro Ethernet Reporting Security Card -Note 10	Per/Acct	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Metro Ethernet Reporting Service Establishment – 1x charge – Note 10	Per/Acct	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Note 1 – DS1 circuits that are a total of 6 miles or more require 2 Local Channels and Interoffice Channel Mileage for the distance between Central Offices for the two end site locations. For example:

Site 1 – Franklin, TN – LOCAL CHANNEL ($88.91)
Site 2 - Brentwood, TN – LOCAL CHANNEL ($88.91)
Interoffice Mileage from Franklin Central Office to Brentwood Central Office is 8.6 miles. $10.50 x 9 miles = $94.50
Total monthly service cost - $272.32
DS1 mileages are rounded up to the next whole number; e.g. 8.1 up to 8.9 miles are rounded up to 9 miles.

Note 2 – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon transition. Orders for additional circuits must be approved by AT&T on availability basis.

Note 3- Basic Ethernet provides full-duplex transmission of port connections. This service arrangement provides best effort, high speed connection for customer premise to another premise with Basic metro Ethernet.

Note 4 – Premium Fixed Ethernet provides the Committed Bandwidth speed.

Note 5 – Premium Burst Ethernet provides the ability to burst above the committed bandwidth rate when excess bandwidth is available.

Note 6 – Metro Ethernet Additional Mileage applies to all Ethernet 1Gbps and/or Premium connections that are 10 miles or more from the serving Metro-E central office. Mileage does not apply to Basic Ethernet services except for 1Gbps.

Note 7 – Metro Ethernet Priority Plus dedicates 25% of the circuit bandwidth as high-priority traffic e.g. VoIP. This is statically assigned and cannot be dynamically reallocated when the high-priority traffic volume is less than 25% of the total traffic in use at a particular time.

Note 8 – Metro Ethernet Q-Forwarding – This feature provides the ability to stack Virtual Local Area Networks (VLANs) onto one Metro Ethernet Premium connection port utilizing IEEE 802.1Q protocol and transporting multiple customer LAN traffic to a single location.

Note 9 – Metro Ethernet Reporting (MER) is a tariff service that provides alarm surveillance, performance reporting and SLA reporting for Metro Ethernet network components. It is only available to customers who subscribe to premium service.

Note 10 - ME Security Card – MER offers a web-enabled GUI. To access reports, the customer logs into the MER server. Log-ins, passwords and secure ID cards are provided to the customer.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
(AVPN) AT&T Virtual Private Network Port Only	LD Domestic AVPN Flat Rate 1.544Mpbs/ Port/FR,ATM	/month	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69
	LD Domestic AVPN Flat Rate 10Mpbs/ Port/Ethernet or ATM	/month	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54
	LD Domestic AVPN Flat Rate 15Mpbs/ Port/FR,ATM	/month	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05
	LD Domestic AVPN Flat Rate 20Mpbs/ Port/FR,ATM	/month	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58
	LD Domestic AVPN Flat Rate 25Mpbs/ Port/FR,ATM	/month	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12
	LD Domestic AVPN Flat Rate 30Mpbs/ Port/FR,ATM	/month	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24
	LD Domestic AVPN Flat Rate 45Mpbs/ Port/FR,ATM	/month	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88
	LD Domestic AVPN Flat Rate 100Mpbs/Port/Ethernet or ATM	/month	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62
	CoS Pkg Multimedia Std/1.544Mbps	/month	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16
	CoS Pkg Multimedia Std/10Mbps	/month	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29
	CoS Pkg Multimedia Std/15Mbps	/month	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88
	CoS Pkg Multimedia Std/20Mbps	/month	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94
	CoS Pkg Multimedia Std/25Mbps	/month	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89
	CoS Pkg Multimedia Std/30Mbps	/month	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40
	CoS Pkg Multimedia Std/45Mbps	/month	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23
	CoS Pkg Multimedia Std/100Mbps	/month	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58

Explanation: This section for ordering port access to AT&T's Virtual Private Network for global reach. The AVPN access circuits are ordered separately. The CoS package allows traffic prioritization, the term "Multimedia Standard CoS" refers to specific set of prioritization profiles which will be selected at time of order.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
AVPN Local Access	AVPN 1.544 Mbps Circuit and mileage – 0 up to 10 miles fixed rate	/month	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18
	AVPN 1.544 Mbps Circuit and mileage – 11 miles up to 20 miles fixed rate	/month		$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44
	AVPN 1.544 Mbps Circuit and mileage – 21 miles up to 50 miles fixed rate	/month		$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78
	AVPN 1.544 Mbps Circuit – 51 and over miles -Note 1	/month		$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80
	Additional per mile charge for AVPN 1.544 Mbps Circuit - 51 miles and over – Note 1	/per mile		$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51
	AVPN DS3 Access	/month	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14
	AVPN 100 Mbps Ethernet Access	/month	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73

Explanation: This section is for ordering local access circuits within AT&T LEC network to AT&T's Virtual Private Network for NetTN global reach outside the State of Tennessee. AVPN DS3 and 100 Mbps Ethernet Access Circuits greater than 10 miles or outside AT&T LEC network are priced on a case-by-case basis and must be approved by the State and the Contractor. The Mileage is rounded up to the next whole number; e.g. 10.1 up to 10.9 miles are rounded up to 11 miles. AVPN port is ordered separately.

Note 1 – The additional per mile and per month charges apply to AVPN 1.544 Mbps circuits >=51 miles. For instance: circuit that is 60 miles is charged $346.80 per month plus 60 miles times $4.51 ($270.60) for a total circuit cost of $617.40 per month.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR – Note 2	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40
	Primary System Single Bay	/month	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70
	Wavelength WAN 10 Gbps Transparent Optical Network Protected - IntraLATA	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Wavelength LAN 10 Gbps Transparent Optical Network	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Optical Signal Amplification	/month		$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00	$918.00
	WaveLength Channel Per Gigabit Ethernet At 1Gbps Wavelength Transport Protected	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Fibre Connection, Channel Wavlength Transport Optical Network	/month		$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66
	Per Enterprise System Connection – SBCON Channel Wavelength Protected	/month		$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82	$977.82
	Per OC-3 Wavelength protected	/month		$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16	$1,459.16
	Per OC-12 Wavelength Protected	/month		$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40	$1,907.40
	Per OC-48 Wavelength protected	/month		$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86	$3,442.86
	Per OC-192 Wavelength protected	/month		$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16	$6,485.16
	Per Fibre Channel 100			$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66	$1,716.66

	Wavelength Protected	/month										
	Per Fibre Channel 200 Wavelength Protected	/month		$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53	$3,099.53
	Per Fast Ethernet 100 Wavelength Protected	/month		$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16	$944.16
	Dedicated Ring Expansion System	/month		$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00	$1,224.00
Channelized DS3 - OIR	Central Office DS1 Channel Interface per DS1 Interface	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Channelized DS3 (Note 1) – per DS3-Note 1	/month		$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18
SmartRing Service-OIR-Note 2	Customer Node OC-192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Central Office Node – OC192	/month		$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Per Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Local Channel per quarter mile	/month		$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24	$55.24
	Interoffice Channel Fixed – OC192	/month		$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36	$324.36
	Interoffice Channel per quarter mile –OC192	/month		$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12	$20.12
	Alternate Central Office Local Channel	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Alternate Central Office Local Channel per Quarter mile	/month		$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91	$119.91
	Customer Channel Interface – per Fractional 1000 Mbps-single mode	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	Customer Channel Interface – per 1000 Mbps-ME backbone, per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	Customer Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
	CO Channel Interface – per 1000	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35

	Mbps ME Backbone											
	CO Channel Interface – per 1000 Mbps-600Mbps, per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
	CO Channel Interface – per Fractional 1000 Mbps 1000 Mbps per node	/month		$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35	$382.35
	CO Channel Interface – per Fractional 1000 Mbps 600 Mbps per node	/month		$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44	$357.44
	CO Channel Interface – per Fractional 1000 Mbps 600 MbpsME Backbone 600 Mbps per node	/month		$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88	$287.88
OIR Diversity Circuit – Note 3	100Mbps TNTower to Chattanooga NetTN NAP	/month		$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00	$18,235.00

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Note 1 - Service includes the DS3 Channel system at the CO, the Local channel up to 1 mile, 28 DS1 interfaces at the CO and a DS3 Interface at the customer site. Customer is responsible for end-site equipment to terminate this service.

Note 2 – Wavelength and SmartRing services to provide necessary bandwidth and route diversity between the 2 OIR data centers per NetTN contract Attachment E, Section.4.

Note 3 – NetTN Solution to replace the TNII diversity circuit under the TNII contract.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00
	DSL (3M x 384k)	/month	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30
	DSL (6M x 384k)	/month	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31

Explanation: This section is used for ordering DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95
	Interstate 800 services for RA access	/minute	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
	3G/4G Wireless Air Card User, per Account, with static IP addresses	/month	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78
	SSL VPN Server implementation/installation-2000 users	/1x install	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00
	SSL monthly fee w/ browser for web applications-1000 users	/month	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00
	SSL monthly fee w/ browser for web applications-2000 users	/month	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00
	Multi-factor Hard Token	per user/mth	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81
	Multi-factor server license & token with 3-yr battery	/annually per user	$62.12	$62.12	$62.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12
	Multi-factor server license maintenance	/annually per user	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36

Explanation: This section is for dial-up and broadband remote access, SSL and multi-factor authentication for an individual.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Multipoint Audio Service	/30min	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03
	H.323 Directory Listing Service	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80
	Unlimited Video Usage – Note 1	/month	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60
	Video Bridge Subscription to Video Control Panel – Note 1	/month	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20
	Unlimited Video Bridge 3 Year Maintenance – Note 1	/month	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88
	Video Bridge Call Launch Fee Note 2	/per call	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11

Explanation: This section is for ordering video conferencing service. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Note 1 – This service is for ordering unlimited video service utilizing a dedicated MCU with a web-scheduler within the NetTN network. Read-only access will be provided to NetTN Partners for management and trouble shooting fault management tickets. This is Basic service only, providing 384 up to 1.544Mbps speeds, no encryption. AT&T will provide maintenance, management, monitoring and help-desk support. All applicable NetTN SLAs apply. All three components are required, unlimited video usage, video bridge subscription to video control panel and unlimited video Bridge 3 yr maintenance.

Note 2 – This is an optional component for having AT&T manually schedule the conference instead of using web-scheduler.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00
	6 Mbps	/month	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00
	9 Mbps	/month	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00
	12 Mbps	/month	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00
	15 Mbps	/month	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00
	21 Mbps	/month	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00
	27 Mbps	/month	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00
	DS3	/month	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00
	Metro Ethernet 10Mbps	/month	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00
	Metro Ethernet 20Mbps	/month	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00
	Metro Ethernet 50Mbps	/month	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00
	Metro Ethernet 100Mbps	/month	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00
	Metro Ethernet 150Mbps	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	Metro Ethernet 200Mbps	/month	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00
	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 500Mbps	/month	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00
	OC 3	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	OC 12	/month	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00
	OC 48	/month	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00
	Alternate ISP ME 1 Gbps	/month		$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/Intranet	Name Space Management, per zone	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Email, per account (100 Mbps storage)	/month	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
	Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
	K-12 Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100Mbps Connection	/month	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00
	Metro E 1 Gbps Connection	/month	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00
	B-Channels-Voice/Data-each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Primary Rate Installation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (Surcharges) – Note 1	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Note 1 – The E911 surcharge rate allows collection of E911 surcharges at the county established rate. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00
	B-Channels-Voice/Data-Each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (per number)	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site Router 10/100 48 Switch Ports	/month	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00
	End Site Router PoE 802.af	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00
	End Site Router Wireless Option (802.11b/g)	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90
	Ethernet 100 Mbps	/month	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	New services	/incident	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	On-site work order hardware configuration change	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Consulting Services											
	Principal Architect Consulting Services-Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Program Manager Consulting Services – Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Sr. Consultant Consulting Services – Note 1	/hour		$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Technology/Security Consulting Services – Note 1	/hour		$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00
	Senior Engineer Consulting Service – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager II Consulting Services – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager I Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Engineer Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Technician Consulting Services – Note 1	/hour		$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00
	Site Survey	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	Load Testing Point-to-Point Circuits	/incident	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Migration end site order processing	/order	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Expedite charges/per WAN Circuit	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	TACACS Additional user accounts 7-12 users –Note 2	/incident		$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
	TACACS Additional user accounts 13-25 users – Note 2	/incident		$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00
	Telecommunications Service Priority (TSP) – per circuit – Note 3	/Monthly		$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.

Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.
Note 1 – A statement of work will be developed and agreed upon between the State and the Contractor for specific categories of consulting services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Note 2 - TACACS - Read only access for up to 3000 NetTN managed routers via Telnet. If the number of concurrent sessions is exceeded the State will ensure that Enabled Employees log off the sessions if requested to do so by AT&T personnel.

Note 3 - Telecommunications Service Priority – FEMA telecommunications restoral priority.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Enhanced Firewall-IDS	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site 24 Port Integrated Switch	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	End Site 48 Port Integrated Switch	/month	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00
	End Site Integrated FW IOS / 24 Port Integrated Switch	/month	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	End Site Integrated FW IOS / 48 Port Integrated Switch	/month	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00
	End Site Cisco ASA 5510, Note 1 & 2	/month	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00
	End Site Cisco ASA 5520, Note 1& 3	/month	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20
	End Site Cisco ASA 5520 High Availability-Note 1 & 4	/month	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40
	End Site Cisco ASA 5540 - Note 1 & 5	/month	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20
	End Site Cisco ASA 5540HA GigE - Note 1 & 6	/month	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00
	End Site Cisco ASA 5550HA GigE - Note 1 & 7	/month	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Note 1 - This is a premise-based firewall, fully managed and monitored by AT&T. AT&T provides the following support for this managed firewall:

- Proactive 7x24 monitoring and management, maintenance and updates.
- Initial consultation for the activation of the firewall service, and testing at customer location.
- Change/configuration Management – Customers may request up to 6 change requests per month, per device.
- On-site maintenance response is available 7 days/week, 24 hours/day. Technicians dispatched to customer location within 4 business hours of validated trouble

Note 2 – Small Office with approved Throughput = 2 x T1
Note 3 – Medium Office with approved Throughput = T1 / DS3
Note 4 – Medium Office, high availability* with approved Throughput = T1 / DS3
Note 5 - Large Office, high availability* with approved Throughput = OC-3
Note 6 - Large Office, high availability* with approved Throughput = OC-3
Note 7 - X-large Office, high availability* with approved Throughput = OC-3 plus
* High Availability option can be configured as a two-Firewall cluster including Active/Standby mode with automatic failover in the case of hardware failure.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	19" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	23" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	Cabinet	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Cage/Square Footage	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Power - 48v DC 20 Amps A/B	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Power - 48v DC 30 Amps A/B	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Power - 48v DC 40 Amps A/B	/month	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
	Power - 48v DC 50 Amps A/B	/month	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Power – 48v DC 60 Amps A/B	/month	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00
	Cross Connect – DS1	/incident	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Cross Connect – DS1	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – DS3/Coax	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – DS3/Coax	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – Ethernet/Cat 5	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – Ethernet/Cat 5	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect - Fiber	/incident	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Cross Connect - Fiber	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost are the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication – Note 1	Per user /month	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80
	Authentication – Note 2	Per user /month	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05
	Authentication – Note 3	Per user /month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This section is for ordering Hosted Identity Management for eHealth and future defined NetTN Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – This includes all users that require identity authentication through the Trusted Authentication Manager (Log directly into the TN eHealth Network portal). All users will be eligible for Customer support levels one through three as defined below.

Note 2 – This includes all users that authenticate their identity through their organization's Web Identity and Access Management system and then federate the user's credentials to the AT&T Trusted Identity Broker. AT&T is responsible to transform the federation protocol of the user's credentials to whatever protocol required by the relying endpoint and then pass on the user's credentials to the relying party endpoint. Users in this scenario are eligible for customer support levels two and three as defined below, whereas the Identity provider organization is responsible for level one customer support.

AT&T, through its subcontractor relationship(s) shall provide access to Help Desk services for the purposes of reporting TN eHealth Network-related problems, as described below: Definition of Customer Support Levels:

Support Level 1 – The problem is affecting time-critical applications with production work at a standstill. The TN eHealth Portal is completely unusable and no work- around is currently known. The Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 2 - The Trusted Broker Platform does not function properly, but key business processes are not interrupted. The TN eHealth Portal is significantly impaired such that key business processes cannot be conducted and no known workaround is currently available. The AT&T Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 3 – The Trusted Broker Platform is functioning, but specific User (s) is affected and cannot conduct work as needed.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Next Generation 9-1-1 (NG -911)	Aggregation Point – NHVL,Knox, Chatt & Memphis Facilities	/incident		$235,513.00	$235,513.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Hardware	/incident		$204,863.87	$204,863.87	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Aggregation -Installation	/incident		$204,863.87	$204,863.87	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Control Center – Facilities & Build out	/incident		$375,738.00	$375,738.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC-Hardware -	/incident		$500,778.43	$500,778.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	NCC -Installation	/incident		$500,778.43	$500,778.43	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Call delivery & Monitoring Software	/incident		$1,166,725.50	$1,166,725.50	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Hardware	/incident		$8,739.53	$8,739.53	$8,739.53	$8,739.53	$0.00	$0.00	$0.00	$0.00	$0.00
	PSAPs Edge Installation	/incident		$8,739.53	$8,739.53	$8,739.53	$8,739.53	$0.00	$0.00	$0.00	$0.00	$0.00
	Network Usage Information, Traffic reports per measurement ID, per report	/incident		$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40	$20.40
	E-911 SS7 Trunk group – per one way trunk group	/incident		$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86	$706.86
	E-911 SS7 Trunk group – per one way trunk group	/month		$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20	$10.20
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/incident		$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46	$329.46
	E-911 SS7 DSO Trunk – 1st mile Per trunk – initial trunk group	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22
	E-911 SS7 DSO Trunk – ea. additional mile per Trunk	/month		$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06	$.06
	E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial group setup	/incident		$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74	$496.74
	E-911 SS7 DSO Trunk, 1st mile per trunk, subsequent to initial group setup	/month		$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22	$11.22
	Custom Routing, Per PSAP Routing Number	/incident		$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32	$16.32

Speed Call List, Per EMNT trunk, initial or rearrangement	/incident		$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02	$52.02
Core hardware Maintenance	/month		$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96	$27,742.96	$27,741.96
Software Maintenance-Call delivery & monitoring	/month		$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98	$42,685.98
Edge PSAP Hardware Mtc.	/month		$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14	$345.14
NetTN 9-1-1 Support Services	/month		$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68	$54,655.68

Explanation: **This section is for NG-9-1-1 over NetTN.** This service is subject to NetTN Service Level Agreements. **This project will be implemented in three stages as described below:**

Stage 1: The Aggregation Points and NetTN Control Centers will be deployed. Wireless Carriers and VoIP Providers will move their 9-1-1 call traffic from the legacy 9-1-1 selective routers to the Aggregation Points. 9-1-1 Calls will be delivered from the 9-1-1 Over NetTN Control Centers (NCC) to the appropriate legacy selective router for delivery to the PSAP. This places the Aggregation Points and NCCs into service without making any changes that will directly impact the PSAPs.

Stage 2: NetTN Call Delivery to the PSAPs. Edge devices and firewalls will be deployed at the PSAPs and NetTN connections will be installed. 9-1-1 Calls will be delivered from the NCC directly to the PSAP over NetTN.

Stage 3: All remaining originating 9-1-1 call traffic (landline 9-1-1 calls) will be migrated off the legacy selective routers and connected to the managed IP network at designated edge routers and the legacy 9-1-1- selective router may be decommissioned.

Attachment T – TN-NG911 Requirements

T.1 The Tennessee Emergency Communications Board (TEBC) provides oversight and direction for emergency communications in the State of Tennessee. The TECB is planning to move to a fully integrated Statewide Next Generation 9-1-1 solution leveraging the NetTN network and a phased approach.

The intent is to implement a robust IP-enabled Next Generation E9-1-1 call delivery network. This network will initially deliver wireless and nomadic VoIP (non-wireline) 9-1-1 traffic from all of the wireless carriers and VoIP providers operating in the State of Tennessee to each PSAP utilizing the existing 9-1-1 tandems (Stage 1). In Stage 2, this 9-1-1 traffic will be delivered to each PSAP over the IP network. It is envisioned that additional network elements will be added in the future that will ultimately replace a portion or all of the existing 9-1-1 tandem requirements and support the delivery of all 9-1-1 traffic in the future.

By using technologies that are tried and proven in the commercial sector, the State hopes to gain many of the benefits that have been realized by businesses when transitioning from proprietary and often hardware-based legacy systems to open systems based on commoditized components and accepted open standards. Some of the benefits that the TECB is seeking include:

I. Increased reliability, resiliency and flexibility to accommodate changing requirements
II. Ability to easily integrate new technology
III. Ability to easily extract management information from the system
IV. Improve public safety for the citizens of and visitors to the State of Tennessee
V. Equalize service across the State, increasing functionality and capabilities for all Public Safety Answering Points (PSAPs)
VI. Improve call transfer functionality across jurisdictions, including LATA boundaries
VII. Improve communications between PSAPs
VIII. Facilitate transfer of GIS data across jurisdictional boundaries
IX. Prepare PSAPs for future 9-1-1 technologies (telematics, VoIP, ACN)
X. Provide a cost effective means of PSAP backup and fail over (call rerouting)
XI. Improve reliability and redundancy in the 9-1-1 delivery network
XII. Facilitate a cooperative project initiative involving all public safety stakeholders and other potential partners in Tennessee
XIII. Emphasize inter-agency cooperation and the sharing of information across traditional boundaries in a manner that promotes true system-wide interoperability from call delivery through event dispatch and response.

In order to facilitate a smooth migration from the legacy 9-1-1 network to the 9-1-1 Over NetTN network, an incremental implementation approach will be used. This Project is focused on Stage 1 & 2 (described below). Stage 3 is a future requirement and described here only to provide a high level perspective of the overall longer term plan. The focus of the first phase of this is to move deployment of Stage 1 & 2 forward. Stage 3 will be addressed at a later date when appropriate.

I. Provide a migration plan for 9-1-1 in Tennessee to move from the legacy TDM based network architecture to a next generation IP enabled network architecture.
II. Create a uniform voice and data delivery architecture that facilitates seamless 9-1-1 delivery to PSAPs and between PSAPs in Tennessee.
III. Reduce geographic boundaries with neighboring states to enable 9-1-1 call transfer.

IV. Seamlessly integrate with both TDM and SIP capable PSAP equipment in order to allow PSAPs to use either legacy or next generation equipment.
V. Provide an IP based solution (versus TDM) to 9-1-1 stakeholders in order to create redundancy and diversity, and provide improved survivability to the PSAPs.
VI. Provide options for fallover, contingency call flow, and congestion control including diverse and robust network paths which may be chosen on an individual PSAP level by the TECB.
VII. Create a network of networks that integrates with other next generation Public Safety networks at the local and national levels per industry recommendations.

T.1.a. Implementation Stage 1: The Aggregation Points and NetTN Control Centers will be deployed. Wireless Carriers and VoIP Providers will move their 9-1-1 call traffic from the legacy 9-1-1 selective routers to the Aggregation Points. 9-1-1 Calls will be delivered from the 9-1-1 Over NetTN Control Centers (NCC) to the appropriate legacy selective router for delivery to the PSAP. This places the Aggregations Points and NCCs into service without making any changes that will directly impact the PSAPs.

T.1.b. Implementation Stage 2: NetTN Call Delivery to the PSAPs. Edge devices and firewalls will be deployed at the PSAPs and NetTN connections will be installed. 9-1-1 Calls will be delivered from the NCC directly to the PSAP over NetTN.

T.1.c. Stage 3: All remaining originating 9-1-1 call traffic (landline 9-1-1 calls) will be migrated off the legacy selective routers and connected to the managed IP network at designated edge routers and the legacy 9-1-1- selective router may be decommissioned.

T.1.d. The core infrastructure for 9-1-1 Over NetTN will be located in geographically diverse, redundant facilities. There will be two NetTN Control Centers (NCCs) located in Nashville and Knoxville Central Offices.

T.1.e. 9-1-1 Over NetTN services will be an AT&T Labs approved solution and will fit in with AT&T's long term products and services while meeting the NetTN long term products and services requirements and goals.

T.1.f 9-1-1 Over NetTN services will comply with NENA standards for NG 9-1-1.

T.1.g. TECB and AT&T will agree on interface requirements for CPE vendors that have an interest in connecting to the network using native SIP. These requirements will be based on Public Safety SIP standards which are still under consideration at this time.

T.1.h. AT&T will monitor and report bandwidth utilization and recommend bandwidth upgrades as defined by Service Level Agreement A.11 of the NetTN contract. TECB will define the minimum bandwidth requirements for each participating PSAP and number of PSAP connections to NetTN.

T.1.i. 9-1-1 Over NetTN will be standards based (forward focused), have an open architecture, be fully redundant including geographic diversity and be built upon common off the shelf equipment. 9-1-1 Over NetTN will not contain proprietary interfaces.

T.1.j. 9-1-1 Over NetTN will leverage the NetTN network infrastructure to provide connectivity to PSAPs within all 95 counties within the State of Tennessee regardless of LATA and franchise boundaries. The TEBC will determine the deployment plan and timelines in providing connectivity to the PSAPs.

T.1.k. Four geographically diverse network Aggregation Points for wireless and VoIP 9-1-1 calls will be located in Knoxville, Nashville, Memphis and Chattanooga. At the Aggregation Points, TDM to IP gateways will perform the SS7 to IP conversion required to transport voice traffic over the network. Each carrier will connect to two or more of the Aggregation Points for redundancy purposes. Each Aggregation Point (four total) will be sized for at least 40% of the total statewide inbound call volume to ensure call delivery.

T.1.l. Inbound trunk groups from originating wireless carriers and nomadic VoIP providers will be built at the County level to facilitate default routing.

T.1.m. Call delivery will be IP based from the Aggregation Points to the NCCs. Each NCC (Two total) will be sized to handle 100% of the statewide call volume so that if a single NCC fails, call delivery is still handled seamlessly.

T.1.n. Call Transfer of wireless and nomadic VoIP 9-1-1 calls will allow the ability to transfer calls with ALI anywhere within Tennessee, as well as the ability to transfer calls with ALI to/from PSAPs served by Kentucky and Mississippi 911 tandems (Owensboro KY and Jackson MS).

T.1.o. Call Transfer of landline and static VoIP 9-1-1 calls will allow the ability to transfer calls anywhere within Tennessee, as well as the ability to transfer calls to/from PSAPs served by Kentucky and Mississippi 911 tandems (Owensboro, KY and Jackson, MS). ALI delivery of transferred calls will depend on the availability of the ALI information provided by the receiving PSAPs ALI database provider.

T.1.p. 9-1-1 Over NetTN will continue using the legacy ALI Database Services from the existing ALI Database providers to support ALI for all calls including transfers until notified otherwise by the TECB. The solution will allow for the coordination and management of carriers data (wireless and VoIP), the coordination of legacy database providers (AT&T, Frontier and CenturyLink) and provide an opportunity to move to non-dialable pANIs.

T.1.q. 9-1-1 Over NetTN will allow connections to the PSAPs to remain unchanged to minimize impact at the PSAP level. The solution will allow IP calls to be delivered to the PSAP and then converted to a legacy format (CAMA like) in order to ensure legacy PSAP equipment can remain unchanged.

T.1.r. During implementation and migration, the legacy network will leverage existing ALI connections and add SS7 connections from the aggregation points to the legacy selective routers (7 in state, 2 out of state). Post implementation, the legacy 9-1-1 network can be leveraged for alternate routing and redundancy as an option at the TECB's choosing.

T.1.s. The PSAPs' with existing ALI databases will provide ALI responses for calls delivered to the PSAP by NetTN 9-1-1 Services.

T.1.t. The following are the Database requirements for wireless and nomadic VoIP:

i. ALI retrieval requires steering to MPCs and VPCs. Existing steering links in use by the existing ALI database providers will continue to be used.
ii. pANIs will be associated with wireless carriers and VPCs
iii. Approximately 23,000 shell records exist in the current AT&T database; it is estimated there are approximately 30,000 shell records for all Tennessee PSAPs; the Database shall accommodate the necessary shell records for Tennessee PSAPs.
iv. The wireless carriers will have an opportunity to move to non-dialable pANIs (NXX = 211, 511, etc.)
v. pANIs, associated MSAG entries and steering entries will be updated in all applicable Databases

T.1.u. PSAP connectivity is estimated based on current capacity to handle wireless calls. This information was provided to AT&T by the State of Tennessee based on PSAP survey data collected in the first half of 2009. Circuit capacity was calculated based on each call requiring 100 Kbps throughput across the IP network. Any site that was calculated to need up to 1.5Mbps was rounded up to a T1 NetTN connection to match the NetTN contract. Since no site required more than 3Mbps, any site requiring more than 1.5Mbps was assumed to have a 3Mbps NetTN connection.

T.1.v. 9-1-1 Over NetTN will have tandem-to-tandem connections to seven legacy Selective Routers in the State of Tennessee:

i. Chattanooga
ii. Jackson
iii. Knoxville
iv. Memphis
v. Nashville
vi. Johnson City
vii. Cookeville

T.1.w. 9-1-1 Over NetTN will have redundant fault tolerant tandem-to-tandem connections to out-of-state AT&T legacy Selective Routers located in Jackson MS and Owensboro KY.

T.1.x. The connectivity from the Aggregation Point to the Legacy Selective Routers will be sized based on call volumes from the carriers to those routers. Once carriers transition to the new network, the connectivity will be scaled for the appropriate legacy connectivity requirement and as required for alternate routing.

T.1.y. Call delivery scenarios including tabular routing, alternate routing and overflow routing will be supported. AT&T and the TECB will work with the PSAPs to develop and implement a jointly approved test plan to ensure all appropriate call routing scenarios are all implemented and working correctly.

T.1.z. Post-Implementation operational support will be provided by the AT&T Life Cycle Management team.

T.2 Operations Requirements

A proposed implementation plan is shown below. Note: Some of these tasks can be performed concurrently. The TECB and AT&T jointly agreed upon project plan will clearly define the task structure and timeline. The TEBC will have the final authority to decide the specific deployment plan and timelines with the migration of PSAPs into the 9-1-1 over NetTN system.

i. Install the Nashville and Knoxville NCCs
ii. Install SS7-IP gateways at the four Tennessee Aggregation Points
iii. Implement NetTN connectivity among Aggregation Points and Data Centers
iv. Connect NCCs to 9 legacy tandems
v. Deploy MSAGs and pANIs in ALI Database(s)
vi. Establish new pANI ranges as required
vii. Connect wireless and nomadic VoIP providers to Aggregation Points.
viii. Test call delivery from carriers through 9-1-1 Over NetTN Core and to legacy tandems
ix. Move wireless and nomadic VoIP 9-1-1 calls to Aggregation Points.

x. Deliver 9-1-1 calls from 9-1-1 Over NetTN Core to the legacy tandems for delivery to the PSAPs.
xi. Install 9-1-1 Over NetTN PSAP Router and NetTN WAN CE devices at PSAPs
xii. Implement TEBC's call delivery schemas for each PSAP – primary, default, overflow, alternate, etc.
xiii. Test call delivery from carriers through 9-1-1 Over NetTN Core to the PSAPs over the NetTN network.
xiv. Implement TEBC's cut over plan for PSAPs
xv. Deliver 9-1-1 calls from 9-1-1 Over NetTN Core to PSAPs over NetTN

T.2.a. AT&T and its subcontractors (as required) will be responsible for the end to end solution up to the AT&T demarcation point.

T.2.b. A dedicated AT&T project manager will lead the implementation of the solution for the duration of implementation period.

T.2.c. A dedicated Life Cycle Management (LCM) Operations Manager will manage the service and support of the 9-1-1 over NetTN network for the duration of the NetTN contract.

T.3 Future Requirements and Considerations

T.3.a Integration with the State's alternate IP network. AT&T understands that IP enables a customer to provide a back up network to the primary IP network and that NENA is looking to various alternate IP network technologies to provide redundancy to the primary IP network. AT&T will work with the State of Tennessee to determine how an alternate IP network could be connected to NetTN, which will serve as the primary network. When a design is mutually agreed upon by both AT&T and the State of Tennessee, AT&T will work with the State of Tennessee to develop the operational interface agreements that would need to exist in order to support this future product offering and price the solution accordingly. Upon joint agreement on design and operations, AT&T and the State of Tennessee will work together to create this product offering under the NetTN contract.

T.3.b. Landline 911- All remaining originating 9-1-1 call traffic (landline 9-1-1 calls) will be migrated off the legacy selective routers and connected to the managed IP network. The TECB will determine the deployment plan and timelines in providing the migration strategy for the PSAPs.

T.3.c. Static VoIP 911-All originating Static VoIP call traffic will be migrated off the legacy selective routers and connected to the managed IP network. The TECB will determine the deployment plan and timelines in providing the migration strategy for the PSAPs.

T.3.d. Native VoIP Delivery to 9-1-1 Over NetTN – No VoIP carriers currently deliver calls in this manner. If this capability is offered, the TECB and AT&T will review requirements and modify as required. Additional security requirements must be considered.

T.3.e. Text messaging via SMS, MMS, etc. As industry standards are defined, AT&T will work with the State of Tennessee to develop the architectural and operational interface agreements that would need to exist in order to support this future product offering and price the solution accordingly. Upon joint agreement on design and operations, AT&T and the State of Tennessee will work together to create this product offering under the NetTN contract.

T.3.f. Video relay - As industry standards are defined, AT&T will work with the State of Tennessee to develop the architectural and operational interface agreements that would need to exist in order to support this future product offering and price the solution accordingly. Upon joint agreement

on design and operations, AT&T and the State of Tennessee will work together to create this product offering under the NetTN contract.

T.4 Security Requirements

T.4.1 As defined by the TECB, each PSAP connection may require NetTN managed end-site firewall services for individual PSAP security purposes.

T.4.2 IP security processes and procedures will be put in place as defined by the NetTN contract in conjunction with the TEBC.

CONTRACT AMENDMENT

Agency Tracking #	Edison ID	Contract #	Amendment #
31701-03005	2904	FA-09-25220-00	2

Contractor	Contractor Federal Employer Identification or Social Security #
AT&T Corporation	☐ C- or ☒ V- 13-4924710

Amendment Purpose/ Effects

Expanded services within the scope of the contract

Contract Begin Date	Contract End Date	Subrecipient or Vendor	CFDA #(s)
July 1,2008	June 30,2018	☐ Subrecipient ☒ Vendor	

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,471,591.00		$7,471,591.00
2010			$27,400,000.00		$27,400,000.00
2011			$31,780,000.00		$31,780,000.00
2012			$38,336,800.00		$38,336,800.00
2013			$47,752,576.00		$47,752,576.00
2014			$66,854,095.00		$66,854,095.00
2015			$81,593,329.00		$81,593,329.00
2016			$93,933,039.00		$93,933,039.00
2017			$108,428,481.00		$108,428,481.00
2018			$99,922,610.00		$99,922,610.00
TOTAL:			**$603,472,521.00**		**$603,472,521.00**

American Recovery and Reinvestment Act (ARRA) Funding – ☐ **YES** ☒ **NO**

— COMPLETE FOR AMENDMENTS —

END DATE AMENDED? ☐ **YES** ☒ **NO**

FY	Base Contract & Prior Amendments	THIS Amendment ONLY
2009	$7,471,591.00	
2010	$27,400,000.00	
2011	$31,780,000.00	
2012	$38,336,800.00	
2013	$47,752,576.00	
2014	$66,854,095.00	
2015	$81,593,329.00	
2016	$93,933,039.00	
2017	$108,428,481.00	

Agency Contact & Telephone #

Vickie Stanfill 615-253-5529

Agency Budget Officer Approval (there is a balance in the appropriation from which this obligation is required to be paid that is not otherwise encumbered to pay obligations previously incurred)

OIRPCM
10/20/09

2018	$99,922,610.00		Speed Code	Account Code
TOTAL:	$603,472,521.00	$0.00	FA00000192	706000000

— OCR USE —

F&A Secured Document

F40925220-02

Procurement Process Summary (non-competitive, FA- or ED-type only)

Refer to the attached "Summary of Amendment 2 changes to Contract Attachment B" for specific detail. The contract amendment was negotiated aggressively with the contractor, AT&T and each amended line item compared with contracts of similar size, scope and functionality.

AMENDMENT TWO
TO FA-09-25220-00 / 2904

This Contract Amendment is made and entered by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corporation, hereinafter referred to as the "Contractor." It is mutually understood and agreed by and between said, undersigned contracting parties that the subject Contract is hereby amended as follows:

1. The following provision is added as Contract Section A.12:

   A.12. Consulting Services

   A.12.a At the State's request, the Contractor will provide professional services to the State. Professional services may be required, for example, to analyze, design, develop, and implement additional functionality not specified in this Contract and RFP. The professional services may be provided either on or off-site, at the State's option, and will be billed to the State on a per-hour basis. The types of professional services provided may include, but not be limited to, on-site technical support, project management, software analysis, design, implementation, and training.

   A.12.b. There is no guarantee that the State will use any of the Contractor's Consulting Services. The State retains full control as to the timing and usage of Consulting Services.

2. The text of Contract Section D.5. is deleted in its entirety and replaced with the following:

   D.5. Subcontracting. The Contractor shall not assign this Contract or enter into a subcontract for any of the services performed under this Contract without obtaining the prior written approval of the State. If such subcontracts are approved by the State, they shall contain, at a minimum, sections of this Contract below pertaining to "Conflicts of Interest," "Nondiscrimination," and "Records" (as identified by the section headings). Notwithstanding any use of approved subcontractors, the Contractor shall be the prime contractor and shall be responsible for all work performed.

   The Contractor may, with the State's consent, which consent shall not be unreasonably withheld, assign certain of its rights and obligations under this Agreement to an Affiliate authorized to provide such products or services to the State hereunder.

3. Contract Attachment B is deleted in its entirety and replaced with the new Contract Attachment B attached hereto.

The revisions set forth herein shall be effective October 9, 2009. All other terms and conditions not expressly amended herein shall remain in full force and effect.

IN WITNESS WHEREOF,

AT&T CORPORATION

Xavier D Williams — 10/15/09

CONTRACTOR SIGNATURE — **DATE**

Xavier D. Williams SVP-GEM Markets

PRINTED NAME AND TITLE OF CONTRACTOR SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

M.D. Goetz, Jr. 10-21-09

M. D. GOETZ, JR., COMMISSIONER MDA **DATE**

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45
	DSL (3M x 384k)	/month	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50
	DSL (6M x 384k)	/month	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01
	384kbps	/month	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00
	1.544 Mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	9 Mbps	/month	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00

Mbps											
Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$0.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12	1.544 Mbps	/month	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00

	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Incremental 50Mbps upgrade to existing 50Mbps circuit	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
K12 WAN Circuit Managed point to point without Internet access-Note 1	1.544 Mbps	/month		$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month		$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month		$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month		$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month		$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month		$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	Metro Ethernet 100 Mbps	/month	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00
	Metro Ethernet 1 Gbps	/month	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Note1: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, site connectivity, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday. This pricing is contingent upon a design ratio of 8:1 Metro Ethernet connections ("Spoke" sites) to a Metro Ethernet Hub site. All configurations must be approved by the State and the Contractor on an individual case basis. "Spoke" sites receive NetTN SLAs A.14, A.15, and A.16 only.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50
	384kbps	/month	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50
	1.544 Mbps	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74
	4.5 Mbps	/month	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49
	6 Mbps	/month	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49
	7.5 Mbps	/month	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49
	9 Mbps	/month	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49
	16 Mbps	/month	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 2 Mbps	/month	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74
	Metro Ethernet 4 Mbps	/month	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00
	Metro Ethernet 8 Mbps	/month	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00
	Metro Ethernet 10 Mbps	/month	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50
	Metro Ethernet 20 Mbps	/month	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00

	Metro Ethernet 50 Mbps	/month	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50
	Metro Ethernet 100 Mbps	/month	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50
	Metro Ethernet 600 Mbps	/month	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00
	Metro Ethernet 1 Gbps	/month	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00
	Monday – Sunday 24 X 7 Coverage	/month	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	Metro Ethernet 1 Gbps	/month	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
	Wavelength 1.25Gbps	/month	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
	Wavelength 2.5Gbps	/month	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
	Wavelength OC3	/month	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39
	Wavelength OC12	/month	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18
	Wavelength OC48	/month	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00
	Wavelength OC192	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Wavelength 10 Gbps	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET	OC12	/month	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	OC48	/month	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00
	OC192	/month	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Local Channel per air mile	/month	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00
	Interoffice Channel per air mile	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Customer node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00
	Central office node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 100 Mbps	/month	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49
	Metro Ethernet 1 Gbps	/month	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00
	Metro Ethernet 600 Mbps	/month	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46
	Metro Ethernet 1 Gbps	/month	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00
	TDOT ITS 9.6 Synchronet per end point	/month	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	DS1 - 5 miles or less	/mileage	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00
	DS1 – 6 miles and over Interoffice mileage – Note 1	/mileage	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
	DS1 – 6 miles and over Local channels – Note 1	/month	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91
	Flat Rate DS1 IntraLATA/InterLATA – Note 2	/month	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00
	Intralata DS3	/mileage	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
	Interlata DS3	/mileage	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00
	Interstate DS1	/mileage	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00
	Interstate DS3	/mileage	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	Metro Ethernet 2 Mbps Basic IntraLATA/IntraState –Note 3	/month	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00
	Metro Ethernet 2 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64	$389.64
	Metro Ethernet 4 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26	$421.26
	Metro Ethernet 8 Mbps Basic IntraLATA/IntraState -Note 3	/month	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00
	Metro Ethernet 8 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96	$456.96
	Metro Ethernet 10 Mbps Basic IntraLATA/IntraState - note 3	/month	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33
	Metro Ethernet 10 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72	$495.72
	Metro Ethernet 10 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96	$660.96
	Metro Ethernet 20 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24	$624.24
	Metro Ethernet 20 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64	$746.64
	Metro Ethernet 50 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08	$820.08

Metro Ethernet 50 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76	$905.76
Metro Ethernet 100 Mbps Basic IntraLATA/IntraState -Note 3	/month	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00
Metro Ethernet 100 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44	$991.44
Metro Ethernet 100 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28	$1,187.28
Metro Ethernet 250 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36	$1,242.36
Metro Ethernet 250 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96	$1,425.96
Metro Ethernet 500 Mbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28	$1,646.28
Metro Ethernet 500 Mbps Premium Burst IntraLATA/IntraState –Note 5	/month		$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64	$1,817.64
Metro Ethernet 1Gbps Basic IntraLATA/IntraState –Note 3	/month		$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40	$1,652.40
Metro Ethernet 1Gbps Premium Fixed IntraLATA/IntraState –Note 4	/month		$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32	$2,362.32
Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00
Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00
Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75
Metro Ethernet Premium 2- 9 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50	$178.50
From 26 to 35 miles per connection	/month	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35	$298.35
From 36 to 50 miles per connection	/month	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75	$471.75
Metro Ethernet 10- 99 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70	$188.70
From 26 to 35 miles per connection	/month	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20	$316.20
From 36 to 50 miles per connection	/month	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70	$494.70
Metro Ethernet Premium 100- 499 Mbps additional mileage charge – Note 6											
From 10 to 25 miles per connection	/month	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60	$234.60

	From 26 to 35 miles per connection	/month	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80	$397.80
	From 36 to 50 miles per connection	/month	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10	$617.10
	Metro Ethernet Premium 500-1000 Mbps and Basic Ethernet 1Gbps additional mileage charge – Note 6											
	From 10 to 25 miles per connection	/month	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60	$285.60
	From 26 to 35 miles per connection	/month	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30	$474.30
	From 36 to 50 miles per Connection	/month	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60	$744.60
	Premium Ethernet optional Features											
	Priority Plus – NOTE 7	/month	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08	$55.08
	Q-Forwarding – NOTE 8	/month	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84	$42.84
	Q-Forwarding- Service Establishment Charge	/incident	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00	$510.00
	Metro Ethernet Reporting Charge per connection-Note 9	month	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90	$4.90
	Metro Ethernet Web Interface Charge –Note 9	month	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36	$18.36
	Metro Ethernet Web Interface Charge – 1x charge	Per/Acct	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50	$76.50
	Metro Ethernet Reporting Security Card -Note 10	Per/Acct	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Metro Ethernet Reporting Service Establishment – 1x charge – Note 10	Per/Acct	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Note 1 – DS1 circuits that are a total of 6 miles or more require 2 Local Channels and Interoffice Channel Mileage for the distance between Central Offices for the two end site locations. For example:

Site 1 – Franklin, TN – LOCAL CHANNEL ($88.91)
Site 2 - Brentwood, TN – LOCAL CHANNEL ($88.91)
Interoffice Mileage from Franklin Central Office to Brentwood Central Office is 8.6 miles. $10.50 x 9 miles = $94.50
Total monthly service cost - $272.32
DS1 mileages are rounded up to the next whole number; e.g. 8.1 up to 8.9 miles are rounded up to 9 miles.

Note 2 – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon transition. Orders for additional circuits must be approved by AT&T on availability basis.

Note 3- Basic Ethernet provides full-duplex transmission of port connections. This service arrangement provides best effort, high speed connection for customer premise to another premise with Basic metro Ethernet.

Note 4 – Premium Fixed Ethernet provides the Committed Bandwidth speed.

Note 5 – Premium Burst Ethernet provides the ability to burst above the committed bandwidth rate when excess bandwidth is available.

Note 6 – Metro Ethernet Additional Mileage applies to all Ethernet 1Gbps and/or Premium connections that are 10 miles or more from the serving Metro-E central office. Mileage does not apply to Basic Ethernet services except for 1Gbps.

Note 7 – Metro Ethernet Priority Plus dedicates 25% of the circuit bandwidth as high-priority traffic e.g. VoIP. This is statically assigned and cannot be dynamically reallocated when the high-priority traffic volume is less than 25% of the total traffic in use at a particular time.

Note 8 – Metro Ethernet Q-Forwarding – This feature provides the ability to stack Virtual Local Area Networks (VLANs) onto one Metro Ethernet Premium connection port utilizing IEEE 802.1Q protocol and transporting multiple customer LAN traffic to a single location.

Note 9 – Metro Ethernet Reporting (MER) is a tariff service that provides alarm surveillance, performance reporting and SLA reporting for Metro Ethernet network components. It is only available to customers who subscribe to premium service.

Note 10 - ME Security Card – MER offers a web-enabled GUI. To access reports, the customer logs into the MER server. Log-ins, passwords and secure ID cards are provided to the customer.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
(AVPN) AT&T Virtual Private Network Port Only	LD Domestic AVPN Flat Rate 1.544Mpbs/ Port/FR,ATM	/month	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69
	LD Domestic AVPN Flat Rate 10Mpbs/ Port/Ethernet or ATM	/month	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54
	LD Domestic AVPN Flat Rate 15Mpbs/ Port/FR,ATM	/month	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05
	LD Domestic AVPN Flat Rate 20Mpbs/ Port/FR,ATM	/month	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58
	LD Domestic AVPN Flat Rate 25Mpbs/ Port/FR,ATM	/month	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12	$1,791,12
	LD Domestic AVPN Flat Rate 30Mpbs/ Port/FR,ATM	/month	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24
	LD Domestic AVPN Flat Rate 45Mpbs/ Port/FR,ATM	/month	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88
	LD Domestic AVPN Flat Rate 100Mpbs/Port/Ethernet or ATM	/month	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62
	CoS Pkg Multimedia Std/1.544Mbps	/month	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16
	CoS Pkg Multimedia Std/10Mbps	/month	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29
	CoS Pkg Multimedia Std/15Mbps	/month	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88
	CoS Pkg Multimedia Std/20Mbps	/month	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94
	CoS Pkg Multimedia Std/25Mbps	/month	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89
	CoS Pkg Multimedia Std/30Mbps	/month	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40
	CoS Pkg Multimedia Std/45Mbps	/month	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23
	CoS Pkg Multimedia Std/100Mbps	/month	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58

Explanation: This section for ordering port access to AT&T's Virtual Private Network for global reach. The AVPN access circuits are ordered separately. The CoS package allows traffic prioritization, the term "Multimedia Standard CoS" refers to specific set of prioritization profiles which will be selected at time of order.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
AVPN Local Access	AVPN 1.544 Mbps Circuit and mileage – 0 up to 10 miles fixed rate	/month	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18
	AVPN 1.544 Mbps Circuit and mileage – 11 miles up to 20 miles fixed rate	/month		$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44	$320.44
	AVPN 1.544 Mbps Circuit and mileage – 21 miles up to 50 miles fixed rate	/month		$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78	$457.78
	AVPN 1.544 Mbps Circuit – 51 and over miles -Note 1	/month		$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80	$346.80
	Additional per mile charge for AVPN 1.544 Mbps Circuit - 51 miles and over – Note 1	/per mile		$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51	$4.51
	AVPN DS3 Access	/month	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14
	AVPN 100 Mbps Ethernet Access	/month	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73

Explanation: This section is for ordering local access circuits within AT&T LEC network to AT&T's Virtual Private Network for NetTN global reach outside the State of Tennessee. AVPN DS3 and 100 Mbps Ethernet Access Circuits greater than 10 miles or outside AT&T LEC network are priced on a case-by-case basis and must be approved by the State and the Contractor. The Mileage is rounded up to the next whole number; e.g. 10.1 up to 10.9 miles are rounded up to 11 miles. AVPN port is ordered separately.

Note 1 – The additional per mile and per month charges apply to AVPN 1.544 Mbps circuits >=51 miles. For instance: circuit that is 60 miles is charged $346.80 per month plus 60 miles times $4.51 ($270.60) for a total circuit cost of $617.40 per month.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40
	Primary System Single Bay	/month	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70
	Central Office DS1 Channel Interface per DS1 Interface	/month		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Channelized DS3 (Note 1) – per DS3-Note 1	/month		$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18	$1,233.18

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Note 1 - Service includes the DS3 Channel system at the CO, the Local channel up to 1 mile, 28 DS1 interfaces at the CO and a DS3 Interface at the customer site. Customer is responsible for end-site equipment to terminate this service.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00
	DSL (3M x 384k)	/month	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30
	DSL (6M x 384k)	/month	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31

Explanation: This section is used for ordering DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95
	Interstate 800 services for RA access	/minute	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
	3G/4G Wireless Air Card User, per Account, with static IP addresses	/month	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78
	SSL VPN Server implementation/installation-2000 users	/1x install	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00
	SSL monthly fee w/ browser for web applications-1000 users	/month	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00
	SSL monthly fee w/ browser for web applications-2000 users	/month	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00
	Multi-factor Hard Token	per user/mth	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81
	Multi-factor server license & token with 3-yr battery	/annually per user	$62.12	$62.12	$62.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12
	Multi-factor server license maintenance	/annually per user	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36

Explanation: This section is for dial-up and broadband remote access, SSL and multi-factor authentication for an individual.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Multipoint Audio Service	/30min	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03
	H.323 Directory Listing Service	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80
	Unlimited Video Usage – Note 1	/month	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60
	Video Bridge Subscription to Video Control Panel – Note 1	/month	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20
	Unlimited Video Bridge 3 Year Maintenance – Note 1	/month	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88
	Video Bridge Call Launch Fee Note 2	/per call	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11

Explanation: This section is for ordering video conferencing service. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Note 1 – This service is for ordering unlimited video service utilizing a dedicated MCU with a web-scheduler within the NetTN network. Read-only access will be provided to NetTN Partners for management and trouble shooting fault management tickets. This is Basic service only, providing 384 up to 1.544Mbps speeds, no encryption. AT&T will provide maintenance, management, monitoring and help-desk support. All applicable NetTN SLAs apply. All three components are required, unlimited video usage, video bridge subscription to video control panel and unlimited video Bridge 3 yr maintenance.

Note 2 – This is an optional component for having AT&T manually schedule the conference instead of using web-scheduler.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00
	6 Mbps	/month	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00
	9 Mbps	/month	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00
	12 Mbps	/month	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00
	15 Mbps	/month	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00
	21 Mbps	/month	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00
	27 Mbps	/month	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00
	DS3	/month	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00
	Metro Ethernet 10Mbps	/month	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00
	Metro Ethernet 20Mbps	/month	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00
	Metro Ethernet 50Mbps	/month	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00
	Metro Ethernet 100Mbps	/month	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00
	Metro Ethernet 150Mbps	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	Metro Ethernet 200Mbps	/month	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00
	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 500Mbps	/month	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00
	OC 3	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	OC 12	/month	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00
	OC 48	/month	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/Intranet	Name Space Management, per zone	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Email, per account (100 Mbps storage)	/month	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
	Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
	K-12 Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100Mbps Connection	/month	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00
	Metro E 1 Gbps Connection	/month	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00
	B-Channels-Voice/Data-each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Primary Rate Installation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (Surcharges) – Note 1	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Note 1 – The E911 surcharge rate allows collection of E911 surcharges at the county established rate. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00
	B-Channels-Voice/Data-Each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (per number)	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site Router 10/100 48 Switch Ports	/month	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00
	End Site Router PoE 802.af	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00
	End Site Router Wireless Option (802.11b/g)	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90
	Ethernet 100 Mbps	/month	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	New services	/incident	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	On-site work order hardware configuration change	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Consulting Services											
	Principal Architect Consulting Services-Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Program Manager Consulting Services – Note 1	/hour		$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	Sr. Consultant Consulting Services – Note 1	/hour		$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00	$204.00
	Technology/Security Consulting Services – Note 1	/hour		$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00	$192.00
	Senior Engineer Consulting Service – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager II Consulting Services – Note 1	/hour		$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00	$172.00
	Project Manager I Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Engineer Consulting Services – Note 1	/hour		$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00	$131.00
	Technician Consulting Services – Note 1	/hour		$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00	$83.00
	Site Survey	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	Load Testing Point-to-Point Circuits	/incident	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Migration end site order processing	/order	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Expedite charges/per WAN Circuit	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	TACACS Additional user accounts 7-12 users –Note 2	/incident		$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00	$255.00
	TACACS Additional user accounts 13-25 users – Note 2	/incident		$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00	$765.00
	Telecommunications Service Priority (TSP) – per circuit – Note 3	/Monthly		$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13	$1.13

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.

Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.
Note 1 – A statement of work will be developed and agreed upon between the State and the Contractor for specific categories of consulting services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Note 2 - TACACS - Read only access for up to 3000 NetTN managed routers via Telnet. If the number of concurrent sessions is exceeded the State will ensure that Enabled Employees log off the sessions if requested to do so by AT&T personnel.

Note 3 - Telecommunications Service Priority – FEMA telecommunications restoral priority.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Enhanced Firewall-IDS	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site 24 Port Integrated Switch	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	End Site 48 Port Integrated Switch	/month	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00
	End Site Integrated FW IOS / 24 Port Integrated Switch	/month	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	End Site Integrated FW IOS / 48 Port Integrated Switch	/month	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00
	End Site Cisco ASA 5510, Note 1 & 2	/month	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00
	End Site Cisco ASA 5520, Note 1& 3	/month	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20
	End Site Cisco ASA 5520 High Availability-Note 1 & 4	/month	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40
	End Site Cisco ASA 5540 - Note 1 & 5	/month	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20
	End Site Cisco ASA 5540HA GigE - Note 1 & 6	/month	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00
	End Site Cisco ASA 5550HA GigE - Note 1 & 7	/month	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Note 1 - This is a premise-based firewall, fully managed and monitored by AT&T. AT&T provides the following support for this managed firewall:

- Proactive 7x24 monitoring and management, maintenance and updates.
- Initial consultation for the activation of the firewall service, and testing at customer location.
- Change/configuration Management – Customers may request up to 6 change requests per month, per device.
- On-site maintenance response is available 7 days/week, 24 hours/day. Technicians dispatched to customer location within 4 business hours of validated trouble

Note 2 – Small Office with approved Throughput = 2 x T1
Note 3 – Medium Office with approved Throughput = T1 / DS3
Note 4 – Medium Office, high availability* with approved Throughput = T1 / DS3
Note 5 - Large Office, high availability* with approved Throughput = OC-3
Note 6 - Large Office, high availability* with approved Throughput = OC-3
Note 7 - X-large Office, high availability* with approved Throughput = OC-3 plus
* High Availability option can be configured as a two-Firewall cluster including Active/Standby mode with automatic failover in the case of hardware failure.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	19" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	23" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	Cabinet	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Cage/Square Footage	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Power - 48v DC 20 Amps A/B	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Power - 48v DC 30 Amps A/B	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Power - 48v DC 40 Amps A/B	/month	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
	Power - 48v DC 50 Amps A/B	/month	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Power – 48v DC 60 Amps A/B	/month	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00
	Cross Connect – DS1	/incident	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Cross Connect – DS1	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – DS3/Coax	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – DS3/Coax	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – Ethernet/Cat 5	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – Ethernet/Cat 5	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect - Fiber	/incident	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Cross Connect - Fiber	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost are the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication – Note 1	Per user /month	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80
	Authentication – Note 2	Per user /month	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05
	Authentication – Note 3	Per user /month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This section is for ordering Hosted Identity Management for eHealth and future defined NetTN Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – This includes all users that require identity authentication through the Trusted Authentication Manager (Log directly into the TN eHealth Network portal). All users will be eligible for Customer support levels one through three as defined below.

Note 2 – This includes all users that authenticate their identity through their organization's Web Identity and Access Management system and then federate the user's credentials to the AT&T Trusted Identity Broker. AT&T is responsible to transform the federation protocol of the user's credentials to whatever protocol required by the relying endpoint and then pass on the user's credentials to the relying party endpoint. Users in this scenario are eligible for customer support levels two and three as defined below, whereas the Identity provider organization is responsible for level one customer support.

AT&T, through its subcontractor relationship(s) shall provide access to Help Desk services for the purposes of reporting TN eHealth Network-related problems, as described below:
Definition of Customer Support Levels:

Support Level 1 – The problem is affecting time-critical applications with production work at a standstill. The TN eHealth Portal is completely unusable and no work- around is currently known. The Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 2 - The Trusted Broker Platform does not function properly, but key business processes are not interrupted. The TN eHealth Portal is significantly impaired such that key business processes cannot be conducted and no known workaround is currently available. The AT&T Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 3 – The Trusted Broker Platform is functioning, but specific User (s) is affected and cannot conduct work as needed.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

CONTRACT AMENDMENT COVER

RFS Tracking #	Edison Contract ID #	Amendment #
31701-03005	2904	1

Amendment Purpose	Delegated Authority Requisition ID # (ONLY if applicable)
Rate reductions and expanded services within the scope of the contract	

Contractor/Grantee	Contractor/Grantee FEIN or SSN
AT&T Corporation	☐ C- or ☒ V- 13-4924710

Begin Date	End Date	Subrecipient or Vendor	CFDA #(s)
July 1,2008	June 30,2018	☐ Subrecipient ☒ Vendor	

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,471,591.00		$7,471,591.00
2010			$27,400,000.00		$27,400,000.00
2011			$31,780,000.00		$31,780,000.00
2012			$38,336,800.00		$38,336,800.00
2013			$47,752,576.00		$47,752,576.00
2014			$66,854,095.00		$66,854,095.00
2015			$81,593,329.00		$81,593,329.00
2016			$93,933,039.00		$93,933,039.00
2017			$108,428,481.00		$108,428,481.00
2018			$99,922,610.00		$99,922,610.00
TOTAL:			**$603,472,521.00**		**$603,472,521.00**

— COMPLETE FOR AMENDMENTS —

FY	Base Contract & Prior Amendments	THIS Amendment ONLY
2009	$7,471,591.00	
2010	$27,400,000.00	
2011	$31,780,000.00	
2012	$38,336,800.00	
2013	$47,752,576.00	
2014	$66,854,095.00	
2015	$81,593,329.00	
2016	$93,933,039.00	
2017	$108,428,481.00	
2018	$99,922,610.00	
TOTAL:	**$603,472,521.00**	**$0.00**

— OCR Use —

Procuring Agency Contact & Telephone #

Vickie Stanfill 615-253-5529

Procuring Agency Budget Officer Approval (there is a balance in the appropriation from which this obligation is required to be paid that is not otherwise encumbered to pay obligations previously incurred.)

Maureen Abbey/ar

Speed Code	Account Code
FA00000048	70600000

Procurement Process Summary (FA or ED-type only)

F&A Secured Document

2904-FA0925220-01

Refer to the attached "Summary of Amendment 1" for specific detail. The contract amendment was negotiated aggressively with the contractor, AT&T and each amended line item compared with contracts of similar size, scope and functionality.

Summary of Amendment 1:

1. All NetTN services rates changed from 4 decimal places (Ten Thousands) to 2 decimal places (Hundreds). The rates are truncated by 2 decimal places; the savings is negligible to the State and results in no change to the value of the NetTN contract. This change is requested due to ease of catalog of service readability, ease of quoting exact amounts for new and existing customers and ease of reconciling monthly billing. The industry norm is 2 decimal places for technology services.
2. NetTN Catalog of Services page 5
    a. Managed WAN Circuit point to point without Internet access for K12 sites. Special pricing applicable only to K12 schools.
        i. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. Lowering the overall rate (including the administrative fee) to match the comparative rate (without the administrative fee) effectively gives TN a 2% lower price than what was approved for TN and for the other clients with comparable contracts.
3. NetTN Catalog of Services page 13
    a. Point to Point DS1 rate structures changed from rate of $45.00 per mile for all circuits =>6 miles and over. The pricing structure is changed to $88.91 per local channel and $10.50 per mile.
        i. Example- 9 mile circuit Franklin to Brentwood, TN
            1. Current rate structure - 9 x $45.00= $405.00
            2. Amended rate structure – ($88.91 x 2)+ (10.50 x 9)= $272.32
        ii. Example monthly savings - $405.00 - $272.32 = $132.68
    b. Flat Rate DS1IntraLATA/InterLATA Circuits – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon customer request. Orders for additional circuits must be approved by AT&T on availability basis.
        i. Example – 80 mile circuit Nashville to Crossville, TN
            1. Current rate structure = 60 x $45.00 = $2,700.00
            2. Amended rate structure = $680.00
        ii. Example monthly savings - $2,700.00 - $680.00 = $2,020.00
4. NetTN Catalog of Services Ethernet and Wavelength Services pages 13 and 14
    a. Ethernet and Wavelength Services InterLATA/IntraState and InterState deleted and replaced with NetTN Catalog of Services with AT&T's Virtual Private Network (AVPN) port and access lines on pages 14 and 15.

i. Example – Ethernet 100Mbps circuit from Nashville Data Center to Revenue location in New York

1. Current rate structure - $7,500 for each end of circuit - $15,000
2. Amended rate structure – 100Mbps port ($5,580.62)+ Class of Service (CoS) Pkg 100mbps ($697.58) + 100Mbps Access ($2,144.14) = $8,422.34
3. Example monthly savings - $15,000 - $8,422.34 = $6,577.66

5. NetTN Catalog of Services page 17
   a. Incremental increase of DSL bandwidth offerings – DSL bandwidth increases in increments of 1.5Mbps for download and 384K for upload speeds. DSL offerings expanded to include 6Mbps x 384K.
6. NetTN Catalog of Service page 19
   a. 3G/3G Wireless Air Card rate reduction - $50.00 changed to $40.78
   b. Secure Socket layer (SSL) pricing added as scoped in Contract Attachment E – Network requirements - E.5.q. Remote Access Solutions shall allow secure VPN sessions to the NetTN network from remote broadband internet users
      i. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. Lowering the overall rate (including the administrative fee) to match the comparative rate (without the administrative fee) effectively gives TN a 2% lower price than what was approved for TN and for the other clients with comparable contracts.
   c. Multi-factor authentication added as scoped in Contract Attachment E – Network requirements E.5.b – The NetTN contractor will be responsible for management and administration of multi-factor authentication.
      i. Rates compared with similar contracts of size, scope and functionality. The rates in the comparative list do not include the NetTN Administrative Fee of 2%. With each monthly invoice submitted for payment of NetTN services provided, the contractor remits to the State the NetTN Administrative Fee. Lowering the overall rate (including the administrative fee) to match the comparative rate (without the administrative fee) effectively gives TN a 2% lower price than what was approved for TN and for the other clients with comparable contracts.

7. NetTN Catalog of Service page 20
    a. Expanded NetTN video service to include option for unlimited video and maintenance of dedicated video bridge located in Nashville, TN. Reduces cost by an average of 44%.
        i. OIR 12 month average 384kbps video usage – 18,547 minutes
            1. Current Rate Structure - $16.20 per 30 minutes = (18,547 / 30) x $16.20 = $10,011.60 monthly
            2. Amended Rate Structure – Flat rate monthly unlimited - $4,398.68
            3. Monthly savings based on average - $10,011.60 - $4,398.68 = $5,612.92
8. NetTN Catalog of Service page 25
    a. E911 charges changed from per number to billing number as specified in Contract Attachment J – Billing Requirements J.2.d The state will only be responsible for associated fees and taxes applicable by law to the State of Tennessee. The state will pay applicable E911 charges, as long as they are billed to the State by billing number, not bulk billed. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).
9. NetTN Catalog of Services page 32
    a. Expanded managed firewall services to include fully managed premise based firewall solution for small, medium large and extra large offices.
    b. Rates compared with similar contracts of size, scope and functionality.
10. NetTN Catalog of Services page 34
    a. Reduced Authentication (note 1) per user monthly rate from $17.29 to $10.80. Reduces cost by an average of thirty-eight percent.
    b. Reduced Authentication (note 2) per user monthly rate changed from one-time consulting fee to monthly per user fee for Identity Providers participating in the NetTN eHealth network requiring help desk support. Defined cost on a per user basis as opposed to an open amount based on hours in an integration scope of work. Cost reduction on this element is not specifically defined, but it allows for budgeting of costs over the term of service as opposed to a large one-time fee at the outset of the project.
11. Contract Attachments P through R. Corrected errors in header numbering; no other changes made.
12. Contract Attachment S. Attachment 6.11 of the RFP did not allow the contractor's WAN equipment to alter IP Precendence QoS values 0 through 7. The language is revised to allow changes to values 6 and 7 for network information, values 0 through 5 will remain unaltered.

AMENDMENT ONE
TO FA-09-25220-00

This Contract Amendment is made and entered by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corporation, hereinafter referred to as the "Contractor." It is mutually understood and agreed by and between said, undersigned contracting parties that the subject Contract is hereby amended as follows:

1. The text of Contract Section E.7 is deleted in its entirety and replaced with the following:

   E.7. Incorporation of Additional Documents. The documents detailed below shall be incorporated as a part of this Contract by reference and, in the event of a discrepancy or ambiguity regarding the Contractor's duties, responsibilities, and performance under this Contract, shall govern in the order of precedence herein detailed.

   a. this Contract document and all of its attachments and exhibits, excluding items incorporated by reference;

   b. Contract Attachment S; Contract Attachment S supersedes RFP Attachment 6.11 which is incorporated herein by Contract Section E.7.c.;

   c. the Request for Proposals (resulting in this Contract) and its associated amendments;

   d. any Technical Specifications provided to the Contractor by the State; and

   e. the Contractor's Proposal, including all clarifications and addenda made thereto at the request of the State.

2. Contract Attachment B is deleted in its entirety and replaced with the new Contract Attachment B attached hereto.

3. Contract Attachment P is deleted in its entirety and replaced with the new Contract Attachment P attached hereto.

4. Contract Attachment Q is deleted in its entirety and replaced with the new Contract Attachment Q attached hereto.

5. Contract Attachment R is deleted in its entirety and replaced with the new Contract Attachment R attached hereto.

6. Contract Attachment S attached hereto is added as a new Contract Attachment.

The revisions set forth herein shall be effective June 5, 2009. All other terms and conditions not expressly amended herein shall remain in full force and effect.

IN WITNESS WHEREOF,

CONTRACTOR LEGAL ENTITY NAME:

Xavier D Williams 5-8-09

CONTRACTOR SIGNATURE **DATE**

Xavier Williams, SVP- Gem Markets

PRINTED NAME AND TITLE OF CONTRACTOR SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

M. D. Goetz Jr. 5-12-09

M. D. GOETZ, JR., COMMISSIONER MOA **DATE**

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45	$279.45
	DSL (3M x 384k)	/month	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50	$310.50
	DSL (6M x 384k)	/month	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01	$345.01
	384kbps	/month	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00	$475.00
	1.544 Mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	9 Mbps	/month	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99	$2,524.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00

Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00
Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$0.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12	1.544 Mbps	/month	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00	$525.00
	3 Mbps	/month	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99	$924.99
	4.5 Mbps	/month	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99	$1,324.99
	6 Mbps	/month	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99	$1,724.99
	7.5 Mbps	/month	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99	$2,124.99
	10.5 Mbps	/month	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99	$2,924.99
	16 Mbps	/month	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73	$3,363.73
	25 Mbps	/month	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29	$3,868.29
	DS3 – 45 Mbps	/month	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54	$4,448.54
	Metro Ethernet 2 Mbps	/month	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49	$787.49
	Metro Ethernet 4 Mbps	/month	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00	$900.00
	Metro Ethernet 8 Mbps	/month	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00	$1,150.00
	Metro Ethernet 10 Mbps	/month	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00	$1,495.00
	Metro Ethernet 20 Mbps	/month	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00	$2,150.00
	Metro Ethernet 50 Mbps	/month	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00	$2,495.00
	Metro Ethernet 100 Mbps	/month	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00	$2,795.00
	Metro Ethernet 200 Mbps	/month	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00	$4,891.00
	Metro Ethernet 300 Mbps	/month	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00	$7,826.00

	Metro Ethernet 450 Mbps	/month	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00	$9,500.00
	Metro Ethernet 600 Mbps	/month	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00	$11,000.00
	Metro Ethernet 750 Mbps	/month	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00	$12,500.00
	Metro Ethernet 900 Mbps	/month	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00	$14,000.00
	Metro Ethernet 1 Gbps	/month	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00	$15,500.00
	Monday – Sunday 24 X 7 Coverage	/month	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00	$100.00
K12 WAN Circuit Managed point to point without Internet access	Metro Ethernet 100 Mbps – Note 1	/month	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00	$1,187.00
	Metro Ethernet 1Gbps – Note1	/month	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00	$2,037.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Note1: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, site connectivity, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday. This pricing is contingent upon a design ratio of 8:1 Metro Ethernet 100Mbps connections to a Metro Ethernet 1Gbps Hub site.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50	$251.50
	384kbps	/month	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50	$427.50
	1.544 Mbps	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74	$878.74
	4.5 Mbps	/month	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49	$1,192.49
	6 Mbps	/month	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49	$1,552.49
	7.5 Mbps	/month	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49	$1,912.49
	9 Mbps	/month	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49	$2,272.49
	16 Mbps	/month	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36	$3,027.36
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 2 Mbps	/month	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74	$708.74
	Metro Ethernet 4 Mbps	/month	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00	$810.00
	Metro Ethernet 8 Mbps	/month	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00	$1,035.00
	Metro Ethernet 10 Mbps	/month	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50	$1,345.50
	Metro Ethernet 20 Mbps	/month	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00	$1,935.00
	Metro Ethernet 50 Mbps	/month	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50	$2,245.50

	Metro Ethernet 100 Mbps	/month	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50	$2,515.50
	Metro Ethernet 600 Mbps	/month	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00	$10,500.00
	Metro Ethernet 1 Gbps	/month	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00	$14,250.00
	Monday – Sunday 24 X 7 Coverage	/month	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00	$50.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00	$9,000.00
	Metro Ethernet 1 Gbps	/month	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00	$12,000.00
	Wavelength 1.25Gbps	/month	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00	$15,000.00
	Wavelength 2.5Gbps	/month	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00	$18,000.00
	Wavelength OC3	/month	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39	$8,538.39
	Wavelength OC12	/month	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18	$14,942.18
	Wavelength OC48	/month	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00	$19,000.00
	Wavelength OC192	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00
	Wavelength 10 Gbps	/month	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00	$22,250.00

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET	OC12	/month	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00	$210.00
	OC48	/month	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00	$840.00
	OC192	/month	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00	$5,750.00
	Local Channel per air mile	/month	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00	$245.00
	Interoffice Channel per air mile	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Customer node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00
	Central office node	/month	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00	$1,750.00

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49	$832.49
	DS3 – 45 Mbps	/month	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68	$4,003.68
	Metro Ethernet 100 Mbps	/month	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49	$5,336.49
	Metro Ethernet 1 Gbps	/month	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62	$19,121.62

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00	$2,400.00
	Metro Ethernet 600 Mbps	/month	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46	$9,221.46
	Metro Ethernet 1 Gbps	/month	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45	$17,209.45

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00	$205.00
	TDOT ITS 9.6 Synchronet per end point	/month	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35	$76.35

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	DS1 - 5 miles or less	/mileage	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00	$45.00
	DS1 – 6 miles and over Interoffice mileage – Note 1	/mileage	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50	$10.50
	DS1 – 6 miles and over Local channels – Note 1	/month	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91	$88.91
	Flat Rate DS1 IntraLATA/InterLATA – Note 2	/month	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00	$680.00
	Intralata DS3	/mileage	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00	$700.00
	Interlata DS3	/mileage	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00	$95.00
	Interstate DS1	/mileage	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00	$75.00
	Interstate DS3	/mileage	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	Metro Ethernet 2 Mbps IntraLATA/IntraState	/month	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00	$350.00
	Metro Ethernet 8 Mbps IntraLATA/IntraState	/month	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00	$425.00
	Metro Ethernet 10 Mbps IntraLATA/IntraState	/month	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33	$446.33
	Metro Ethernet 100 Mbps IntraLATA/IntraState	/month	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00	$975.00
	Metro Ethernet 450 Mbps IntraLATA/IntraState	/month	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00	$1,795.00
	Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00	$2,070.00
	Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00	$3,000.00
	Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75	$4,787.75

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Note 1 – DS1 circuits that are a total of 6 miles or more require 2 Local Channels and Interoffice Channel Mileage for the distance between Central Offices for the two end site locations. For example:

Site 1 – Franklin, TN – LOCAL CHANNEL ($88.91)
Site 2 - Brentwood, TN – LOCAL CHANNEL ($88.91)
Interoffice Mileage from Franklin Central Office to Brentwood Central Office is 8.6 miles. $10.50 x 9 miles = $94.50
Total monthly service cost - $272.32
DS1 mileages are rounded up to the next whole number; e.g. 8.1 up to 8.9 miles is rounded up to 9 miles.

Note 2 – Existing circuits will be transferred from other contracts to the NetTN Contract and will receive $680.00 Monthly Rate upon customer request. Orders for additional circuits must be approved by AT&T on availability basis.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
(AVPN) AT&T Virtual Private Network Port Only	LD Domestic AVPN Flat Rate 1.544Mpbs/ Port/FR,ATM	/month	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69	$312.69
	LD Domestic AVPN Flat Rate 10Mpbs/ Port/Ethernet or ATM	/month	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54	$978.54
	LD Domestic AVPN Flat Rate 15Mpbs/ Port/FR,ATM	/month	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05	$1,135.05
	LD Domestic AVPN Flat Rate 20Mpbs/ Port/FR,ATM	/month	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58	$1,447.58
	LD Domestic AVPN Flat Rate 25Mpbs/ Port/FR,ATM	/month	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12	$1,791.12
	LD Domestic AVPN Flat Rate 30Mpbs/ Port/FR,ATM	/month	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24	$2,083.24
	LD Domestic AVPN Flat Rate 45Mpbs/ Port/FR,ATM	/month	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88	$2,625.88
	LD Domestic AVPN Flat Rate 100Mpbs/Port/Ethernet or ATM	/month	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62	$5,580.62
	CoS Pkg Multimedia Std/1.544Mbps	/month	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16	$39.16
	CoS Pkg Multimedia Std/10Mbps	/month	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29	$122.29
	CoS Pkg Multimedia Std/15Mbps	/month	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88	$141.88
	CoS Pkg Multimedia Std/20Mbps	/month	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94	$180.94
	CoS Pkg Multimedia Std/25Mbps	/month	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89	$223.89
	CoS Pkg Multimedia Std/30Mbps	/month	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40	$260.40
	CoS Pkg Multimedia Std/45Mbps	/month	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23	$328.23
	CoS Pkg Multimedia Std/100Mbps	/month	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58	$697.58

Explanation: This section for ordering port access to AT&T's Virtual Private Network for global reach. The AVPN access circuits are ordered separately. The CoS package allows traffic prioritization, the term "Multimedia Standard CoS" refers to specific set of prioritization profiles which will be selected at time of order.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
AVPN Local Access	AVPN 1.544 Mbps Access	/month	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18	$259.18
	AVPN DS3 Access	/month	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14	$2,144.14
	AVPN 100 Mbps Ethernet Access	/month	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73	$4,926.73

Explanation: This section is for ordering local access circuits (0-10 miles) within AT&T LEC network to AT&T's Virtual Private Network for NetTN global reach outside the State of Tennessee. Circuits greater than 10 miles or outside AT&T LEC network are priced on a case-by-case basis. The AVPN port is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40	$3,638.40
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40	$6,494.40
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40	$12,226.40
	Primary System Single Bay	/month	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70	$4,574.70

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00	$55.00
	DSL (3M x 384k)	/month	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30	$64.30
	DSL (6M x 384k)	/month	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31	$84.31

Explanation: This section is used for ordering DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00	$145.00

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95	$10.95
	Interstate 800 services for RA access	/minute	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03	$0.03
	3G/4G Wireless Air Card User, per Account, with static IP addresses	/month	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78	$40.78
	SSL VPN Server implementation/installation-2000 users	/1x install	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00	$8,464.00
	SSL monthly fee w/ browser for web applications-1000 users	/month	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00	$3,875.00
	SSL monthly fee w/ browser for web applications-2000 users	/month	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00	$6,629.00
	Multi-factor Hard Token	per user/mth	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81	$7.81
	Multi-factor server license & token with 3-yr battery	/annually per user	$62.12	$62.12	$62.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12	$60.12
	Multi-factor server license maintenance	/annually per user	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36	$3.36

Explanation: This section is for dial-up and broadband remote access, SSL and multi-factor authentication for an individual.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	Multipoint Audio Service	/30min	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03	$3.03
	H.323 Directory Listing Service	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20	$16.20
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80	$37.80
	Unlimited Video Usage – Note 1	/month	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60	$1,560.60
	Video Bridge Subscription to Video Control Panel – Note 1	/month	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20	$520.20
	Unlimited Video Bridge 3 Year Maintenance – Note 1	/month	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88	$2,317.88
	Video Bridge Call Launch Fee Note 2	/per call	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11	$286.11

Explanation: This section is for ordering video conferencing service. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Note 1 – This service is for ordering unlimited video service utilizing a dedicated MCU with a web-scheduler within the NetTN network. Read-only access will be provided to NetTN Partners for management and trouble shooting fault management tickets. This is Basic service only, providing 384 & 512 speeds, no encryption. AT&T will provide maintenance, management, monitoring and help-desk support. All applicable NetTN SLAs apply. All three components are required, unlimited video usage, video bridge subscription to video control panel and unlimited video Bridge 3 yr maintenance.

Note 2 – This is an optional component for having AT&T manually schedule the conference instead of using web-scheduler.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	3 Mbps	/month	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00	$1,040.00
	6 Mbps	/month	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00	$1,810.00
	9 Mbps	/month	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00	$2,145.00
	12 Mbps	/month	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00	$2,872.00
	15 Mbps	/month	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00	$3,285.00
	21 Mbps	/month	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00	$3,950.00
	27 Mbps	/month	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00	$5,280.00
	DS3	/month	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00	$7,050.00
	Metro Ethernet 10Mbps	/month	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00	$1,720.00
	Metro Ethernet 20Mbps	/month	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00	$3,240.00
	Metro Ethernet 50Mbps	/month	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00	$5,700.00
	Metro Ethernet 100Mbps	/month	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00	$6,500.00
	Metro Ethernet 150Mbps	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	Metro Ethernet 200Mbps	/month	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00	$14,500.00
	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 500Mbps	/month	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00	$27,000.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00
	OC 3	/month	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00	$10,200.00
	OC 12	/month	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00	$38,520.00
	OC 48	/month	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00	$65,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00	$16,400.00
	Metro Ethernet 1Gbps	/month	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00	$45,000.00

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/Intranet	Name Space Management, per zone	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00
	Email, per account (100 Mbps storage)	/month	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00	$15.00
	Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25
	K-12 Content Filtering per user	/month	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25	$0.25

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100Mbps Connection	/month	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00	$1,850.00
	Metro E 1 Gbps Connection	/month	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00	$3,550.00

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00	$534.00
	B-Channels-Voice/Data-each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Primary Rate Installation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (Surcharges) – Note 1	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Note 1 – The E911 surcharge rate allows collection of E911 surcharges at the county established rate. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number of unique billing number).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00	$434.00
	B-Channels-Voice/Data-Each	/month	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92	$0.92
	Telephone Numbers (per number)	/month	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19	$0.19
	E911 (per number)	/month	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00	$3.00

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00	$595.00

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site Router 10/100 48 Switch Ports	/month	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00	$225.00
	End Site Router PoE 802.af	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00
	End Site Router Wireless Option (802.11b/g)	/month	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00	$90.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90	$9.90
	Ethernet 100 Mbps	/month	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00	$27.00

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	New services	/incident	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00	$950.00
	On-site work order hardware configuration change	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Consulting Services	/hour	$210.00	$220.00	$230.00	$240.00	$245.00	$250.00	$255.00	$260.00	$265.00	$270.00
	Site Survey	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00
	Load Testing Point-to-Point Circuits	/incident	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Migration end site order processing	/order	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Expedite charges/per WAN Circuit	/incident	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00	$250.00

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.
Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Enhanced Firewall-IDS	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	End Site 24 Port Integrated Switch	/month	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00	$550.00
	End Site 48 Port Integrated Switch	/month	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00	$650.00
	End Site Integrated FW IOS / 24 Port Integrated Switch	/month	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00	$750.00
	End Site Integrated FW IOS / 48 Port Integrated Switch	/month	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00	$850.00
	End Site Cisco ASA 5510, Note 1 & 2	/month	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00	$459.00
	End Site Cisco ASA 5520, Note 1& 3	/month	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20	$1,387.20
	End Site Cisco ASA 5520 High Availability-Note 1 & 4	/month	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40	$2,774.40
	End Site Cisco ASA 5 - Note 1 & 5	/month	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20	$4,855.20
	End Site Cisco ASA 5540HA GigE - Note 1 & 6	/month	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00	$5,202.00
	End Site Cisco ASA 5550HA GigE - Note 1 & 7	/month	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00	$10,404.00

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Note 1 - This is a premise-based firewall, fully managed and monitored by AT&T. AT&T provides the following support for this managed firewall:

- Proactive 7x24 monitoring and management.
- All maintenance and updates.
- Initial consultation for the activation of the firewall service, and testing at customer location.
- Change/configuration Management – Customers may request up to 6 change requests per month, per device.
- On-site maintenance response is available 7 days/week, 24 hours/day. Technicians dispatched to customer location within 4 business hours of validated trouble

Note 2 – Small Office with approved Throughput = 2 x T1
Note 3 – Medium Office with approved Throughput = T1 / DS3
Note 4 – Medium Office, high availability with approved Throughput = T1 / DS3
Note 5 - Large Office, high availability with approved Throughput = OC-3
Note 6 - Large Office, high availability with approved Throughput = OC-3
Note 7 - X-large Office, high availability with approved Throughput = OC-3 plus

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00	$5,000.00
	19" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	23" Open Rack	/month	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00	$1,600.00
	Cabinet	/month	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00	$125.00
	Cage/Square Footage	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Power - 48v DC 20 Amps A/B	/month	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Power - 48v DC 30 Amps A/B	/month	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Power - 48v DC 40 Amps A/B	/month	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00	$400.00
	Power - 48v DC 50 Amps A/B	/month	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Power – 48v DC 60 Amps A/B	/month	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00	$600.00
	Cross Connect – DS1	/incident	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00	$200.00
	Cross Connect – DS1	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – DS3/Coax	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – DS3/Coax	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect – Ethernet/Cat 5	/incident	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00	$300.00
	Cross Connect – Ethernet/Cat 5	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
	Cross Connect - Fiber	/incident	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00	$500.00
	Cross Connect - Fiber	/month	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost are the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication – Note 1	Per user /month	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80	$10.80
	Authentication – Note 2	Per user /month	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05	$4.05
	Authentication – Note 3	Per user /month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This section is for ordering Hosted Identity Management for eHealth and future defined NetTN Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – This includes all users that require identity authentication through the Trusted Authentication Manager (Log directly into the TN eHealth Network portal). All users will be eligible for Customer support levels one through three as defined below.

Note 2 – This includes all users that authenticate their identity through their organization's Web Identity and Access Management system and then federate the user's credentials to the AT&T Trusted Identity Broker. AT&T is responsible to transform the federation protocol of the user's credentials to whatever protocol required by the relying endpoint and then pass on the users credentials to the relying party endpoint. Users in this scenario are eligible for customer support levels two and three as defined below, whereas the Identity provider organization is responsible for level one customer support.

AT&T, through its subcontractor relationship(s) shall provide access to Help Desk services for the purposes of reporting TN eHealth Network-related problems, as described below:
Definition of Customer Support Levels:

Support Level 1 – The problem is affecting time-critical applications with production work at a standstill. The TN eHealth Portal is completely unusable and no work- around is currently known. The Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 2 - The Trusted Broker Platform does not function properly, but key business processes are not interrupted. The TN eHealth Portal is significantly impaired such that key business processes cannot be conducted and no known workaround is currently available. The AT&T Help Desk and not the Change Control Process would address resolution of this problem.
Support Level 3 – The Trusted Broker Platform is functioning, but specific User (s) are affected and cannot conduct work as needed.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

Attachment P – eHealth Requirements

P.1 The State of Tennessee though Executive Order 35 established the statewide eHealth Advisory Council to coordinate the various eHealth initiatives across the state with a common goal, the successful development and implementation of electronic medical records. The Tennessee eHealth Council initiative will accelerate the adoption and use of Health Information Technology to improve healthcare quality, increase patient safety, reduce healthcare cost and enable individuals and communities to make the best possible health decision. The Council's mission is to drive improvement in the quality, safety and efficiency of healthcare for the State of Tennessee healthcare consumers by providing leadership, education, support and engaging the entire community to accelerate the implementation of eHealth solutions. The six main components of the mission are:

i. Interconnect clinicians and providers for sharing of electronic health information
ii. Support the appropriate Security and Privacy controls as required by State and Federal Law
iii. Support interoperability between all healthcare stakeholders
iv. Minimize and eliminate redundant or duplicate services among stakeholders
v. Define and implement policy and procedures to ensure proper use and full transparency
vi. Ensure public trust through appropriate safeguard and transparency

In an effort to accelerate eHealth deployment across the State of Tennessee, the NetTN network will serve as the main and the most affordable broadband choice eHealth participants, which include licensed health care professionals and health care stakeholders.

P.1.a. A private network, the eHealth Exchange Zone, will be provided by the NetTN contractor for the purposes of exchanging protected health information for purposes of treatment and other appropriate uses permitted by HIPAA.

P.1.b. The NetTN contractor will provide a hosted identity management solution with the capability to federate within the eHealth exchange zone and/or other defined TNII Association Partner VRFs.

P.1.c. The NetTN contractor will provide a Level 1 help desk for eHealth participants and second and third level support for the hosted identity management solution. The NetTN Help Desk will provide End Point Application support, based on documentation and training provided by End Point Application owners. End-point Application owners must provide the NetTN Service provider the documentation and provide End Point Application training, thirty (30) Business Days before the Application going "live" to provide sufficient time for training of the Help Desk and updating of the Help Desk documentation. End Point-provided documentation should adhere to the following guidelines:

i. The End Point Application documentation must not exceed three (3) pages of medium size print.

ii. The Application "Knowledge Base" or "Kbase" documentation must be in English and follow a mutually agreed Application Kbase documentation format. "Knowledge Base" is defined as the tool used by the Help Desk personnel to retrieve Application support documentation and frequently asked questions.

P.1.d. State of Tennessee Health agencies/employees will authenticate to NetTN eHealth member services. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

P.1.e. Health providers and/or TNII Association end sites with identity management systems will be charged a one-time consulting fee for set-up in lieu of the monthly authentication charge.

P.1.f. The contractor will promote NetTN eHealth services for both private and public Healthcare facilities/eHealth participants. The contractor will be responsible for promoting NetTN services, Catalog of Service line items, to healthcare providers. The contractor account team will promote the NetTN services as the first choice to Healthcare providers. The private healthcare facilities/eHealth

participants will contract directly with the NetTN Contractor for use of the NetTN eHealth Exchange Zone and State of Tennessee NetTN Catalog of Service rates and meet the following specifications:

i. eHealth participants must execute the Proposer's Commercial Contract of which this Catalog of Services is attached;
ii. Execute data sharing agreements with other eHealth participants;
iii. Participate in the authentication solution for access within the eHealth Exchange Zone;
iv. Exchange a minimum core data set with other eHealth participants for treatment purposes as well as other acceptable uses permitted by HIPAA;
v. Abide by the recommended guidelines for the exchange of protected health information as endorsed by the eHealth Council, the entity created by the Governor's Executive Order #35 and any applicable State and/or Federal laws or regulations.

P.1.g. The eHealth participant's use of the NetTN catalog of services and eHealth Exchange Zone may be suspended or terminated immediately with cause by the State of Tennessee with written notice to the NetTN contractor. Furthermore, either party may terminate this agreement with 30 days written notice to all parties, including the NetTN contractor.

P.1.h. The NetTN contractor will provide a web site for eHealth services including but not limited to the following: ordering of NetTN services, federal and state level grant information with easy access to funding forms and grant applications.

P.1.i. The NetTN Service Provider will be responsible for the following Hosted Identity Management Service objectives:

i. Hosted Identity Management System Monthly Availability – 99.0%

ii. Hosted Identity Management average monthly response time for system and application response time – 20 Seconds (login to System and access to administrative tools from main System page)

iii. Hosted Identity Management Help Desk response objectives:

(1) Average speed to answer – 60 seconds of all calls (The average time it takes a user to speak to an agent)

Time is measured once the caller has made a final selection from the telephone prompt and is placed in queue until the caller is working with an agent.

Measurement Calculation: This Service Level is averaged monthly and calculated by dividing the number of calls answered in a specified time by the total number of calls to the Service Desk in the measurement window and expressed as a percentage.

Numerically: (Calls answered in a specified time) / (All calls answered) * 100 = Level of Service percent

(2) Abandon rate of all global inbound calls – 10% (The percentage of users that call in to the Help Desk and hang up before being connected with a live agent.)

Service Level Description: "Call Abandon Rate" measures those calls that are disengaged by a caller after being placed in a call queue, but before being handled by an agent as reported through telephone switch metrics.

Measurement Calculation: This key metric is averaged monthly and calculated by dividing the number of calls placed in a call queue, but were disengaged by a caller, by the total number of calls placed in a call queue to the Service Desk during the measurement window and expressed as a percentage.
Numerically: Metric Calculation (Calls disengaged by caller) / (Total calls placed in call queue) = Call Abandon Rate.

(3) Call Duration – 20 minutes or less

The duration of time a user is on the telephone with an agent resolving an issue and time used to the call once the call has ended (time agent enters comments or notes pertaining to the call).

iv. Exceptions to Service Level Objectives

Any of the following events will not be used in the calculation of any service level objective or key metrics, or (ii) will excuse NetTN' performance to the extent any such event impacted the NetTN Service Providersability to perform the eHealth Services:

(1) Planned outages, scheduled maintenance, and external events.

(2) Failure to follow reasonable instructions and training with regard to the use of NetTN eHealth Services.

Attachment Q – Terms and Acronyms

This section is to define terms and acronyms used throughout this RFP. If a term or acronym is in question and is not defined in this section or elsewhere in the RFP, it is the responsibility of the Contractor to contact the State RFP coordinator and receive clarification.

- **ACH** – Automated Clearing House is a highly reliable and efficient nationwide batch-oriented electronic funds transfer system governed by the NACHA OPERATING RULES that provide for the interbank clearing of electronic payments for participating depository financial institutions.
- **ACL** – Access Control List
- **ASN** – Autonomous System Number
- **BGP** – Border Gateway Protocol is used to autonomously route IP packets of information over the Internet.
- **CALEA** – Communications Assistance for Law Enforcement Act the U.S. Congress passed the Communications Assistance for Law Enforcement Act (CALEA) to aid law enforcement in its effort to conduct surveillance of citizens via digital telephone networks. The Act obliges telephone companies to make it possible for law enforcement agencies to tap any phone conversations carried out over its networks, as well as making call detail records available. The act also stipulates that it must not be possible for a person to detect that his or her conversation is being monitored by the respective government agency.
- **Contractor** – The primary corporate entity (individual or consortium) that will be under contract by the State to provide the services and products that are defined and requested in this RFP for the NetTN network.
- **Core Network** – Also referred to as Core Backbone and Core. The Core Network consists of all elements and components operating the WAN.
- **CoS** – Class of Service is a way of managing traffic in a network by grouping similar types of traffic (for example, e-mail, streaming video, voice, large document file transfer) together and treating each type as a class with its own level of service priority.
- **CPE** – Customer Premise Equipment is equipment located at an End Site or Data Center location.
- **DACS** – Digital Access Cross-connect System is a digital switching device in telecommunications for routing T1 lines.
- **DHCP** – Dynamic Host Configuration Protocol is an Internet protocol for automating the configuration of computers that use TCP/IP. DCHP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers.
- **DIA** – Direct Internet Access
- **DLSW** – Data-link Switching (SNA over TCP/IP networks)
- **DNS** – Domain Name Server is an Internet service that translates domain names into IP addresses.
- **DSCP** – Differentiated Services Code Point value corresponds to a specific QoS.
- **DSL** – Digital Subscriber Line
- **DS3** – Digital Signals 3, 44.736 Mbps on a T3 facility or 34.368 Mbps on E3 facility.
- **DTE** – Data Terminal Equipment
- **Wavelength** – Dense Wave Division Multiplexing
- **DIFFSERV** – Differential Services
- **EBGP** – External Border Gateway Protocol
- **Edge Device** – Equipment that interfaces between the WAN circuit, End Site's LAN and, or other devices.
- **Egress** – Connecting point where the NetTN network peers with another network.
- **Eligible Private Entities** - End sites that can purchase from the state's NetTN contract. At this time there are 6 identified TNII Association partners. They are: (State agencies), TBR (Universities, Community Colleges and Technology schools), UT (UT campuses and affiliate agencies), SDE (K12 schools), Local Government (cities and counties), and eHealth (end sites). Other eligible entities include private schools and both private and not-for-profit entities.
- **End Site** – User location.

- **FERPA** – Family Education Rights and Privacy Act of 1974 (20 U.S.C. § 1232g)
- **FCC** – Federal Communications Commission
- **FEC** – Forwarding Equivalence Classes is a term used in Multiprotocol Label Switching (MPLS) to describe a set of packets with similar or identical characteristics.
- **HIPAA** – Health Insurance Portability and Accountability Act of 1996
- **IDS** – Intrusion Detection System
- **IHD** – Integrated Help Desk (OIR level one support)
- **ILEC** – Incumbent local exchange carriers
- **Implementation** – The act of implementing, providing a practical means for accomplishing something.
- **IP** – Internet Protocol
- **IPS** – Intrusion Prevention System
- **ISP** – Internet Service Provider
- **LAN** – Local Area Network
- **LATA** – Local Access and Transport Area
- **LEA** – Local Education Agency
- **LDAP** – Lightweight Directory Access Protocol
- **Local Government** – State of Tennessee county, city, or other forms of local government.
- **MAN** – Metropolitan Area Network
- **MACD** – Moves, adds, changes and deletes
- **Managed Services** – for the purposes of this RFP, Managed Services are End Site services provided by and fully managed by the Contractor. It is the responsibility of the Contractor to provide all implementation, changes, and maintenance of the network circuit and edge device.
- **MCU** – Multipoint Control Units
- **MPLS** – Multi-protocol Label Switching.
- **MSA** – Metropolitan Service Area. The metropolitan area includes all major cities and their surrounding counties within the State of Tennessee.
- **NAP** – Network Access Points. The NAPs shall be the aggregation locations sites that interconnect the core backbone segments together in redundant diverse paths.
- **NAT** – Network Address Translation technique in which the source and/or destination addresses of IP packets are converted from private to public.
- **Network Administration Access Control** – the systems or mechanisms used to control administrative access to data equipment or services.
- **NMS** – Network Management System.
- **NOC** – Network Operations Center is the physical space from which a typically large telecommunications network is managed, monitored and supervised.
- **NOSC** – OIR Network Operations and Security Center
- **NTP** – Network Time Protocol.
- **OIR** – Office for Information Resources. This department supports State agencies and their needs for data, voice and video communications.
- **POP** – Point of Presence. A POP is a regional aggregation site for all circuits and traffic from End Site locations within that region. The POP is then connected to a NAP through a larger bandwidth circuit.
- **PRI** – Primary Rate Interface
- **Prime Contractor** – See Contractor.
- **QoS** – Quality of Service
- **RA** – Remote Access
- **RAL** – Receipt Acknowledgement Letter (relating to E-Rate).
- **Redundancy** – the provision of additional or duplicate systems, equipment, etc., that function in case an operating part or system fails.
- **RFP** – Request for Proposal
- **SA** – System Administrator
- **SAN** – Storage Area Network
- **SDE** – State Department of Education K-12
- **SLA** – Service Level Agreement
- **SLD** – Schools and Libraries Division

- **SNA** – System Network Architecture
- **SNMP** – Simple Network Management Protocol
- **SPIF** – Service Provider Invoice Form
- **SPIN** – Service Provider Identification Number
- **SPOC** – Single Point of Contact
- **SSH** – Secure Shell
- **Subcontractor** – This may be one or more entities contracted by the Prime Contractor to fulfill all NetTN requirements.
- **TACACS** – Terminal Access Controller Access Control System
- **TBR** – The Board of Regents. This TNII Association partner is the governing body responsible for 19 State Universities and community colleges throughout the State of Tennessee in addition to technology centers.
- **TCP** – Transfer Control Protocol
- **TCRS** – Tennessee Consolidated Retirement System
- **TDM** – Time Division Multiplexing
- **TFTP** – Trivial File Transfer Protocol
- **TNII** – Tennessee Information Infrastructure. TNII is the current statewide private network.
- **TNII Association Partners** – The association consisting of; the Office for Information Resources (OIR), Tennessee Board of Regents (TBR), University of Tennessee (UT), Tennessee State Department of Education (K-12), and local governments.
- **TSP** – Telecommunications Service Priority System
- **UDP** – User Datagram Protocol
- **Unmanaged Services** – Unmanaged services" refer to end site services provided by the contractor and managed by the TNII Association Partners requesting the unmanaged service. Such services include an outsourced, statewide, state of the art, private communications network and require the selected Contractor to be responsible for the engineering, implementation, maintenance and management of NetTN.
- **URL** – Uniform Resource Locator
- **User Access Control** – the systems or mechanisms used to control user access to data services.
- **USAC** – Universal Services Administrative Company
- **UT** – the University of Tennessee colleges and institutes including UT-Knoxville, UT–Chattanooga, UT-Martin, UT-Memphis, and UT-Space Institute.
- **VSAT** – Very Small Aperture Terminal
- **VLAN** – Virtual LAN
- **VoIP** – Voice-over-Internet Protocol. The technology used to transform audio (voice) communications into Internet protocol packets for transmitting across an Internet Protocol network.
- **VPN** – Virtual Private Network is a private communications network
- **VRF** – Virtual Route Forwarding
- **WAN** – Wide Area Network

Attachment R – Contract Clarifications

Item #	RFP Proposal Document Name and Sub Section	Clarification
1.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.1, page 1)	D.1 The TNII Association requires a core network that supports the Multiprotocol label Switching. Confirm your compliance with this mandatory requirement and describe the approach. **Suggested Contract Language Clarification:** How will the routing between VRFs be handled with sites that have VRF connections and DIA circuits?
	Response:	First, NetTN will provide the capability to route traffic on a NetTN InterVRF basis, as dynamically as possible based on the requirement. This would use a particular VRF's globally legal routes or route aggregates, advertising them into other, target NetTN VRFs. This would allow for InterVRF traffic to prefer the NetTN "network fabric" rather than send such traffic through the Internet. For NetTN sites that will use both a NetTN VRF connection and a separate DIA (a non-NetTN VRF) connection, then the use of BGP on the NetTN VRF connection to the customer site is generally recommended. This allows the customer site to receive NetTN VRF or interVRF routes as BGP routes, allowing the site to make better routing and return decisions on routes received via the NetTN VRF connection. To accomplish this, the following is one recommended example. There will be an eBGP peering session supported within the VRF across the connection from the NetTN PER to the NetTN CER (NetTN Provider Edge Router to the NetTN Customer Edge Router). VRF route prefixes (VPN routes) will be exchanged across this link. This propagates the VPN route prefixes to the NetTN CER. From the NetTN CER to the customer router (C router), the use of iBGP is recommended. The use of virtual or physical interfaces for iBGP peering are available. The NetTN CER can be placed into the customer's BGP ASN sending VPN routes to the Customer router as iBGP routes. These iBGP routes can use BGP attributes to appropriately mark the routes. Since the customer site router (C router) will also have a DIA (non-NetTN) connection, a separate BGP session or static route default via the DIA connection will be used to provide Internet routing, depending on the customer relationship with the DIA provider. If the DIA routes received are eBGP routes, than the C router will have learned globally legal prefixes via that connection and can use BGP attributes to sort and manage any duplicate prefixes received by both DIA and NetTN VRF connections. For example, if a globally legal prefix is seen across both the NetTN VPN connection regardless of source VRF and the DIA connection, then the NetTN VPN connection will be preferred because the AT&T managed CER will be configured to set the Local Preference attribute to a higher value than default (default local preference is a value of 100), which will make the NetTN VPN route preferred throughout the customer AS for prefixes learned from the NetTN VPN connection. Another option is the use of eBGP for the NetTN VPN connection. Generally, when eBGP is used, the customer will become responsible for determining routing of prefixes to the preferred NetTN or DIA connection. If using eBGP for both NetTN and DIA connections, a shorter AS Path

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		should be evident in the prefixes learned from the VPN eBGP peer, also causing these routes to be preferred over those learned from the DIA eBGP peer.
2.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.3, page 2)	D.3 Specify how traffic or packet classification will be handled throughout the NetTN WAN infrastructure. **Suggested Contract Language Clarification:** How will this be handled if NetTN manages the entire endsite to include LAN services?
	Response:	LAN services packet classification will be handled using the same DSCP mechanism and classes as the WAN services. We would perform Layer 2 802.1p frame priority marking and mapping it to DSCP at Layer 3, based on class, at the Customer Edge Router. There are multiple methods depending on the customer/provider requirements. The host device could mark the packet with 802.1p frame priority/CoS, and the NetTN LAN switch accepts and passes these thru to the NetTN CER router. Another option is to dedicate ports on the NetTN LAN switch based on desired customer priority and connect host devices to the appropriate NetTN LAN switch ports based on customer need. These different options, and percentage of standardization, influence their respective costs. These options are subject to review and pricing efforts for LAN mgmt service. The RFP did not require pricing for these options; however, such services may be added by amendment at a later date.
3.	08 –D-Network Concept – D.6	What are processes/procedures for determining flat line of service and loss of circuit or circuits for bonded T1s 1 - Flat line of services? 2 - Loss of single circuit in MLPP group?
	Response:	1 - Please refer to AT&T response in T9 for more detail. At a high level service outage events and performance errors per the defined SLA measures are tracked and monitored on a 24x7 basis. As soon as an outage event is detected or a performance threshold is surpassed a ticket is auto-generated via AOTS. OIR will be notified via the eBond interface into their Remedy system at the same instance. 2 - Smarts builds a correlation between each individual T-1 and the virtual Multi-link PPP interface. If the T-1's are connected via T-1 Controller (CSU) built into the router, it would recognize that interface and monitor the T-1 at the Layer 1/2 level.
4.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.12, page 18)	D.12 Specify the technical approach to establishing logical network partitions (VRF) and future TNII Association Partners/Initiatives. **Suggested Contract Language Clarification:** No specifics on approach other then saying they can do it.
	Response:	The technical approach is conforming to RFC 4364, BGP/MPLS VPNs, which supersedes RFC2547. Refer to link http://www.rfc-editor.org/rfc/rfc4364.txt for more information.
5.	08_NetTN_Section_D_Network Concept and	D.13 Specify your solution(s) for supporting this requirement: OIR has locations with multiple agencies, each requiring their own separate

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	Connectivity.doc (Section D, D.13, page 18)	LAN segment. OIR requires that multiple Virtual Local Area Networks (VLANs) be available at these end sites. These VLANs should be delivered via a trunk interface unless separate interfaces are ordered. **Suggested Contract Language Clarification:** Within the physical WAN link? Need clarification
	Response:	For same VRF (e.g. OIR only) requirements: The NetTN CER device will use the CER Ethernet LAN interface to connect to the customer site switch, where VLANs are required. The NetTN CER LAN interface configuration will include sub-interfaces of the physical interface, one for each separate VLAN that is required. Each CER LAN sub-interface will use the encapsulation command of "encapsulation dot1q vlan-id". For multiple VRF requirements: The NetTN CER LAN interface will be configured for sub-interfaces using "encapsulation dot1q vlan-id". Since these different VLANs are intended for different VRFs, then separate IP subnets are recommended per sub-interface/vlan. The VLANs will be trunked across the same physical NetTN CER to NetTN PER WAN link using 802.1q tagging to maintain multiple VRF assignments to the separate sub-interfaces/vlans at the NetTN CER.
6.	09 – E-Bandwidth Requirements – E.5	What is process for obtaining additional QoS markings and is there a charge associated?
	Response:	The Life Cycle Management will work with the association via a Service Request Form (SRF) to determine best practice for adding additional QoS markings. If the State requests additional markings beyond those required by the RFP, the cost would be based upon consulting rates as defined in the CoS; however, if the additional markings involve insignificant changes, ATT would anticipate adding the markings free of charge.
7.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.8, page 39) And 09c_Section_E_Attachment_2_Fast Access DSL Product Information.doc	E.8 Specify the Digital Subscriber Line (DSL) solutions that will be offered to the State for direct access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** Direct Access is mentioned, but no details on how to provide Direct Access. Attachment says 2 year warranty. How does this factor into NetTN? How will DSL communicate directly to each VRF while keeping each VRF separate? Are their separate DSL networks per VRF? In the event of any conflict between the terms or provisions contained in the referenced sections and the State's Contract, the terms of the Contract shall prevail.
	Response:	The NetTN core backbone network will integrate AT&T DSL service as a direct access type into the NetTN solution. This is an AT&T exclusive as we plan to integrate DSL connectivity via our standard AT&T NetVPN platform (an MPLS VPN product), which is available in franchise, in our nine-state, Southeast region. We'll create the appropriate VPNs on the NetVPN platform and integrate the NetTN MPLS VPNs with the NetVPN

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		platform using the MPLS 10A inter-provider network specifications (back to back VPNs/VRFs). This allows NetTN to extend VPNs/VRFs into this nine-state regional platform. A DSL direct access method can therefore be used for a customer site, connecting to the appropriate NetVPN provider edge router and placed into the appropriate "extended" NetTN VPN/VRF. The customer traffic will pass from the NetVPN VPN/VRF, via the 10A inter-provider link, into the matching NetTN VPN/VRF. Each DSL sub-interface will be assigned to the VRF instance specified by the customer at the NetVPN PE router that terminates the PVC provisioned for that customer link. Separation between site groups that are in different VRFs is inherent in the RFC4364 compliant architecture in the NetTN network design. Each DSL site connection is kept separate at layer two through the DSL infrastructure, obviating the need for a separate DSL network per VRF.
8.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.9,page 40)	E.9 Specify any broadband Cable solutions, through Cable TV contractors, that may be offered to the State for direct access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** Does not appear to meet requirements for direct connect **Need discussion on which type of VPN will be used SSL or IPSEC? Is the NETGATE or 831 needed? What about customer provided IPSEC VPN devices?**
	Response:	AT&T can support managed VPN broadband Cable solutions for access to the NetTN Core Backbone. These include SSL, IPSEC and L2TP. For Remote Access Single VPN users the AT&T Global Network Client VPN (AGN software) is required. For SOHO sites with multiple users either a Cisco 831 or Netgate router will be required to establish the VPN tunnel.
9.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.10, page 41)	E.10 Specify any broadband wireless solutions that may be offered to the State for direct access to the NetTN Core Backbone network. Wireless solutions shall include but not limited to broadband access from cellular networks as well as satellite options. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** VPN or FR or both? Clarify when VPN vs. FR would be used.
	Response:	AT&T Mobility 3G users will have direct access to the core as the NetTN core will be directly connected to AT&T Mobility infrastructure using diverse high speed circuits to Chicago and Atlanta. Other Mobility users not using an AT&T service will use the VPN service as defined by the RFP. AT&T has also included the cost of connecting two diverse Mobility locations in the overall cost of the 3G cards.
10.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.11 page	E.11 The TNII Association Partners desire the capability of obtaining increases in bandwidth within a short timeframe. Beyond the logical service of altering CIR values, describe the technical features of the proposed NetTN network that will provide for the

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	44)	bandwidth of specific Service Addresses to be increased within a few hours or days. For example: The NetTN Contractor could install high capacity Access Circuits and offer a reduction in monthly fees for unused capacity. **Suggested Contract Language Clarification:** Add burstable Ethernet services to CoS if required – vendor states only CBW for managed services Didn't address the question of bandwidth throttling. Not sure this meets short timeframe! The State understands that it was not a requirement of the RFP to price the ability to increase bandwidth of specific addresses within a few days or hours.
	Response:	The TNII Association Partners can specify a list of "readily upgradeable" sites where fast-response upgrades will be needed. With a list of those sites specified, AT&T could provision as low as 10M service on as large as a 1G port, for example. This will be accomplished through rate limiting of the traffic via Committed Bandwidth (CBW). With that configuration, we could turn the services up from 10M or 20M to as high as 1G in a short timeframe with a change in the site configuration within the AT&T network. The requirements to accomplish this scenario are as follows: • CE will have to be a Cisco 3750 Switch, or equipment with similar throughput capabilities, at each of these locations • One 1G port will be utilized on the PE for each of these locations • We will provision sites in this manner at a premium monthly charge (amount TBD) where specifically requested for particular locations at the time of initial service installation. The additional monthly charge will defray expenses for the additional hardware components required to support these "readily upgradeable" locations. This will be specified in a future amendment and pricing will be determined at that time. These options will be defined and priced within the Catalog of Services via that future amendment.
11.	10-F-Higher Education – F.3	Specify how Internet 2 will be connected into NetTN & provided to K12, Higher Education & ehealth. Define security sandwich. Where is connection? The proposed NetTN network will provide Internet2 service to the eligible TNII Association partners via a connection to the University of Memphis, (the State I2 connector site).
	Response:	AT&T has proposed to provide Internet 2 connectivity for NetTN qualified end sites from a recognized State of Tennessee Internet 2 SEGP connector. AT&T will continue to support the current Internet 2 connectivity to the University of Memphis with the security being provided by the University. AT&T has ability to provide additional security beyond that which required in the RFP, and can, at the State's request, develop a

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		Statement of Work for that service offering.
12.	10-F-Higher Education – F.5	Collocation must connect to AT&T services – clarify
	Response:	As part of the NetTN bid response AT&T provided pricing for AT&T Network Collocation Services (NCS). NCS is provided in available AT&T central office space and is intended for locating customer equipment within the AT&T services environment for direct connectivity to the AT&T's portfolio of service offerings. The NCS services is not intended to be a Data Center offering or a "Carrier Hotel" type solution for connectivity to multiple carriers. Data Center and Carrier Hotel options were not a requirement of the RFP. AT&T does have Data Center options available for State of Tennessee that can be priced and offered as part of NetTN. Also, if a "Carrier Hotel" type solution is required, then AT&T can pursue a third party vendor that would support the services required by State of Tennessee.
13.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H4, page 4)	H.4 Specify in detail the proposed Remote Access used for direct dial up access to the NetTN Core Backbone network and the cost-effective approach. **Suggested Contract Language Clarification:** Password aging? Password resets with challenge questions? How is ANIRA connected to NetTN, size of connection, what is covered under the $10.95 charge for remote access? VPN access is not direct access Remote Access, customers has a few questions A. VRF built per NetTN VPN? B. What are the IP who assigns them are they public ips or private? C. Password Aging, Password Reset and challenge questions? D. Do they get IP ranges per entity?
	Response:	ANIRA (AT&T Network-based IP VPN Remote Access service is an AT&T managed platform that provides nationwide Dial (Layer2) and Broadband Internet (Layer 3) remote access service. NetTN will use dedicated connections from Nashville and Memphis NAPs to the AT&T VPN service (AVPN) which runs across the AT&T Common Backbone (CBB) which includes the ANIRA platforms. These NetTN to AVPN/AT&T CBB dedicated connections are anticipated to be GbE or some subset, appropriately sized to carry all remote access VRFs as required. The NetTN to AVPN/AT&T CBB connection forms a "VRF extension" allowing a VRF, e.g. OIR VRF, to extend all the way to the ANIRA platform interface. In our NetTN remote access solution, the ANIRA platforms L2TP Interface Gateway and Virtual Interface Gateways (LIG/VIG, etc) connects to the AT&T CBB with AVPN connections, which is an MPLS connection method, then reaches the NetTN backbone via our dedicated AVPN connections. When a direct dial user dials an appropriate telephone number, the user session is connected to the ANIRA LIG/VIG which will perform the appropriate radius authentication, or optional token-based authentication, before allowing the user session into the assigned users NetTN VRF, an "extended" VRF which effectively sets at the AVPN connection to the

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		ANIRA platform. The authenticated user session is assigned an IP address from the following ANIRA options: Both Dynamic and Fixed IP addressing are supported. Dynamic IP addresses may be: (I) ordered and managed by AT&T; or (ii) Customer may elect to provision and manage their dynamic IP addresses via their own DHCP server. Fixed IP addresses are provided to AT&T by the Customer such that AT&T shall pass out the same Customer RA user or VPN device site unique IP address each and every time that user or site uses this service (Due to the Dual VIG Infrastructure each Fixed IP User or device will have 2 IP addresses). • A technical flow is as follows: 1. The user dials the LIG and enters account ID, userID and password 2. The LIG passes the user logon information to the AT&T Service Manager, where authentication takes place (the user ID is revoked after three unsuccessful logon attempts, providing an additional layer of security) 3. User logon information is encrypted via full Commercial Data Masking Facility (CDMF) when using the dialer 4. Upon successful user authentication, the Service Manager passes to the LIG a list of all IP addresses with which the user may communicate. This list is not sent to the end user but rather maintained on, and used by, the LIG to determine whether to pass or discard the packet. • Supports either customer provided or AT&T provided addressing (Registered or unregistered RFC1918 addressing) • Supports fixed IP addressing- User receives the same address each time they connect to the network Once the remote access user session has authenticated and been assigned an IP address, the session flows into the appropriate NetTN firewall context for the appropriate VRF. The NetTN VRF therefore "extends" all the way to the output of the ANIRA platform to accept user sessions into the proper NetTN VRF. Dial access at Layer 2 is therefore a direct access method into the NetTN VRF. The beauty of the ANIRA platform is that it provides direct dial up access nationally. The "Administration Tools for Service Manager" application allows CPOCs to perform password resets and retrieve a list of User IDs in an account for the Remote Access feature. Although the "Administration Tools for Service Manager" application can perform many functions, it is strongly recommended that use be limited to password resets and retrieving a User ID list. Password Aging can be set anywhere from 1 - 998 days, or it can be set to never expire. With passwords managed by a service manager the customer can also force users to use an Extended Password - Indicates whether the user is subjected to IESC (Inter-Enterprise System Connection) controls. A value of Y indicates IESC controls are to be enforced. IESC controls require users to have extended passwords for

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		network logon. An extended password must contain one of the following characters: .?;"()':&
14.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.5 page 18)	H.5 Specify broadband Virtual Private Network (VPN) access to the NetTN Core Backbone from a commercial Internet Service Provider other than NetTN. **Suggested Contract Language Clarification:** IPSEC or SSL? Supports both but no indication of preference. Is it SSL or IPSec what is the Client, IP ranges etc. etc.

	Response:	AT&T can support a managed broadband VPN access to the NetTN Core Backbone from commercial Internet Service Providers through our AT&T Network-based IP VPN Remote Access service (ANIRA) offering. The AT&T ANIRA offering is integrated into the NetTN remote access solution and supports the use of other 3rd party IP providers. The VPN options include L2TP, IPSec, and SSL. For Remote Access Single users the AT&T Global Network Client (AGN software) will be required to establish the VPN. ANIRA users that require single-User access via dial, broadband, or WiFi can use the AT&T Global Network Client (AGN) software. For example, AGN V6.0 has the following features:
		
		• Software client for remote access and VPN
		• Single user interface and log on credentials for WiFi, dial, and broadband
		• Support for roaming WiFi networks, AT&T network and extended access
		• Support for multiple user profiles
		• For all recent versions of Windows
		• User friendly, easy to use, easy to set-up
		• Integrated global dialer software
		  • Single sign-on of dial & VPN connection
		  • Helps selection of local phone number to dial to avoid toll charges
		  • Automatic dialing rules (7, 10, or 11 digits)
		  • Updates to global dial POP database three times a week
		  • Alert the user if a closer dial POP is available at the location user is dialing from
		  • Automatic backup via toll-free 800# if local dial connection fails to establish
		• Support for 3rd party authentication (i.e., customer managed servers)
		  • RADIUS, SecurID, SafeWord, Defender (PassGo)
		• Updates
		  • Updated versions of the software posted on public web-site for download
		  • Users are pro-actively prompted to download updates when available
		• Graphic display of throughput (bytes sent and bytes received)

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		• Dynamic configuration of DNS (original config restored after disconnect)
		• Traveling users can easily change set-up (old connections kept in memory)
		• Inactivity and duration timeouts (even for use with Instant Messaging)
		• Connectivity records maintained for SLA/reporting
		• Help-desk information available, extensive online help
		• Customization & Branding (only available with previous version of the client—V5)
		  • Virtually all text & appearance is customizable (at extra cost, for requirements not specified in the RFP)
		  • Extra setup window can be added to prompt for customer-specific information
		  • Setup/Install options can be pre-configured and/or hidden
		  • Profiles and preferences can be pre-configured
		  • Access and helpdesk numbers can be customized (at extra cost, for requirements not specified in the RFP)
		  • Customized settings are preserved across future upgrades
		• Translations in other major languages (V5 only)
		
		The IP addressing options are as listed in the response to question 18 above.
		
		For SOHO sites with multiple users either a Cisco 831 or Netgate router will be required to establish the VPN tunnel to the VIG.

15.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.6 page 21)	H.6 Specify any Digital Subscriber Line (DSL) solutions that may be offered to the State for access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** CSS or client VPN? Different answer from earlier
	Response:	AT&T offers standard DSL in its territory. AT&T has also partnered with the ILECS in Tennessee and where available AT&T has structured resale agreements with those ILECS to provide those services. This service is based upon a VPN client offering.
16.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H7 page 30)	H.7 Specify the broadband Cable solutions, through Cable TV contractors, that will be offered to the State for access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** CSS ANRIA need explanation when each is used
	Response:	AT&T has partnered with the Cable companies to resale Cable Internet service. These users would access the NetTN backbone over a VPN connection.
17.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.9, page 47)	H.9 Specify how dial-up and VPN connections will be supported, implemented and managed by the Proposer to allow access to the NetTN Core Backbone network. **Suggested Contract Language Clarification:**

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		A lot of standard information about what ANIRA can do but no specifies about what they propose. Will the ANIRA solution for VPN connections to ISP's etc.? Use NetTN internet bandwidth or some other dedicated connection to NetTN.
	Response:	The ANIRA client will provide an IPSec tunnel through underlying provider networks back to the IPSec tunnel terminating device in the AT&T Common Backbone (CBB). Each user session must authenticate to the AT&T Radius service. The AT&T CBB has all NetTN VPNs configured on it. The Radius service on the AT&T CBB will place each IPSec tunnel termination into the corresponding VPN based on the authentication information provided by the user. Each VPN instance on the AT&T CBB will have connections across links into the NetTN network into the corresponding VPN instance on NetTN.
18.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.10, page 50)	H.10 Specify the security methods that will be used by RA. Describe how users will be multi-factor authenticated, how administration can be delegated and how usage and logging can be audited **Suggested Contract Language Clarification:** Information about capabilities but no specifics in exactly what will be used.
	Response:	Several Multi-factor authentication methods are available with ANIRA - • RADIUS • SecurID over RADIUS protocol • SafeWord over RADIUS protocol AT&T will work with the State and TNII Association Partners to determine the best available multi-factor authentication method available given their specific environment. Related to administration. AT&T will work with the State or the Associated TNII Partner to establish a "Customer Point of Contact". Available to the CPOC is the Direct Registration Facility which is offered via the BusinessDirect Web Portal.
19.	12-H –Remote Access – H.11	Clarify database is the same as TNII offering for OIR management of Remote Access see SRF?
	Response:	No. The Remote Access database that is currently used for TNII or OIR will no longer be used. Upon installation of the AT&T Remote Access Solution TNII and OIR will begin using the AT&T Business Direct database. It is AT&T's shared common management platform and tools.
20.	13-I-Quality of Service – I.6	Clarify tools used for QoS monitoring
	Response:	AT&T Advanced Application Traffic Analyzer. ATA is a *differentiator* for AT&T because of the following features: 1. Egress CoS simulation (key feature to fully understand and engineer QoS) 2. Link and CoS Utilization (correlation with link speed and CoS BW) 3. CoS changes simulation ("what if" analysis prior to change

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		in prediction) The AT&T Business Direct Portal allows the authorized user to view the Application Traffic Analyzer reports, define your reports, select your sites; select you scale and select the time zone. The Business Direct Application Analysis Portal allows for drill down capability for IP sources of unmapped traffic and can reveal unknown IP addresses report via a report.
21.	15-K-Multi-point – K.2	SIP not supported – why? RTSP?
	Response:	SIP support is not part of AVCS offering at this time due to varied number of SIP dialing plans. However; AVCS is working with leading manufacturers on this front and once a generally accepted SIP standard is adopted AVCS will work to incorporate SIP support in the future. RTSP stands for Real Time Streaming Protocol – The Real Time Streaming Protocol (RTSP), developed by the IETF and created in 1998 as RFC 2326, is a protocol for use in streaming media systems which allows a client to remotely control a streaming media server, issuing VCR-like commands such as "play" and "pause", and allowing time-based access to files on a server. The sending of streaming data itself is not part of the RTSP protocol. Most RTSP servers use the standards-based RTP as the transport protocol for the actual audio/video data, acting somewhat as a metadata channel.
22.	15_NetTN_Section_K_Multipoint Video Service Requirements.doc (Section K, K.3,page 3)	K.3 State the Multipoint Control Units (MCUs) maximum port size, the proposed ports installed and expansion process. Supply any upgrade information for additional features. **Suggested Contract Language Clarification:** How will MCUs be tied into NetTN? Port size proprietary – clarify how NetTN will be sized for MCU ports also port capability for supporting multiple 768K calls
	Response:	While exact port capacity and bridge configuration are proprietary, AVCS uses Polycom MGC 100 MCUs as the standard video bridge. The bridges are located in Video Network Operations Centers (VNOCs) in Denver, CO, Philadelphia, PA and London, UK. All bridge are controlled remotely via AVCS' in-house enterprise management control software and database. AVCS has produced single videoconferences with over 250 sites running at 384 Kbps with no adverse affect on normal daily videoconference volumes.
23.	15-K-Multi-point – K.6	Clarify features available at no additional charge under CoS rates and specify chargeable features
	Response:	Video Broadcast Meet & Greet - The AT&T conference producer greets all sites at once just prior to meeting start time, and turns the conference over to the host. The conference is then placed into a monitored scanned environment. For assistance, participants would call AT&T's main reservations and help desk number at 866-843-3606 or 303-415-3552. **Included With Service.**

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		Screen Layouts - Since meetings are conducted in a variety of ways, AT&T offers various screen layouts designed to complement the meeting requirements. The desired conference mode must be selected at time of reservation request; otherwise, the default option is always voice activated switching. The following options are available: Voice-Activated Switching - this conference mode is recommended for use in interactive meetings or when most of the participants are expected to share information. Here, all conference participants view the current speaker. The result is that all participants see natural video switching during the conference. Voice-activated switching is always the default conference mode. • Voice-Activated Switching displays the current speaker in full-screen **Included With Service** • When a different video site speaks, then they are viewed by all other participants **Included With Service** Presentation Mode - is ideal for classroom training and instructional meetings where there is one primary speaker and limited interaction from the other participants. Presentation mode allows you to broadcast a single video endpoint to all other endpoints in the conference. During the conference, all endpoints continue to view the presenter, while the presenter sees either the site asking a question or making a comment (through voice- activated switching), or may view multiple sites at once (through Continuous Presence). A specific endpoint must be pre-assigned as the presenter when placing a conference reservation request. This endpoint will remain fixed as the only broadcasting site that all other endpoints will view. **Included With Service** • All participating sites always view the Presenter in full-screen **Included With Service** • The Presenter may view one or several sites at a time (using Continuous Presence) **Upcharge** The following Conference Features are available as options and should be requested at time of conference reservation: Meet and Greet - Video Site by Site - the conference producer greets each site individually as they are added into the conference. This allows for a pre-conference quality check on video and audio connectivity at the specific site level. **Upcharge** Dedicated Conference Producer - ideal for meetings that require a special touch. When this option is selected a Conference Producer is assigned and dedicated to the individual conference to manage the call set-up, monitor the bridge activity and provide assistance during the conference (presentation assistance is included). With the *In-call* monitoring option the Conference Producer remains on the live call to monitor audio and video quality. Any problems and/or special requests are addressed in real-time. With the *Standby* monitoring option the Conference Producer exits the live conference and monitors bridge diagnostics only. The Dedicated Video Conference Producer can easily facilitate Voting and polling, Question and

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		Answer, and Roll Call functionality. **Upcharge** Presentation Assistance - send AT&T your PowerPoint® slides and we will run your presentation for you. This option integrates your presentation with the videoconference. **Upcharge - Requires Dedicated Conference Producer** Continuous Presence - this option displays multiple conference sites on a single screen. Several layout options are available, and they may be changed in real-time during the conference by the AT&T conference producer. **Upcharge** Common Layouts Available: 4 Quadrants (see 4 sites at a time) **Upcharge** Top & Bottom (see 2 sites at a time) **Upcharge** Side-by-Side (see 2 sites at a time) **Upcharge** Five plus one (see 6 sites at a time) **Upcharge** Nine Squares (see 9 sites at a time) **Upcharge** Transcoding - allows videoconferencing systems with different speeds or bit rates, resolution rates, frame rates and audio compression schemes to conference together without requiring all systems to drop to the lowest common denominator, and lets all systems perform at their highest capabilities without compromising quality. **Included With Service** Multipoint Data Collaboration - Through simultaneous video conferencing and data conferencing, multiple participants can view, edit, and collaborate on the same document, spreadsheet, or presentation. There are 2 standards available for Multipoint Data Collaboration: H.239 - Sometimes known as People+Content by Polycom® system users and Duo Video by Tandberg® system users, this standard has become the default for data collaboration in a video environment. More robust and easier to use than T.120, it is supported readily on all newer equipment. **Upcharge** T.120 Document Conferencing* - An older standard that has recently fallen out of favor as it is more difficult to master and not as robust as H.239. In order to utilize this optional feature each participant must have T.120 compliant equipment. **Upcharge** IP / ISDN Gateway Conversion - allows the connection of IP (H.323) video sites into a videoconference with ISDN (H.320) sites. **Included With Service** Audio-only add-on Port - select the number of audio ports for those participants without access to videoconferencing systems so that they may be able to join the meeting: **Upcharge** Unattended Audio Site - Toll Access - participants pay transport charges to the bridge **Upcharge** Unattended Audio Site - Toll Free Access - transport charges included **Upcharge**

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		Communication Line - remain in direct contact with the AT&T conference producer at all times during the conference to provide specific instructions or to resolve troubles. Upcharge Custom Background - adds a professional touch by including your company or organization's logo in the background during call set-up and Meet & Greet. **Upcharge** Conference Recording - simply record the videoconference and output to either videotape (VHS) or CD-ROM. Additional copies are also available upon request. **Upcharge** Satellite Downlink Connection* - allows AT&T to receive a satellite broadcast signal and then re-broadcast to all video sites connected to an AT&T bridged videoconference call. **Upcharge** Event Management Services - offers coordination and assistance with high-profile or special events. AT&T assigns a single point of contact to pull all the details together to customize production solutions for even the most complex events which may include, but is not limited to, the following: Consultation, Event Preparation, Production, and Follow-up. **Upcharge** Streaming Video and Audio - Live or Archive* **Upcharge** * Dedicated Conference Producer required for use of this feature or option The pricing information outlined above was not a requirement of the RFP; however, it may be included in a future amendment.
24.	15-K-Multi-point – K.8	What is rate for ISDN LD charges and how billed?
	Response:	The RFP did not require pricing for ISDN LD charges. The State should be clear that provided pricing did not include ISDN transport. The State may choose to add this service through a future amendment.
25.	K.13	Could a diagram/drawing of the proposed Polycom V2IU-based traversal solution be provided? (The need for H.460 traversal SPECIFIC to bridge connections is questionable for external entities communicating w/ OIR supported-agencies since OIR already provides H.460 traversal capability. If the vendor implements 323 zone controls for the bridging/MCU solution offered, they must describe how it would neighbor without conflict with any existing State (OIR, UT, TBR and/or LLG) H.323 zone control—including current or proposed E.164 and/or URI-based dialing plans for the bridging solution.
	Response:	A copy of the referenced diagram has been provided and is in the Project File.
26.	16-L-video Conferencing – L.2	Clarify process for router issues during video call – communication between video center and NOC
	Response:	AVCS conference producers will always troubleshoot any connection or quality issue during a conference. When the issue is beyond the abilities and tools of a conference producer to fix, the issue is escalated to a helpdesk engineer. The helpdesk engineer has additional network and

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		video knowledge and tools at their disposal. When it is determined that the issue is a network issue outside of the control of AVCS, the helpdesk engineer interfaces with GCSC in order to report the issue and continue troubleshooting procedures. All efforts are made handle these issues during the conference or ideally, during pre-conference set-up time. In the event that an issue cannot be resolved during the conference or will unduly delay or interfere with other conferees, the effected conferee's endpoint will be isolated from the call and audio add-on capabilities will be offered. At all times the host of the call is consulted before this step is taken. All issues are followed-up between the GCSC and AVCS until resolved.
27.	L.3 (iii)	"No show" sites in any conference are charged bridge port fees for scheduled conference duration unless a request to drop that site is made during the duration of the conference. In this case, the charge will be to the next time/billing increment (e.g ¼ hour, etc.)
	Response:	AT&T's Policy is below: Policy on No Shows & Cancellations: (i) Conferences cancelled prior to scheduled setup time are not billable (ii) Conferences cancelled after the scheduled setup time are billed for all bridge ports and options reserved for the call. Network transport charges are not assessed on cancelled conferences, except for any actual bridge dial-out connect time. (iii) "No show" sites in any conference are charged bridge port fees for scheduled conference duration (scheduled start time to end time). For users who drop during a call or if a call ends the user will be billed only for the amount of time the site is active in the call. Public Video Room Rental Cancellations (i) Within 4 business days – Scheduling fee only (ii) Within 3 to 4 business days – Scheduling fee and 50% of room rental (iii) Within 2 business days – Scheduling fee and 100% of room rental Extending a Conference With AT&T's video bridging service, the conference will terminate at scheduled end time unless the Host or a conference participant contacts the AT&T video center to request a time extension at least 5 minutes prior to scheduled end time. However, when a dedicated conference producer is assigned to the conference, AT&T can automatically extend the conference simply by acknowledging that the meeting is still going on. To avoid conference termination issues, we recommend adding 30 minutes of time to your anticipated end time when making a reservation. This provides an extra "buffer" of time should a conference run beyond scheduled end time.

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		In addition, the conference requestor may request a "warning tone" at time of reservation. A warning tone sounds 10 minutes prior to scheduled conference end time and serves as a reminder to the Host to either wrap-up the meeting, or call AT&T to extend the conference. Self-service Conferences (AT&T *Auto Launch*) During the conference, the user may request to have a conference producer join the conference for assistance or call monitoring, etc. If this option is requested, then the conference will be billed using Bridge Port Charges for "Assisted" conferencing as specified in the Pricing section, in lieu of the Bridge Port Charges as specified for AT&T *Auto Launch.* The pricing information outlined above was not a requirement of the RFP; however, it may be included in a future amendment.
28.	18_NetTN_Section_N_Internet Connectivity.doc (Section N, N.7, page 12)	N.7 The Proposer shall provide information on the type of technologies listed below that can provide Internet coverage. If coverage is not available throughout the State, indicate areas of coverage where service is available and not available: a. DSL b. Leased Line c. Optical d. Ethernet e. Wavelength 1.23Gb, 10GB, etc. f. Cable g. Wireless h. Satellite **Suggested Contract Language Clarification:** DSL – Proposing different SLA's than in Specifications. Is DSL service available in entire AT&T area? Page 20 says it is. Notwithstanding any statements made in AT&T's proposal or in response to these questions, in the event of any conflict between the State's SLAs, as detailed in Contract Attachment A, and any statements made by AT&T in the proposal or herein, the State's SLAs shall prevail. Leased Line – A lot of standard AT&T marketing stuff and not really addressing the RFP requirements.
	Response:	AT&T provided response based upon standard Internet service offering not directly connected to the AT&T core. The SLA's are based upon AT&T standard Internet service offerings. AT&T DSL Internet is offered in AT&T territory where available. AT&T has also partnered with ILECS in Tennessee to offer internet where available.
29.	18-N-Internet –N.8	Clarify -The AT&T Managed Token Authentication Service – additional charge or included in remote access rate?
	Response:	The RFP did not require AT&T Managed Token Authentication Service. AT&T offers Managed Token service from several providers. This is an additional charge and not currently proposed. AT&T can work with the Association to define requirements and the vendor of choice and offer a

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		token service
30.	23-S-E-rate-S.5	Clarify SDE monthly bill to F&A will be at discounted rate
	Response:	The State Department of Education (SDE) in order to receive their e-rate benefits must have a bill reflecting the total amount of charges from which the e-rate benefits will be based. A discounted bill showing only the SDE out-of-pocket (after e-rate benefits) fails to document the Gross billing charges upon which the e-rate discount can be applied. Documenting the pre-discount/gross billing figure is a vital audit requirement used to justify the e-rate benefits which SDE will receive. Depending upon the product that SDE elects to purchase and the billing system supporting that product, SDE will be able to minimize their cash flow requirements to the level necessary to pay only their out-of-pocket expenses. The FCC has approved two methods of handing the distribution of these benefits to the applicant without pursuing a reimbursement process where SDE would have been asked to pay their bill in full and then seek reimbursement. Depending upon the product or service being purchased, the billing system in support of that product and the SPIN utilized, SDE will use either the Service Provider Invoice (SPI) process or the AT&T Reimbursement Form (ARF) process. Under the SPI process, SDE would work with our E-rate Support Center to group/detail how their funding request was made. This information contained in a template called the Pre-discount Calculation Grid, will be used to identify the relationship between our various billing items and SDE's funding request numbers (FRN). Once the relationship has been established, the product/service installed and funding approved by USAC, AT&T's E-rate Support Center will work to establish a special Term and Condition (T&C) within the billing system which will calculate an e-rate credit based upon the prior month's eligible product and services and place it on SDE's monthly bill. The bill would then have a full audit trail of services purchased less e-rate credits applied resulting in an adjusted billing amount which SDE would pay. AT&T would then aggregate monthly all of the e-rate credits which they have applied to applicant bills and invoice USAC directly for this amount. This invoice is referred to as USF Form 474 Service Provider Invoice. Unfortunately, not all of our billing systems currently have this capability, for those systems which do not currently have this feature an alternative approach exists The alternative approach is called the AT&T Reimbursement Form (ARF). Under this approach, the process is very similar as SDE will once again work with our E-rate Support Center to build the Pre-discount Calculation Grid, verify the installation to their satisfaction of the product/services and the approval of their funding request. In cooperation with the E-rate Support Center a calculation of monthly e-rate benefits will be determined. This amount will be entered online by SDE requesting that the benefits be provided to them immediately. AT&T will generate a check within approximately two weeks in this amount which SDE could use to pay their bill. The advantage of this process to SDE is that it is much faster and more timely than the BEAR process and doesn't require full payment of the

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		bill prior to its use. AT&T would then aggregate the benefits which were provided under this payment process and once again seek reimbursement from USAC using the USF Form 474 Service Provider Invoice. SDE will be provided on a quarterly basis from USAC a report showing the benefits paid AT&T on their behalf by FRN. Should this amount differ from what SDE has received from AT&T during this timeframe, instructions will be provided to assist SDE from stopping all future payments to AT&T by USAC until these figures can be reconciled. A detailed explanation of the benefit payment process for each of AT&T's SPIN numbers along with E-rate Support Center contact information can be found at www.att.com/erate. In addition, a demo of the AT&T Reimbursement Form (ARF) process can also be found at this site.
31.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.1,page 1)	T.1 Identify the NOC that will serve the TNII Association and the NetTN network. Specify how TNII Association technical staff will communicate with NetTN Contractor technical staff in the NOC, including telephone, e-mail, and other online contact. Identify which secondary NOC, will be used as a backup. **Suggested Contract Language Clarification:** This description does not mention Remedy. How do we access information on orders?
	Response:	The attached presentation covers all aspects of eBonding and does give customer reference examples. As far as development work as it relates to eBonding, the issue becomes how the fields map via the XML interface between the systems. The State will need to have their Remedy personal available to go through the field mappings and there may be some updates necessary on both sides, the State and AT&T, to ensure the fields are mapped appropriately and are passing the necessary information. A copy of the referenced presentation is in the Project File.
32.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.2, page 2)	T.2 Confirm Proposer's Network management System(NMS) and specify in detail, the system that supports the TNII Association: a. Clearly identify the devices and capabilities of the system for generating alarms and alerts. b. Provide examples of output from such system or application screen-shots. c. Specify Contractor policies and procedures that are followed to notify the TNII Association NOSC/NOCs when major or catastrophic alarms/alerts are received. d. Specify the backup system e. Viewing/receiving Alarms and Alerts: Specify what types of alarms and alerts are available for viewing/receiving and how and when they are generated. f. Time Intervals: Identify time intervals Proposer has established

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		that determine when an outage has occurred and when reported to the TNII Association. g. Reaction to Alarms: Specify what immediate steps are taken once an alarm is received. h. Recurring Events: Specify what procedures are in place to mitigate recurring events. i. Scope of Monitoring: Clearly identify, with examples, at what point monitoring ends. **Suggested Contract Language Clarification:** Page 14 - Do the tickets generated and update intervals match RFP requirements? Page 16 – Does this criteria match RFP requirements?
	Response:	Page 14 - The tickets generated timeframe is significantly improved as compared to the requirements of the RFP for all ticket classifications. There is immediate ticket generation and notification provided through the AT&T iGEMS and eBonding platforms, which exceeds the 10 minute and 30 minute notification requirements defined as part of the SLAs. The first critical notification is sent at 30 minutes and then subsequently every hour as defined in the RFP requirements. Page 16 - The escalation and internal notification process of the GCSC and its executive team was disclosed as part of the RFP response to demonstrate AT&T's commitment to service excellence. The chart on Page 16 does not demonstrate the notification process to the State or how tickets are generated, managed, updated and resolved, and should not be viewed as relevant to SLA compliance or non-compliance.
33.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.3, page 26)	T.3 Integration with the Trouble Ticketing System: Specify how the alarm and alert system or application is integrated into the Trouble Ticketing System used to support the NetTN network so that Trouble Tickets can automatically be opened when an alarm or alert is discovered. **Suggested Contract Language Clarification:** Not clear on how Trouble Tickets will move back and forth between AOTS & Remedy. Clarify how eBonding will interface with OIR's remedy system for Trouble tickets and orders. Will OIR be required to do development work? Where, identify customer, is this working today?
	Response:	The attached presentation covers all aspects of eBonding and does give customer reference examples. As far as development work as it relates to eBonding, the issue becomes how the fields map via the XML interface between the systems. The State will need to have their Remedy personal available to go through the field mappings and there may be some updates necessary on both sides, the State and AT&T, to ensure the fields are mapped appropriately and are passing the necessary information.

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		A copy of the referenced presentation is in the Project File.
34.	24-T-Contractor's NOC-T.17	Specify SNMP commands allowed for read only access. Clarify charges for TACACS Read Only access to routers via Telnet
	Response:	The RFP did not require pricing for TACACS Read Only access to routers via Telnet. There is an additional cost for TACACs access via telnet. The TACACs access cost is $10.00 OTC and $1.66 recurring charge per router. SNMP Commands can be referenced in Attachment A on page 9 of the RFP response.
35.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.1, page 1)	U.1 **Core Backbone Availability.** The Core Backbone network infrastructure of the NetTN WAN shall have a minimum monthly network availability factor of 99.999%. Note: the network availability factor must be calculated for the entire Core Backbone network infrastructure and not for a per circuit basis. Specify the formula, metrics and data elements monitored for calculating Core Backbone availability in a 30-day calendar month. Specify your proposed Core Backbone availability factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Change calculation to reflect all core components not just devices The calculation should also include circuits. They only mention devices. What are they counting as a core device?
	Response:	(Total number of WAN interfaces in core x {total number of possible uptime hours - total number of service affecting downtime hours})/ by (total number of WAN interfaces in core x total number of possible uptime hours)
36.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.2,page 1)	U.2 **End Site to Core Backbone Availability.** The network infrastructure consisting of WAN services and the edge devices managed by the Contractor as part of the availability requirement shall have a minimum monthly network availability factor of 99.95%; based on a 30-day month, this equates to 21 minutes of un-scheduled network downtime per end site. Specify the formula, metrics and data elements monitored for calculating End Site to Core Backbone availability in a 30-day calendar month. Specify your proposed End Site to Core Backbone availability factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Calculation should be for connection vs. just circuit. U.2 - Clarify daily measurement Change response to reflect all components – WAN circuit plus edge and PE device and include formula – (total minutes/month minus (Total outage minutes) divided by (minutes/month)

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	Response:	([CE+circuit+PE interface] x {total number of possible uptime hours - total number of service affecting downtime hours})/ by (([CE+circuit+PE interface] x total number of possible uptime hours)
37.	25 –U-Service Levels – U.3	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
38.	25 –U-Service Levels – U.4	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
39.	25 –U-Service Levels – U.5	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
40.	25 –U-Service Levels – U.6	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
41.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.7, page 3)	U.7 **NetTN Edge Device to NAP Average Jitter Measurement.** The NetTN Edge Device to NAP Average Jitter shall be =< 5 ms. Specify the formula, metrics and data elements monitored for calculating the NetTN Edge Device to NAP Average Jitter Measurement. Specify your proposed NetTN Edge Device to NAP Average Jitter Measurement. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Response doesn't make sense. Cut and paste error? What does jitter availability mean? Jitter is not an availability calculation. Change response to include the following: Jitter, the variation in the delay of received packets in a flow, is measured by comparing the interval when RTP packets were sent to the interval at which they were received. For instance, if packet #1 and packet #2 leave 50 milliseconds apart and arrive 60 milliseconds apart, then the jitter is 10 milliseconds. Formula: rtp-jitter-sum / rtp-jitter-count 120 samples/day minus bandwidth utilization >=80% and averaged for 10-hour daily measurement
	Response:	AT&T agrees to the suggested response change
42.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc U.8	U.8 **NetTN Edge Device Errored Packets.** The NetTN Edge Device Errored Packets shall be =< 75% total Errored Packets (e.g., bad packets) per 24 hour day for the entire calendar month. Specify the formula, metrics and data elements monitored for calculating the NetTN Edge Device Hourly Device Errored Packets. Specify your proposed NetTN Edge Device Hourly Device Errored Packets

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		factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** U.8 - AT&T amend response to specify =<75%
	Response:	AT&T agrees with the suggested response change of =<.75%
43.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.11, page 4)	U.11 **Report for End Site to Core WAN Circuit Hourly Average Bandwidth Utilization.** The NetTN Edge Device to Core WAN Circuit Average Hourly Inbound Bandwidth Utilization and the Hourly Average Outbound Bandwidth Utilization: =< 80% average bandwidth utilization per 24 hour day per calendar month. Specify the formula, metrics and data elements monitored for calculating End Site to Core Bandwidth Utilization. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Change response to include formula No specifics on calculation method.
	Response:	The NetTN End Site to Core WAN circuit hourly average bandwidth utilization (inbound/outbound) is measured on an average hourly basis. A reading will be taken every 5 minutes, 12 samples per hour, and 288 samples per 24 hours. The 288 samples minus any 5 minute samples where the average bandwidth utilization is >=80% utilization or minus any samples that were otherwise unavailable, will then be averaged together for the 24 hour measurement, for both inbound and outbound directions. The formulae for determining raw interface utilization for full duplex facilities is listed below: Input utilization = ^ifInOctetsx8x100 ---------- (number of seconds in ^)x IfSpeed Output utilization = ^ifOutOctetsx8x100 ---------- (number of seconds in ^)x IfSpeed [^ refers to Delta] All of the MIB attributes listed above are found in RFC1213 MIB. Details of the MIB variables used in these formulas are as follows: .1.3.6.1.2.1.2.2.1.10 ifInOctets OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Counter MAX-ACCESS read-only

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		STATUS Mandatory DESCRIPTION "The total number of octets received on the interface, including framing characters." ::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 10 } .1.3.6.1.2.1.2.2.1.16 .1.3.6.1.2.1.2.2.1.16 ifOutOctets OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Counter MAX-ACCESS read-only STATUS Mandatory DESCRIPTION "The total number of octets transmitted out of the interface, including framing characters." ::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 16 } .1.3.6.1.2.1.2.2.1.5 ifSpeed OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Gauge MAX-ACCESS read-only STATUS Mandatory DESCRIPTION "An estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth." ::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 5 }
44.	27-W- Performance management – W.1	Change following response to reflect 5 minute sampling - Health Reports are generated over 24 hours using 15 minute samples gathered via SNMP.
	Response:	AT&T plans on polling the devices every minute as defined in the service level agreements, via ICMP or other like technology. AT&T will also poll every 2 minutes via SNMP, which exceeds the requirement as set forth in the service level agreements. For end of month SLA reporting, AT&T will use 5 minute samples, or a more frequent sample, to determine compliance. The 15 minute reference is solely a reference to how the data will be presented in the online reports that will be available via the Business Direct portal.

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45.	27-W- Performance management – W.4	Clarify 1 - Unless specifically requested by the TNII Association Partner, alarming will occur weekdays only. Time periods shown are based on local time. Clarify 2 - In addition, at any time, a TNII Association Partner may request a network consultation for specific performance issues or network enhancement opportunities, which may require capacity planning. Additional charge? Ad hoc reports? Define special report request.
	Response:	(1) The thresholds can be easily set up to exclude certain times that are not of interest (such as overnight or weekends). Finally, the thresholds can be established for GMT or local time (fixed hour offset from GMT). (2) The TNII Association Partners may request a network consultation for specific performance issue or network enhancement opportunities which may require additional capacity planning. There is no additional charge for the consultation and the development of ad hoc capacity management reports.
46.	27-W- Performance management – W.6	Provide procedures that specify when event correlation analysis is initiated and how the results are applied.
	Response:	The Global Client Support Center (GCSC) is responsible for proactively monitoring the NetTN infrastructure to immediately respond and resolve performance issues and errors. As part of the Integrated Global Enterprise Management System (iGEMS), the GCSC tracks events and performance errors utilizing a suite of industry leading tools, including HP OpenView, EMC/SMARTS, and Concord eHealth. The Network Node Mgr accepts the SNMP messages which are then correlated the Smarts In Charge and triggers an alarm even in HP/OVO and a subsequent ticket in AOTS ticketing system.
47.	27-W- Performance management – W.7	Clarify - Unless specifically requested by the TNII Association Partner, alarming will occur weekdays only. Time periods shown are based on local time. Clarify fault outage- A chronic problem is defined as an AT&T fault outage, which occurs 3 times in a rolling 30-day period. Once a problem has been identified as chronic, AT&T GCSC will open a trouble ticket and it will remain open until the Client's Point of Contact agrees the problem is resolved.
	Response:	During on-going operations of the network, there may be faults, which are complex in nature, difficult to resolve or reoccur on a regular basis. A chronic problem is defined as an AT&T fault outage, which occurs 3 times in a rolling 30-day period. Once a problem has been identified as chronic, AT&T GCSC will open a trouble ticket and it will remain open until the Client's Point of Contact agrees the problem is resolved. While a chronic trouble ticket is open, AT&T GCSC will take all reasonable actions to identify and resolve the root cause. This may include running extended stress tests, enlisting the assistance of equipment manufacturers, dispatching on-site technicians and upgrading or replacing suspect

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		equipment. AT&T also utilizes an auditing platform called ACTION- Audit Control to Insure Operations Needs to provide audit control, flagging of critical issues and escalations, and identification "chronic" sites for immediate investigation
48.	27-W- Performance management – W.8	Clarify how incident reports are created and reviewed with Association
	Response:	The AT&T Business Direct Portal contains the information for the TNII Association Partners for Incident Management. The AT&T LCM team will provide regular reports for each TNII Association Partner on a regular basis as mutually agreed upon by the LCM team and the TNII Association partners. Monthly reports will also be produced.
49.	27-W- Performance management – W.10	Verify trouble tickets will be updated as specified in SLAs, A.14, A.15 & A.16
	Response:	Yes, tickets will be updated as specified in the SLA's.
50.	27-W- Performance management – W.11	Verify application monitoring is inherent in managed service
	Response:	The Application Traffic Analyzer (ATA) product performs application level monitoring on the specified devices within the State of Tennessee network. It may not be reasonable to install ATA on all State of TN devices due to capacity constraints at individual site locations. The RFP did not require that ATA be installed on all State of TN devices.
51.	27-W- Performance management – W.12	Change response to 5 minute samples - Health Reports are generated over 24 hours using 15 minute samples gathered via SNMP.
	Response:	AT&T plans on polling the devices every minute as defined in the service level agreements, via ICMP or other like technology. AT&T will also poll every 2 minutes via SNMP, which exceeds the requirement as set forth in the service level agreements. For end of month SLA reporting, AT&T will use 5 minute samples, or a more frequent sample, to determine compliance. The 15 minute reference is solely a reference to how the data will be presented in the online reports that will be available via the Business Direct portal.
52.	28.X.Security- X.5	*(It is assumed that malicious and General NetTN network traffic must traverse the network monitored by the security device in order to be captured) Clarify
	Response:	All traffic must traverse the network monitored by the security device in order to be captured. The goal of a good security posture is to verify that all traffic is monitored. Once the traffic is monitored, network tools are in place to parse the data into meaningful alerts.
53.	28.X.Security- X.6	Clarify - Managed security offering as part of NetTN offering – Is the response for the core or for end sites?
	Response:	The AT&T managed security offering protects both core and end sites through firewall context and IDS and IPS with regard to traffic received from the NetTN Internet Egress connections, passing from these

Item #	RFP Proposal Document Name and Sub Section	Clarification
		connections through the NetTN security perimeter to the targeted NetTN VRF. This security extends to the managed router service at the end-site, which is the demark for managed WAN services. The RFP did not require managed LAN services; however, if the customer chooses to purchase managed LAN services, this service would then extend to those AT&T managed devices as well. While this seeks to protect the described end sites from Internet based attacks, it doesn't protect Intra-VRF site-to site traffic, since this traffic is already inside the NetTN security perimeter. For enhanced, IntraVRF, end site to end site protection, AT&T NetTN is offering options for premise-based firewall/IDS/IPS solution for each end site seeking such protection. Since OIR end sites are anticipated to receive their Internet service from OIR directly, and not the NetTN Internet service, then OIR end sites are subject to the level of firewall/IDS/IPS and security policy that the OIR Internet service is capable of providing. In otherwards, OIR end sites on NetTN receive their Internet service from within the OIR VRF (IntraVRF), traffic which passes from the OIR data center(s) directly into the OIR VRF and then directly to OIR end sites. The AT&T managed security offering is therefore bypassed in these instances. An enhanced, intraVRF, OIR Internet to end site or endsite to end site protection would require an optional premise-based firewall/IDS/IPS solution for each site seeking such protection.
54.	28.X.Security-X.7	Security controls for Inter-VPN traffic will be directed by default routing through the centralized firewall installation to the internet border router (IBR). The IBR, as it has to maintain the return paths from the Internet for every legal prefix within NetTN, will direct the traffic back into the central firewall where it will be forwarded into the destination VPN. Sites within a VPN that have a need for protection from other end-sites in the same VPN will need to purchase managed firewall or IDS services from AT&T Managed Routing Services (MRS). Is this the service included in the CoS – Managed IOS Why reference to AT&T CPE Maintenance?
	Response:	The reference to AT&T CPE Maintenance is because the Central firewalls will be located in the AT&T Central Offices and monitored and managed by GCSC.
55.	29-Y-Configuration – Y.3	Emergency changes must follow defined change mgmt process - The NetTN requester will assume all risk associated to the emergency change request. Any outages or negative impact incurred as a result of the emergency change request will NOT count against SLAs/SLOs. This includes any and all large ticket volumes of Sev.1 outages caused because of the emergency change. AT&T will assume fault (change results in an outage) if the parameter information provided is not properly implemented. The customer will own any impacts with Operational databases being out of step due to the emergency change. Clarify emergency changes must follow defined change mgmt process before the change is implemented, the requesting NetTN engineer request must be reviewed by NetTN vendor engineers to ensure will not impact other customers.

Item #	RFP Proposal Document Name and Sub Section	Clarification
	Response:	AT&T will assume fault (change results in an outage) if the parameter information provided is not properly implemented. The AT&T LCM team and the State of Tennessee will jointly define the emergency change process to ensure impact to the overall network.
56.	29-Y-Configuration – Y.5	Clarify migration orders for NetTN will be input by NetTN vendor with full access by Association partner
	Response:	AT&T will input into the system all migrated orders.
57.	30.Z-General responsibilities – Z.3	Identify by name person with overall responsibility
	Response:	Greg Brown – Resume to follow
58.	32_NetTN_Section_BB_ Billing_Requirements.doc	J.9.b The TNII Association requires all refunds, credits, and Contractor payments must be resolved within a maximum of three billing cycles. Note: J.9.b is found on page 154 of the NetTN RFP and J.1.k is found on page 151 of the NetTN RFP **Suggested Contract Language Clarification:** Add the following sentence: OIR and SDE billing disputes must be resolved in accordance with Contract Attachment J, Section J.1.k.
	Response:	AT&T agrees to the sentence addition.

ATTACHMENT S - Differential services (DIFFSERV)

Office for Information Resources' (OIR) Utilization of Differential Services (DIFFSERV)

This document provides a brief insight into OIR's current plan to utilize DIFFSERV in establishing QoS for OIR supported agencies. Though the document is mainly focused on the current video application, other QoS required applications (such as voice traffic) is anticipated and will need to be accommodated.

The following table is a current OIR listing of the eight levels of IP Precedence with their associated usage types as planned for the current NetTN WAN.

Value	Name	Usage
0	Routine	All customer traffic that is not destined for NetTN Video or the DLSW remote peers.
1	Priority	Available
2	Immediate	Available
3	Flash	DLSW (SNA) this may also be used for important streaming video
4	Flash-override	Video
5	Critical	Voice
6	Network	Reserved for network information (e.g. routing updates, hello packets)
7	Network	Reserved for network information (e.g. routing updates, hello packets)

Current OIR Requirements for H.323 Video

- Quality of Service (QoS) is a requirement, end-to-end, across the WAN core.
- Office for Information Resources (OIR) will mark all H.323 video traffic with OIR's DIFFSERV AF41 (refer to AF Code Policy Table). This marking will occur at the CODEC or the LAN switch. DIFFSERV AF41 equals Decimal value 34, which equals Binary value 100010. IP Precedence reads the first three digits. Binary 100 is IP precedence 4. The formula for the conversion from DIFFSERV to Decimal is below.

> To convert from the AF name to the decimal equivalent, use this simple formula. Think of the AF value as Afxy, the formula is $8x + 2y$ = decimal value.
>
> For Example: AF41 = (8 x 4) + (2 x 1) = 34

- OIR requires that DIFFSERV values be received from the WAN at the destination end-site as they were provided from the sending end-site. The WAN core equipment cannot strip or alter DIFFSERV values for 0 through 5.
- OIR will set the DIFFSERV values and the router will map those settings to the appropriate IP precedence on the NetTN devices.
- OIR Gatekeepers will be used for Call Admission Control (CAC) and will be managed by OIR.
- NetTN H.323 directory services will be ordered only for CODECs establishing sessions with the NetTN MCU.

ATTACHMENT S - Differential services (DIFFSERV)

- Priority queue sizes are to be provisioned on the NetTN routers based on a combination of installed bandwidth and router manufacturer's specifications for queuing H.323 traffic.

AF Code Policy Table

AF Class	Service Descriptor	AF Value	Decimal Value	Class Drop probability	binary value in dscp	IP Prec Value	IP Prec Binary Value	IP Prec Name
5	Voice	EF		n/a		5	101	Critical
4	Platinum Critical	41	34	low	100010	4	100	Flash Override
4	Platinum Important	42	36	medium	100100	4	100	Flash Override
4	Platinum Routine	43	38	high	100110	4	100	Flash Override
3	Gold Critical	31	26	low	011010	3	011	Flash
3	Gold Important	32	28	medium	011100	3	011	Flash
3	Gold Routine	33	30	high	011110	3	011	Flash
2	Silver Critical	21	18	low	010010	2	010	Immediate
2	Silver Important	22	20	medium	010100	2	010	Immediate
2	Silver Routine	23	22	high	010110	2	010	Immediate
1	Copper Critical	11	10	low	001010	1	001	Priority
1	Copper Important	12	12	medium	001100	1	001	Priority
1	Copper Routine	13	14	high	001110	1	001	Priority
Unmarked	Best Effort	N/A		N/A	N/A	0	000	Routine

CONTRACT SUMMARY SHEET

021908

RFS #	Contract #
317 . 03 — 154 — 07	FA-09-25220-00

State Agency	State Agency Division
Department of Finance and Administration	Office for Information Resources

Contractor Name	Contractor ID # (FEIN or SSN)
AT&T Corporation	☐ C- or ☒ V- 13-4924710

Service Description

Network Tennessee - NetTN Services

Contract Begin Date	Contract End Date	SUBRECIPIENT or VENDOR?	CFDA #
July 1, 2008	June 30, 2018	VENDOR	

Mark Each TRUE Statement

☒ Contractor is on STARS ☒ Contractor's Form W-9 is on file in Accounts

Allotment Code	Cost Center	Object Code	Fund	Funding Grant Code	Funding Subgrant Code
317.03	205	060	12		

FY	State	Federal	Interdepartmental	Other	TOTAL Contract Amount
2009			$7,471,591.00		$7,471,591.00
2010			$27,400,000.00		$27,400,000.00
2011			$31,780,000.00		$31,780,000.00
2012			$38,336,800.00		$38,336,800.00
2013			$47,752,576.00		$47,752,576.00
2014			$66,854,095.00		$66,854,095.00
2015			$81,593,329.00		$81,593,329.00
2016			$93,933,039.00		$93,933,039.00
2017			$108,428,481.00		$108,428,481.00
2018			$99,922,610.00		$99,922,610.00
TOTAL			$603,472,521.00		$603,472,521.00

COMPLETE FOR AMENDMENTS ONLY

FY	Base Contract & Prior Amendments	THIS Amendment ONLY
TOTAL		
End Date		

State Agency Fiscal Contact & Telephone #

Maureen Abbey, 741-6070

State Agency Budget Officer Approval

Maureen Abbey

Funding Certification (certification required by T.C.A. § 9-4-5, that there is a balance in the appropriation from which the obligated expenditure is required to be paid that is not otherwise encumbered to pay obligations previously incurred)

Contractor Ownership (complete for ALL base contracts - N/A to amendments or delegated authorities)

☐ African American ☐ Person w/ Disability ☐ Hispanic ☐ Small Business ☐ Government
☐ Asian ☐ Female ☐ Native American ☒ NOT Minority/Disadvantaged ☐ Other

Contractor Selection Method (complete for ALL base contracts - N/A to amendments or delegated authorities)

☒ RFP ☐ Competitive Negotiation * ☐ Alternative Competitive Method *
☐ Non-Competitive Negotiation * ☐ Negotiation w/ Government (ID, GG, GU) ☐ Other *

Procurement Process Summary (complete for selection by Non-Competitive Negotiation, Competitive Negotiation, OR Alternative Method)

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OFFICE OF LEGISLATIVE

CONTRACT
BETWEEN THE STATE OF TENNESSEE,
DEPARTMENT OF FINANCE AND ADMINISTRATION
AND
AT&T CORPORATION

This Contract, by and between the State of Tennessee, Department of Finance and Administration, hereinafter referred to as the "State" and AT&T Corporation, hereinafter referred to as the "Contractor," is for the provision of NetTN services, as further defined in the "SCOPE OF SERVICES."

The Contractor is A FOR-PROFIT CORPORATION.

Contractor Vendor Identification Number: 13-4924710
Contractor Address: 333 Commerce, Suite 2101, Nashville, TN 37201
Contractor Place of Incorporation or Organization: Delaware

A. SCOPE OF SERVICES:

A.1. The Contractor shall provide all service and deliverables as required, described, and detailed by this Scope of Services and shall meet all service and delivery timelines specified in the Scope of Services section or elsewhere in this Contract.

Contract Section A outlines the scope of services and deliverables the State shall require the Contractor to provide. It also describes the level of revenue sharing required by the State. The scope of service for Network Tennessee (NetTN) shall be demanding in nature, and the Contractor must meet the requirements detailed in this Contract as well as all requirements imposed by Additional Documents listed in Contract Section E.7.

A.2. <u>Network Concept and Connectivity</u>

A.2.a. The Contractor is responsible for the design, construction, implementation and management of a flexible and scalable, high-speed, statewide Optical Transport Network (OTN) infrastructure. During the implementation and migration of existing sites, the NetTN network will run in parallel and directly communicate to the existing networks, which are known as the TNII Network.

A.2.b. The Contractor will be responsible for the placement of at least three Network Access Points (NAPs), one each, in Nashville, Knoxville, and Memphis. For redundancy purposes, the NAPs are required and must mesh together with redundant links.

A.2.c. The NetTN Contractor is required to provide Ingress/Egress to two different Internet Service Providers in two different NAPs with automatic failover.

A.2.d. All Core Network locations (NAPs or Points of Presence [POPs]) shall have circuit diversity (different fiber sheath and fiber route) for active redundancy to other Core Network locations with the same bandwidth availability to ensure reliability of the Core Network.

A.2.e. The Contractor will design, deliver, install and manage all the necessary bandwidth, network hardware and software systems for the TNII Association partners: the State of Tennessee, Department of Finance and Administration, Office for Information Resources (OIR); Tennessee Board of Regents (TBR); University of Tennessee (UT); State of Tennessee Department of Education (SDE); and local government individual End Sites for NetTN services. It is the intent of this managed service to provide a technical infrastructure for TNII Association Partners and end users to access, utilize and leverage Internet and WAN based resources as effectively as possible and meet the technical specifications. The Contractor is responsible for a secure logical VRF (Virtual Route Forwarding) for each current and future TNII Association Partner.

A.2.f. SDE service shall include Internet Access and bundled Internet services to include management of electronic mail services, security, network management, and operational support of the SDE VRF of the NetTN network. SDE locations shall be in compliance with E-Rate guidelines for Priority 1 E-Rate funding (see Contract Section A.3 below).

A.2.g. The Contractor will design, deliver, install and manage all the necessary bandwidth, network hardware and software systems for non-profits who are providing government-related services.

A.2.h. The Contractor shall provide Universal Access pricing, as listed in the Contract Attachment B, NetTN Catalog of Service Offerings, for End Site locations desiring Wide Area Network (WAN) transport from the NetTN network infrastructure anywhere within the State. Universal Access pricing shall be defined as a single price structure for the same WAN connectivity service anywhere within the State of Tennessee.

A.2.i. Support for mobile end users, telecommuters, and access from home computers into the NetTN wide area network is required. Remote access refers to network connections that are temporary by nature originating from a remote location. The NetTN Remote Access analog solution shall provide a secure multi-factor authenticated access by using firewalls, network Intrusion Detection and Protection Systems as described herein. OIR currently has 2700 dial-up accounts and 1100 3G users that allow access to the TNII network. The TNII Association requires remote access options to include but not be limited to:

i. Wireless Access

(1) 3G
(2) 4G
(3) Wi-Fi
(4) WiMAX

ii. Broadband Internet Services

(1) DSL
(2) Cable

iii. Analog Dial-up

A.2.j. The Contractor shall maintain Quality of Services (QoS) requirements that are outlined in this Contract for the NetTN network. The Contractor must also implement network and performance management software that can verify QoS requirements are being met.

A.2.k. The Contractor shall provide video communications to include multipoint and point-to-point video conferencing in addition to streaming video with a comprehensive scheduling system.

A.2.l. The NetTN Contractor shall provide the network infrastructure necessary to support IP Multicast services.

A.2.m. The TNII Association Partners will be looking for new innovative and cost effective methods for Internet delivery from the NetTN Contractor, both managed and unmanaged (Direct Internet Access). The following is a list of technologies that will be considered:

i. Optical (OC-3, OC-12, etc.)
ii. Ethernet (2 Mbps, 4 Mbps, 8 Mbps, 10 Mbps, 1 Gbps, etc.)
iii. Leased line (T-1, DS3, etc.)
iv. DSL (ADSL, SDSL)
v. Cable

vi. Wireless
- Wi-Fi
- WiMAX

vii. Other applicable technologies

A.2.n. The Contractor shall be responsible for providing content filtering. For SDE, the Contractor shall be required to provide a solution that complies with the Children's Internet Protection Act (Pub. L. 106-554), Title XVII-Children's Internet Protection.

A.2.o. Upon transition of SDE to NetTN, the Contractor shall provide email services including management and administrative functions required for email support to NetTN SDE subscribed users. The Contractor will be responsible for the implementation and transition from the existing SDE Contractor to the NetTN network.

A.2.p. The Contractor shall be responsible for providing DNS services.

A.3. Universal Services Fund. Support for Universal Services Fund: The Universal Services Fund (USF) provides communities across the country with affordable telecommunication services. The Universal Services Administrative Company (USAC) manages the fund. The Schools and Libraries Universal Service Support Mechanism (E-Rate) provides discounts to assist most schools and libraries in the United States in obtaining affordable telecommunications and Internet access. Rural Health Care is a universal service support mechanism that provides reduced rates to rural Health Care Providers (HCPs) for telecommunications services related to the use of telemedicine & telehealth. The Contractor must provide a network that will allow the schools and libraries in Tennessee to qualify for Universal Services Administrative Company (USAC) Funds. The network must allow the Rural Health Care providers in Tennessee to qualify for Universal Services Administrative Company (USAC).

A.3.a. E-Rate Service Provider Compliance Requirements. The Contractor will comply with all service provider related requirements associated with the USAC's Schools & Libraries E-rate Program. (http://www.universalservice.org/sl/providers/). The following defines the mandatory requirements for the Contractor to be in compliance with the E-Rate rules and regulations as they pertain to successfully submitting a bundled K12 service offering. The K12 bundled Internet service offering must provide a solution that complies with these requirements as part of their overall service offering. Contractor's failure to meet these requirements will be cause for the State to immediately terminate the contract and pursue a cause of action for damages.

i. The NetTN Contractor must be an eligible telecommunications provider and comply with all service provider related requirements associated with the USAC's Schools & Libraries E-rate Program.

ii. The E-rate Program is built on the foundation of self-certification. The service provider who participates in the E-rate Program has a responsibility to educate themselves about the Program requirements and timelines. Certain service provider requirements are outlined in the Schools and Libraries Division (SLD) Guide to Service Provider Participation in the E-Rate, which is located on the SLD web site at www.universalservice.org/sl. The SLD web site contains other pertinent information relevant to service providers.

iii. The NetTN Contractor must be in compliance with the E-rate Program rules at all times. In the event that the SLD determines that the service provider has not acted in compliance with Program rules, it can result in denial of funding, reduction in funding, cancellation of funding (a commitment adjustment), audit or other investigation, for which the service provider will take full responsibility.

iv. The NetTN Contractor will be registered with USAC by filing FCC Form 498, Service Provider Information Form. In addition, each K-12 service provider must have on file with USAC FCC Form 473, Universal Service for Schools and Libraries Service Provider Annual Certification Form.

v. The NetTN Contractor must comply with and/or assist the State in the following E-Rate

related matters:

(1) The NetTN Contractor must assist in the FCC Form 471 process.

(a) The Contractor will provide the State information about the technology, the products and the services that are being provided.

(b) The Contractor will provide information that the State can include with their application, as the supporting documentation, which describes in detail the services being ordered.

(c) If the State decides to do a service substitution, the Contractor will detail how the original request is being met by the newly desired configuration.

(d) The Contractor will provide clarification, as necessary, to the State about billing account numbers, contract numbers, phone numbers, ineligible components (if any), and other details of existing services.

(e) The Contractor will provide the State all information about Service Provider Identification Numbers (SPIN) numbers and company names.

(f) The Contractor will provide the State backup documentation and information during the Program Integrity Assurance (PIA) staff application review.

(g) The Contractor will provide the State with information during the preparation of FCC Form 471.

(h) The Contractor will review the Receipt Acknowledgement Letter (RAL) and provide written notifications to the State of the corrections that are required.

(i) The Contractor will make the necessary corrections based on the notifications provided to the State.

(j) The Contractor will review the Funding Commitment Decisions Letter (FCDL) to insure its accuracy. The Contractor will provide written notification of any problems to the State. The Contractor will provide information for the State to file an appeal and/or make corrections in accordance with the timelines published by USAC at www.universalservice.org/sl.

(k) The Contractor will assist in the FCC Form 486 process. The Contractor will provide the State with information relevant to the actual start date of services. The Contractor will monitor the Form 486 filing to ensure that the State does not miss any Form 486 deadlines.

(l) The Contractor will monitor the Form 472 filing to ensure that the State does not miss any Form 472 deadlines.

A.4. On-going Network Management Services

A.4.a. The Contractor shall include a comprehensive network management service to support the new NetTN WAN infrastructure; various network layer protocols, and the Edge Device equipment that comprises the new, NetTN WAN infrastructure.

The TNII Association has defined the following as the outsourced network management domain:

i. WAN communication circuits
ii. End-to-end connectivity between the NetTN Core Network and End Sites
iii. Edge devices
iv. Video Communications Gatekeepers where required
v. All other WAN devices or services identified by the TNII Association.

A.4.b. The functional requirements and specifications for network management functionality and services fall into the following categories:

i. Fault Management – Fault and Problem management is a process within Network Operations responsible for applying proven and consistent analytical approaches to network problem determination, isolation, and resolution. The primary objective is to minimize network interruptions that would negatively impact service levels to the end user. The NetTN Contractor's Fault and Problem management service must interface to the existing OIR Network Operations and Security Center (NOSC) infrastructure and any other TNII Association Partner delegated to problem resolution.

ii. Performance Management – Network Capacity and Performance management shall be a functional area within the NetTN Contractor's overall network management service offering. Performance management is focused on capturing and analyzing network component utilization data. Optimization of network capacity and performance is accomplished by adjusting parameters within the network's design constraints. The NetTN Contractor's proactive Performance management service shall provide monthly network performance reports to support the SLAs designated as Attachment A of this NetTN RFP.

iii. Configuration Management – Configuration management is the process within Network Operations responsible for maintaining a database of technical information on all network components and End Site connections to the new NetTN WAN infrastructure. Moves, adds, changes and deletes (MACD) for all End Site connections must be part of the overall Configuration Management service offering. In addition, configuration information shall be required to support the Fault and Problem management functions of the Network Operations Center during problem identification and resolution.

iv. Security Management – Network Security management is the process within Network Operations that implements and enforces NetTN security policies and procedures to protect the NetTN WAN infrastructure from unauthorized access, modification, disruption or destruction. The NetTN Contractor's on-going security management service and practice must include internal security audits, verification testing, and monitoring to accommodate the security requirements desired by the TNII Association. The TNII Association, or their delegated party, must also be capable of viewing and auditing routing and switching configurations respective to the ownership of the data in question traversing the NetTN Network. In the case of information security incidents or investigations, information security personnel employed by the State of Tennessee, The University of Tennessee (UT), and Tennessee Board of Regents (TBR) SDE or local government must have the capability to analyze and determine course of action while working with the Contractor. The TNII Association, at its sole discretion, may also require a security audit by a third party every six months.

v. Accounting Management – Accounting and Cost Management is an ongoing function within Network Operations with two functions. The first is the monitoring and control of the cost of the network, both capital and operating expenses. The second is the administration of a billing scheme for the Universal Access pricing that is being delivered to the NetTN End User community. The billing scheme must fulfill and meet the requirements stated in Contract Attachment J, Billing Requirements.

A.4.c. Network Operations Center (NOC)

The Contractor must have a 24x7 Network Operations Center (NOC). The NOC shall provide constant monitoring and dedicated network management services required by the State in this Contract.

For OIR, the Contractor's NOC must use the State's Remedy system (a single Remedy database shared by both the Contractor and the State) in order to interface with the OIR NOSC. Remedy shall be the system used to open and close all tickets to be acted upon by the Contractor.

The Board of Regents (TBR), UT, SDE (K-12), and local government shall also require the use of a trouble ticketing system that shall be separate from the trouble ticketing database utilized by OIR. The Contractor shall provide options to interface the Contractor's trouble ticketing system to existing trouble ticketing systems utilized by these entities. For entities that do not have trouble ticketing systems, the Contractor will be responsible for providing web-based access to the contractor's trouble ticketing system for searching, viewing and extracting information.

The Contractor must define and establish efficient standard operating procedures to describe in detail the interactions between the Contractor's NOC with the OIR NOC, and with key operational personnel at TBR, UT, and K-12. This shall be paramount to ensure a smooth and seamless transition for the future network management responsibility.

A.5. Implementation of the New NetTN Network and Services

A.5.a. The Contractor shall update and continually maintain the NetTN Network and Services End Site cutover and implementation plan (the "Implementation Plan") that was submitted in tentative form as a part of the Proposal. This Implementation Plan shall contain specific detail about how individual OIR, TBR, UT, SDE and local government End Sites shall be transitioned to the new NetTN network. The TNII Association shall work with the Contractor as needed to construct and continually modify the Implementation Plan. This plan shall be based on input provided by the TNII Association to minimize disruption of services and work flow at End Site locations and maximize available resources.

A.5.b. Maintaining Network Availability

The current TNII network is in production and the implementation of the new, NetTN WAN infrastructure must be transparent and seamless. The Contractor shall maintain and provide to the TNII Association, upon request, a fall back plan if the migration and implementation cutover of End Site locations proves to be unreliable and disruptive.

A.6. Upon request of the TNII Association, and as applicable by law, the Contractor shall comply with all CALEA requirements applicable to the NetTN network or End Site users.

A.7. As other services become available through technological developments, the Contractor will be required to make these services available to the TNII Association. The Contractor and the TNII Association will mutually decide if the service is beneficial to TNII Association Partners and should be added to the contract, in accordance with contract Section E.19. Services added will require agreement regarding the service level factors and the cost.

A.8. Service Level Agreements (SLA)

Service level agreements (SLAs) and Contractor performance commitments are specified in this Contract, in Attachment A. The Contractor shall be responsible for generating monthly network management reports as well as providing network management data to the TNII Association for

monitoring and verifying Contractor compliance with the SLAs and commitments defined in this contract.

A.9. NetTN Administrative Fee

The Contractor shall remit an amount monthly to the State (Department of Finance and Administration Office of Business and Finance) equal to 2% of the net monthly invoices submitted by the Contractor for NetTN services provided by the Contractor for all Tennessee public entities (OIR, SDE [K-12], UT, TBR, local governments and Non-profits). See Contract Section C.9 for details regarding the calculation of the remittance amount. The 2% fee will fund the budget for the TNII Executive Director and the staff for the TNII Association. This remittance shall be made in accordance with the terms of a separate "NetTN Administrative Fees" contract, which shall be entered into by the parties. Note: The amount of the 2% fee is not E-Rate eligible.

A.10. Contractor Licensure and Work Procedures

A.10.a. The Contractor is responsible for all licenses, certifications, permits, etc. required for completion of the work as required by this Contract.

i. Tennessee Contractor license(s) will be required. The following contractor license classifications are considered acceptable: E; E-D; E-F; E-G; E-J; CE; CE-D; CE-F; CE-G; CE-J; S-Telecommunications; S-Fiberoptic; or S-Low Voltage Computer Wiring.

ii. These classifications are outlined in Rule 0680-1-.16 under Electrical Contracting and under Specialty.

A.10.b. The Contractor must replace or restore (at least to the original condition) any damage to floor, ceiling, walls, furniture, landscape, etc. caused by its personnel and/or operations, at the Contractor's expense.

A.10.c. During site installation/construction, the Contractor must maintain a clean and safe working environment for not only Contractor staff, but also State workers and the public.

i. The Contractor must minimize disruptions to the State work force as much as possible.

ii. The Contractor must leave all work areas secured, safe, and clean after stopping for the day.

A.10.d. The Contractor must use the State's (or the requesting entity's) work order system to receive and update work orders. All work order direction MUST be in written form (electronic or paper), with the exception of stop work orders, which may be given verbally (followed by written notification). All work orders must be completed on time as defined by the 'due date' on the work order issued by the State.

A.11. NetTN and TNII Names are Synonymous

For the purposes of all contracts, grants, or other documents outside of the Network Tennessee - NetTN Contract that make reference to "TNII," it should be understood that, upon approval of this Contract, NetTN services replace, or over time will replace, the services known as Tennessee Information Infrastructure (TNII) and that the terms NetTN and TNII are considered synonymous names for the State's private telecommunications network.

B. CONTRACT TERM:

This Contract shall be effective for the period commencing on July 1, 2008, and ending on June 30, 2018. The State shall have no obligation for services rendered by the Contractor which are not performed within the specified period.

C. PAYMENT TERMS AND CONDITIONS:

C.1. Maximum Liability. In no event shall the maximum liability of the State under this Contract exceed Six Hundred Three Million, Four Hundred Seventy-Two Thousand, Five Hundred Twenty-One Dollars and No Cents ($603,472,521.00). The Service Rates in Section C.3 shall constitute the entire compensation due the Contractor for the Service and all of the Contractor's obligations hereunder regardless of the difficulty, materials or equipment required. The Service Rates include, but are not limited to, all applicable taxes, fees, overheads, and all other direct and indirect costs incurred or to be incurred by the Contractor.

The Contractor is not entitled to be paid the maximum liability for any period under the Contract or any extensions of the Contract for work not requested by the State. The maximum liability represents available funds for payment to the Contractor and does not guarantee payment of any such funds to the Contractor under this Contract unless the State requests work and the Contractor performs said work. In which case, the Contractor shall be paid in accordance with the Service Rates detailed in Section C.3. The State is under no obligation to request work from the Contractor in any specific dollar amounts or to request any work at all from the Contractor during any period of this Contract.

C.2. Compensation Firm. The Service Rates and the Maximum Liability of the State under this Contract are firm for the duration of the Contract and are not subject to escalation for any reason unless amended.

C.3. Payment Methodology. The Contractor shall be compensated based on the Service Rates herein for units of service authorized by the State in a total amount not to exceed the Contract Maximum Liability established in Section C.1. The Contractor's compensation shall be contingent upon the satisfactory completion of units of service or project milestones defined in Section A. The Contractor shall be compensated based upon the rates approved and accepted by the State in the NetTN Catalog of Service Offerings, Contract Attachment B.

The Contractor shall submit monthly invoices, in form and substance acceptable to the State as outlined in Contract Attachment J, Billing Requirements, with all of the necessary supporting documentation, prior to any payment. Such invoices shall be submitted for completed units of service or project milestones for the amount stipulated.

C.4. Travel Compensation. The Contractor shall not be compensated or reimbursed for travel, meals, or lodging.

C.5. Payment of Invoice. The payment of the invoice by the State shall not prejudice the State's right to object to or question any invoice or matter in relation thereto. Such payment by the State shall neither be construed as acceptance of any part of the work or service provided nor as an approval of any of the amounts invoiced therein.

C.6. Invoice Reductions. The Contractor's invoice shall be subject to reduction for amounts included in any invoice or payment theretofore made which are determined by the State, on the basis of audits conducted in accordance with the terms of this Contract, not to constitute proper remuneration for compensable services.

C.7. Deductions. The State reserves the right to deduct from amounts which are or shall become due and payable to the Contractor under this or any contract between the Contractor and the State of Tennessee any amounts which are or shall become due and payable to the State of Tennessee by the Contractor.

C.8. Automatic Deposits. The Contractor shall complete and sign an "Authorization Agreement for Automatic Deposit (ACH Credits) Form." This form shall be provided to the Contractor by the

State. Once this form has been completed and submitted to the State by the Contractor all payments to the Contractor, under this or any other contract the Contractor has with the State of Tennessee shall be made by Automated Clearing House (ACH). The Contractor shall not invoice the State for services until the Contractor has completed this form and submitted it to the State.

C.9. Calculation of NetTN Administrative Fee. Along with each monthly invoice submitted for payment of NetTN services provided, the Contractor shall remit to the State the NetTN Administrative Fee. For each month, this Fee shall be calculated as follows:

Net Monthly Invoice Amount X .02

"Net Monthly Invoice Amount" is the total monthly charges for any TNII Association authorized line items of service (from the NetTN Catalog of Service Offerings), less any charges that cannot be driven directly to a valid billing number.
The first month's remittance may be delayed for 30 days to allow the contractor time to receive payment from the State for the first month's service. All other remittances, beginning with the second month's invoice, must be remitted along with the invoice for that month.

D. STANDARD TERMS AND CONDITIONS

D.1. Required Approvals. The State is not bound by this Contract or any amendment thereof until it is approved by the appropriate State officials in accordance with applicable Tennessee State laws and regulations.

D.2. Modification and Amendment. This Contract may be modified only by a written amendment executed by all parties hereto and approved by the appropriate Tennessee State officials in accordance with applicable Tennessee State laws and regulations.

D.3. Termination for Convenience. The State may terminate this Contract without cause for any reason. Said termination shall not be deemed a Breach of Contract by the State. The State shall give the Contractor at least sixty (60) days written notice before the effective termination date. The Contractor shall be entitled to receive compensation for satisfactory, authorized service completed as of the termination date, but in no event shall the State be liable to the Contractor for compensation for any service which has not been rendered. Upon such termination, the Contractor shall have no right to any actual general, special, incidental, consequential, or any other damages whatsoever of any description or amount.

D.4. Termination for Cause. If the Contractor fails to properly perform its obligations under this Contract in a timely or proper manner, or if the Contractor violates any terms of this Contract, the State shall have the right to terminate the Contract and withhold payments in excess of fair compensation for completed services.

a. The State will provide notification of termination for cause in writing. This notice will: (1) specify in reasonable detail the nature of the breach; (2) provide the Contractor with an opportunity to cure, which must be requested in writing no less than 10 days from the date of the Termination Notice; and (3) shall specify the effective date of termination in the event the Contractor fails to correct the breach. The Contractor must present the State with a written request detailing the efforts it will take to resolve the problem and the time period for such resolution. This opportunity to "cure" shall not apply to circumstances in which the Contractor intentionally withholds its services or otherwise refuses to perform. The State will not consider a request to cure contract performance where there have been repeated problems with respect to identical or similar issues, or if a cure period would cause a delay that would impair the effectiveness of State operations. In circumstances where an opportunity to cure is not available, termination will be effective immediately.

b. Notwithstanding the foregoing, the Contractor shall not be relieved of liability to the State for damages sustained by virtue of any breach of this Contract by the Contractor.

D.5 Subcontracting. The Contractor shall not assign this Contract or enter into a subcontract for any of the services performed under this Contract without obtaining the prior written approval of the State. If such subcontracts are approved by the State, they shall contain, at a minimum, sections of this Contract below pertaining to "Conflicts of Interest," "Nondiscrimination," and "Records" (as identified by the section headings). Notwithstanding any use of approved subcontractors, the Contractor shall be the prime contractor and shall be responsible for all work performed.

D.6. Conflicts of Interest. The Contractor warrants that no part of the total Contract Amount shall be paid directly or indirectly to an employee or official of the State of Tennessee as wages, compensation, or gifts in exchange for acting as an officer, agent, employee, subcontractor, or consultant to the Contractor in connection with any work contemplated or performed relative to this Contract.

D.7. Nondiscrimination. The Contractor hereby agrees, warrants, and assures that no person shall be excluded from participation in, be denied benefits of, or be otherwise subjected to discrimination in the performance of this Contract or in the employment practices of the Contractor on the grounds of disability, age, race, color, religion, sex, national origin, or any other classification protected by Federal, Tennessee State constitutional, or statutory law. The Contractor shall, upon request, show proof of such nondiscrimination and shall post in conspicuous places, available to all employees and applicants, notices of nondiscrimination.

D.8 Prohibition of Illegal Immigrants. The requirements of Public Acts of 2006, Chapter Number 878, of the state of Tennessee, addressing the use of illegal immigrants in the performance of any contract to supply goods or services to the state of Tennessee, shall be a material provision of this Contract, a breach of which shall be grounds for monetary and other penalties, up to and including termination of this Contract.

a. The Contractor hereby attests, certifies, warrants, and assures that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract. The Contractor shall reaffirm this attestation, in writing, by submitting to the State a completed and signed copy of the document as Attachment C, hereto, semi-annually during the period of this Contract. Such attestations shall be maintained by the contractor and made available to state officials upon request.

b. Prior to the use of any subcontractor in the performance of this Contract, and semi-annually thereafter, during the period of this Contract, the Contractor shall obtain and retain a current, written attestation that the subcontractor shall not knowingly utilize the services of an illegal immigrant to perform work relative to this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant to perform work relative to this Contract. Attestations obtained from such subcontractors shall be maintained by the contractor and made available to state officials upon request.

c. The Contractor shall maintain records for all personnel used in the performance of this Contract. Said records shall be subject to review and random inspection at any reasonable time upon reasonable notice by the State.

d. The Contractor understands and agrees that failure to comply with this section will be subject to the sanctions of Public Chapter 878 of 2006 for acts or omissions occurring after its effective date. This law requires the Commissioner of Finance and Administration to prohibit a contractor from contracting with, or submitting an offer, proposal, or bid to

contract with the State of Tennessee to supply goods or services for a period of one year after a contractor is discovered to have knowingly used the services of illegal immigrants during the performance of this Contract.

e. For purposes of this Contract, "illegal immigrant" shall be defined as any person who is not either a United States citizen, a Lawful Permanent Resident, or a person whose physical presence in the United States is authorized or allowed by the federal Department of Homeland Security and who, under federal immigration laws and/or regulations, is authorized to be employed in the U.S. or is otherwise authorized to provide services under the Contract.

D.9. Records. The Contractor shall maintain documentation for all charges under this Contract. The books, records, and documents of the Contractor, insofar as they relate to work performed or money received under this Contract, shall be maintained for a period of three (3) full years from the date of the final payment and shall be subject to audit at any reasonable time and upon reasonable notice by the State, the Comptroller of the Treasury, or their duly appointed representatives. The financial statements shall be prepared in accordance with generally accepted accounting principles.

D.10. Monitoring. The Contractor's activities conducted and records maintained pursuant to this Contract shall be subject to monitoring and evaluation by the State, the Comptroller of the Treasury, or their duly appointed representatives.

D.11. Progress Reports. The Contractor shall submit brief, periodic, progress reports to the State as requested.

D.12. Strict Performance. Failure by any party to this Contract to insist in any one or more cases upon the strict performance of any of the terms, covenants, conditions, or provisions of this Contract shall not be construed as a waiver or relinquishment of any such term, covenant, condition, or provision. No term or condition of this Contract shall be held to be waived, modified, or deleted except by a written amendment signed by the parties hereto.

D.13. Independent Contractor. The parties hereto, in the performance of this Contract, shall not act as employees, partners, joint venturers, or associates of one another. It is expressly acknowledged by the parties hereto that such parties are independent contracting entities and that nothing in this Contract shall be construed to create an employer/employee relationship or to allow either to exercise control or direction over the manner or method by which the other transacts its business affairs or provides its usual services. The employees or agents of one party shall not be deemed or construed to be the employees or agents of the other party for any purpose whatsoever.

The Contractor, being an independent contractor and not an employee of the State, agrees to carry adequate public liability and other appropriate forms of insurance, including adequate public liability and other appropriate forms of insurance on the Contractor's employees, and to pay all applicable taxes incident to this Contract.

D.14. State Liability. The State shall have no liability except as specifically provided in this Contract.

D.15. Force Majeure. The obligations of the parties to this Contract are subject to prevention by causes beyond the parties' control that could not be avoided by the exercise of due care including, but not limited to, acts of God, riots, wars, strikes, epidemics or any other similar cause.

D.16. State and Federal Compliance. The Contractor shall comply with all applicable State and Federal laws and regulations in the performance of this Contract.

D.17. Governing Law. This Contract shall be governed by and construed in accordance with the laws of the State of Tennessee. The Contractor agrees that it will be subject to the exclusive

jurisdiction of the courts of the State of Tennessee in actions that may arise under this Contract. The Contractor acknowledges and agrees that any rights or claims against the State of Tennessee or its employees hereunder, and any remedies arising therefrom, shall be subject to and limited to those rights and remedies, if any, available under *Tennessee Code Annotated*, Sections 9-8-101 through 9-8-407.

D.18. Completeness. This Contract is complete and contains the entire understanding between the parties relating to the subject matter contained herein, including all the terms and conditions of the parties' agreement. This Contract supersedes any and all prior understandings, representations, negotiations, and agreements between the parties relating hereto, whether written or oral.

D.19. Severability. If any terms and conditions of this Contract are held to be invalid or unenforceable as a matter of law, the other terms and conditions hereof shall not be affected thereby and shall remain in full force and effect. To this end, the terms and conditions of this Contract are declared severable.

D.20. Headings. Section headings of this Contract are for reference purposes only and shall not be construed as part of this Contract.

E. SPECIAL TERMS AND CONDITIONS:

E.1. Conflicting Terms and Conditions. Should any of these special terms and conditions conflict with any other terms and conditions of this Contract, these special terms and conditions shall control.

E.2. Communications and Contacts. All instructions, notices, consents, demands, or other communications required or contemplated by this Contract shall be in writing and shall be made by facsimile transmission, by overnight courier service, or by first class mail, postage prepaid, addressed to the respective party at the appropriate facsimile number or address as set forth below or to such other party, facsimile number, or address as may be hereafter specified by written notice.

The State:
Vickie Stanfill, TNII Executive Director
15th Floor Tennessee Tower
312 8th Avenue, North
Nashville, TN 37243-0288
Telephone Number: (615) 253-5529
Facsimile Number: (615) 253-1433
Email: Vickie.Stanfill@state.tn.us

The Contractor:
Tom Scott
AT&T Corporation
333 Commerce Street
Floor 24
615-401-4313
615-401-4190
Email: Tom.Scott@att.com

All instructions, notices, consents, demands, or other communications shall be considered effectively given as of the day of delivery; as of the date specified for overnight courier service delivery; as of three business days after the date of mailing; or on the day the facsimile transmission is received mechanically by the facsimile machine at the receiving location and receipt is verbally confirmed by the sender if prior to 4:30 p.m. CST. Any communication by

facsimile transmission shall also be sent by United States mail on the same date of the facsimile transmission.

E.3. Subject to Funds Availability. The Contract is subject to the appropriation and availability of State and/or Federal funds. In the event that the funds are not appropriated or are otherwise unavailable, the State reserves the right to terminate the Contract upon written notice to the Contractor. Said termination shall not be deemed a breach of Contract by the State. Upon receipt of the written notice, the Contractor shall cease all work associated with the Contract. Should such an event occur, the Contractor shall be entitled to compensation for all satisfactory and authorized services completed as of the termination date. Upon such termination, the Contractor shall have no right to recover from the State any actual, general, special, incidental, consequential, or any other damages whatsoever of any description or amount.

E.4. Breach. A party shall be deemed to have breached the Contract if any of the following occurs:

— failure to perform in accordance with any term or provision of the Contract;
— partial performance of any term or provision of the Contract;
— any act prohibited or restricted by the Contract, or
— violation of any warranty.

For purposes of this Contract, these items shall hereinafter be referred to as a "Breach."

a. Contractor Breach— The State shall notify Contractor in writing of a Breach.

i. In event of a Breach by Contractor, the state shall have available the remedy of Actual Damages and any other remedy available at law or equity.

ii. Liquidated Damages— In the event of a Breach, the State may assess Liquidated Damages. The State shall notify the Contractor of amounts to be assessed as Liquidated Damages. The parties agree that due to the complicated nature of the Contractor's obligations under this Contract it would be difficult to specifically designate a monetary amount for a Breach by Contractor as said amounts are likely to be uncertain and not easily proven. Contractor hereby represents and covenants it has carefully reviewed the Liquidated Damages contained in Contract Attachment A and agree that said amounts represent a reasonable relationship between the amount and what might reasonably be expected in the event of Breach, and are a reasonable estimate of the damages that would occur from a Breach. It is hereby agreed between the parties that the Liquidated Damages represent solely the damages and injuries sustained by the State in losing the benefit of the bargain with Contractor and do not include any injury or damage sustained by a third party. The Contractor agrees that the liquidated damage amount is in addition to any amounts Contractor may owe the State pursuant to the indemnity provision or other section of this Contract.

The State may continue to withhold the Liquidated Damages or a portion thereof until the Contractor cures the Breach, the State exercises its option to declare a Partial Default, or the State terminates the Contract. The State is not obligated to assess Liquidated Damages before availing itself of any other remedy. The State may choose to discontinue Liquidated Damages and avail itself of any other remedy available under this Contract or at law or equity; provided, however, Contractor shall receive a credit for said Liquidated Damages previously withheld except in the event of a Partial Default.

iii. Partial Default— In the event of a Breach, the State may declare a Partial Default. In which case, the State shall provide the Contractor written notice of: (1) the date on which Contractor shall terminate providing the service associated

with the Breach; and (2) the date the State will begin to provide the service associated with the Breach. The Notice of partial default and termination of services associated with the breach shall advise the Contractor whether there is an opportunity to cure or if the State has determined under Section D.4 that an opportunity to cure is not applicable. Notwithstanding the foregoing, the State may revise the time periods contained in the notice written to the Contractor.

In the event the State declares a Partial Default, the State may withhold, together with any other damages associated with the Breach, from the amounts due the Contractor the greater of: (1) amounts which would be paid the Contractor to provide the defaulted service; or (2) the cost to the State of providing the defaulted service, whether said service is provided by the State or a third party. To determine the amount the Contractor is being paid for any particular service, the Department shall be entitled to receive within five (5) days any requested material from Contractor. The State shall make the final and binding determination of said amount.

The State may assess Liquidated Damages against the Contractor for any failure to perform which ultimately results in a Partial Default with said Liquidated Damages to cease when said Partial Default is effective. Upon Partial Default, the Contractor shall have no right to recover from the State any actual, general, special, incidental, consequential, or any other damages whatsoever of any description or amount. Contractor agrees to cooperate fully with the State in the event a Partial Default is taken.

iv. Contract Termination— In the event of a Breach, the State may terminate the Contract immediately or in stages. The Contractor shall be notified of the termination in writing by the State. Said notice shall hereinafter be referred to as Termination Notice. The Termination Notice shall advise the Contractor whether there is an opportunity to cure or if the State has determined under Section D.4 that an opportunity to cure is not applicable. The Termination Notice may specify either that the termination is to be effective immediately, on a date certain in the future, or that the Contractor shall cease operations under this Contract in stages. In the event of a termination, the State may withhold any amounts which may be due Contractor without waiver of any other remedy or damages available to the State at law or at equity. The Contractor shall be liable to the State for any and all damages incurred by the State and any and all expenses incurred by the State which exceed the amount the State would have paid Contractor under this Contract. Contractor agrees to cooperate with the State in the event of a Contract Termination or Partial Takeover.

The Termination Notice must (1) specify in reasonable detail the nature of the breach; (2) provide Contractor with an opportunity to cure, which shall be no less than 10 days from the date of the Termination Notice; (3) shall specify the effective date of termination in the event Contractor fails to correct the breach. The Termination Notice may specify that the Contractor shall cease operations under this Contract in stages. Contractor must present the State with a written request detailing the efforts it will take to resolve the problem. This opportunity to "cure" shall not apply to circumstances in which the Contractor intentionally withholds its services or otherwise refuses to perform. The State will not consider a request to cure contract performance where there have been repeated problems with respect to identical or similar issues, or if a cure period would cause a delay that would impair the effectiveness of State operations.

b. State Breach— In the event of a Breach of Contract by the State, the Contractor shall notify the State in writing within 30 days of any Breach of Contract by the State. Said

notice shall contain a description of the Breach. Failure by the Contractor to provide said written notice shall operate as an absolute waiver by the Contractor of the State's Breach. In no event shall any Breach on the part of the State excuse the Contractor from full performance under this Contract. In the event of Breach by the State, the Contractor may avail itself of any remedy at law in the forum with appropriate jurisdiction; provided, however, failure by the Contractor to give the State written notice and opportunity to cure as described herein operates as a waiver of the State's Breach. Failure by the Contractor to file a claim before the appropriate forum in Tennessee with jurisdiction to hear such claim within one (1) year of the written notice of Breach shall operate as a waiver of said claim in its entirety. It is agreed by the parties this provision establishes a contractual period of limitations for any claim brought by the Contractor.

E.5. Partial Takeover. The State may, at its convenience and without cause, exercise a partial takeover of any service which the Contractor is obligated to perform under this Contract, including but not limited to any service which is the subject of a subcontract between Contractor and a third party, although the Contractor is not in Breach (hereinafter referred to as "Partial Takeover"). Said Partial Takeover shall not be deemed a Breach of Contract by the State. Contractor shall be given at least 30 days prior written notice of said Partial Takeover with said notice to specify the area(s) of service the State will assume and the date of said assumption. Any Partial Takeover by the State shall not alter in any way Contractor's other obligations under this Contract. The State may withhold from amounts due the Contractor the amount the Contractor would have been paid to deliver the service as determined by the State. The amounts shall be withheld effective as of the date the State assumes the service. Upon Partial Takeover, the Contractor shall have no right to recover from the State any actual, general, special, incidental, consequential, or any other damages whatsoever of any description or amount.

E.6. State Furnished Property. The Contractor shall be responsible for the correct use, maintenance, and protection of all articles of nonexpendable, tangible, personal property furnished by the State for the Contractor's temporary use under this Contract. Upon termination of this Contract, all property furnished shall be returned to the State in good order and condition as when received, reasonable use and wear thereof excepted. Should the property be destroyed, lost, or stolen, the Contractor shall be responsible to the State for the residual value of the property at the time of loss.

E.7. Incorporation of Additional Documents. The documents detailed below shall be incorporated as a part of this Contract by reference and, in the event of a discrepancy or ambiguity regarding the Contractor's duties, responsibilities, and performance under this Contract, shall govern in the order of precedence herein detailed.

a. this Contract document and all of its attachments and exhibits, excluding items incorporated by reference;

b. the Request for Proposals (resulting in this Contract) and its associated amendments;

c. any Technical Specifications provided to the Contractor by the State; and

d. the Contractor's Proposal, including all clarifications and addenda made thereto at the request of the State.

E.8. Lobbying. The Contractor certifies, to the best of its knowledge and belief, that:

a. No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any federal loan, the entering

into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.

b. If any funds other than federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit Standard Form-LLL, ``Disclosure Form to Report Lobbying," in accordance with its instructions.

c. The Contractor shall require that the language of this certification be included in the award documents for all sub-awards at all tiers (including subcontracts, sub-grants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into and is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, *U.S. Code*. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

E.9. Prohibited Advertising. The Contractor shall not refer to this Contract or the Contractor's relationship with the State hereunder in commercial advertising in such a manner as to state or imply that the Contractor or the Contractor's services are endorsed.

E.10. Confidentiality of Records. Strict standards of confidentiality of records and information shall be maintained in accordance with applicable state and federal law. All material and information, regardless of form, medium or method of communication, provided to the Contractor by the State or acquired by the Contractor on behalf of the State shall be regarded as confidential information in accordance with the provisions of applicable state and federal law, state and federal rules and regulations, departmental policy, and ethical standards. Such confidential information shall not be disclosed, and all necessary steps shall be taken by the Contractor to safeguard the confidentiality of such material or information in conformance with applicable state and federal law, state and federal rules and regulations, departmental policy, and ethical standards.

The Contractor's obligations under this section do not apply to information in the public domain; entering the public domain but not from a breach by the Contractor of this Contract; previously possessed by the Contractor without written obligations to the State to protect it; acquired by the Contractor without written restrictions against disclosure from a third party which, to the Contractor's knowledge, is free to disclose the information; independently developed by the Contractor without the use of the State's information; or, disclosed by the State to others without restrictions against disclosure. Nothing in this paragraph shall permit Contractor to disclose any information that is confidential under federal or state law or regulations, regardless of whether it has been disclosed or made available to the Contractor due to intentional or negligent actions or inactions of agents of the State or third parties.

It is expressly understood and agreed the obligations set forth in this section shall survive the termination of this Contract.

E.11. Copyrights and Patents. The Contractor agrees to indemnify and hold harmless the State of Tennessee as well as its officers, agents, and employees from and against any and all claims or suits which may be brought against the State for infringement of any laws regarding patents or copyrights which may arise from the Contractor's performance of this Contract, unless the claim is based entirely on infringing actions by the State and in which the alleged intellectual property violations are completely unrelated to the Contractor's actions or inactions. In any such action brought against the State, the Contractor shall satisfy and indemnify the State for the amount of any final judgment for infringement. The Contractor further agrees it shall be liable for the

reasonable fees of attorneys for the State in the event such service is necessitated to enforce the terms of this Contract or otherwise enforce the obligations of the Contractor to the State. The State shall give the Contractor written notice of any such claim or suit and full right and opportunity to conduct the Contractor's own defense thereof.

E.12. Hold Harmless. The Contractor agrees to indemnify and hold harmless the State of Tennessee as well as its officers, agents, and employees from and against any and all claims, liabilities, losses, and causes of action which may arise, accrue, or result to any person, firm, corporation, or other entity which may be injured or damaged as a result of acts, omissions, or negligence on the part of the Contractor, its employees, or any person acting for or on its or their behalf relating to this Contract. The Contractor further agrees it shall be liable for the reasonable cost of attorneys for the State in the event such service is necessitated to enforce the terms of this Contract or otherwise enforce the obligations of the Contractor to the State.

In the event of any such suit or claim, the Contractor shall give the State immediate notice thereof and shall provide all assistance required by the State in the State's defense. The State shall give the Contractor written notice of any such claim or suit, and the Contractor shall have full right and obligation to conduct the Contractor's own defense thereof. Nothing contained herein shall be deemed to accord to the Contractor, through its attorney(s), the right to represent the State of Tennessee in any legal matter, such rights being governed by *Tennessee Code Annotated*, Section 8-6-106.

E.13. Tennessee Consolidated Retirement System. The Contractor acknowledges and understands that, subject to statutory exceptions contained in *Tennessee Code Annotated*, Section 8-36-801, *et seq.*, the law governing the Tennessee Consolidated Retirement System (TCRS), provides that if a retired member of TCRS, or of any superseded system administered by TCRS, or of any local retirement fund established pursuant to *Tennessee Code Annotated*, Title 8, Chapter 35, Part 3 accepts state employment, the member's retirement allowance is suspended during the period of the employment. Accordingly and notwithstanding any provision of this Contract to the contrary, the Contractor agrees that if it is later determined that the true nature of the working relationship between the Contractor and the State under this Contract is that of "employee/employer" and not that of an independent contractor, the Contractor may be required to repay to TCRS the amount of retirement benefits the Contractor received from TCRS during the period of this Contract.

E.14. HIPAA Compliance. The State and Contractor shall comply with obligations under the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and its accompanying regulations.

a. Contractor warrants to the State that it is familiar with the requirements of HIPAA and its accompanying regulations, and will comply with all applicable HIPAA requirements in the course of this Contract.

b. Contractor warrants that it will cooperate with the State, including cooperation and coordination with State privacy officials and other compliance officers required by HIPAA and its regulations, in the course of performance of the Contract so that both parties will be in compliance with HIPAA.

c. The State and the Contractor will sign documents, including but not limited to business associate agreements (see Contract Attachment D), as required by HIPAA and that are reasonably necessary to keep the State and Contractor in compliance with HIPAA. This provision shall not apply if information received by the State under this Contract is NOT "protected health information" as defined by HIPAA, or if HIPAA permits the State to receive such information without entering into a business associate agreement or signing another such document.

E.15. FERPA Compliance. The State and Contractor shall comply with the Family Education Rights and Privacy Act of 1974 (20 U.S.C. § 1232g) (FERPA) and its accompanying regulations (34 C.F.R.

99). Contractor warrants that it is familiar with requirements of FERPA and its accompanying regulations and that it will comply with all applicable FERPA requirements in the performance of its duties in this Contract. Contractor agrees to cooperate with the State as required by FERPA and its regulations in the performance of its duties in this Contract. Contractor agrees to maintain the confidentiality of all education records and student information and use such records and information for the exclusive purpose of performing its duties in this Contract.

E.16. Transition Services. As this Contract nears its end, the Contractor agrees to cooperate fully with the State and, or any vendor that receives an award for a subsequent contract for NetTN successor services, to transition the NetTN Services from the Contractor to the State and/or the subsequent vendor. At the State's discretion, the State shall start these transition services as early as 24 months prior to the end of the present Contract. The Contractor shall:

a. Provide continuing services that are the same as those currently provided, with no decrease in quality, as the State coordinates the transition from the present Contract.

b. Six months prior to the expiration of the present Contract, the Contractor in cooperation with the State shall establish the fair market value of the NetTN end-site equipment, excluding K-12 sites. At the end of the present Contract, the State shall have the option of purchasing end-site equipment at this fair market value, as determined by the average of three nationally reputable used equipment resellers mutually agreed to and selected by the State and the Contractor.

c. Fully cooperate with the State and any subsequent vendor in testing and parallel operation of any new network that supersedes the existing NetTN network.

E.17. Price Decreases

a. The Contractor shall extend to the State the benefit of any rates included in the Contractor's contracts with other clients with lower or equal revenue volumes to those of the State that are lower than the rates being paid by the State. The basis of comparison shall be the benchmark described in Contract Section E.17.d.ii.

b. The Contractor's failure to offer lower rates than other contracts with lower or equal revenue volumes, for functionally equivalent NetTN Services, shall be considered a violation of the terms of the contract. The Contractor shall issue credits to the State retroactively from the published or effective date of the reduced rates and appropriately adjust the rates for the remainder of the term of the contract.

c. The Contractor must agree to come into conformity with general price and cost decreases resulting from law, regulatory decisions, or industry competitive forces.

d. Competitive Price Assurance. In order to identify the lowest rates available, the State of Tennessee will have a benchmark analysis prepared annually by an independent telecommunications industry consultant. The benchmark study shall:

i. Be performed on an annual basis.
ii. The benchmark shall compare the State's rates against rates contractually provided to other States and enterprises, with attention given to functionally equivalent NetTN Services, annual commitments, and mix of services associated with such other contracts in the State of Tennessee and other states in the sourthern region. For purposes of this Contract, the "states in the southern region" are the following: Alabama, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Arkansas, Florida, and Tennessee.
iii. The benchmark shall emphasize those rates in effect at the time of the benchmark analysis.

iv. The benchmark shall not be limited to just the service Contractor's contracts, but shall include contracted rates offered by other Tier 1 Inter-exchange Carriers (IXCs) and Local Exchange Carriers (LECs) certified by the Tennessee Regulatory Authority.
v. The benchmark shall be made for those services that represent the State's most significant volumes. For example, T1, Managed Services, Ethernet services, Direct Internet Access and DSL.
vi. The Contractor shall take appropriate steps to unilaterally adjust the State's pricing, charges and, or discounts, as appropriate, to make the State's rates equal to the benchmarks best rates.
viii. Rates may not be increased for the duration of the State's contract, regardless of the result of any benchmark.
ix. The Contractor shall reimburse the State for the cost of the benchmark analysis in the following manner: the State shall notify the Contractor of the cost of the independent benchmark analysis, and the Contractor shall reduce the next Contractor invoice to the State by this amount.
x. As stated in Contract Attachment K, Section K.2.b, the TNII Association reserves the right to obtain three competitive quotes for functionally equivalent NetTN services whereas the Contractor must be equal to or less than the lowest of comparable quotes. Otherwise, as deemed necessary according to the terms of this Contract, the Contractor shall adjust their pricing downward accordingly.

E.18. Catalog of Services Supplements. During the course of this contract, the State may request the Contractor to update the Catalog of Services with additional service(s), otherwise known as "Non-Prepriced Items (NPIs)." The NPI's shall be within the general scope of services. The State shall provide the Contractor with a written description of the additional service(s), and the Contractor shall submit a price for the additional service(s). See Contract Section E.24 for the provisions governing competitive pricing for NPIs. If the State and Contractor reach an agreement regarding the service(s) and the fee(s) associated with the addition, the agreement shall become effective by means of a contract amendment. Any such amendment requiring NPIs must be mutually agreed upon by the parties and signed by the Contractor and the head of the procuring State agency and must be approved by other State officials as required by State Laws and Regulations. The Contractor shall not commence additional work until the State has issued a written contract amendment and secured all required approvals.

E.19. Technology Refresh. The Contractor will perform periodic technology reviews (2 – 3 years) to assess where the currently implemented NetTN network is in relation to industry norms, at that time. The contractor shall review best practices and make any recommendations or update of equipment, or services. Such updates shall be cost neutral or shall result in lower costs to the State of Tennessee.

E.20. Contractor Commitment to Diversity. The Contractor shall comply with and make reasonable business efforts to exceed the commitment to diversity represented by the Contractor's proposal responding to **RFP - 317.03-154-07** (Attachment 6.3, Section B, Item B.13.) and resulting in this Contract.

The Contractor shall assist the State in monitoring the Contractor's performance of this commitment by providing, as requested, a quarterly report of participation in the performance of this Contract by small business enterprises and businesses owned by minorities, women, and persons with a disability. Such reports shall be provided to the state of Tennessee Governor's Office of Business Diversity Enterprise in form and substance as required by said office.

E.21. Limitation of Liability. The parties agree that the total liability of the Contractor for breach of this Contract shall not exceed the value of this contract. The value shall be established by the Contract Maximum Liability in Section C.1 and increased by subsequent amendments if any. The foregoing provision shall not limit the contractor's liability for intentional torts, criminal acts or fraudulent conduct.

E.22. Performance Bond. The Contractor shall provide to the State a performance bond guaranteeing full and faithful performance of all undertakings and obligations under this Contract and in the following amounts:

- Ten million dollars ($10,000,000.00) for year one (approximately six [6] months),
- Ten million dollars ($10,000,000.00) for year two,
- Seven million dollars ($7,000,000.00) for year three,
- Six million dollars ($6,000,000.00) for year four,
- Five million dollars ($5,000,000.00) for year five,
- Five million dollars ($5,000,000.00) for year six,
- Five million dollars ($5,000,000.00) for year seven,
- Five million dollars ($5,000,000.00) for year eight,
- Five million dollars ($5,000,000.00) for year nine,
- Five million dollars ($5,000,000.00) for year ten
- Two million dollars ($2,000,000.00) for the remainder of the Contract term (approximately six [6] months).

The Contractor shall submit the year one bond no later than the day immediately preceding the Contract start date and, as applicable in the case of subsequent performance bonds, no later than December 10th preceding each covered period beginning on January 1st each year. The bond shall be in the manner and form prescribed by the State (at Attachment 6.15 hereto), and the bond shall be issued through a company licensed to issue such a bond in the state of Tennessee.

The performance bond shall guarantee full and faithful performance of all undertakings and obligations under this Contract for the first calendar year of the Contract (ending December 31st following the Contract start date) in the amount of Ten Million Dollars ($10,000,000) and, thereafter, a new performance bond in the amounts detailed above, covering each subsequent calendar year, or portion of calendar year, of the Contract period. In which case, the Contractor shall provide such performance bonds to the State no later than each December 10th preceding the period covered beginning on January 1st of each year.

Failure to provide to the State the performance bond(s) as required herein prior to the Contract start date and, as applicable, no later than December 10th preceding each subsequent period covered beginning on January 1st of each year, shall result in contract termination. The Contractor understands that the stated amount of the performance bond required hereunder shall not be reduced during the contract period for any reason, except as provided for in the list detailed above.

E.23. State Ownership of Work Products. The State shall have ownership, right, title, and interest, including ownership of copyright, in all work products, including computer source code, created, designed, developed, derived, documented, installed, or delivered under this Contract subject to the next subsection and full and final payment for each "Work Product." The State shall have royalty-free and unlimited rights and license to use, disclose, reproduce, publish, distribute, modify, maintain, or create derivative works from, for any purpose whatsoever, all said Work Products.

a. To the extent that the Contractor uses any of its pre-existing, proprietary or independently developed tools, materials or information ("Contractor Materials"), the Contractor shall retain all right, title and interest in and to such Contractor Materials, and the State shall acquire no right, title or interest in or to such Contractor Materials EXCEPT the Contractor grants to the State an unlimited, non-transferable license to use, copy and distribute internally, solely for the State's internal purposes, any Contractor Materials reasonably associated with any Work Product provided under the Contract.

b. The Contractor shall furnish such information and data as the State may request, including but not limited to computer code, that is applicable, essential, fundamental, or intrinsic to any Work Product and Contractor Materials reasonably associated with any Work Product, in accordance with this Contract and applicable state law.

c. Nothing in this Contract shall prohibit the Contractor's use for its own purposes of the general knowledge, skills, experience, ideas, concepts, know-how, and techniques obtained and used during the course of providing the services requested under this Contract.

d. Nothing in the Contract shall prohibit the Contractor from developing for itself, or for others, materials which are similar to and/or competitive with those that are produced under this Contract.

E.24. Competitive Pricing for Non-Prepriced Items added to the Catalog of Services.

a. During the course of this contract, the State may request that the Contractor update the Catalog of Services with additional line items, otherwise known as "Non-Prepriced Items" or "NPIs." The NPIs shall be within the general scope of services. The State shall provide the Contractor with a written description of the NPI, and the Contractor shall submit a price to the State for the NPI.

b. The State requires that the pricing offered to the State for NPIs be competitive with pricing offered to the market in general. The Contractor must provide detailed documentation to the State to substantiate the proposed cost(s). This documentation may be in the form of invoices to the vendor, records of employment costs, component costs, or other documentation that clearly and specifically verifies the cost of the input resources to the Contractor.

c. For any input resource that is a component of an NPI, or for the NPI itself, the State shall have the option to require the Contractor to obtain three (3) bids for the item(s) in question. If the State invokes this option, the Contractor must incorporate the item(s) with the lowest bid price into its NPI proposed cost. In this event, the Contractor will provide to the State records of the bid process to substantiate that the lowest bid price(s) were used.

d. If the State and Contractor reach an agreement regarding the service(s) and the cost(s) associated with the addition, the State will add the new line items to Contract Attachment A, Catalog of Services, through the Contract amendment process. Such amendments shall be signed by the Contractor and the head of the procuring State agency and approved by other State officials as required by State Laws and Regulations. The Contractor shall not commence additional work until the State has issued a written contract amendment and secured all required approvals.

e. All Contractor, Supplier, or Subcontractor pricing information used in determining the price(s) for NPIs shall be subject to audit by the State, the Tennessee Comptroller of the Treasury, or their duly appointed representatives. Such audit shall be performed during normal business hours upon reasonable notice by the State.

IN WITNESS WHEREOF:

AT&T CORPORATION:

OK to sign/ATT Legal
KTR

Mark Keiffer 6-10-08

CONTRACTOR SIGNATURE **DATE**

Mark Keiffer, Pres.-Regional Business Markets

PRINTED NAME AND TITLE OF CONTRACTOR SIGNATORY (above)

DEPARTMENT OF FINANCE AND ADMINISTRATION:

M D Goetz 6/16/08

M. D. GOETZ, JR., COMMISSIONER **Date**

APPROVED:

DEPARTMENT OF FINANCE AND ADMINISTRATION:

PER AUTHORIZED SIGNATURE ABOVE

M D Goetz

M. D. GOETZ, JR., COMMISSIONER **Date**

COMPTROLLER OF THE TREASURY:

John G. Morgan 6/30/08

JOHN G. MORGAN, COMPTROLLER OF THE TREASURY **Date**

Attachment A – Service Level Agreements

A. Service Level Agreements (SLAs) and Commitments

Given the magnitude and scope of the NetTN Wide Area Network (WAN) infrastructure and outsourced network management services desired by the TNII Association, it is paramount the NetTN Contractor enter into a contractual relationship with the TNII Association that succinctly defines Service Level Agreements (SLAs) and commitments.

It is the intent of this *Pro Forma* contract to specifically define the SLA criteria that are demanded by the TNII Association. The technical requirements that are presented throughout this RFP document represent the ***minimum*** requirements that are being mandated by the TNII Association. The NetTN Contractor is encouraged to exceed these minimum requirements and should state so in their RFP response in the General Approach and Specific Requirements sections of this RFP document where applicable. The NetTN Contractor must consider carefully what commitment level is required in terms of technical infrastructure and resources pertaining to meeting the overall SLAs being mandated by the TNII Association.

Service Level Agreement (SLA) payments are based upon the Catalog of Services amounts.

The various monthly network management reports for Fault Management, Performance Management, Configuration Management, and Security Management will be used to verify and analyze NetTN Contractor conformance with the defined SLA desired by the TNII Association.

The following SLA definitions define separately monitored and measured performance criteria. For example, A.2 defines the NetTN End Site to Core Backbone Availability SLA while A.5 defines the NetTN Internet Access WAN Service Availability SLA. Consider a NetTN WAN infrastructure connection failure occurs between End Site and a NAP that lasts for 8 hours. This exceeds the SLA definition in A.2, so the appropriate payment in that section applies. However, since Internet Access would have been available if not for the connection failure (i.e., other End Sites were able to access the Internet during this timeframe), A.5 penalties do not apply.

As a second example, had the WAN connection failure described above occurred during the same time a NetTN Internet Access WAN circuit outage occurred, payments from both SLAs in A.2 and A.5 would apply since they are to be monitored separately.

At no time shall the compensation made to the State by the Contractor, for failures to conform with the SLAs included in this document, result in the aggregate amount of such compensation for an individual End Site be in excess of 100% of that End Site's NetTN WAN monthly invoice.

The following specifies and defines the SLA criteria that shall become part of the final contract between the Contractor and the State regarding this Contract document.

A.1 Core Backbone Availability

The Core Backbone network infrastructure of the NetTN WAN shall have a minimum monthly network availability factor of 99.999%. Note: the network availability factor must be calculated for the entire Core Backbone network infrastructure and not for a per circuit basis.

Scheduled Downtime: The NetTN Contractor shall be entitled to no greater than 4 hours of scheduled downtime for the entire Core Backbone network infrastructure and each end site connected to the NetTN network infrastructure per quarter or 3 month period. Scheduled downtime must be coordinated with the TNII Association with at least 14 days advance notice prior to performing the scheduled downtime in order for the downtime not to be calculated into the monthly network availability factor.

Conformance: The above network availability factors shall be calculated at the end of each calendar month according to the parameters defined above and will be substantiated through performance reports generated by the Contractor.

Compensation for a Given Month: Should non-conformance apply to a given month, 1% of the total aggregate monthly costs for all WAN services currently purchased under this contract shall be paid.

Compensation for a Second Consecutive Month: Should non-conformance apply to a second consecutive month, 2% of the total aggregate monthly costs for all WAN services currently purchased under this contract shall be paid.

Compensation for an Nth Consecutive Months: For each consecutive month of non-conformance, **N**% of the total aggregate monthly costs for all WAN services currently purchased under this contract shall be paid, where **N** is the number of consecutive months of non-conformance.

The above compensation shall be made by the Contractor within 15 business days after each monthly Core Backbone Network Availability report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.2 End Site to Core Backbone Availability

The following shall define the SLA commitment for End Site to Core Backbone availability:

The network infrastructure consisting of WAN services and the edge devices managed by the Contractor as part of the availability requirement shall have a minimum monthly network availability factor of 99.95%; based on a 30-day month, this equates to 21 minutes of un-scheduled network downtime per end site. For each WAN Circuit, availability will be based on a 5 minute sampling rate, presented on a per hour basis for a 24 hour day and calculated based on the ratio of total circuit up-time over total possible circuit up-time for that 24 hour day basis for the entire calendar month.

Scheduled Downtime: The NetTN Contractor shall be entitled to no greater than 4 hours of scheduled downtime for each end site connected to the NetTN network infrastructure per quarter or 3 month period. Scheduled downtime must be coordinated with the TNII Association with at least 14 days advance notice prior to performing the scheduled downtime in order for the downtime not to be calculated into the monthly network availability factor.

Conformance: The above network availability factors shall be calculated at the end of each calendar month according to the parameters defined above and will be substantiated through performance reports generated by the Contractor.

Compensation for a Given Month: Failure to meet the aforementioned monthly availability requirement for each End Site to Core Backbone service shall result in a payment equal to 10% of that End Site's monthly bill.

Compensation for a Second Consecutive Month: Should non-conformance apply for a second consecutive month, 20% of that End Site's total monthly costs shall be issued as a payment to affected End Site.

Compensation for an Nth Consecutive Month. For each consecutive month of non-conformance, (**N** x 10%) of that End Site's total monthly costs shall be issued as a payment to that End Site, where **N** is the number of consecutive months of non-conformance.

The above compensation shall be made by the Contractor within 15 business days after each monthly End Site to Core Backbone Availability report (one per End Site) is reviewed and verified by both the TNII Association and the NetTN Contractor. This review and verification process shall be mutually scheduled between the respective TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.3 OIR Data Center Direct Internet Access (DIA) Service Availability

OIR will utilize Direct Internet Access (DIA) circuits from the Data Center(s) to the Internet to provide aggregate Internet access to all OIR end sites on NetTN. Each Data Center DIA shall have a minimum monthly availability factor of 99.999% per 24-hour day per calendar month. For each OIR Data Center DIA circuit, availability will be based on a 5 minute sampling rate, presented on a per hour basis for a 24 hour day and calculated based on the ratio of total circuit up-time over total possible circuit up-time for that 24 hour day basis for the entire calendar month.

***Scheduled Downtime*:** The NetTN Contractor shall be entitled to no greater than 4 hours of scheduled downtime for the Data Center DIA connection. Scheduled downtime must be coordinated with OIR with at least 14 days advance notice prior to performing the scheduled downtime in order for the downtime not to be calculated into the monthly DIA availability factor.

Conformance: The above availability factors shall be calculated at the end of each calendar month according to the parameters defined above and will be substantiated through performance reports generated by the Contractor.

Compensation for a Given Month: Should non-conformance apply to a given month, 50% of the total aggregate monthly costs for all OIR Data Center DIA services currently purchased under this contract shall be paid.

Compensation for a Second Consecutive Month: Should non-conformance apply to a second consecutive month, 60% of the total aggregate monthly costs for all OIR Data Center DIA services currently purchased under this contract shall be paid.

Compensation for Additional Consecutive Months: For each consecutive month beyond the second month of non-conformance, 75% of the total aggregate monthly costs for all OIR Data Center DIA services currently purchased under this contract shall be paid.

The above compensation shall be made by the Contractor within 15 business days after each monthly Data Center DIA Availability report is reviewed and verified by both OIR and the NetTN Contractor. The review and verification process shall be mutually scheduled between OIR and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.4 OIR Data Center Point-to-Point Circuit Availability

OIR will utilize point-to-point circuits between its Data Centers to support data replication and alternate routes into each Center. The Data Center point-to-point circuit shall have a minimum monthly availability factor of 99.999% per 24-hour day per calendar month. For each OIR Data Center Point-to-Point Circuit, availability will be based on a 5 minute sampling rate, presented on a per hour basis for a 24 hour day and calculated based on the ratio of total circuit up-time over total possible circuit up-time for that 24 hour day basis for the entire calendar month.

Scheduled Downtime: The NetTN Contractor shall be entitled to no greater than 4 hours of scheduled downtime for the Data Center point-to-point connection. Scheduled downtime must be coordinated with OIR with at least 14 days advance notice prior to performing the scheduled downtime in order for the downtime not to be calculated into the monthly availability factor.

Conformance: The above circuit availability factor shall be calculated at the end of each calendar month and will be substantiated through performance reports generated by the NetTN Contractor.

Compensation for a Given Month: Failure to meet the aforementioned monthly availability requirement shall result in a payment equal to 10% of the monthly point-to-point circuit cost.

Compensation for a Second Consecutive Month: Should non-conformance apply for a second consecutive month, 20% of the point-to-point circuit cost shall be issued as a payment.

Compensation for an Nth Consecutive Month. For each consecutive month of non-conformance, (**N** x 10%) of the point-to-point circuit monthly cost shall be issued as a payment, where **N** is the number of consecutive months of non-conformance.

The above compensation shall be made by the Contractor within 15 business days after each monthly OIR Data Center Point-to-Point Circuit Availability report is reviewed and verified by both OIR and the NetTN Contractor. The review and verification process shall be mutually scheduled between OIR and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.5 NetTN Internet Access WAN Service Availability

The following shall define the SLA commitment for each NetTN Internet Access WAN Circuit's Availability:

Each NetTN Internet Access WAN Service Availability shall be => 99.999% per 24 hour day per calendar month. NetTN Internet Access WAN Availability will be based on a 5 minute sampling rate, presented on a per hour basis for a 24 hour day and calculated based on the ratio of total circuit up-time over total possible circuit up-time for that 24 hour day basis for the entire calendar month.

Conformance: The above NetTN Internet Access availability factor shall be calculated at the end of each calendar month and will be substantiated through performance reports generated by the NetTN Contractor.

Compensation for a Given Month: Should non-conformance apply to a given month, 1% of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid.

Compensation for a 2nd Consecutive Month: Should non-conformance apply to a second consecutive month, 2% of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid.

Compensation for an Nth Consecutive Month: For each consecutive month of non-conformance, **N%** of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid, where **N** is the number of consecutive months of non-conformance.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Internet Access Availability report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.6 NetTN Internet/Internet2 Availability to First Hop Beyond the NetTN Default Gateway Devices

The following shall define the SLA commitment for NetTN Internet/Internet2 Availability. Any loss of connectivity from an end site to the first hop beyond the NetTN Internet/Internet2 gateway devices due to a routing issue will be considered as non-availability. Any loss of Internet/Internet2 BGP sessions between BGP peers will also be considered as non-availability.

NetTN Internet/Internet2 Availability shall be => 99.95% per 24 hour day per calendar month. NetTN Internet/Internet2 Availability will be based on a 5 minute sampling rate, presented on a per hour basis for a 24 hour day and calculated based on the ratio of total availability over total possible availability for that 24 hour day basis for the entire calendar month.

Conformance: The above NetTN Internet/Internet2 Access availability factor shall be calculated at the end of each calendar month and will be substantiated through performance reports generated by the NetTN Contractor.

Compensation for a Given Month: Should non-conformance apply to a given month, 1% of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid.

Compensation for a 2nd Consecutive Month: Should non-conformance apply to a second consecutive month, 2% of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid.

Compensation for an Nth Consecutive Month: For each consecutive month of non-conformance, **N**% of the total aggregate monthly costs for all affected WAN services purchased under this contract shall be paid, where **N** is the number of consecutive months of non-conformance.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Internet Access Availability report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.7 NetTN Edge Device Errored Packets

The following shall define the SLA commitment for the NetTN Edge Device Errored Packets:

The NetTN Edge Device Errored Packets shall be =< .75% total errored packets (e.g., bad packets) per 24 hour day for the entire calendar month. A reading will be taken every 5 minutes, 12 samples per hour, and 288 per 24 hours. The 288 samples minus any 5 minute samples where the average bandwidth utilization is > = 80%, or minus any samples that were otherwise unavailable, will then be averaged together for the daily measurement.

Conformance: The above errored packet factor shall be calculated at the end of each calendar month and will be substantiated through performance reports generated by the Contractor.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for any NetTN Edge Device shall result in a monthly payment equal to 3% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for any NetTN Edge Device for two occurrences in a single month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for any NetTN Edge Device type for **N** occurrences in the same month shall result in a monthly payment equal to (**N** x 2%) of that End Site's monthly bill, where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Edge Device Errored Packet Report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.8 NetTN Edge Device to NAP Average Jitter Measurement

The following shall define the SLA commitment for the NetTN Edge Device to NAP Jitter Average:

The NetTN Edge Device to NAP Average Jitter shall be =< 5 ms. A reading will be taken every 5 minutes, 12 samples per hour, and 120 samples per 10 hours, Monday through Friday 7:00 a.m. to 5:00 p.m. The 120 samples minus any 5 minute samples where the average bandwidth utilization is >= 80% or minus any samples that where otherwise unavailable, will then be averaged together for the daily measurement.

Circuit-switched DSL communication lines shall be exempt from this SLA requirement.

Conformance: The NetTN Average Jitter measurement shall be performed by injecting packets at regular intervals into the network, Edge Device to NAP and measuring the variability in the arrival time as set forth in the relevant standards of RFC 2679 and RFC 3393 and will be substantiated through performance reports generated by the Contractor. This average jitter factor shall be calculated at the end of each calendar month.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for any NetTN Edge Device shall result in a monthly payment equal to 1% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for any NetTN End Device for two occurrences in a single month shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for any NetTN End Device type for **N** occurrences in the same month shall result in a monthly payment equal to (**N** x 1%) of that End Site's monthly bill, where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Jitter report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.9 NetTN Edge Device to the 1st Hop In the Core Average Round-Trip Response Time Delay

The following shall define the SLA commitment for the NetTN Edge Device to the 1st Hop in the Core Average Round-Trip Response Time Delay:

The NetTN Edge Device to the 1st Hop Average Round-Trip Response Time Delay shall be =< 20 ms per 24 hour day per calendar month. A reading will be taken every 5 minutes, 12 samples per hour, and 288 per 24 hours. The 288 samples minus any 5 minute samples where the average bandwidth utilization is >= 80% will then be averaged together for the daily measurement.

The delay shall refer to the round-trip transmission delay between the WAN port of the NetTN Edge Device and the WAN port of the 1st Hop DTE device and can include transmission delay, queuing delay and serialization delay.

Circuit-switched DSL communication lines shall be exempt from this SLA requirement.

Conformance: The above average round-trip response time delay factor shall be calculated at the end of each calendar month and will be substantiated through performance reports generated by the Contractor.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for any NetTN Edge Device shall result in a monthly payment equal to 3% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for any NetTN End Device for two occurrences in a single month shall result in a monthly payment equal to 6% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for any NetTN End Device type for **N** occurrences in the same month shall result in a monthly payment equal to (**N** x 3%) of that End Site's monthly bill, where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Edge Device to the 1st Hop in the Core Average Round-Trip Response Time Delay report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.10 NetTN Average Round Trip Latency, NetTN OIR End Site to OIR Data Centers NetTN Edge Device

The following shall define the SLA commitment for the NetTN End Site to OIR Data Centers' Average Round Trip Latency:

The NetTN End Site to OIR Data Center NetTN Edge Device Average Round Trip Latency shall be =< 125 ms per 24 hour day per calendar month. A reading will be taken every 5 minutes, 12 samples per hour, and 288 samples per 24 hours. The 288 samples minus any 5 minute samples where the average bandwidth utilization is >= 80% or minus any samples that where otherwise unavailable, will then be averaged together for the daily measurement.

Circuit-switched DSL communication lines shall be exempt from this SLA requirement.

Conformance: The NetTN Average Round Trip Latency measurements shall be performed by measuring the round trip time latency of packet arrival from any OIR End Site on the NetTN WAN to the OIR Data Center and NetTN Edge Device. The above average round-trip latency factor shall be calculated at the end of each calendar month.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement shall result in a payment of 2% of that end site's monthly bill.

Compensation for 2 Occurrences in a Single Month: Failure to meet the above requirements for 2 occurrences in the same month shall result in a monthly payment equal to 4% of that end site monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirements for **N** occurrences in the same month shall result in a monthly payment equal to (**N** x 2%) of that end site's monthly bill, where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN OIR End Site to OIR Data Center NetTN Edge Device. Average Round-Trip Latency report is reviewed and verified. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.11 Report for End Site to Core WAN Circuit Hourly Average Bandwidth Utilization

The following shall define the SLA commitment for the NetTN Edge Device to Core WAN Circuit Hourly Average Bandwidth Utilization:

The NetTN Edge Device to Core WAN Circuit Average Hourly Inbound Bandwidth Utilization and the Hourly Average Outbound Bandwidth Utilization: =< 80% average bandwidth utilization per 24 hour day per calendar month.

All NetTN End Site connections shall have an hourly average bandwidth utilization value less than 80% utilization. This 80% bandwidth utilization value shall be calculated as an average value for each hour based on the twelve 5 minute time samples. Polling and response time measurements must be conducted every 5 minutes for a total of 12 time samples per hour and 288 per 24 hours.

In the event this 80% hourly average bandwidth utilization factor is exceeded for a given End Site, remedial action by the respective NetTN Association Partner must be taken to determine if the bandwidth requires an upgrade within the timeframes as specified by A.13

Conformance: The requirement for meeting this Service Level is a monthly notification via a report from the Contractor during the monthly Service Level meeting.

Compensation for One Occurrence: Failure to notify the State of an end site that exceeds the above requirements for any NetTN Edge Device shall result in a monthly payment equal to 2% of that End Site's monthly bill.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Edge Device to Core WAN Circuit Hourly Average Bandwidth Utilization report is reviewed and verified by both the TNII Association and the NetTN Contractor. This review and verification process shall be mutually scheduled between the respective TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.12 NetTN Internet Access Hourly Average Bandwidth Utilization

The following shall define the SLA commitment for the NetTN Internet Access Hourly Average Bandwidth Utilization:

Each NetTN Internet Access Hourly Average Inbound Bandwidth Utilization and the Hourly Average Outbound Bandwidth Utilization =< 80% per hour for the entire calendar month.

Each NetTN Internet egress WAN link shall have an hourly average bandwidth utilization value less than 80% utilization. This 80% bandwidth utilization value shall be calculated as an hourly average value. Polling and response time measurements must be conducted every 5 minutes for a total of 12 time samples per hours, 10 hours a day, and 5 days a week, Monday through Friday.

Conformance: The above NetTN Internet Access WAN circuit hourly average bandwidth utilization factor shall be calculated at the end of each calendar month on a per hour basis for the entire calendar month.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement shall result in a payment of 2% of the total aggregate monthly costs for all affected NetTN WAN services currently purchased under this contract.

Compensation for 2 Occurrences in a Single Month: Failure to meet the above requirements for 2 occurrences in the same month shall result in a monthly payment equal to 4% of the total aggregate monthly costs for all affected NetTN WAN services currently purchased under this contract.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirements for **N** occurrences in the same month shall result in a monthly payment equal to (**N** x 2%) of the total aggregate monthly costs for all affected NetTN WAN services currently purchased under this contract where **N** is the number of occurrences in a single month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NetTN Internet Access Hourly Average Bandwidth Utilization report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.13 NAP to NAP Core WAN Circuit Hourly Average Bandwidth Utilization

The following shall define the SLA commitment for the NAP to NAP to Core WAN Circuit Hourly Average Bandwidth Utilization:

The NAP to NAP to Core WAN Circuit Average Hourly Inbound Bandwidth Utilization and the Hourly Average Outbound Bandwidth Utilization: =< 80% per hour for the entire calendar month.

Each NetTN NAP to NAP egress WAN link shall have an hourly average bandwidth utilization value less than 80% utilization. This 80% bandwidth utilization value shall be calculated as an hourly average value. Polling and response time measurements must be conducted every 5 minutes for a total of 12 time samples per hours, 10 hours a day, and 5 days a week, Monday through Friday 7:00 a.m. to 5:00 p.m.

Conformance: The above NAP to NAP Core WAN Circuit Hourly Average Bandwidth Utilization shall be calculated at the end of each calendar month on a per hour basis for the entire calendar month.

Compensation for 2 Occurrences in a Single Month: Failure to meet the above requirement shall result in a payment of 1% of the total aggregate monthly costs for all NetTN WAN services currently purchased under this contract.

Compensation for 2 Occurrences in a Single Month: Failure to meet the above requirements for 2 occurrences in the same month shall result in a monthly payment equal to 2% of the total aggregate monthly costs for all NetTN WAN services currently purchased under this contract.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirements for N occurrences in the same month shall result in a monthly payment equal to (N x 1%) of the total aggregate monthly costs for all NetTN WAN services currently purchased under this contract where N is the number of occurrences in a single month.

The above compensation shall be made by the Contractor within 15 business days after each monthly NAP to NAP Core WAN Circuit Hourly Average Bandwidth Utilization report is reviewed and verified by both the TNII Association and the NetTN Contractor. This review and verification process shall be mutually scheduled between the respective TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.14 End Site Critical Problem Identification and Problem Resolution

The following shall define the SLA commitment for the NetTN Fault Management Problem Identification and Problem Resolution service offering:

Critical Problem Identification shall be immediate Level 3 ticket opened, work log entry within 10 minutes, subsequent entries into work log within 30 minutes, first critical notification within 30 minutes and subsequent critical notifications every hour until the problem is fixed.

Critical Problem Fixed: three hours or less.

Conformance: The above critical problem identification and problem resolution requirement shall be reviewed at the end of each calendar month based upon daily fault management reports for the entire month that measure the response times as well as the resolution time of the critical problem.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for critical problem identification and problem resolution shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for critical problem identification and problem resolution for a second occurrence within the same month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for critical problem identification and problem resolution for **N** occurrences in a single month shall result in a monthly payment equal to (**N** x 2%) of that End Site's monthly bill where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each End Site's Monthly Critical Fault report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.15 End Site Major Problem Identification and Problem Resolution

The following shall define the SLA commitment for the NetTN Fault Management Problem Identification and Problem Resolution service offering:

Major Problem Identification shall be immediate Level 2 ticket work log generated within 30 minutes with subsequent entries into log within two hours.

Major Problem Fixed: six hours or less.

Conformance: The above major problem identification and problem resolution requirement shall be reviewed at the end of each calendar month based upon daily fault management reports for the entire month that measure the response times as well as the resolution time of the major problem.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for major problem identification and problem resolution shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for major problem identification and problem resolution for a second occurrence within the same month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for major problem identification and problem resolution for **N** occurrences in a single month shall result in a monthly payment equal to (**N x 2%**) of that End Site's monthly bill where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each End Site's Monthly Major Fault report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.16 End Site Minor Problem Identification and Problem Resolution

The following shall define the SLA commitment for the NetTN Fault Management Problem Identification and Problem Resolution service offering:

Minor Problem Identification shall be immediate Level 2 ticket work log generated within 30 minutes and subsequent entries into log within four hours.

Minor Problem Fixed: eight hours or less.

Conformance: The above for minor problem identification and problem resolution requirements shall be reviewed at the end of each calendar month for the entire month that measure the response times as well as the resolution time of the minor problem.

Compensation for One Occurrence In a Single Month: Failure to meet the above requirement for minor problem identification and problem shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for minor problem identification and problem resolution for a second occurrence within the same month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for minor problem identification and problem resolution for **N** occurrences in a single month shall result in a monthly payment equal to (**N x 2%**) of that End Site's monthly bill where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each End Site's Monthly Minor Fault report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.17 Ordering, Installing, Conducting Verification Testing for New or Upgraded End Site

The following shall define the SLA commitment for the NetTN Configuration Management ordering, provisioning and testing service offering:

Ordering, Installing, Testing and Incorporating into monitoring tools for any new, changed, or upgraded End Site Location's WAN connection: 30 calendar days or less, with the exception of end site unavailability, or network facilities which must conform to 45 business days, or if the 30th calendar day falls on a weekend or State holiday. This time period will be less than 30 calendar days if so offered by the Contractor. Fiber-based facilities for Ethernet and Wavelength must conform to 60 days.

Conformance: The above ordering, installing, and testing responsiveness for new or upgraded End Sites shall be reviewed at the end of each calendar month according to the configuration management reports generated by the NetTN Contractor.

Compensation for Being 1-7 Calendar Days Late: Failure to meet the above requirement for ordering, installing, and testing a new or upgraded End Site location shall result in a monthly payment equal to 10% of that End Site's total monthly bill.

Compensation for Being 8-14 Calendar Days Late: Failure to meet the above requirement for ordering, installing, and testing a new or upgraded End Site location shall result in a monthly payment equal to 20% of that End Site's total monthly bill.

Compensation for Being More Than 14 Calendar Days Late: Failure to meet the above requirement for ordering, installing, and testing a new or upgraded End Site location shall result in a monthly payment equal to (**N%** + 20%) of that End Site's total monthly bill where **N** is each additional day late beyond 14 days.

The above compensation shall be made by the Contractor within 15 business days after each End Site Installation, Network Acceptance Testing, and End Site Certification Summary report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.18 Configuration Management Services – Reactive Critical

The following shall define the SLA commitment for the NetTN Configuration Management Reactive – Critical response level:

Critical Configuration Response: Immediate Work Order Generated, and 10 minute e-mail updates until configuration is completed.

Critical Configuration Response: 15 Minutes or Less for Live Video Sessions and Security Issues. This time period will be less if so offered by the Contractor.

Critical Configuration Response: three hours or less for others. This time period will be less if so offered by the Contractor.

Circuit-switched DSL communication lines shall be exempt from this SLA requirement.

Conformance: The above critical configuration response level shall be reviewed at the end of each calendar month according to the configuration management reports generated by the NetTN Contractor.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for critical configuration response based on a critical fault shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for critical configuration response based on a critical fault for a second occurrence within the same month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for critical configuration response based on a critical fault shall result in a monthly payment equal to (**N** x 2%) of that End Site's monthly bill where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each End Site's Monthly Reactive Configuration Change Summary report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.19 Configuration Management Services – Reactive Major

The following shall define the SLA commitment for the NetTN Configuration Management Reactive – Major response level:

Major Configuration Response: Immediate Work Order Generated, and 30 minute E-mail updates Until Configuration Completed.

Major Configuration Response: six hours or less.

Circuit-switched DSL communication lines shall be exempt from this SLA requirement.

Conformance: The above major configuration response level shall be reviewed at the end of each calendar month according to the configuration management reports generated by the NetTN Contractor.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for major configuration response based on a major fault shall result in a monthly payment equal to 2% of that End Site's monthly bill.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for major configuration response based on a major fault for a second occurrence within the same month shall result in a monthly payment equal to 4% of that End Site's monthly bill.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for major configuration response based on a major fault shall result in a monthly payment equal to **(N x 2%)**of that End Site's monthly bill where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each End Site's Monthly Reactive Configuration Change Summary report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.20 Remote Access (RA) Configuration Management Services – Proactive

Remote Access (RA) Configuration Management Services include the establishment of new RA accounts as well as any changes or deletions of RA accounts.

The following shall define the SLA commitment for the NetTN Configuration Management Proactive response level:

Proactive Configuration Response: three calendar days.

Conformance: The above described RA Configuration Management Services level shall be reviewed at the end of each calendar month.

Compensation for One Occurrence in a Single Month: Failure to meet the above requirement for the NetTN Network's RA Service Offering on a monthly basis shall result in a monthly payment based on the total number of RA utilizing the NetTN Remote Access Service equal to 2% of the total monthly Remote Access bill for that TNII Association partner.

Compensation for Two Occurrences in a Single Month: Failure to meet the above requirement for the NetTN Network's RA Service Offering on an hourly basis for a second time within the same month shall result in a monthly payment based on the total number of end users utilizing the NetTN Remote Access Service equal to 4% of the total monthly Remote Access bill for that TNII Association partner.

Compensation for N Occurrences in a Single Month: Failure to meet the above requirement for the NetTN Network's RA Offering on an hourly basis shall result in a monthly payment based on the total number of end users utilizing the NetTN Remote Access Service equal to (**N** x 2%) of the total monthly Remote Access bill for that TNII Association partner, where **N** is the number of occurrences in a single calendar month.

The above compensation shall be made by the Contractor within 15 business days after each Monthly NetTN Remote Assess Configuration Change Summary report is reviewed and verified by both the TNII Association and the NetTN Contractor. The review and verification process shall be mutually scheduled between the TNII Association and the NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

A.21 Report for Security Administration Management Services

The following shall define the SLA commitment for Critical and Major Security identification and problem resolution service offering (A.14, A.15, A.18, and A.19).

All Critical and Major Security incidents shall be reported by the NetTN Contractor weekly.

Conformance: The requirement for meeting this Service Level is a weekly notification via a report from the NetTN Contractor.

Compensation: Failure to report a Critical or Major Security incident to the TNII Association shall result in a monthly payment equal to 2% of that End Site's monthly bill.

The above compensation shall be made by the Contractor within 15 business days after each weekly security incident report is reviewed and verified by both the TNII Association and the NetTN Contractor. This review and verification process shall be mutually scheduled between the respective TNII Association and NetTN Contractor for each month no greater than three weeks after the preceding month's last day.

Attachment B – NetTN Catalog of Service Offerings

In the tables that follow the time periods for the various contract "Years" shall be:	
Year 1	From July 1, 2008 through June 30, 2009
Year 2	From July 1, 2009 through June 30, 2010
Year 3	From July 1, 2010 through June 30, 2011
Year 4	From July 1, 2011 through June 30, 2012
Year 5	From July 1, 2012 through June 30, 2013
Year 6	From July 1, 2013 through June 30, 2014
Year 7	From July 1, 2014 through June 30, 2015
Year 8	From July 1, 2015 through June 30, 2016
Year 9	From July 1, 2016 through June 30, 2017
Year 10	From July 1, 2017 through June 30, 2018

NetTN Catalog of Service Offerings

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access.	DSL (1.5 x 256k)	/month	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500	$279.4500
	DSL (3M x 384k)	/month	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000	$310.5000
	DSL (6M x 384k)	/month	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100	$345.0100
	384kbps	/month	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050	$475.0050
	1.544 Mbps	/month	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000
	3 Mbps	/month	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900
	4.5 Mbps	/month	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900
	6 Mbps	/month	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900
	7.5 Mbps	/month	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900
	9 Mbps	/month	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900	$2,524.9900
	10.5 Mbps	/month	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900
	16 Mbps	/month	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385
	25 Mbps	/month	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993
	DS3 – 45 Mbps	/month	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442
	Metro Ethernet 2 Mbps	/month	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900
	Metro Ethernet 4 Mbps	/month	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000
	Metro Ethernet 8 Mbps	/month	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000
	Metro Ethernet 10 Mbps	/month	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000
	Metro Ethernet 20 Mbps	/month	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000
	Metro Ethernet 50 Mbps	/month	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000

	Metro Ethernet 100 Mbps	/month	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000
	Metro Ethernet 200 Mbps	/month	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000
	Metro Ethernet 300 Mbps	/month	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000
	Metro Ethernet 450 Mbps	/month	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000
	Metro Ethernet 600 Mbps	/month	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000
	Metro Ethernet 750 Mbps	/month	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000
	Metro Ethernet 900 Mbps	/month	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000
	Metro Ethernet 1 Gbps	/month	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000
	Monday – Sunday 24 X 7 Coverage	/month	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$0.0000

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet access for K-12	1.544 Mbps	/month	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000	$525.0000
	3 Mbps	/month	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900	$924.9900
	4.5 Mbps	/month	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900	$1,324.9900
	6 Mbps	/month	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900	$1,724.9900
	7.5 Mbps	/month	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900	$2,124.9900
	10.5 Mbps	/month	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900	$2,924.9900
	16 Mbps	/month	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385	$3,363.7385
	25 Mbps	/month	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993	$3,868.2993
	DS3 – 45 Mbps	/month	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442	$4,448.5442
	Metro Ethernet 2 Mbps	/month	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900	$787.4900
	Metro Ethernet 4 Mbps	/month	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000	$900.0000
	Metro Ethernet 8 Mbps	/month	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000	$1,150.0000
	Metro Ethernet 10 Mbps	/month	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000	$1,495.0000
	Metro Ethernet 20 Mbps	/month	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000	$2,150.0000
	Metro Ethernet 50 Mbps	/month	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000	$2,495.0000
	Metro Ethernet 100 Mbps	/month	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000	$2,795.0000

	Metro Ethernet 200 Mbps	/month	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000	$4,891.0000
	Metro Ethernet 300 Mbps	/month	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000	$7,826.0000
	Metro Ethernet 450 Mbps	/month	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000	$9,500.0000
	Metro Ethernet 600 Mbps	/month	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000	$11,000.0000
	Metro Ethernet 750 Mbps	/month	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000	$12,500.0000
	Metro Ethernet 900 Mbps	/month	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000	$14,000.0000
	Metro Ethernet 1 Gbps	/month	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000	$15,500.0000
	Monday – Sunday 24 X 7 Coverage	/month	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000	$100.0000

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, Internet Access, email services, DNS services/management, site connectivity, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Friday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet access.	DSL (1.5 x 256k)	/month	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086	$251.5086
	384kbps	/month	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045	$427.5045
	1.544 Mbps	/month	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000
	3 Mbps	/month	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405	$878.7405
	4.5 Mbps	/month	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910	$1,192.4910
	6 Mbps	/month	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910	$1,552.4910
	7.5 Mbps	/month	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910	$1,912.4910
	9 Mbps	/month	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910	$2,272.4910
	16 Mbps	/month	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647	$3,027.3647
	DS3 – 45 Mbps	/month	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897
	Metro Ethernet 2 Mbps	/month	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410	$708.7410
	Metro Ethernet 4 Mbps	/month	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000	$810.0000
	Metro Ethernet 8 Mbps	/month	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000	$1,035.0000
	Metro Ethernet 10 Mbps	/month	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000	$1,345.5000
	Metro Ethernet 20 Mbps	/month	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000	$1,935.0000
	Metro Ethernet 50 Mbps	/month	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000	$2,245.5000
	Metro Ethernet 100 Mbps	/month	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000	$2,515.5000
	Metro Ethernet 600 Mbps	/month	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000	$10,500.0000
	Metro Ethernet 1 Gbps	/month	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000	$14,250.0000

	Monday – Sunday 24 X 7 Coverage	/month	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interfaces with minimum (2) 10/100 Mbps ports, NetTN security, network management and operation support, includes 7 a.m. - 6 p.m. local time coverage Monday - Saturday.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Higher Education Research WAN Circuit	Metro Ethernet 750 Mbps	/month	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000	$9,000.0000
	Metro Ethernet 1 Gbps	/month	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000
	Wavelength 1.25Gbps	/month	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000
	Wavelength 2.5Gbps	/month	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000	$18,000.0000
	Wavelength OC3	/month	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900	$8,538.3900
	Wavelength OC12	/month	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825	$14,942.1825
	Wavelength OC48	/month	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000	$19,000.0000
	Wavelength OC192	/month	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000
	Wavelength 10 Gbps	/month	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000	$22,250.0000

Explanation: This section is used for ordering data circuits to the End Site locations. The cost per month includes the local loop, long haul circuits, all associated end site and network hardware, appropriate LAN Interface, Internet Access, NetTN security, network management and operation support, includes 24 X 7 coverage.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
SONET	OC12	/month	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000	$210.0000
	OC48	/month	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000	$840.0000
	OC192	/month	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000	$5,750.0000
	Local Channel per air mile	/month	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000	$245.0000
	Interoffice Channel per air mile	/month	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000
	Customer node	/month	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000
	Central office node	/month	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000	$1,750.0000

Explanation: This section is used for ordering SONET ring based technology with 100% survivability.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit with Internet Access over SONET	3 Mbps	/month	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910	$832.4910
	DS3 – 45 Mbps	/month	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897	$4,003.6897
	Metro Ethernet 100 Mbps	/month	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900	$5,336.4900
	Metro Ethernet 1 Gbps	/month	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219	$19,121.6219

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site WAN Circuit without Internet Access over SONET	Metro Ethernet 100 Mbps	/month	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000	$2,400.0000
	Metro Ethernet 600 Mbps	/month	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612	$9,221.4612
	Metro Ethernet 1 Gbps	/month	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597	$17,209.4597

Explanation: These services are available to customers installing SONET or who have existing SONET services. The Sonet Ring is ordered separately. The SONET provides the transport portion of the WAN data circuit. All NetTN Service Level Agreements apply for the WAN Circuit riding the SONET.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
TDOT ITS SmartWay	TDOT ITS T1's Point-to-Point	/month	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000	$205.0000
	TDOT ITS 9.6 Synchronet per end point	/month	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500	$76.3500

Explanation: This section is for ordering T1's and 9.6 Synchronet circuits for Tennessee's Department of Transportation ITS SmartWay System. ITS stands for Intelligent Transportation Systems, a system of advanced communications technologies designed to improve transportation safety and mobility. TDOT Smartway is Tennessee's intelligent transportation system. Circuits will terminate at 6603 Centennial Boulevard, Nashville, TN on SONET. The SONET ring is ordered separately.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point/Ethernet/ Wavelength	Intralata DS1	/mileage	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000	$45.0000
	Interlata DS1	/mileage	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000	$12.5000
	Intralata DS3	/mileage	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000	$700.0000
	Interlata DS3	/mileage	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000	$95.0000
	Interstate DS1	/mileage	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000	$75.0000
	Interstate DS3	/mileage	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000
	Metro Ethernet 2 Mbps IntraLATA/IntraState	/month	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000	$350.0000
	Metro Ethernet 2 Mbps InterLATA/IntraState	/month	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000	$1,500.0000
	Metro Ethernet 2 Mbps InterState	/month	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000	$2,500.0000
	Metro Ethernet 8 Mbps IntraLATA/IntraState	/month	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000	$425.0000
	Metro Ethernet 8 Mbps InterLATA/IntraState	/month	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000	$2,000.0000
	Metro Ethernet 8 Mbps InterState	/month	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000
	Metro Ethernet 10 Mbps IntraLATA/IntraState	/month	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300	$446.3300
	Metro Ethernet 10 Mbps InterLATA/IntraState	/month	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000	$3,500.0000
	Metro Ethernet 10 Mbps InterState	/month	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000	$4,000.0000
	Metro Ethernet 100 Mbps IntraLATA/IntraState	/month	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000	$975.0000
	Metro Ethernet 100 Mbps InterLATA/IntraState	/month	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000

	Metro Ethernet 100 Mbps InterState	/month	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000	$7,500.0000
	Metro Ethernet 450 Mbps IntraLATA/IntraState	/month	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000	$1,795.0000
	Metro Ethernet 450 Mbps InterLATA/IntraState	/month	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000	$10,000.0000
	Metro Ethernet 450 Mbps InterState	/month	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000	$12,000.0000
	Wavelength 1.25 Gbps IntraLATA/IntraState	/month	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000	$2,070.0000
	Wavelength 1.25 Gbps InterLATA/IntraState	/month	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000	$15,000.0000
	Wavelength 1.25 Gbps InterState	/month	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000	$20,000.0000
	Wavelength 2.5 Gbps IntraLATA/IntraState	/month	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000	$3,000.0000
	Wavelength 2.5 Gbps InterLATA/IntraState	/month	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000	$23,000.0000
	Wavelength 2.5 Gbps InterState	/month	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000
	Wavelength 10 Gbps IntraLATA/IntraState	/month	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500	$4,787.7500
	Wavelength 10 Gbps InterLATA/IntraState	/month	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000	$35,000.0000
	Wavelength 10 Gbps InterState	/month	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000	$42,000.0000

Explanation: This section is for ordering additional circuits. The TNII Association partner ordering this service is responsible for the management and maintenance of the required equipment to support this service.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Point to Point – OIR	Wavelength 1.25 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000	$3,638.4000
	Wavelength 2.5 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000	$6,494.4000
	Wavelength 10 Gbps Transparent Transport Optical Network Protected - IntraLATA	/month	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000	$12,226.4000
	Primary System Single Bay	/month	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000	$4,574.7000

Explanation: This section is for ordering OIR Data Center point to point circuits. This service is subject to NetTN Service Level Agreements A.4. OIR is responsible for the management and maintenance of the required equipment to support this service.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services - DSL	DSL (1.5 X 256k)	/month	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000	$55.0000
	DSL (3M x 384k)	/month	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000	$64.3000

Explanation: This section is used for ordering DSL connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Broadband Internet Services Cable	384kbps x 4Mbps	/month	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000	$145.0000

Explanation: This section is used for ordering cable connections to the Internet only. NetTN Service Level Agreements do not apply. The customer will be responsible for obtaining a VPN account for access to State resources.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Remote Access User	Analog up to 56kbps, per account	/month	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500	$10.9500
	Interstate 800 services for RA access	/minute	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300	$0.0300
	3G/4G Wireless User, per Account, with static IP addresses	/month	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000	$50.0000

Explanation: This section is for dial-up or broadband remote access for an individual.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Video Conferencing Services.	Dial Out – 384 Kbps ISDN	/30min	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000
	Multipoint Audio Service	/30min	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300	$3.0300
	H.323 Directory Listing Service	/incident	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	384 Kbps Video Multipoint Service Per Half Hour	/30min	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000	$16.2000
	768 Kbps Video Multipoint Service Per Half Hour	/30min	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000
	1.544Mbps Video Multiport Service Per Half Hour	/30 min	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000	$37.8000

Explanation: This section is for ordering video conferencing service.

For H.323-based connections, users must pay a set-up fee for the NetTN service provider's maintenance of the H.323-based directory. There are no other costs associated with point to point H.323 QoS connections. When requiring multipoint services, half hour usage options are based on available connection bandwidth. This cost includes any scheduling or management functions for H.323-based multipoint services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Direct Internet Access	DS1 – (1.544)	/month	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000
	3 Mbps	/month	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000	$1,040.0000
	6 Mbps	/month	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000	$1,810.0000
	9 Mbps	/month	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000	$2,145.0000
	12 Mbps	/month	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000	$2,872.0000
	15 Mbps	/month	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000	$3,285.0000
	21 Mbps	/month	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000	$3,950.0000
	27 Mbps	/month	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000	$5,280.0000
	DS3	/month	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000	$7,050.0000
	Metro Ethernet 10Mbps	/month	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000	$1,720.0000
	Metro Ethernet 20Mbps	/month	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000	$3,240.0000
	Metro Ethernet 50Mbps	/month	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000	$5,700.0000
	Metro Ethernet 100Mbps	/month	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000	$6,500.0000
	Metro Ethernet 150Mbps	/month	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000
	Metro Ethernet 200Mbps	/month	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000	$14,500.0000
	Metro Ethernet 250Mbps	/month	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000
	Metro Ethernet 500Mbps	/month	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000	$27,000.0000
	Metro Ethernet 1Gbps	/month	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000
	OC 3	/month	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000	$10,200.0000
	OC 12	/month	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000	$38,520.0000
	OC 48	/month	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000	$65,000.0000

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. The NetTN end site ordering this service is responsible for the management and maintenance of the required equipment to support this service. The DIA Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
OIR Direct Internet Access	Metro Ethernet 250Mbps	/month	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000	$16,400.0000
	Metro Ethernet 1Gbps	/month	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000	$45,000.0000

Explanation: This section is used for ordering Internet access that is not part of the NetTN infrastructure. OIR is responsible for the management and maintenance of the required equipment to support this service. This Service will not connect to any NetTN equipment that is on site for the delivery of any other service. Direct Internet Access is direct access from the end site to the Internet POP. This service is subject to SLA A.3.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet/ Intranet Services	Name Space Management, per zone	/month	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000
	Email, per account	/month	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000	$15.0000
	Content Filtering per user	/month	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500
	K-12 Content Filtering per user	/month	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500	$0.2500

Explanation: This section is for ordering Internet/Intranet services. Further detail of these service offerings is provided in their respective RFP response sections.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Internet 2	Metro E 100mb Connection	/month	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000	$1,850.0000
	Metro E 1 Gbps Connection	/month	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000	$3,550.0000

Explanation: This section is used for ordering access to Internet 2 peering connection. The first 3 Metro E 100mbps connections will be no charge for the life of the NetTN Contract. Any additional circuits will be charged at contracted rates.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services	Access Line & Interfaces-Voice/Data-each	/month	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000	$534.0000
	B-Channels-Voice/Data-each	/month	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200
	Primary Rate Installation	/incident	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	Telephone Numbers (per number)	/month	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900
	E911 (per number)	/month	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000

Explanation: This service is used for local transport only. No customer provided equipment is included. It will not connect to the NetTN backbone. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Primary Rate ISDN Services over SONET	Access Line & Interfaces-Voice/Data-each	/month	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000	$434.0000
	B-Channels-Voice/Data-Each	/month	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200	$0.9200
	Telephone Numbers (per number)	/month	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900	$0.1900
	E911 (per number)	/month	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000	$3.0000

Explanation: This service is for the Primary Rate ISDN Services over SONET. SONET is ordered separately. No customer equipment is included. NetTN Service Level Agreements do not apply. Primary Rate ISDN (PRI) Voice/Data option provides two-way voice and/or data transmission and includes the functionality of hunting and calling line identification (i.e. PBX Trunk Aggregation).

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Failover Circuit	Failover Managed Circuit 1.544 mbps	/month	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000	$595.0000

Explanation: This section is used for End Sites to order a back-up NetTN managed WAN circuit with Internet access to any alternate NetTN NAP. Service must provide automated failover capability. All NetTN Service Level Agreements apply.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Router Equipment	End Site Router 10/100 24 Switch Ports	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	End Site Router 10/100 48 Switch Ports	/month	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000	$225.0000
	End Site Router PoE 802.af	/month	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000
	End Site Router Wireless Option (802.11b/g)	/month	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000	$90.0000

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Additional End Site WAN Data LAN Connection	Ethernet 10 Mbps	/month	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000	$9.9000
	Ethernet 100 Mbps	/month	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000	$27.0000

Explanation: This section is for ordering additional data LAN connection(s) to the End Site. In a campus environment or multi-agency building, an end site may require more than one LAN interface. In the event that the router must be upgraded to accommodate multiple LAN interfaces, the router upgrade and associated cost will be the responsibility of the NetTN Service provider. A managed WAN circuit includes (2) 10/100 Mbps LAN interface ports between the router and LAN switch.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
End Site Services	Cutover implementation	/incident	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	New services	/incident	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000	$950.0000
	On-site work order hardware configuration change	/incident	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000
	Consulting Services	/hour	$210.0000	$220.0000	$230.0000	$240.0000	$245.0000	$250.0000	$255.0000	$260.0000	$265.0000	$270.0000
	Site Survey	/incident	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000
	Load Testing Point-to-Point Circuits	/incident	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000
	Migration end site order processing	/order	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	Expedite charges/per WAN Circuit	/incident	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000

Explanation: This section is for ordering integration service whether it is for the initial cutover implementation, new services for new end sites or existing end sites, or consulting services.
Reminder: All End Sites that are cutover onto the NetTN WAN infrastructure shall include the managed service offerings as specified in the RFP document. NetTN WAN equipment software or configuration changes, modifications, enhancements, and improvements are to be considered part of the managed service offerings.

Clarification: The following further clarifies the definition of the above labor or services that can be charged by the NetTN Service Provider to the appropriate TNII Association Partner:

Cutover Implementation refers to the migration of an existing TNII Association end site to the new NetTN WAN infrastructure. Embedded in the cost are the migration planning, hardware and software configurations, on-site installation services, end site documentation, and acceptance tests.

New Services are for new end sites.

On Site work order hardware configuration changes refer to situations where a technician needs to travel to the customer premise to change the NetTN provided equipment only where the end site WAN circuit is not changing.

Consulting Services are available on a per hour basis for consulting on NetTN Scope of Services.

Load Testing Point-to-Point Circuits: Validating the actual throughput that the circuit can handle.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Enhanced Firewall	Enhanced Firewall – stand alone Firewall at end-site	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	Enhanced Firewall-IDS	/month	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000

Explanation: This section is used for ordering equipment to connect to the NetTN End Site Managed Services or NetTN unmanaged services.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Managed End Site Firewall and Managed End Site Switch	End Site Integrated FW IOS	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	End Site 24 Port Integrated Switch	/month	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000	$550.0000
	End Site 48 Port Integrated Switch	/month	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000	$650.0000
	End Site Integrated FW IOS / 24 Port Integrated Switch	/month	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000	$750.0000
	End Site Integrated FW IOS / 48 Port Integrated Switch	/month	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000	$850.0000

Explanation: This section is used for ordering end site firewall and LAN switch. Cost per month includes all hardware, software, operations support and management for WAN, firewall and switch. These services may be ordered with any managed end site circuit with or without Internet access.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Co-location Services	Racks/Cabinet Installation	/incident	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000	$5,000.0000
	19" Open Rack	/month	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000
	23" Open Rack	/month	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000	$1,600.0000
	Cabinet	/month	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000	$125.0000
	Cage/Square Footage	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	Power - 110v AC 15 Amps	/month	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000	$150.0000
	Power - 110v AC 20 Amps	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	Power - 220v AC 20 Amps	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	Power - 220v AC 30 Amps	/month	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000
	Power - 48v DC 20 Amps A/B	/month	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	Power - 48v DC 30 Amps A/B	/month	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000
	Power - 48v DC 40 Amps A/B	/month	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000	$400.0000
	Power - 48v DC 50 Amps A/B	/month	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000
	Power – 48v DC 60 Amps A/B	/month	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000	$600.0000
	Cross Connect – DS1	/incident	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000	$200.0000
	Cross Connect – DS1	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	Cross Connect – DS3/Coax	/incident	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000
	Cross Connect – DS3/Coax	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

	Cross Connect – Ethernet/Cat 5	/incident	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000	$300.0000
	Cross Connect – Ethetrnet/Cat 5	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000
	Cross Connect - Fiber	/incident	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000	$500.0000
	Cross Connect - Fiber	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This is for a customer who wishes to co-locate equipment within the NetTN Service Provider's NAP or POP facilities for special purposes, such as SAN servers. Included in this cost are the physical space, air conditioning and restricted access privileges.

Description	Detail	Unit	Year 1 Unit Cost	Year 2 Unit Cost	Year 3 Unit Cost	Year 4 Unit Cost	Year 5 Unit Cost	Year 6 Unit Cost	Year 7 Unit Cost	Year 8 Unit Cost	Year 9 Unit Cost	Year 10 Unit Cost
Hosted Identity Management	Authentication Per User – Note 1	/month	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900	$17.2900
	Authentication Per User – Note 2	/hour	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000	$250.0000
	Authentication Per User – Note 3	/month	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000	$0.0000

Explanation: This section is for ordering Hosted Identity Management Services for eHealth and future defined TNII Association Partner VRFs. This service is subject to NetTN Service Level Agreements.

Note 1 – eHealth participants must use line item to authenticate to eHealth Exchange Zone with the exception of Health providers with Identity management systems and State of Tennessee Health agencies/employees.

Note 2 – Health providers with identity management systems will be charged a one-time consulting fee for set-up in lieu of the monthly authentication charge.

Note 3 - State of Tennessee Health agencies/employees will authenticate to the NetTN network. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

Attachment C – Attestation Re Personnel Used In Contract Performance

ATTESTATION RE PERSONNEL USED IN CONTRACT PERFORMANCE

SUBJECT CONTRACT NUMBER:	
CONTRACTOR LEGAL ENTITY NAME:	AT&T Corporation
FEDERAL EMPLOYER IDENTIFICATION NUMBER: (or Social Security Number)	13-4924710

The Contractor, identified above, does hereby attest, certify, warrant, and assure that the Contractor shall not knowingly utilize the services of an illegal immigrant in the performance of this Contract and shall not knowingly utilize the services of any subcontractor who will utilize the services of an illegal immigrant in the performance of this Contract.

SIGNATURE & DATE: 6-10-08

NOTICE: This attestation MUST be signed by an individual empowered to contractually bind the Contractor. If said individual is not the chief executive or president, this document shall attach evidence showing the individual's authority to contractually bind the Contractor.

OK to sign ATT Legal AOK

Attachment D – HIPAA Business Associate Agreement

HIPAA BUSINESS ASSOCIATE AGREEMENT

COMPLIANCE WITH PRIVACY AND SECURITY RULES

THIS BUSINESS ASSOCIATE AGREEMENT (hereinafter "Agreement") is between The State of Tennessee, Department of Finance and Administration (hereinafter "Covered Entity") and AT&T Corporation (hereinafter "Business Associate"). Covered Entity and Business Associate may be referred to herein individually as "Party" or collectively as "Parties."

BACKGROUND

Covered Entity acknowledges that it is subject to the Privacy and Security Rules (45 CFR Parts 160 and 164) promulgated by the United States Department of Health and Human Services pursuant to the Health Insurance Portability and Accountability Act of 1996 (HIPAA), Public Law 104-191 in certain aspects of its operations.

Business Associate provides services to Covered Entity pursuant to one or more contractual relationships detailed below and hereinafter referred to as "Service Contracts"

Network Tennessee (NetTN) Services – Contract # _____

In the course of executing Service Contracts, Business Associate may come into contact with, use, or disclose Protected Health Information (defined in Section 1.8 below). Said Service Contracts are hereby incorporated by reference and shall be taken and considered as a part of this document the same as if fully set out herein.

In accordance with the federal privacy and security regulations set forth at 45 C.F.R. Part 160 and Part 164, Subparts A, C, and E, which require Covered Entity to have a written memorandum with each of its internal Business Associates, the Parties wish to establish satisfactory assurances that Business Associate will appropriately safeguard "Protected Health Information" and, therefore, make this Agreement.

DEFINITIONS

1.1 Terms used, but not otherwise defined, in this Agreement shall have the same meaning as those terms in 45 CFR §§ 160.103, 164.103, 164.304, 164.501 and 164.504.

1.2 "Designated Record Set" shall have the meaning set out in its definition at 45 C.F.R. § 164.501.

1.3 "Electronic Protected Health Care Information" shall have the meaning set out in its definition at 45 C.F.R. § 160.103.

1.4 "Health Care Operations" shall have the meaning set out in its definition at 45 C.F.R. § 164.501.

1.5 "Individual" shall have the same meaning as the term "individual" in 45 CFR § 160.103 and shall include a person who qualifies as a personal representative in accordance with 45 CFR § 164.502(g).

1.6 "Privacy Official" shall have the meaning as set out in its definition at 45 C.F.R. § 164.530(a)(1).

1.7 "Privacy Rule" shall mean the Standards for Privacy of Individually Identifiable Health Information at 45 CFR Part 160 and Part 164, subparts A, and E.

1.8 "Protected Health Information" shall have the same meaning as the term "protected health information" in 45 CFR § 160.103, limited to the information created or received by Business Associate from or on behalf of Covered Entity.

1.9 "Required by Law" shall have the meaning set forth in 45 CFR § 164.512.

1.10 "Security Rule" shall mean the Security Standards for the Protection of Electronic Protected Health Information at 45 CFR Parts 160 and 164, Subparts A and C.

2. OBLIGATIONS AND ACTIVITIES OF BUSINESS ASSOCIATE (Privacy Rule)

2.1 Business Associate agrees to fully comply with the requirements under the Privacy Rule applicable to "business associates," as that term is defined in the Privacy Rule and not use or further disclose Protected Health Information other than as permitted or required by this Agreement, the Service Contracts, or as Required By Law. In case of any conflict between this Agreement and the Service Contracts, this Agreement shall govern.

2.2 Business Associate agrees to use appropriate procedural, physical, and electronic safeguards to prevent use or disclosure of Protected Health Information other than as provided for by this Agreement. Said safeguards shall include, but are not limited to, requiring employees to agree to use or disclose Protected Health Information only as permitted or required by this Agreement and taking disciplinary actions for inappropriate use or disclosure as necessary.

2.3 Business Associate shall require any agent, including a subcontractor, to whom it provides Protected Health Information received from, created or received by, Business Associate on behalf of Covered Entity or that carries out any duties for the Business Associate involving the use, custody, disclosure, creation of, or access to Protected Health Information, to agree, by written contract with Business Associate, to the same restrictions and conditions that apply through this Agreement to Business Associate with respect to such information.

2.4 Business Associate agrees to mitigate, to the extent practicable, any harmful effect that is known to Business Associate of a use or disclosure of Protected Health Information by Business Associate in violation of the requirements of this Agreement.

2.5 Business Associate agrees to require its employees, agents, and subcontractors to promptly report, to Business Associate, any use or disclosure of Protected Health Information in violation of this Agreement. Business Associate agrees to report to Covered Entity any use or disclosure of the Protected Health Information not provided for by this Agreement

2.6 If Business Associate receives Protected Health Information from Covered Entity in a Designated Record Set, then Business Associate agrees to provide access, at the request of Covered Entity, to Protected Health Information in a Designated Record Set, to Covered Entity or, as directed by covered Entity, to an Individual in order to meet the requirements under 45 CFR § 164.524, provided that Business Associate shall have at least twenty (20) business days from Covered Entity notice to provide access to, or deliver such information.

2.7 If Business Associate receives Protected Health Information from Covered Entity in a Designated Record Set, then Business Associate agrees to make any amendments to Protected Health Information in a Designated Record Set that the Covered Entity directs or agrees to pursuant to the 45 CFR § 164.526 at the request of Covered Entity or an Individual, and in the time and manner designated by Covered Entity, provided that Business Associate shall have at least ten (10) days from Covered Entity notice to make an amendment.

2.8 Business Associate agrees to make its internal practices, books, and records including policies and procedures and Protected Health Information, relating to the use and disclosure of Protected Health Information received from, created by or received by Business Associate on behalf of, Covered Entity available to the Secretary of the United States Department of Health in Human Services or the Secretary's designee, in a time and manner designated by the Secretary, for purposes of determining Covered Entity's or Business Associate's compliance with the Privacy Rule.

2.9 Business Associate agrees to document disclosures of Protected Health Information and information related to such disclosures as would be required for Covered Entity to respond to a request by an Individual for an accounting of disclosure of Protected Health Information in accordance with 45 CFR § 164.528.

2.10 Business Associate agrees to provide Covered Entity or an Individual, in time and manner designated by Covered Entity, information collected in accordance with this Agreement, to permit Covered Entity to respond to a request by an Individual for and accounting of disclosures of Protected Health Information in accordance with 45 CFR § 164.528, provided that Business Associate shall have at least twenty (20) days from Covered Entity notice to provide access to, or deliver such information which shall include, at minimum, (a) date of the disclosure; (b) name of the third party to whom the Protected Health Information was disclosed and, if known, the address of the third party; (c) brief description of the disclosed information; and (d) brief explanation of the purpose and basis for such disclosure.

2.11 Business Associate agrees it must limit any use, disclosure, or request for use or disclosure of Protected Health Information to the minimum amount necessary to accomplish the intended purpose of the use, disclosure, or request in accordance with the requirements of the Privacy Rule.

2.11.1 Business Associate represents to Covered Entity that all its uses and disclosures of, or requests for, Protected Health Information shall be the minimum necessary in accordance with the Privacy Rule requirements.

2.11.2 Covered Entity may, pursuant to the Privacy Rule, reasonably rely on any requested disclosure as the minimum necessary for the stated purpose when the information is requested by Business Associate.

2.11.3 Business Associate acknowledges that if Business Associate is also a covered entity, as defined by the Privacy Rule, Business Associate is required, independent of Business Associate's obligations under this Memorandum, to comply with the Privacy Rule's minimum necessary requirements when making any request for Protected Health Information from Covered Entity.

2.12 Business Associate agrees to adequately and properly maintain all Protected Health Information received from, or created or received on behalf of, Covered Entity

2.13 If Business Associate receives a request from an Individual for a copy of the individual's Protected Health Information, and the Protected Health Information is in the sole possession of the Business Associate, Business Associate will provide the requested copies to the individual and notify the Covered Entity of such action. If Business Associate receives a request for Protected Health Information in the possession of the Covered Entity, or receives a request to exercise other individual rights as set forth in the Privacy Rule, Business Associate shall notify Covered Entity of such request and forward the request to Covered Entity. Business Associate shall then assist Covered Entity in responding to the request.

2.14 Business Associate agrees to fully cooperate in good faith with and to assist Covered Entity in complying with the requirements of the Privacy Rule.

3 OBLIGATIONS AND ACTIVITIES OF BUSINESS ASSOCIATE (Security Rule)

3.1 Business Associate agrees to fully comply with the requirements under the Security Rule applicable to "business associates," as that term is defined in the Security Rule. In case of any conflict between this Agreement and Service Agreements, this Agreement shall govern.

3.2 Business Associate agrees to implement administrative, physical, and technical safeguards that reasonably and appropriately protect the confidentiality, integrity, and availability of the electronic protected health information that it creates, receives, maintains, or transmits on behalf of the covered entity as required by the Security Rule.

3.3 Business Associate shall ensure that any agent, including a subcontractor, to whom it provides electronic protected health information received from or created for Covered Entity or that carries out any duties for the Business Associate involving the use, custody, disclosure, creation of, or access to Protected Health Information supplied by Covered Entity, to agree, by written contract (or the appropriate equivalent if the agent is a government entity) with Business Associate, to the same restrictions and conditions that apply through this Agreement to Business Associate with respect to such information.

3.4 Business Associate agrees to require its employees, agents, and subcontractors to report to Business Associate within five (5) business days, any Security Incident (as that term is defined in 45 CFR Section 164.304) of which it becomes aware. Business Associate agrees to promptly report any Security Incident of which it becomes aware to Covered Entity.

3.5 Business Associate agrees to make its internal practices, books, and records including policies and procedures relating to the security of electronic protected health information received from, created by or received by Business Associate on behalf of, Covered Entity available to the Secretary of the United States Department of Health in Human Services or the Secretary's designee, in a time and manner designated by the Secretary, for purposes of determining Covered Entity's or Business Associate's compliance with the Security Rule.

3.6 Business Associate agrees to fully cooperate in good faith with and to assist Covered Entity in complying with the requirements of the Security Rule.

4. PERMITTED USES AND DISCLOSURES BY BUSINESS ASSOCIATE

4.1 Except as otherwise limited in this Agreement, Business Associate may use or disclose Protected Health Information to perform functions, activities, or services for, or on behalf of, Covered Entity as specified in Service Contracts, provided that such use or disclosure would not violate the Privacy and Security Rule, if done by Covered Entity.

4.2 Except as otherwise limited in this Agreement, Business Associate may use Protected Health Information as required for Business Associate's proper management and administration or to carry out the legal responsibilities of the Business Associate.

4.3 Except as otherwise limited in this Agreement, Business Associate may disclose Protected Health Information for the proper management and administration of the Business Associate, provided that disclosures are Required By Law, or provided that, if Business Associate discloses any Protected Health Information to a third party for such a purpose, Business Associate shall enter into a written agreement with such third party requiring the third party to: (a) maintain the confidentiality, integrity, and availability of Protected Health Information and not to use or further disclose such information except as Required By Law or for the purpose for which it was disclosed, and (b) notify Business Associate of any instances in which it becomes aware in which the confidentiality, integrity, and/or availability of the Protected Health Information is breached.

4.4 Except as otherwise limited in this Agreement, Business Associate may use Protected Health Information to provide Data Aggregation services to Covered Entity as permitted by 42 CFR § 164.504(e)(2)(i)(B).

4.5 Business Associate may use Protected Health Information to report violations of law to appropriate Federal and State Authorities consistent with 45 CFR 164.502(j)(1)

5. OBLIGATIONS OF COVERED ENTITY

5.1 Covered Entity shall provide Business Associate with the notice of Privacy Practices that Covered Entity produces in accordance with 45 CFR § 164.520, as well as any changes to such notice. Covered Entity shall notify Business Associate of any limitations in its notice that affect Business Associate's use or disclosure of Protected Health Information.

5.2 Covered Entity shall provide Business Associate with any changes in, or revocation of, permission by an Individual to use or disclose Protected Health Information, if such changes affect Business Associate's permitted or required uses.

5.3 Covered Entity shall notify Business Associate of any restriction to the use or disclosure of Protected Health Information that Covered Entity has agreed to in accordance with 45 CFR § 164.522, to the extent that such restriction may affect Business Associate's use of Protected Health Information.

6. PERMISSIBLE REQUESTS BY COVERED ENTITY

6.1 Covered Entity shall not request Business Associate to use or disclose Protected Health Information in any manner that would not be permissible under the Privacy or Security Rule, if done by Covered Entity.

7. TERM AND TERMINATION

7.1 Term. This Agreement shall be effective as of the date on which it is signed by both parties and shall terminate when all of the Protected Health Information provided by Covered Entity to Business Associate, or created or received by Business Associate on behalf of Covered Entity, is destroyed or returned to Covered Entity, or, if it is infeasible to return or destroy Protected Health Information, Section 7.3. below shall apply.

7.2 Termination for Cause.

7.2.1. This Agreement authorizes and Business Associate acknowledges and agrees Covered Entity shall have the right to immediately terminate this Agreement and Service Contracts in the event Business Associate fails to comply with, or violates a material provision of, requirements of the Privacy and/or Security Rule or this Memorandum.

7.2.2. Upon Covered Entity's knowledge of a material breach by Business Associate, Covered Entity shall either:

7.2.2.1. provide a reasonable opportunity for Business Associate to cure the breach or end the violation, or

7.2.2.2. if Business Associate has breached a material term of this Agreement and cure is not possible or if Business Associate does not cure a curable breach or end the violation within a reasonable time as specified by, and at the sole discretion of, Covered Entity, Covered Entity may immediately terminate this Agreement and the Service Agreement.

7.2.2.3. If neither cure nor termination is feasible, Covered Entity shall report the violation to the Secretary of the United States Department of Health in Human Services or the Secretary's designee.

7.3 Effect of Termination.

7.3.1. Except as provided in Section 7.3.2. below, upon termination of this Agreement, for any reason, Business Associate shall return or destroy all Protected Health Information received from Covered Entity, or created or received by Business Associate on behalf of, Covered Entity. This provision shall apply to Protected Health

Information that is in the possession of subcontractors or agents of Business Associate. Business Associate shall retain no copies of the Protected Health Information.

7.3.2. In the event that Business Associate determines that returning or destroying the Protected Health Information is not feasible, Business Associate shall provide to Covered Entity notification of the conditions that make return or destruction unfeasible. Upon mutual agreement of the Parties that return or destruction of Protected Health Information is unfeasible, Business Associate shall extend the protections of this Memorandum to such Protected Health Information and limit further uses and disclosures of such Protected Health Information to those purposes that make the return or destruction unfeasible, for so long as Business Associate maintains such Protected Health Information.

8. MISCELLANEOUS

8.1 Regulatory Reference. A reference in this Agreement to a section in the Privacy and /or Security Rule means the section as in effect or as amended.

8.2 Amendment. The Parties agree to take such action as is necessary to amend this Memorandum from time to time as is necessary for Covered Entity to comply with the requirements of the Privacy and Security Rules and the Health Insurance Portability and Accountability Act, Public Law 104-191. Business Associate and Covered Entity shall comply with any amendment to the Privacy and Security Rules, the Health Insurance Portability and Accountability Act, Public Law 104-191, and related regulations upon the effective date of such amendment, regardless of whether this Agreement has been formally amended.

8.3 Survival. The respective rights and obligations of Business Associate under Section 7.3. of this Memorandum shall survive the termination of this Agreement.

8.4 Interpretation. Any ambiguity in this Agreement shall be resolved in favor of a meaning that permits Covered Entity and the Business Associate to comply with the Privacy and Security Rules.

8.5 Notices and Communications. All instructions, notices, consents, demands, or other communications required or contemplated by this Agreement shall be in writing and shall be delivered by hand, by facsimile transmission, by overnight courier service, or by first class mail, postage prepaid, addressed to the respective party at the appropriate facsimile number or address as set forth below, or to such other party, facsimile number, or address as may be hereafter specified by written notice.

COVERED ENTITY:	BUSINESS ASSOCIATE:
Vickie Stanfill, TNII Executive Director	Tom Scott
15th Floor Tennessee Tower	AT&T Corporation
312 8th Avenue, North	333 Commerce Street
Nashville, TN 37243-0288	Floor 24
Telephone Number: (615) 253-5529	Telephone Number: (615) 401-4313
Facsimile Number: (615) 253-1433	Facsimile Number: (615) 401-4190

All instructions, notices, consents, demands, or other communications shall be considered effectively given as of the date of hand delivery; as of the date specified for overnight courier service delivery; as of three (3) business days after the date of mailing; or on the day the facsimile transmission is received mechanically by the facsimile machine at the receiving location and receipt is verbally confirmed by the sender.

8.6 Strict Compliance. No failure by any Party to insist upon strict compliance with any term or provision of this Agreement, to exercise any option, to enforce any right, or to seek any remedy upon any default of any other Party shall affect, or constitute a waiver of, any Party's right to insist upon such strict compliance, exercise that option, enforce that right, or seek that remedy with respect to that default or any prior, contemporaneous, or subsequent default. No custom or practice of the Parties at variance with any provision of this Agreement shall affect, or constitute a waiver of, any Party's right to demand strict compliance with all provisions of this Agreement

8.7 Severability. With respect to any provision of this Agreement finally determined by a court of competent jurisdiction to be unenforceable, such court shall have jurisdiction to reform such provision so that it is enforceable to the maximum extent permitted by applicable law, and the Parties shall abide by such court's determination. In the event that any provision of this Agreement cannot be reformed, such provision shall be deemed to be severed from this Agreement, but every other provision of this Agreement shall remain in full force and effect.

8.8 Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Tennessee except to the extent that Tennessee law has been pre-empted by HIPAA.

8.9 Compensation. There shall be no remuneration for performance under this Agreement except as specifically provided by, in, and through, existing administrative requirements of Tennessee State government and services contracts referenced herein.

IN WITNESS WHEREOF,

[signature] 6-10-08
Date:

[signature] 7-1-08
Date:

OK to sign
AT legal
AOK

Attachment E – Network Requirements

E.1 Network Concept and Connectivity

The NetTN private Wide Area Network (WAN) has several objectives tailored to the TNII Association Partner communities. For the State agencies and OIR, the main objective is to provide a secure transport for data and services to and from the OIR Data Centers to the End Sites. OIR also uses TNII for video conferencing and point to point video. For K-12, the main objective is to provide delivery of Internet services, content filtering, and email to schools and school districts. TBR will use NetTN for a variety of services that include WAN connectivity for video conferencing, transport of voice and data between locations and connectivity to the Internet. The University of Tennessee and local government will use NetTN primarily for connectivity to the Internet. VoIP and IP telephony will continue to grow as an application that all TNII Association Partners will use.

While the design of the NetTN Network will be left up to the Contractor, there are several factors that are required. The placement of the NAPs will be left to the Contractor's discretion, with the exception of at least three NAPs one each in Nashville, Knoxville, and Memphis. For redundancy purposes, the NAPs are required and must mesh together with redundant links.

All equipment in the NAPs must be redundant and backed-up with continuous uninterrupted power source. There should be no single point of failure within the proposed NetTN NAPs.

The NetTN Contractor is required to provide Ingress/Egress, to Internet in two different NAPs with automatic failover as described herein.

The NetTN contract for services shall provide **Universal Access pricing** to all End Site locations throughout the State. Direct Internet Access (DIA) shall be priced competitively in both metro and rural areas.

Edge Devices – In addition to providing the WAN backbone and circuits, the Contractor will also be responsible for the provisioning, installation and maintenance of the edge devices at the end user locations. Depending on the TNII Association Partner, these must support and interact with one or more of the following: Internet access, video conferencing equipment and LANs for IP.

Core Backbone (NAP/POP) Equipment – The Contractor shall be responsible for providing all equipment for the connectivity of the Core Backbone circuits.

NAP Equipment – Because the function of the NAP is not only to aggregate all of the circuits from any core network POPs, if proposed, but also any direct connections from End Site locations, the configuration at every NAP may be different. Therefore, for the WAN interfaces, the physical connections will vary from traditional interfaces to support T-1s and DS3s to optical fiber interfaces. The necessary routers and switches to support the network and associated protocols must be supplied, maintained and managed by the Contractor.

POP Equipment (Core Network) – In the event POPs are utilized in the Contractor's network configuration, the POP equipment will be configured to aggregate circuits originating at the End Site locations and pass the voice, data and video traffic through to the NAP sites. The physical interfaces for the WAN connections will support both the circuits from the End Sites as well as the link to the NAP. All routers and switches to support the network and associated protocols must be supplied, maintained and managed by the Contractor. All POPs proposed shall be redundant within the network with diverse circuitry (different fiber sheath and fiber route) connecting to the proposed NAP locations.

Access Circuit Services – The local access connection between the customer premise Edge Device and the Contractor's NAP or POP must use generally and commercially available transport services. Preference should be given to open, secure, scalable, industry-standards-based, services that provide end-to-end Quality of Service (QoS) capable of transporting voice, video, and data applications within a converged media stream. Time Division Multiplexing (TDM) – based transport services, such as T1 digital carrier, DSL, and so on, shall be acceptable where dictated by the business needs such as cost and Service Level Agreement (SLA) of the end site.

E.1.a Current TNII Network Connectivity

TNII WAN Components

The layout of the current TNII network can be broken down into three main components, the Network Access Point (NAP), the Point of Presence (POP) and the TNII user location or End Site.

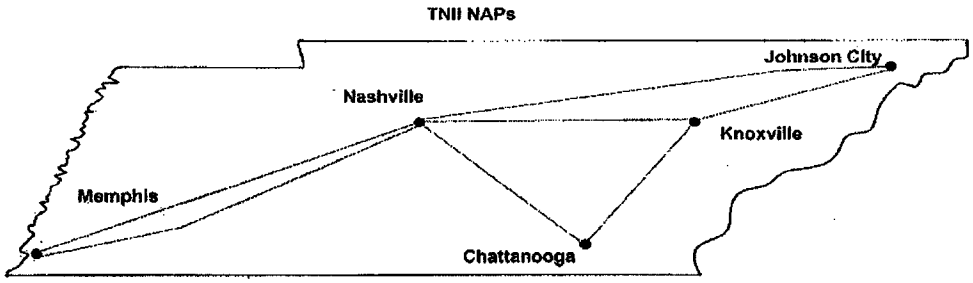
- **Network Access Points (NAPs)** – the NAPs are locations which aggregate the WAN links from POPs and pass the aggregated traffic to other NAPs over high bandwidth circuits. NAPs may also aggregate direct connections from End Sites.
- **Points of Presence (POPs)** – The POPs aggregate the local circuits from the End Sites and connect over high speed WAN connections to the NAPs.
- **End Sites** – the End Site locations are the users of the TNII services.

TNII NAP Connectivity: There are NAPs located at Memphis, Nashville, Chattanooga, Knoxville and Johnson City. There is an OC3 WAN connection between Memphis to Nashville with a redundant link from Memphis to Jackson to Nashville. OC3 links also run from Nashville to Knoxville, Nashville to Chattanooga and Knoxville to Chattanooga. DS3 links run from Knoxville to Johnson City and Johnson City to Nashville.

TNII POP to NAP Connectivity: Typically, DS3s are used to make the connection between POPs in a region and the regional NAP. As bandwidth requirements continue to grow with new and larger applications, multiple DS3s or OC level connectivity between some POPs and NAPs may be required.

TNII End Site Connectivity: Most services to OIR, TBR and End Site locations are via T-1 or fractional T-1 connections. The T-1 connection may carry multiple Ethernet services to one or multiple services to multiple agencies all located within one building or campus. For End Site users requiring larger bandwidths for Internet access, an **N** x T-1 or a full or fraction DS3 solution is currently being deployed. In Metro areas, Ethernet services are being deployed.

The diagram below represents the physical routes between the NAPs.



E.2 Bandwidth Requirements

E.2.a WAN Connections and Bandwidth Requirements

Throughout the NetTN WAN infrastructure, there will be two or three major types of WAN link connections:

NAP to NAP Connections (Core Network) – the Network Access Points (NAPs) are the major hub locations that will aggregate all the network traffic from regional POPs or End Site locations. Therefore, the NAP-to-NAP connections will require the largest amounts of bandwidth and should be engineered to not only provide adequate bandwidth for today's applications, but also allow bandwidth for future applications and growth. All Core Network locations shall have circuit diversity (different fiber sheath and fiber route) for active redundancy to other Core Network locations with the same bandwidth availability to ensure reliability of the Core Network.

POP to NAP Connections (Core Network) – this is the WAN connection from the regional POPs, if proposed, to the NAP location. This connection is extremely important in that it must be sized correctly to carry the aggregate of all traffic from all End Sites to the NAPs. Due to the variety in both the number of End Sites supported by a POP and the variety of applications running at the End Sites, the size of this WAN connection may differ in size. The POP to NAP WAN links must be scalable and sized to support network traffic growth. All Core Network locations shall have circuit diversity for active redundancy to other Core Network locations with the same bandwidth availability to ensure reliability of the Core Network.

End Site to Core Network Connections – the WAN link(s) between local End Sites and its regional POP or NAP. End Site to the Core Network connections will have varying bandwidth requirements depending on a particular End Site's current and future applications. Applications at the End Site can range from IP data traffic to interactive video, VoIP and multimedia applications. End Site WAN circuits may also support multiple End Site users or agencies within one building or campus. Therefore, it is extremely important that the WAN circuit be engineered for the total aggregate amount of data from all applications and users of that circuit.

E.3 Higher Education Research Communities

Technologies are readily available to support multiple Wavelength on the same fiber segment, providing separation of data streams such as Dense Wave Division Multiplexing (Wavelength). These technologies can play an important role in reducing expense to the State for a multitude of high bandwidth applications. One example is the need for the Higher Education Computational Research communities of the State to have a method of transporting research traffic through high bandwidth connectivity to End Sites at rates up to 10 Gbps. The proposed NetTN solution shall support multiple Wavelength services with reduced pricing for the Higher Education Computational Research communities of the State.

In order to maintain and advance its competitive position amongst regional and national peer research institutions, Higher Educational Computational Research communities of the state will need to be provided with an infrastructure capable of supporting demand-based and time-based dynamic circuits over the next 5-10 years. This dynamic circuit infrastructure is needed to support the demanding bulk transport requirements of e-Science, Cyber-Infrastructure, Grid Computing, storage networking and video networking for the next decade. The Contractor will need to provide both a roadmap describing how these services will be technically implemented and supported, and a timeline for implementation. It is assumed that these services can and will be provided over the previously described core infrastructure backbone requirements utilizing one or more of the following standards-based control plane protocols/architectures: IETF GMPLS, OIF O-UNI/E-NNI, or ITU-T [G.8080, G.7713, G.7713.2].

Examples of services required are

- Gigabit Ethernet w/VLAN and jumbo frame support
- 10 Gigabit Ethernet LAN PHY w/VLAN and jumbo frame support
- 10 Gigabit Ethernet WAN PHY w/VLAN and frame support
- OC-48 Wavelengths
- OC-192 Wavelengths
- OUT1 Wavelengths
- OUT2 Wavelengths
- Fiber Channel (FC100)
- Fiber Channel (FC200)
- Fiber Channel (FC400)
- Fiber Channel (FC1200)

In addition, Higher Education Research Communities of the State will need to interconnect with national research and education networks such as Internet2, National Lambda Rail, DOE ESNET and Ultra-Science Net, NASA NISN, etc. Higher education research communities may need to connect to similar next-generation state and/or regional infrastructures. In all cases it will be assumed the Contractor will be able to provide these connections utilizing static circuits/wavelengths with future support of dynamic circuits. Inter-domain control plane support will be required for dynamic circuit setup and release. The Contractor will need to provide both a roadmap describing how these services will be technically implemented and supported, and a timeline for implementation.

E.4 Network Hosts Requirements

The Network Hosts are the main application destinations for the majority of IP related traffic and will vary depending upon the TNII Association Partner. The majority of application servers for the State office locations currently exist at the main Nashville, TN Data Center. Additional State application servers also exist at other facilities in Nashville including most Nashville Campus buildings. Connectivity of these buildings to the current Data Center is provided through the existing Nashville Metropolitan Area Network (MAN) managed by OIR. SDE locations will need access through the NetTN network to the OIR Data Center located in Nashville for access to the statewide SDE Student Management System. Internet traffic for State offices will route through the OIR Data Centers.

E.4.a The current OIR Data Center is the main OIR-managed Data Center located at 901 5th Ave North, Nashville, TN. The current Data Center houses the majority of State application servers and Internet access circuits, therefore necessary bandwidth from the Data Center to the NetTN network must be provided to support all application traffic for use by State agencies. The Contractor shall provide redundant diverse routes into the Data Center. The diverse routes shall each be priced as a separate line entry in the catalog of services. Currently, 100 Mbps Metro-Ethernet provides connectivity from the Nashville NAP with a backup 25 Mbps DS3 circuit located at the Tennessee Tower, 312 8th Ave, Nashville TN, with the Tennessee Tower and Data Center being connected over the MAN. It is anticipated that more bandwidth will be necessary due to the growth of bandwidth intensive applications and centralized Internet Access services provided by the Data Center.

E.4.b Two new Data Centers are being planned for construction; and operations in the current Data Center will be migrated to the two new facilities. One of the new Data Centers will be located within Davidson County [near downtown Nashville]. The second new Data Center will be located within a 25-mile radius of the first new Data Center. NetTN connectivity shall be provided for both new Data Centers. During the migration to the new facilities, NetTN connectivity will be required to all three Data Centers. Refer to RFP Attachment 6.13 for a schematic and specific connectivity/routing requirements to NetTN and between the facilities. The first new Data Center is anticipated to be in operation by December 2008. The second Data Center is anticipated to be in operation by December 2009.

E.4.c Network Support Centers are dispersed across the State to assist in providing faster throughput and some level of redundancy for distant regions of the State. Application servers (such as file, email, and network domain services) operate at the Network Support Centers. The Network Support Centers are located in State facilities within close proximity to the existing regional TNII NAP locations. The OIR-managed Network Support Centers are located in Memphis, Jackson, Johnson City, Knoxville and Chattanooga and are connected to TNII via 16 Mbps fractional DS3 circuits.

E.4.d The Contractor shall utilize dual entrances to the Data Centers provided by OIR.

E.4.e The Contractor shall extend Layer 2 and Layer 3 services from the NetTN Core Backbone network through to the Data Centers.

E.5 Remote Access Requirements

E.5.a Support for mobile end user, telecommuters, and access from home computers into the NetTN wide area network is required. Remote access refers to network connections that are temporary by nature originating from a remote location. The NetTN Remote Access analog solution shall provide a secure authenticated access by using firewalls, network Intrusion Detection and Protection Systems as described herein. OIR currently has 2700 dial-up accounts and 1100 3G users that allow access to the TNII network. The TNII Association requires remote access options to include, but not be limited to:

a. Wireless Access
   I. 3G
   II. 4G
   III. Wi-Fi
   IV. WiMAX
b. Broadband Internet Services
   I. DSL
   II. Cable
c. Analog Dial-up

E.5.b Ultimately our goal is for multi-factor authentication to any point on NetTN. For example, but not limited to the following:

- Remote access (VPN – IPSec or SSL, dialup, wireless, etc.)
- Remote administration (router, switch, server, etc.)

Multi-factor authentication is the process of validating a person or systems identity using a combination of at least two of the commonly recognized factors of:

1) Something you know (password, pin).
2) Something you have (token, certificate, credit/smart card).
3) Something you are (fingerprint, retinal scan).

The NetTN Contractor will be responsible for the management and administration of multi-factor authentication.

E.5.c Remote Access analog dial-up services shall support up to 56K, including V.90 and V.92 connectivity directly to NetTN without the use of a VPN.

E.5.d The TNII Association requires that remote analog dial-up users have the option of connecting to the NetTN network either through a local dial number or via an intrastate toll-free access number.

E.5.e The NetTN remote access analog service must require the remote access user to be authenticated with a valid login ID and password for access to the remote access service.

E.5.f The NetTN remote access analog service must be part of the Universal Access pricing strategy where a monthly flat-rate billing structure is implemented.

E.5.g The NetTN remote access analog service must support user authentication functionality and include the server hardware and management support.

E.5.h The NetTN remote access analog service must support P.01 rate of service (e.g., no greater than 1% blocking) based upon the number of remote access customers that are enabled.

E.5.i The NetTN Service Provider must conduct an acceptance test plan and demonstration of the analog service prior to production implementation.

E.5.j The NetTN remote access analog service must include a performance monitoring capability such that remote access performance and usage can be monitored and measured.

E.5.k The TNII Association requires that the Contractor have an idle time disconnect. The TNII Association requires the ability to adjust the default period of time in which a statewide analog dial-up call is dropped due to inactivity.

E.5.l The analog Remote Access shall be secured by using the following methods:

a. Access Control Mechanisms –The proposed system(s) shall use Radius, Lightweight Directory Access Protocol (LDAP), or Active Directory authentication to be in integration compliance with OIR's Identity Management System.
b. Network Admission Control – The implementation of Remote Access shall include Network Admission Control mechanisms.
c. Network Intrusion Detection and Intrusion Protection Systems – Network Intrusion Detection and Protection Systems (IDS/IPS) shall be included and updated, weekly at a minimum, with the latest attack vectors. These systems shall be installed on the inside of the Network Firewall that is protecting the Network from attacks through devices and RA users accessing the network. All firmware and software shall be kept up to date to manufacturer supported specifications.
d. Network Firewall Protection – There shall be a separate (logical or physical) firewall protecting the network from attacks or malicious code that may exist on user accounts. The firewall shall be capable of automatic blocking of traffic deemed by the IDS/IPS systems as malicious or unrequired.
e. Analog RA must provide ninety day password aging.

E.5.m Wireless High Speed Internet Access coverage shall be nationwide allowing network access in all 50 States.

E.5.n Wireless High Speed internet Access shall provide data services at downlink speeds 60 kbps up to but not limited to 1000 Kbps and uplinks speeds 60 kbps up to but not limited to 300 Kbps. Verification testing will be performed.

E.5.o Wireless high-speed network access must attach to the NetTN infrastructure to enable user access to the OIR intranet without the use of a VPN client. This capability must be available in both Tennessee and nationwide coverage.

E.5.p The Contractor must provide all hardware and software documentation/manuals with each data access card. Wireless data access cards must be PCMCIA Type II compatible with an antenna and receive wireless data at a rate of up to 1000 kbps or higher and transmit data at a rate of up to 300 kbps or higher. With regard to faulty cards, contractor will not have to do on-site repair of cards. New cards will be shipped by the contractor to any destination of choice, and installed by TNII association partner personnel.

E.5.q Remote Access Solutions shall allow secure VPN sessions to the NetTN network from remote broadband Internet users.

E.6 Quality of Service (QoS) Requirements

E.6.a Real-time traffic such as voice over IP shall receive a higher level of priority to network resources by utilizing enterprise-wide industry standard QOS marking.

E.6.b OIR has established guidelines for implementing QoS for OIR supported agencies. OIR will be utilizing Differential Services (DiffServ) to establish service levels within the network. Refer to RFP Attachment 6.11.

E.6.c The TNII Association requires end-to-end IP QoS features to preferentially handle traffic as one of the network's fundamental design philosophies, in order to accomplish the task of prioritizing traffic throughout the network. The network must be able to prioritize traffic by marking packets in order to utilize multiple queues for voice, video and other mission critical applications and to process that traffic based on the packet type.

E.6.d Example Forward Equivalency Class (FEC) Table

The TNII Association has defined the following Forwarding Equivalence Classes (FEC) that shall be supported by the NetTN Contractor:

AF Class	Service Descriptor	AF Value	Decimal Value	Class Drop probability	binary value in descp	IP Precedence Value	IP Prec Binary Value	IP Prec Name
5	Voice	EF		n/a		5	101	Critical
4	Platinum Critical	41	34	low	100010	4	100	Flash Override
4	Platinum Important	42	36	medium	100100	4	100	Flash Override
4	Platinum Routine	43	38	high	100110	4	100	Flash Override
3	Gold Critical	31	26	low	011010	3	011	Flash
3	Gold Important	32	28	medium	011100	3	011	Flash
3	Gold Routine	33	30	high	011110	3	011	Flash
2	Silver Critical	21	18	low	010010	2	010	Immediate
2	Silver Important	22	20	medium	010100	2	010	Immediate
2	Silver Routine	23	22	high	010110	2	010	Immediate
1	Copper Critical	11	10	low	001010	1	001	Priority
1	Copper Important	12	12	medium	001100	1	001	Priority
1	Copper Routine	13	14	high	001110	1	001	Priority
Unmarked	Best Effort	N/A		N/A	N/A	0	000	Routine

E.6.e Forwarding Equivalent Classes shall be employed and be able to classify different types of traffic based on Assured Forwarding, RFC 2597 including but not limited to traffic filters, input interface, either Differentiated Services Code Point (DSCP) or CoS values, MPLS labels, or any IP traffic flow.

E.6.f The proposed NetTN network shall recognize and support the forwarding of QoS marking, queuing, policing and any other QOS mechanism both outbound and inbound from the Customer Edge (CE) device based on Assured Forwarding, RFC 2597. The proposed NetTN network shall also recognize and support QOS queuing, policing and any other mechanism both outbound and inbound from the Provider Edge (PE) device and from within the Provider Cloud based on Assured Forwarding, RFC 2597.

E.6.g A minimum of five FECs are required. The TNII Association may also request additional FECs.

E.6.h The Contractor upon request from the TNII Association may be required to support additional FEC classes in the future.

E.7 Video Conferencing

In addition to data network services, the TNII Association is seeking qualified Contractors that have experience installing and managing WAN connections and edge devices to support statewide H.323 video conferencing services, and those of future standards. Applications include distance learning, remote training, business purposes, telemedicine, judicial hearings and other proceedings.

The TNII Association Partners or users shall maintain ownership of the video conferencing premise equipment from the camera, monitor and video conferencing equipment up to but not including the edge device. The Contractor shall provide the WAN connection and edge device. The WAN infrastructure must be capable of supporting multipoint, point-point, and future video services. Description of Current Video Equipment:

- Currently, OIR has over 150 video endpoints at existing State agency locations.
- All State agency sites are standardized on H.323v4.

E.7.a Video Conferencing Technical Requirements

The following defines the overall technical requirements for video communications and services for the new NetTN WAN infrastructure.

Standard	Description
H.323, H.261, H.263, H.264	Packetized video transmission for IP packetized video – including secure firewall traversal
G.711, G.722, G.723.2, G.728, G.729, G.723.1	Audio transmission for IP packetized audio
H.239	Multiplexing for IP packetized video and audio
H.225, H.235, H.245, H.460.x	Signaling and call control for TDM and IP packetized video/audio—including secure firewall traversal
RTP	Real Time Protocol for IP networks
RSVP	Resource Reservation Protocol for IP networks
RTCP	Real Time Control Protocol for IP networks
RTSP	Real Time Streaming Protocol for IP networks
SIP	Session Initiated Protocol

E.7.a.i The NetTN WAN must support converged data, voice and video communications at End Site locations as required.

E.7.a.ii The NetTN WAN must provide seamless and transparent video connectivity without interruption of service between existing TNII video End Sites and all future NetTN End Site locations during migration.

E.7.a.iii The proposed NetTN Video Conferencing solution shall support multi-point and point to point video conferencing sessions.

E.7.a.iv The proposed NetTN Video Conferencing solution shall support desktop video sessions.

E.7.a.v The proposed NetTN Video Conferencing solution shall support bridging with other Multipoint Control Units (MCUs) which are not part of NetTN.

E.7.a.vi The proposed NetTN Video Conferencing solution shall include authentication and firewall transversal to allow access to only those authorized.

E.7.a.vii The proposed NetTN Video Conferencing solution shall provide the ability to video conference with others outside the NetTN network, e.g., H320 or H.323.

E.7.a.viii The NetTN contractor must provide a firewall traversal solution that must be H.460-compliant, and capable of being inserted into a standard NAT/firewall security solution. It should not function as a substitutionary application/service-specific firewall. Additionally, both the internal and external

elements of the solution must be able to neighbor directly with other H.460-compliant session border controllers and/or gatekeepers in a traditional H.323 zone environment.

E.7.b Multipoint Video Service Requirements

E.7.b.i The TNII Association requires a consolidated statewide multipoint video conferencing service offering as part of the video conferencing requirement. This shall require the Contractor to supply a managed Multipoint Control Unit (MCU) or an array of MCUs in order to provide this service.

E.7.b.ii Multipoint or MCU specifications that the Contractor must consider as part of their MCU video conferencing service offering include:

a. ITU-T and ANSI standards compliance – this will ensure that the proposed system will be non-proprietary and compatible with other Contractors' systems.
b. H.32x interoperability – this will ensure that H.323 and H.320 video conferencing systems are fully interoperable via the multipoint switching service—this must include ISDN access to and from the multi-point solution.
c. Transmission rates supported – the system must be able to support a range of transmission rates from 384kbps up to but not limited to 1.544mbps in a range of quantities, since End Site devices vary.
d. Port density capacities – given the potential growth of number of locations, port density flexibility is a vital feature.
e. Number of possible simultaneous conferences – a statewide solution has the potential for many simultaneous videoconferences.
f. Reliability – outages must be minimized.

E.7.b.iii Multipoint services must be compatible with the existing video conferencing equipment at the TNII video End Site locations.

E.7.b.iv Multipoint services must support 25 simultaneous H.323 video conferencing sessions.

E.7.b.v Multipoint services must be scalable and allow for simultaneous H.323 video conferencing sessions. Video, Audio, Data, Multiplexing, Signaling, and Multipoint switching shall adhere to the standards set forth in section E.8.

E.7.b.vi The NetTN Contractor must provide a toll-free number for technical assistance. End users must have direct access to live technical support during all multipoint sessions.

E.7.b.vii The NetTN Contractor must provide and maintain in its NOC, the necessary codec, audio, and video equipment to properly monitor the technical quality of any real-time multipoint videoconference session. This action will be part of the NetTN Contractor's proactive management approach towards the quick resolution of technical problems. This equipment must be properly maintained and operational at all times.

E.7.b.viii The NetTN Contractor must provide a "common time standard" utilizing via the Network Time Protocol (NTP).

E.7.b.ix While the State would assume that most needs for Multipoint Video Services would occur during normal business hours (8:00 a.m. – 5:00 p.m. local time), it is possible that these services could be required at any time of the day or night.

E.7.c Video Conference Scheduling Requirements

E.7.c.i The proposed NetTN Video Conferencing solution shall include an integrated and bundled interactive robust scheduling package that can be engaged by users desiring to schedule their own conferences.

E.7.c.ii The NetTN Contractor must integrate the video conferencing scheduling effort on a statewide basis and provide video scheduling to any video endpoint that wants to participate in multipoint conferences.

E.7.c.iii The NetTN video conferencing scheduling service must include a toll free number for contact to the NetTN Contractor's NOC for any questions or scheduling issues regarding an active conference, end point equipment, network connectivity and end user assistance.

E.7.c.iv All NetTN multipoint conferences must include a 15-minute setup time where the NetTN Contractor must interface with the end site to test, verify, and if needed contact the designated NetTN Video End Site's point of contact regarding the connection of any video and audio equipment at each endpoint.

E.7.c.v The video conferencing scheduling system must support daylight savings time and multiple time zones and be capable of defining and handling specific holidays tailored to TNII Association Partners.

E.7.c.vi The video conferencing scheduling system must generate unique reservation numbers for each scheduled video conference.

E.7.c.vii The video conferencing scheduling system must provide a security mechanism, including, but not limited to, password authentication for a users and administrator level control.

E.7.c.viii The video conferencing scheduling system must include at a minimum the following information regarding the scheduling of a video conferencing event:

a. Date of Event.
b. Name of Event.
c. Start Time and duration of Event.
d. End Sites involved.
e. Unique Event Reservation Number
f. End Site WAN Connection Type (H.323 or H.320).
g. Specify which Communications Protocols are to be utilized.

E.8 IP Multicasting Requirements

IP Multicast is a bandwidth-conserving technology that reduces traffic by simultaneously delivering a single stream of information to a large group of recipients. This eliminates the redundancy of sending the same piece of information to multiple recipients. Applications where the TNII Association Partners could take advantage of multicast technologies include streaming, state-wide communications, distance learning, file sharing and distribution of software.

E.8.a The NetTN Contractor shall provide an IP Multicast service offering. Design factors that shall be included at a minimum:

- The necessary hardware and software required for IP Multicast services and its associated costs.
- Compliance with emerging network industry standards.
- IP Multicast protocol selection.
- Analysis of estimated bandwidth requirements to deliver future IP Multicast services.
- The network infrastructure necessary to support IP Multicast services.
- Network management of IP Multicast services.
- Method of billing for IP Multicast services.

E.8.b The Contractor shall provide IP Multicasting capability over the NetTN WAN infrastructure for delivery of IP multicast to End Site locations.

E.8.c The NetTN WAN infrastructure shall initially support an IP Multicasting service according to IPv4 specifications. Upon request from the TNII Association, the Contractor shall incorporate and support IPv6 specifications into the NetTN network.

E.8.d The NetTN WAN infrastructure shall support an IP Multicasting service using Internet Group Multicast Protocol (IGMP) to interoperate with End Site type LANs.

E.8.e The NetTN WAN infrastructure must support an IP Multicasting service where Host-to-router and router-to-router signaling uses emerging industry standard protocols.

E.8.f The NetTN WAN infrastructure shall support an IP Multicasting service that scales well within the proposed NetTN WAN infrastructure.

E.8.g The NetTN Contractor IP Multicast service must be manageable and include Performance Management reporting as part of the overall Network Management service offering.

E.8.h IP Multicast must be compatible across multiple Contractor platforms. Any TNII Association Partner shall be able to connect to the network and participate in IP Multicast network-wide, regardless of CPE manufacturer, as long as the CPE complies with standard IP Multicast protocols. The network must have the capability to run all standard IP Multicast and related generic protocols.

E.8.i The NetTN Contractor shall put in place certain metrics to ensure multiple IP Multicasting sessions do not reduce the bandwidth availability of the network to a point of network degradation of other applications on the network.

E.9 Internet Connectivity

E.9.a Current Internet Connectivity Environment

E.9.a.i **OIR** – Internet access is currently distributed to the State agencies over the TNII network from two different Internet Service Providers for redundancy. Internet connectivity is part of a bundled service that is included whenever an agency orders a TNII circuit regardless of other applications that may be subscribed by the End Site location.

E.9.a.ii **TBR** – Internet access is currently distributed to the TBR sites over the TNII network from two different Internet Service Providers for redundancy. Internet connectivity is part of a bundled service that is included whenever a TBR site orders a TNII circuit regardless of other applications that may be subscribed by the End Site location.

E.9.a.iii **UT** – UT End Sites currently obtain Tier 1 Internet access services from sources other than the TNII network.

E.9.a.iv **SDE** – K-12 currently utilizes the K-12 network provided by Education Network of America (ENA) for its internet connectivity. ENA has built their own network throughout the State of Tennessee and services schools and school districts in all 95 counties.

E.9.a.v **Local Governments** – City, county, and other local governments currently obtain Direct Internet Access (DIA) or from sources other than the TNII network.

E.9.b NetTN Internet Connectivity Environment

E.9.b.i **OIR** – OIR Internet access will be via NetTN DIA from the Data Centers. State agencies will receive their Internet services from the OIR Data Centers over the NetTN backbone. The OIR Data Centers will have access to two diverse Internet Service Providers over fully diverse facilities as sources of the Internet. In capacity planning and engineering for End Sites, the Internet service must be taken into

account as a bandwidth variable as well as all other services and applications subscribed to by the agency.

E.9.b.ii **TBR** – In similar scope to the services on the current TNII network, TBR will continue to use NetTN for both managed and unmanaged Internet services in addition to other services utilized on the NetTN network.

E.9.b.iii **UT** – Due to existing direct Internet access connectivity, it is anticipated that most Internet access services will continue to be maintained with alternative carriers, although UT will have access to the services of NetTN and may choose to utilize managed and unmanaged services.

E.9.b.iv **SDE** – It is anticipated that in the third quarter of 2009 the Contractor will begin the migration of K-12 onto the NetTN network. However, the Contractor shall be prepared for migration at an earlier date if so required by the State. The Contractor must be able to provide Internet connectivity to 1500+ schools and school districts dispersed throughout the 95 counties of the State. This will include the installation, maintenance and management of the Edge Device. The Contractor will also be responsible for E-mail accounts, firewalling and content filtering in addition to other responsibilities as dictated herein.

E.9.b.v **Local Government and Non-Profit** – It is the responsibility of the Contractor to provide NetTN Internet connectivity and services to any city, county, or other local government under the terms of this contract, that requests such services.

E.9.c **Technologies for Internet Delivery on NetTN**

The TNII Association Partners will be looking for new innovative and cost effective methods for Internet delivery from the NetTN Contractor. The following is a list of technologies that will be considered:

a. Optical (OC-3, OC-12, etc.)
b. Ethernet (2 Mbps, 4 Mbps, 8 Mbps, 10 Mbps, 1 Gbps, etc.)
c. Leased line (T-1, DS3, etc.)
d. DSL (ADSL, SDSL)
e. Cable
f. Wireless
   - Wi-Fi
   - WiMAX
g. Other applicable technologies

E.9.d **Internet Connectivity Technical Requirements**

E.9.d.i The Contractor shall either be a Tier 1 Contractor or maintain two or more independent links to at least two Tier 1 Contractors, at a minimum of 4.9 Gbps. Access to these Tier 1 links must be no more than three hops from the NetTN network access points.

E.9.d.ii The Contractor must accept TNII Association traffic at the Contractor's facility and route that traffic directly to each Tier 1 network via that Tier 1 Contractor's private customer access node or other private exchange point. The intended result is that the TNII Association's Partner's connectivity to each Tier 1 network will be minimally affected by congestion or other transmission or routing problems that may occur either at the public Inter-exchange points or on another Tier 1 network.

E.9.d.iii The NetTN Internet connectivity service must be supported by a minimum of two, geographically dispersed local Internet Network Access Points within the State of Tennessee that will allow direct access to two, different ISP's Internet backbones in support of local traffic and direct peering within the State of Tennessee (e.g., it is required that any NetTN traffic originating and destined within the State of Tennessee stay within the NetTN network.

E.9.d.iv The NetTN Internet Contractor shall have an assigned public AS-number for the purpose of peering directly with the TNII Association Partner's existing IP network infrastructures.

E.9.d.v The NetTN Internet Contractor shall exchange IP routing tables via authenticated BGP4 for redistribution down to designated NAP, POP and End Site locations as determined by the TNII Association.

E.9.d.vi The NetTN Internet connectivity service shall have a defined security policy, intrusion detection, intrusion prevention, and firewall systems.

E.9.d.vii The NetTN Contractor shall base their Internet bandwidth provisioning and sizing on the aggregation of TBR, UT, SDE, OIR, eHealth, and local government Internet traffic.

E.9.d.viii The Contractor must provide authenticated BGP peering or a combination of static and BGP routing to facilitate failover if required by one or more of the logical network connections.

E.9.d.ix The Contractor must propose all standard DIA connection options from 1.544 Mbps to 500 Mbps, at a minimum.

E.9.d.x The Contractor must support IPSec-based Virtual Private Networks (VPNs) over the proposed DIA connectivity.

E.9.d.xi The NetTN contractor must support BGP peering by default routing for Direct Internet Access.

E.9.e **Content Filtering**

The Contractor shall be responsible for content filtering for several groups within the TNII Association.

E.9.e.i **SDE** – Content filtering shall be provided for the K-12 public school systems for the protection of the school children from inappropriate content and must be implemented by the Contractor as part of this network. Additionally, other content filtering may also be required by SDE and the Contractor will be responsible to provide the content filtering as part of the provided service. Content filtering is not E-Rate eligible.

E.9.e.ii **OIR** – OIR will provide their own content filtering for OIR supported agencies.

E.9.e.iii **TBR/UT** – Content filtering shall be made available upon request by any TBR/UT End Site location.

E.9.e.iv Local Government – Similar to requirements of TBR/UT, if content filtering is required and requested by the Internet user, the Contractor shall make available this service to any End Site location.

E.9.f **Content Filtering Technical Requirements**

E.9.f.i For SDE, the Contractor shall be required to provide a solution that complies with the Children's Internet Protection Act (Pub. L. 106-554), Title XVII-Children's Internet Protection.

E.9.f.ii The content filtering service offering must support "policy-based by users and groups" capability thus allowing different "users and groups" access to different content. These users and groups will be defined by the TNII Association on an on-going basis throughout the life of this contract as part of the Configuration Management service offering.

E.9.f.iii The content filtering service offering must support customized block pages, filter by name and type, and custom reports.

E.9.f.iv The proposed content filtering service offering must not be susceptible to "overblocking and underblocking" during high Internet usage periods.

E.9.f.v The proposed content filtering service offering must support the blocking and configuration of RFC 1918 addressing as well as RFC 1631 addressing.

E.9.f.vi The proposed content filtering service must support delegated administration to access where required.

E.9.g **Email Service Requirements**

E.9.g.i **SDE** – Currently most of SDE (K-12) utilizes Education Networks of America (ENA) for Internet access and support of over 45,000+ email address services. Upon transition of SDE to NetTN, the Contractor shall provide email services including management and administrative functions required for email support to NetTN SDE subscribed users. The Contractor will be responsible for the implementation and transition from the existing SDE Contractor to the NetTN network.

E.9.g.ii **Local Government** – The Contractor shall provide Email services to any city, county, or other local government End Site as requested by that end user.

E.9.g.iii **OIR** – OIR will provide their own email services to OIR supported agencies.

E.9.g.iv **TBR and UT** – While both of these TNII Association partners host most of their own email services, there may be individual sites that require email services. Upon request by any End Site location, the Contractor shall make email services available to that end user.

E.9.g.v The email system must be available, maintained, and managed 24-hours per day (24x7).

E.9.g.vi Each email account shall include the following, at a minimum.

(1) Web Based Access
(2) Anti-Virus protection through web based access
(3) Anti-Spam protection through web based access
(4) Web based storage space of 100 MB
(5) Web based attachment size send and receive of 15 MB
(6) POP3 and SMTP Access Option
(7) Web based message count size of 500 messages

E.9.h **Name Space Management Requirements**

E.9.h.i OIR, TBR and UT will host their own primary and secondary DNS servers. SDE is currently serviced by ENA and the Contractor shall be prepared to provide DNS services to SDE. The Contractor shall also be prepared to provide DNS services to any local government End Site upon request as well as any other TNII Association Partner.

E.9.h.ii The DNS service must comply with RFC 1035 and RFC 2133.

E.9.h.iii The DNS service must provide domain name registration and transitioning services as needed.

E.9.h.iv The DNS service must be available 24x7.

E.9.h.v The DNS service must support primary and secondary DNS services for TNII Association Partners as requested.

E.9.h.vi The DNS service must support domain system inverse mapping.

E.9.h.vii The NetTN Contractor must provide local DNS troubleshooting assistance.

E.9.h.viii The State reserves the right to own the Name Space.

E.9.h.ix Secondary domain name service (DNS) and Reverse IP Lookups must be provided as required by Insights. Contractor must provide u to 25 domains and up to 200 kilobytes of associated zone file data for secondary DNS.

E.9.i **Address Space**

The Contractor needs to be aware that most of the TNII Association Partners own their own address space in the form of Class Bs and Cs which are registered with InterNIC. It shall always be the intent of the State to maintain ownership of the existing registered IP addresses. However, upon request by a TNII Association Partner, the Contractor shall provide assistance in the management of Address Space and IP routing tables to increase routing efficiencies in the NetTN network. Also, if additional address space is required by any TNII Association Partner, the Contractor shall be required to provide that additional address space. The TNII Association Partners shall be able to use the entire 10.X.X.X space at their own discretion.

E.9.i.i **OIR Current Public Address Space.**

OIR has the following Class B Addresses registered with InterNIC:

170.141.0.0/16
170.142.0.0/16
170.143.0.0/16
207.125.0.0/16
204.144.74.0/24

E.9.i.ii **TBR Current Public Address Space.**

The TBR organization and some individual TBR institutions have IP Class B and Class C addresses registered with the InterNIC.

Institution	Network Address
TBR	206.23.0.0/16 198.146.0.0/16
ETSU	151.141.0.0/16
MTSU	161.45.0.0/16
MTSU	204.152.130.0/24
TTU	149.149.0.0/16
U of Memphis	141.225.0.0/16

Other TBR members receive their address space from other ISP's they have contracted directly.

E.9.i.iii UT Current Public Address Space.

Individual UT sites may have either an IP Class B or C network number registered with the InterNIC. Other UT sites obtain their IP network numbers from their contracted Internet contractors.

Site	Network Address
Knoxville	128.169.0.0/16
Knoxville	165.5.0.0/16
Knoxville	192.249.0.0/20
Memphis	132.192.0.0/16
Memphis	160.36.0.0/16
Space Inst.	150.182.0.0/16

E.9.i.iv SDE Current Public Address Space.

SDE has the following Class B Addresses registered with InterNIC:
208.182.0.0/16
208.183.0.0/16
66.4.0.0/16
66.5.0.0/16

To date, the current IP Address allocation is based on the use of the following Classless-Inter Domain Routing IP address blocks:

West Tennessee (Memphis and Jackson areas):
66.5.0.0/16
208.183.192.0/19
208.183.224.0/20

Middle Tennessee (Nashville area):
66.4.0.0/17
208.182.0.0/17
208.182.128.0/19
208.182.182.0/23
208.182.184.0/21
208.183.240.0/20

Lower East Tennessee (Chattanooga area):
208.182.160.0/20
208.182.176.0/22
208.182.180.0/23
208.183.160.0/19

East Tennessee (Knoxville and Johnson City areas):
66.4.128.0/17
208.182.26.0/23
208.182.28.0/23
208.183.0.0/17
208.183.128.0/19

The typical schema for the K-12 managed SDE network has been to utilize Network Address Translation (NAT) for allocation of IP addresses from service platforms maintained across the State. It is envisioned that the current IP address allocation can sustain growth through continued use of NAT and DHCP technologies for IP address allocation and mapping.

E.9.i.v Local Governments Current Public Address Space.

Most city, county, and other local governments currently obtain their IP network addresses from their contracted Internet Service contractors.

E.9.j Address Space Management Requirements

E.9.j.i Upon request by the TNII Association, the NetTN Contractor shall analyze the current IP addressing scheme and provide specific recommendations for any TNII Association Partner regarding the deployment and use of IP network layer addressing schemes.

E.9.j.ii The NetTN Contractor must design and layout an IP network layer addressing plan for the NetTN WAN infrastructure that can support current and future populations of end users and devices as well as accommodate scalability and route summarization with the existing IP network layer addressing schemes currently in place.

E.9.j.iii The NetTN Contractor must develop a plan for providing and allocating sufficient IP address space for NetTN end users desiring Internet access. Note that portions of the existing OIR, TBR, SDE and UT network environments will lose their existing IP addresses in the event that their current ISP changes.

E.9.j.iv IPv6 Transition: The current State network uses an IPv4 network address scheme. Even though the TNII Association does not currently have a timeline for this transition, the Contractor shall propose a strategy and design for adopting and deploying IPv6 in an incremental, dispersed cost efficient manner, while providing direct interoperability between IPv6 and IPv4 systems.

E.9.j.v The NetTN Contractor must effectively manage and assign IP network layer addresses using an automated, on-line database application.

E.9.j.vi The Contractor shall not charge fees for NAT services.

E.9.j.vii The NetTN Contractor must ensure there is a process to authenticate IP address request changes or modifications to the IP databases managed on behalf of the TNII Association.

E.9.j.viii All entities will advertise their public IP addresses dynamically to NetTN (the Contractor) for interconnect between each entity (e.g. between VRFs).

E.9.j.ix OIR will be re-addressing all private IP addresses across the State of Tennessee by Agency. This will include creating separate VLANs per Agency at the end sites. The Contractor must work with OIR to develop and implement a re-addressing plan.

Attachment F – SDE (K-12 Services) Requirements

F.1 Universal Service Fund and E-Rate Program Overview

The first element of understanding the many requirements for the State Department of Education (SDE) is to be knowledgeable of the E-Rate program that supplements the costs of Internet services to schools and libraries through the Universal Services Fund.

E-Rate Program Overview. The "SLD Guide to Service Provider Participation in the E-rate" serves as a step-by-step guide explaining the Universal Service Support Mechanism for Schools and Libraries (the E-rate Program or the Program) for the Service Provider community.

The Universal Service Support Mechanism for Schools and Libraries, commonly called the "E-rate," is administered by the Schools and Libraries Division (SLD) of the Universal Services Administrative Company (USAC). USAC oversees the administration of all universal service support, which includes the High Cost mechanism, the Low-Income mechanism, the Rural Health Care mechanism and the Schools and Libraries mechanism. USAC has the responsibility to administer the program in ways that prevent fraud, waste and abuse.

The E-rate program was established as part of the Telecommunications Act of 1996 with the express purpose of providing affordable access to tele-communications services for all eligible schools and libraries, particularly those in rural and inner-city areas. The Program is run under the auspices of the Federal Communications Commission (FCC), which is ultimately responsible for its proper administration. Funded at up to $2.25 billion annually, the Program provides discounts of 20% to 90% on telecommunications services, Internet access and internal connections. These discounts are provided through the service providers who deliver the actual services.

Funding for the universal service discounts comes from the telecommunications industry, in an Information Age update to the time-honored concept of universal service. The level of discounts schools and libraries are eligible to receive depends on economic need and location, rural or urban; once approved, they apply their discounts to telecommunications services, Internet access and internal connections, then pay the difference out of their own budgets.

Summary of Certain E-rate Processes

- Applicant Sequence of Events
  - Step 1: Develop a Technology Plan
  - Step 2: File FCC Form 470, Schools and Libraries Universal Service Description of Service Requested and Certification Form 470
  - Step 3: Wait 28 days after filing FCC Form 470, receive bids for new services/hold pre-existing contracts.
  - Step 4: Negotiate a contract
  - Step 5: File FCC Form 471, Schools and Libraries Universal Service Services Ordered and Certification Form 471
  - Step 6: Problem Resolution/Program Integrity Review
  - Step 7: Receipt Acknowledgement Letter (RAL)
  - Step 8: Funding Commitment Decisions Letter (FCDL)
  - Step 9: Collect Forms 479, Schools and Libraries Universal Service Certification by Administrative Authority to Billed Entity of Compliance with the Children's Internet Protection Act.
  - Step 10: File FCC Form 486, Schools and Libraries Universal Service Receipt of Service Confirmation Form
  - Step 11: Receive discounted bills from service provider

- Service Provide Invoicing Sequence of Events
  Before any of these events can occur, the service provider must be registered with USAC by filing FCC Form 498, Service Provider Information Form. In addition, the service provider must have on file with USAC FCC Form 473, Universal Service for Schools and Libraries

Service Provider Annual Certification Form

Step 1: Provide services to applicant
Step 2: Provide applicant with discounted bill for services
Step 3: Prepare FCC Form 474, Universal Service for Schools and Libraries Service Provider Invoice Form
Step 4: Submit Service Provider Invoice
Step 5: Assist in Problem Resolution Program
Step 6: Correct errors, if any, on invoices
Step 7: Receive USAC remittance statement

- Additional E-Rate Information
  a. SLD Web Site: www.universalservice.org/sl
  b. SLD Client Service Bureau (toll-free) – (888) 203-8100
  c. The E-rate law: 47 U.S.C. Sec. 254 (http://www.gpoaccess.gov/cfr/index.html)
  d. The E-rate regulations: 47 C.F.R. Part 54 Subpart F (http://www.gpoaccess.gov/cfr/index.html)
  e. FCC web site: www.fcc.gov

The Contractor is encouraged to study the USAC website for E-Rate services at: http://www.usac.org to educate themselves on all aspects of this program.

F.2 SDE Current Environment

The State Department of Education (SDE) currently utilizes the service provider Education Networks of America (ENA). ENA has built a network that delivers Internet services to the SDE in addition to providing firewalling, content filtering, E-mail services and a NOC with help desk functionality. In addition to those functions and requirements which have been discussed elsewhere in this RFP, ENA also provides assistance to the SDE in assisting with the filing of USAC E-Rate forms and fulfilling USAC requirements for a service provider.

F.3 E-Rate Service Provider Compliance Requirements

The Contractor will comply with all service provider related requirements associated with the USAC's Schools Libraries E-rate Program. (http://www.universalservice.org/sl/providers/). The following defines the mandatory requirements for the Contractor to be in compliance with the E-Rate rules and regulations as they pertain to successfully submitting a bundled K-12 service offering. The K-12 bundled Internet service offering must provide a solution that complies with these requirements as part of their overall service offering. Contractor's failure to meet these requirements will be cause for the State to immediately terminate the contract and pursue a cause of action for damages.

F.3.a The NetTN Contractor must comply with all service provider related requirements associated with the USAC's Schools & Libraries E-Rate Program.

F.3.b The E-Rate Program is built on the foundation of self-certification. The service provider who participates in the E-Rate Program has a responsibility to educate themselves about the Program requirements and timelines. Certain service provider requirements are outlined in the *Schools and Libraries Program Guide to Service Provider Participation in E-Rate*, which is located on the web site at http://www.universalservice.org/sl/providers/. The Schools and Libraries Program web site contains other pertinent information relevant to service providers.

F.3.c The NetTN Contractor must be in compliance with the E-Rate Program rules at all times. In the event that the SLD determines that the Service Provider has not acted in compliance with Program rules, it can result in denial of funding, reduction in funding, cancellation of funding (a commitment adjustment), audit or other investigation, for which the Service Provider will take full responsibility.

F.3.d The NetTN Contractor will be registered with USAC by filing FCC Form 498, Service Provider Information Form. In addition, each K-12 service provider must have on file with USAC FCC Form 473, Universal Service for Schools and Libraries Service Provider Annual Certification Form.

F.3.e The NetTN Contractor must comply with and assist the Department of Finance and Administration (F&A) in all E-Rate related matters.

F.3.e.i The NetTN Contractor must assist in the FCC Form 471 process. All Contractor-provided quotes should provide clear delineation between eligible services and ineligible services.

F.3.e.i(1) The NetTN Contractor is expected to be a resource for information about the technology, the products and the services that are being furnished to SDE.

F.3.e.i(2) The NetTN Contractor must timely provide information that the SDE can include with their application, as the supporting documentation, which describes in detail the services being ordered.

F.3.e.i(3) If the SDE decides to do a service substitution, the Contractor will detail how the original request is being met by the newly desired configuration. If the State decides to do a service substitution, the Contractor will detail how the original request is being met by the newly desired configuration.

F.3.e.i(4) The NetTN Contractor will provide clarification, as necessary, to the State about billing account numbers, contract numbers, ineligible components (if any), and other details of existing services.

F.3.e.i(5) The NetTN Contractor will provide the State all information about Service Provider Identification Numbers (SPIN) numbers and company names.

F.3.e.i(6) The NetTN Contractor will provide the State backup documentation and information during the Program Integrity Assurance (PIA) staff application review.

F.3.e.i(7) The NetTN Contractor will provide the State with information during the preparation of FCC Form 471.

F.3.e.i(8) The NetTN Contractor will review the Receipt Acknowledgement Letter (RAL) and provide written notifications to the State of the corrections that are required.

F.3.e.i(9) The NetTN Contractor will make the necessary corrections based on the notifications provided to the State.

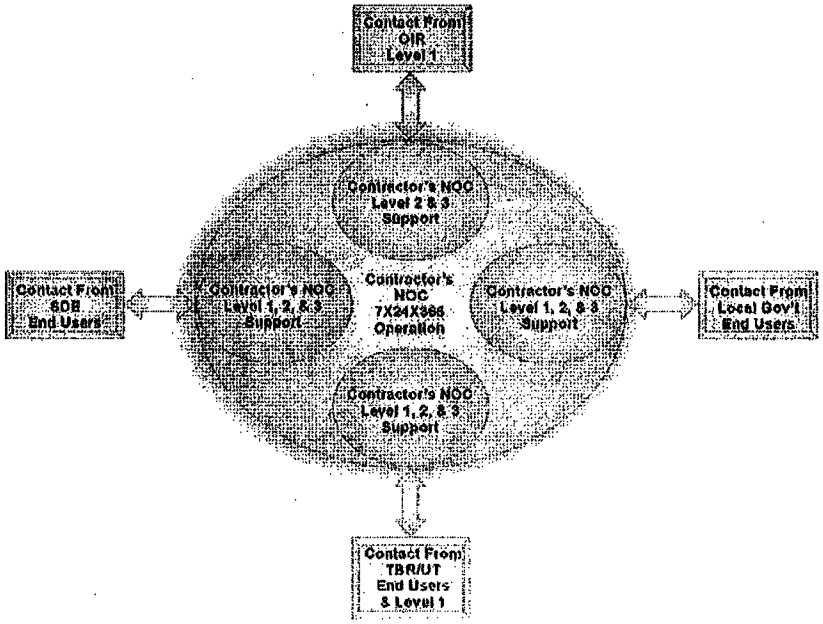
F.3.e.i(10) The NetTN Contractor will review the Funding Commitment Decisions Letter (FCDL) to insure its accuracy. The Contractor will provide written notification of any problems to the State. The Contractor will provide information for the State to file an appeal and/or make corrections in accordance with the timelines published by USAC at www.universalservice.org/sl.

F.3.e.i(11) The NetTN Contractor must assist in the FCC Form 486 process. The Contractor must provide the SDE with information relevant to the actual start date of services.

Attachment G – Network Management Requirements

G.1 Overview

The TNII Association, as described herein, is a consortium of OIR, TBR, UT, SDE (K-12), and local government. The Contractor will provide a fully functional 24x7 Network Operations Center (NOC) to support the Network Management Requirements as set forth within this document. There are unique network management requirements for each partner of the TNII Association. The NOC must provide individual methods of help desk contact availability for identifying each partner including but not limited to toll free numbers and email addresses. A tiered level of support shall also be provided for each partner supported by the NOC.



G.2 Current Network Management Environment

With the implementation of the current TNII network, the TNII Association outsourced the responsibility for the management, monitoring, and maintenance of the TNII network. The TNII co-prime Contractors (BellSouth/Qwest) with sub-contractors EDS and Cisco provide the network operations center. EDS provides a team (24x7), currently located in Herndon VA, for the purposes of monitoring and managing the TNII network.

Procedures – For State agencies and TBR, OIR's IHD (Integrated Help Desk) and NOSC (Network Operations Service Center) provide the first level of support (Level 1) for the end user. Upon receipt of a call from the end user, if a TNII trouble ticket has not been initiated, IHD opens a trouble ticket and enters it into the Remedy ARS System. The NOSC then makes a determination whether the problem is LAN or MAN based in which case they would maintain ownership of the problem. If the problem is not MAN or LAN related, it is forwarded on to the Contractor's NOC. If the IHD had initially classified the problem as "Major", the ticket would have been forwarded to the Contractor's NOC within 30 minutes of the end user's call and in only 10 minutes if the problem was classified as "Critical". When a problem is classified as "Critical", the TNII Contractor Level 2 NOC technicians will attempt to isolate the problem within 30 minutes of troubleshooting or they will escalate the trouble ticket to the Level 3 Technical support technicians. When the problem or requested action has been corrected and, or completed by the Contractor and the ticket returned to the IHD, the IHD is responsible for contacting the end-user to confirm. Upon end-user confirmation, the IHD will resolve the ticket.

SDE is currently not utilizing the TNII network due to an existing contract with Educational Networks of America (ENA). K-12 provides most levels of support for K-12 network applications.

G.3 Contractor's NOC and Monitoring

G.3.a The TNII Association requires around-the-clock monitoring of services for the NetTN network. This includes operating a Network Operations Center (NOC), utilizing State-of-the-art monitoring tools, performing real-time analysis and diagnostics of accumulated traffic information and extending to the TNII Association real-time access to these tools so that the TNII Association partners are able to manage data, voice and multimedia services. The (NOC) shall operate twenty-four hours per day, seven days per week, and three-hundred and sixty-five days per year.

G.3.b The NOC staff provided by the Contractor shall be technically certified on the equipment the Contractor is supporting in the field. The certification requirements can escalate based upon the tiered level of support provided by the NOC.

G.3.c The NetTN network shall include an alarm and alert system with active capabilities to receive alarm status information and alerts received from End Site Circuits and Edge Devices.

G.3.d The Contractor shall provide the TNII Association's entity users with the ability to access and view performance of the error monitoring system or application with a web browser. The TNII Association requires that the users only have access to their End Site information not the entire NetTN network. This system or application must support at least 70 to 100 concurrent authorized TNII Association users.

- Display network faults in real-time.
- Displays any alarm on "Live" circuits.
- Displays alarms in real-time.
- Shows trouble ticket number if one is associated with the alarm.
- Allows network engineers to review alarms on their services and monitor for outages.
- Allows Network Engineer to view trouble ticket statuses, history, etc. including auto-notification of status changes.

G.3.e The Contractor shall provide as part of the proposed NetTN network, out-of-band management to every End Site's NetTN managed Edge Device.

G.3.f The NetTN NOC is to be located in the U.S. and all call centers must be handled by the NOC located in the U.S.

G.4 Service Level Agreement Management Requirements

G.4.a The Contractor will participate with the TNII Association in ongoing Service Level Agreement (SLA) management, including Service Review and Continuous Improvement with proactive monitoring, management, reporting and problem resolution needed to fulfill provisions of the SLA. The specific SLA Requirements are found in Contract Attachment A.

Continuous improvement refers to the ongoing process of improving actual delivered, Service Standards and corresponding customer satisfactions through engineering of processes, methods, facilities, equipment, work breakdown structures, staff roles, organizations and communications.

The Contractor and the TNII Association will gather and analyze Service Level Performance data. To facilitate this, the Contractor will provide the TNII Association online, near real-time access to Service Level information via a web browser. The user will be able to use pre-designed reports or ad-hoc reports.

The Contractor will meet with the TNII Association staff and others weekly for a service review meeting to review deployment and upgrade progress, resolve technical issues, update schedules, review the prior week trouble tickets and consider update of business requirements. The weekly Service Review will provide an opportunity to review and improve the approach for service delivery and to review the technical adequacy of provisioned services.

The SLA Review is a regularly scheduled monthly meeting between the Contractor and the TNII Association and others established to examine service level performance.

The SLA Review helps to ensure Service Level Compliance, to resolve problems and to provide an opportunity for Continuous Improvement. The SLA review meetings are to take place at a State of Tennessee facility. The Contractor and the TNII Association will establish a mutually agreeable mid-month meeting schedule for the SLA review at which time Service Level Performance data from the preceding calendar month and the preceding 30 days will be examined.

G.5 NOC Contact Requirements

G.5.a OIR contact to the Contractor's NOC will be initiated using multiple formats. The first being an automated trouble ticket entry from OIR's Level 1 Integrated Help Desk through the Remedy System. A toll free number, and email address shall also be provided by the Contractor to access Level 2 and 3 NOC staff.

G.5.b The Contractor shall furnish to all TBR End Site's a toll free number, and email address to access the Contractor's Level 1, 2 and 3 NOC Staff.

G.5.c The Contractor shall furnish to all UT End Site's a toll free number, and email address to access the Contractor's Level 1, 2 and 3 NOC Staff.

G.5.d The Contractor shall furnish to all SDE End Site's a toll free number, and email address to access the Contractor's Level 1, 2 and 3 NOC Staff.

G.5.e The Contractor shall furnish to all Local Government End Site's a toll free number, and email address to access the Contractor's Level 1, 2 and 3 NOC Staff.

G.6 Network Management System Software Requirements

G.6.a BMC Remedy IT Service Management for the Enterprise is a suite of applications from BMC Software that integrates and automates IT service and support. Remedy Help and Service Desk, Remedy Change Management, Remedy Asset Management and Remedy Service Level Management Modules work together as a suite offering. The software provides a shared workflow with a consistent user interface, and a common platform.

Remedy software currently plays a critical role as the key communication link between OIR and the Contractor. End Site adds, moves, or changes the placement of and resolution of trouble tickets. These tickets are all tracked and updated on Remedy software. OIR uses BMC Remedy ARSystem software with the ITSM Suite and Web Services Module. The Web services module allows applications on different systems to pass data back and forth via either Intranet or Internet. The State will enhance the capabilities of Remedy through the addition of two new modules, Catalog of Services and the Request for Service module. The Contractor will be required to utilize Remedy (ARSystem ITSM Suite) for full integration of help desk operations, and trouble ticketing and ordering with the State Remedy system.

G.6.b For OIR, the Oracle database that is linked to Remedy software shall be housed at the Data Center for OIR by the State. This database contains information regarding OIR End Site locations, Edge Device and circuit configurations and all data regarding adds, moves or changes and break and fix information entered by the Contractor and the State.

G.6.c For OIR, the Contractor shall use a dedicated connection to access the State's Remedy database. This link will allow the Contractor full access for viewing and updating all configuration data on the Remedy system. The Contractor shall be responsible for the cost of the dedicated circuit.

G.6.d For OIR, the Contractor will be required to utilize HP OpenView with the necessary module components of Network Services Management, Consolidated Event and Performance Management to effectively monitor and support the NetTN services. Utilization of HP OpenView will provide compliance with the State utilized software components and familiarity for technical management personnel. The HP OpenView software and components shall be kept up to date with all current releases and patches in use by the State of Tennessee. The Contractor's HP OpenView must interface with OIRs Remedy system to automatically open trouble tickets when network events occur.

G.6.e OIR shall manage, maintain, and control the OIR's LAN IP address database. The Contractor, if requested, will manage and control other TNII Association partner's LAN IP databases. The Contractor is responsible for maintaining and managing all WAN IP databases.

G.6.f The OIR "Remedy System" currently includes a process used to place and track orders for services with the Contractor. This process (NetTN Order Process) is a custom-written application within the BMC Remedy AR System which is linked to the IT Service Management Module. It is OIR's intention that this process will remain the Order submission tracking facility for NetTN.

G.6.h For OIR, the Contractor will be provided with a Remedy vendor view which will allow the Contractor to retrieve data contained in OIRs Remedy database.

G.6.i It shall be necessary for the Contractor to provide segregated databases for all other TNII Association Partners. These databases will house all configuration information in addition to tracking and creating audit trails for all adds, moves or changes as well as break/fix information. Information in the databases will be entered and accessed through a web based interface.

G.6.j The Contractor will be responsible for developing a web based system for Order Submission and Tracking for other TNII Association Partners.

G.6.k Read only SNMP access is required for all of the NetTN edge devices for the TNII Associations HP OpenView systems.

G.6.l Read only access to the Contractor's Edge Devices will be required via SSH for trouble shooting critical incidents.

G.7 NetTN Tiered Level Support Requirements

G.7.a The Contractor's NetTN NOC function and specifically areas of performance, configuration, accounting, and management shall interface directly with each TNII Association Partner Operations Group Level I support as well as the End Site user. The Contractor's NOC function will provide Level 1, 2, and 3 technical support and interface with the respective contacting party's Fault Management function.

G.7.b ***Level 1 Support – NetTN Help Desk***

Level 1 is representative as the first level of support for End Site users contacting the Contractor's help desk operation. OIR and UT maintain their own help desk operations for first level support. TBR currently uses the OIR help desk but on NetTN will utilize the Contractor's help desk for Level 1 support. SDE and Local Government will also use the Contractor for Level 1 support. The Contractor's NOC help desk shall be available 24-hours per day and 365 days. The Contractor's Level 1 will initiate a trouble ticket and determine the level of support and action necessary to accommodate the end users needs. Level 1 shall be technical enough to resolve the majority of service requests that will involve minor troubleshooting. In the event the service or condition needs to be escalated, the ticket and call will be transferred to Level 2 support.

G.7.c ***Level 2 Support – NetTN NOC***

Level 2 is representative as the second level of support for those entities that maintain their own Level 1 help desk operation as well as the TNII Association Partners who utilize the Contractor's Level 1 Help Desk. Automated alarm conditions shall also be monitored by Level 2 support and in the event an open condition exists, will initiate a help desk ticket entry and initiate the process to resolve. OIR Level 2 support will be accompanied by a trouble ticket entry from their Level 1 help desk support team which will include a complete and current update of the problem scenário. Level 2 NOC technicians will work closely with corresponding partner's operations group and the Contractor's Level 1 technicians to resolve service issues using a variety of diagnostic network management tools and utilities. Level 2 support can deem it necessary to contact a field technician or engineer to perform onsite evaluation, testing, and resolution. Level 2 will also contact manufacturer technical assistance as necessary to resolve issues. In the event the issue cannot be resolved by Level 2 support, a Level 3 engineer or Level 3 field service engineer will be required to resolve the issues.

G.7.d ***Level 3 Support – NetTN NOC Advanced***

Level 3 is representative as the third and highest level of technical support providing engineers capable of troubleshooting and resolving any reported issue. Level 2 technical support can, at anytime, invoke the use of Level 3 support. Level 3 support includes Level 3 Field Engineers for on site problem resolution. Level 3 Engineers must receive complete documentation through the help desk trouble ticket reporting system to have current and complete information to troubleshoot the issues to a resolution. It will be Level 3's responsibility to ensure the issue is completely resolved to the reporting end user's satisfaction.

G.8 Problem Severity Definitions

The following table defines the priority levels associated with potential issues which may occur.

Priority Levels of Problem Occurrences		
Critical	**Major**	**Minor**
Problem identification: • *Trouble Ticket Generated*	*Problem identification:* • *Trouble Ticket Generated*	*Problem identification:* • *Trouble Ticket Generated*
Problems Defined as Critical: - *ISP WAN Link or Equipment Down* - *Any Live Video End Site Outage* - *NAP or POP down.* - *End Site down in a MSA* - *Severe Security Breach* - *VIP Sites* - *RA service down* - *Ten-Nash E-Mail Servers or System is Down* - *K-12 Primary and Secondary DNS Servers or Service is Down* - *More Than 50% of a School System's Access is Down* - *A Security Breach Affecting K-12 is identified* - *Any Major Problem not resolved in the maximum response time* - *Any Internet outage between NetTN and NetTN ISP* - *Other Critical Situations- Operations Group Declared*	*Problems Defined as Major:* - *End Site down in a non-MSA* - *Severely Degraded End Site WAN Access Link Performance* - *Severely Degraded ISP WAN Access Link* - *Severely Degraded WAN Access Link* - *Debugging and Troubleshooting of a Security Problem* - *Severely Degraded Live Video Session* - *More than 25% of a School System's Access is Down* - *Severely Degraded K-12 Access and Performance from an Individual School* - *Severely Degraded Ten-Nash E-mail System Performance* - *Severely Degraded Web Access and Performance Debugging and Troubleshooting of a Security Problem* - *Any Minor Problem not resolved in the maximum response time* - *Other Major Situations- Operations Group Declared*	*Problems Defined as Minor:* - *RA Account* - *Single E-Mail Account* - *Degraded ISP WAN Access Link Performance* - *Degraded End Site WAN Access Link Performance* - *Single End User Down* - *Degraded low speed WAN Access Link or equipment in support of the SNA network infrastructure* - *Degraded Live Video Session* - *An Individual School's K-12 Access is Down* - *An End User's E-Mail Account is Down Degraded* - *K-12 Access and Performance from and Individual School* - *Degraded Ten-Nash E-Mail System Performance* - *Content Filtering Problem or Fault* - *Change or E-Mail Password for End User* - *Add/Move/Delete and E-Mail Account* - *Operations Group Declared*

G.9 Network Management Reporting Requirements

G.9.a Network Management Service Fault Reporting Requirements

The NetTN Contractor shall provide network management service reports to track problem volumes, patterns and trends. The following represents the minimum Fault Management monthly reports as required by the TNII Association. All reporting availability shall be distinguishable by each end site. OIR, TBR, UT, SDE, and local governments will have available reports for their outsourced services provided by the NetTN Contractor. Reports supplied by the NetTN Contractor and obtained by the TNII Association Partner shall be used to determine the Service Levels provided as part of Service Level Agreements (SLA) guaranteed by the NetTN Contractor. Additional reports can be requested by the TNII Association for verification of the NetTN Contractor guaranteed SLAs. The Contractor must provide the requested reports in a timely manner not to exceed one month from the date of request for the additionally requested reports.

i. **Call Tracking** – this is a network management summary report that tracks all trouble calls and trouble tickets that are entered into the Level 1, 2 and Level 3 NetTN Contractor's NOC. These reports must indicate whether the problem has been categorized into the correct category, type, item (CTI).

ii. **End Site to Core Backbone Circuit Restoration Time** – this is a network management baseline report that provides the total elapsed time from WAN Circuit "down" notification to WAN Circuit "up" notification for each End Site to Core Backbone circuit outage event.

iii. **End Site to Core Backbone Circuit Trouble Ticket** – this is a network management baseline report that provides the total number of trouble tickets opened within the trouble ticket system for a specific End Site WAN circuit in a pre-defined time period. The WAN *Circuit Trouble Ticket* report shall include the following elements:

(1) Open tickets with specific time stamps of when the ticket was opened and entered into the system, organized by problem severity (critical, major, or minor).

(2) Resolved tickets with specific time stamps of when the ticket was resolved and organized by problem severity (critical, major, or minor).

(3) Average time to resolve tickets, organized by problem severity (critical, major, or minor).

iv. **End Site Equipment Restoration Time** – this is a network management baseline report that provides the total elapsed time from End Site Edge Device "down" notification to device "up" notification. End Site Edge Device shall include the router and any integrated data/video switch that is installed at a particular End Site location to accommodate integrated data and video communications. SNMP alarm notifications shall be used to identify the start time for equipment "down" notification and an SNMP alarm recovery notification shall be used to identify the stop time for equipment "up" notification.

v. **End Site Equipment Trouble Ticket** – a network management baseline report.

The Equipment Trouble Ticket report will provide the total number of trouble tickets opened for End Site Edge Devices within a pre-defined time period. The Equipment Trouble Ticket report will contain the following elements:

(1) Open tickets with specific time stamps of when the ticket was opened and entered into the system organized by equipment problem severity (critical, major, or minor).

(2) Resolved tickets with specific time stamps of when the equipment problem was resolved (critical, major, or minor).

(3) Average time to resolve tickets organized by equipment problem severity (critical, major, or minor).

vi. **End Site Service Trouble Ticket Restoration Time** – a network management baseline report that provides the total elapsed time from the moment a *service down notification* has been entered into the Trouble Ticketing System and a Trouble Ticket Number has been generated to the moment in time *a service up notification* has been entered into the system. MTR should be used only when systems are restored; they are normally monitored for a period of time before the trouble ticket is completely closed.

Associated Trouble Tickets will be reported for each End Site WAN circuit and the *Service Trouble Ticket Restoration Time* will be measured and archived.

vii. **End Site Service Trouble Ticket** – a network management baseline report that provides information from the Trouble Ticketing System as the total number of trouble tickets opened in a given time period for a given End Site. These trouble tickets will be reported with the following elements:

(1) Open tickets with specific time stamps of when the ticket was opened and entered into the system, organized by problem severity (critical, major, or minor).

(2) Resolved tickets with specific time stamps of when the problem was resolved (critical, major, or minor).

(3) Average time to resolve tickets organized by equipment problem severity (critical, major, or minor).

viii. **Video End Site Uptime/Downtime Report** –a network management baseline report that provides the total elapsed time that all TNII Association Partners have scheduled and require a live and working video conferencing session.

This report shall indicate the total number of scheduled minutes, the total number of fully functioning (audio and video) minutes for multipoint video conferencing sessions, and the total number of non-functioning minutes categorized by correct category and subcategory (audio, video, bandwidth failure, equipment failure, etc.) that have been accumulated for each video conferencing session that is scheduled and executed.

This report shall be provided on monthly basis, sorted by video conferencing reservation or session number, and provided for each respective NetTN Association Partner.

G.9.a.i Fault Management Report Availability

The Fault Management reports must be made available to the respective TNII Association Partners in the following formats:

(1) Dedicated TNII Association Web Server, provided by the NetTN Contractor, for on-line viewing and electronic downloading of the specific monthly reports in formats acceptable to the TNII Association Partners.
(2) On-line monthly report retention shall be archived on the TNII Association Web Server for the current month and for the prior six previous months.
(3) A server, provided by the NetTN Contractor, for downloading of raw American Standard Code for Information Interchange (ASCII) text with delimiters such that the TNII Association Partners can run their own Fault Management reports as part of the auditing and verification procedures that may be initiated.

G.9.b Contractor Performance Management

Network Capacity and Performance Management is a functional area within the Contractor's Network Operation Center (NOC) focused on capturing and analyzing network component utilization data. Optimization of network capacity and performance is accomplished by adjusting parameters within the network's design constraints based upon the utilization reports.

The Contractor takes responsibility for monitoring data traffic on the NetTN WAN infrastructure down to the End Site equipment. This function is also responsible for optimizing and load balancing the traffic on the network by manipulating the operating parameters of various network components.

Elements of performance management include the following:

i. ***Network Availability*** – Ability to access network resources.

ii. ***Network Response Time*** – Round-trip time it takes the network to respond after a user enters a request from End Site device to Destination device (Note: this is not to be compared to application response time, but rather the round-trip time it takes to transmit a packet from End Site to Destination with positive acknowledgment).

iii. ***Jitter*** – The variation in packet inter-arrival time representing inter-packet delay.

iv. ***Throughput*** – The quantity and speed of data being transmitted in/out an End Site location to the NetTN WAN access point.

v. ***Utilization*** – The quantity of network bandwidth that is used by an End Site location over a specific period of time.

vi. ***Analysis and Tuning*** – Proactive performance monitoring and tuning of the network to optimize performance.

vii. ***Capacity Planning*** – Proactive determination of future network utilization and network utilization thresholds based on new service requests or additional End Site network traffic or physical LAN connections.

viii. ***Service Level Agreements*** – Level of network performance guaranteed by the NetTN Contractor.

ix. ***Reporting*** – Customized performance reports (e.g., reports generated by the network management tools that determine utilization, threshold, response time, availability, etc.).

G.9.c Performance Management Technical Requirements

G.9.c.i The NetTN outsourced network management service offering shall have Network Performance capabilities defined which encompasses performance management and capacity planning for all End Site types and all Internet access connection links.

G.9.c.ii The Contractor shall perform data collection from multiple SNMP Manager Devices in the NetTN Contractor's NOC and must have a redundant or back-up SNMP Manager device in the event of failure.

G.9.c.iii The Contractor shall conduct data collection 24-hours/day, 365 days/year such that all network performance data must be available real-time and accessible via a secured Web Server for the current 24-hour period, the previous day (24-hour period), previous month, and previous year. This server will be provided by the NetTN Contractor.

G.9.c.iv The Contractor shall conduct data retrieval, data archiving, and post-processing analysis on a daily basis.

G.9.c.v The Contractor shall be able to identify and report high-utilization End Sites. Reports will also be required for sites whose inbound and/or outbound utilization exceeds 90% for two consecutive hours. Reports will include bandwidth graphs, and 5 minute polling data.

G.9.c.vi The Contractor shall archive NetTN network performance data for a period of no less than one year such that it can be downloaded and printed upon request.

G.9.c.vii As requested, the Contractor shall work with the TNII Association Partners in balancing network traffic and activities at specific End Site locations.

G.9.c.viii The Contractor shall be able to identify cost-effective means to increase capacity to a specific End Site location.

G.9.c.ix The Contractor shall be able to identify network traffic bottlenecks.

G.9.c.x The Contractor shall provide performance data such that capacity planning and network design changes can be made proactively by the Contractor to the NetTN WAN infrastructure with involvement from the TNII Association.

G.9.c.xi The Contractor shall include, at a minimum, the following monthly reports for NetTN Managed Services for each of the TNII Association Partners:

(1) **Core Backbone Availability** – This is a baseline network management report that provides circuit availability or up-time information for individual Core Backbone Availability Connections provided and, or managed by the NetTN Contractor. (See Reference Attachment A, SLA A.1)

(2) **End Site to Core Backbone Availability** – This is a baseline network management report that provides circuit availability or up-time information for individual End Site to Core WAN Connections provided and, or managed by the NetTN Contractor. (See Reference Attachment A, SLA A.2)

(3) **OIR Data Center Direct Internet Access (DIA) Service Availability** – This is a baseline network management report that will measure service availability for OIR Data Center Direct Internet Access. (See Reference Attachment A, SLA A.3)

(4) **OIR Data Center Point-to-Point Circuit Availability** – This is a baseline network management report that will measure OIR Data Center Point-to-Point Circuit Availability. (See Reference Attachment A, SLA A.4)

(5) **NetTN Internet Access WAN Service Availability** – This is a baseline network management report that provides service availability or up-time information for each NetTN Internet Access WAN service provided by the NetTN Contractor. (See Reference Attachment A, SLA A.5)

(6) **NetTN Internet/Internet2 Availability to First Hop Beyond the NetTN Default Gateway Devices** – This is a baseline network management report that provides Intenet/Internet2 availability via routing to the first hop beyond the NetTN network. The report should include any issues with routing such as loss of sessions between NetTN BGP peers. (See Reference Attachment A, SLA A.6)

(7) **NetTN Edge Device Errored Packets** – This is a network management baseline report that provides information about the total number of errored packets received on the NetTN Edge Device's as a percentage of total packet transmission based on

a 5 minute sampling rate, presented on a per hour basis for a 24-hour day. (See Reference Attachment A, SLA A.7)

(8) **NetTN Edge Device to NAP Average Jitter Measurement** – This is a baseline network management report that will measure jitter between the NetTN Edge Device to the NAP. (See Reference Attachment A, SLA A.8)

(9) **NetTN Edge Device to 1st Hop in the Core Average Round-Trip Response Time Delay** – This is a network management baseline report that provides information about the End Site to Core Network average round-trip response time delay through the NetTN WAN infrastructure. (See Reference Attachment A, SLA A.9)

Note: The Internet Access reports are only applicable to the TNII Association Partners who utilize the Contractor's Internet access.

(10) **NetTN Average Round Trip Latency, NetTN OIR End Site to OIR Data Center NetTN Edge Device** – This is a baseline network management report that will measure the average round trip latency between OIR Data Centers and NetTN OIR end sites. (See Reference Attachment A, SLA A.10)

(11) **End Site to Core WAN Circuit Hourly Average Bandwidth Utilization** – This is a baseline network management report that provides bandwidth utilization information on individual End Site to Core Network circuits provided and, or managed by the NetTN Contractor. (See Reference Attachment A, SLA A.11)

(12) **NetTN Internet Access Hourly Average Bandwidth Utilization** – This is a baseline network management report that provides bandwidth utilization information for each NetTN Internet Access WAN circuit provided by the NetTN Contractor. (See Reference Attachment A, SLA A.12)

(13) **NAP to NAP Core WAN Circuit Hourly Average Bandwidth Utilization** – This is a baseline network management report that will measure NAP to NAP Core WAN Circuit Hourly Average Bandwidth Utilization. (See Reference Attachment A, SLA A.13)

(14) **End Site Critical Problem Identification and Problem Resolution** – This is a baseline network management exception report for all incidents that are non-conforming (See Reference Attachment A, SLA A.14)

(15) **End Site Major Problem Identification and Problem Resolution** – This is a baseline network management exception report for End Site Major Problem Identification and Problem Resolution (See Reference Attachment A, SLA A.15)

(16) **End Site Minor Problem Identification and Problem Resolution** – This is a baseline network management exception report for End Site Minor Problem Identification and Problem Resolution (See Reference Attachment A, SLA A.16)

(17) **Ordering, Installing, Conducting Verification Testing for New or Upgraded End Site** – This is a baseline network management exception report for Ordering, Installing, Conducting Verification Testing for New or Upgraded End Site (See Reference Attachment A, SLA A.17)

(18) **Configuration Management Services – Reactive Critical** – This is a baseline network management exception report for Configuration Management Services – Reactive Critical (See Reference Attachment A, SLA A.18)

(19) **Configuration Management Services – Reactive Major** – This is a baseline network management exception report for Configuration Management Services – Reactive Major (See Reference Attachment A, SLA A.19)

(20) **Remote Access (RA) Configuration Management Services – Proactive** – This is a baseline network management exception report for Remote Access (RA) Configuration Management Services – Proactive (See Reference Attachment A, SLA A.20)

(21) **Security Administration Management Services** – This is a baseline network management exception report for Security Administration Management Services (See Reference Attachment A, SLA A.21)

G.9.c.xii The Performance Management reports must be made available to the respective TNII Association Partner in the following formats:

a. Dedicated NetTN Operations Group Web Server (provided by NetTN Contractor) for on-line viewing and electronic downloading of the specific monthly report in formats acceptable to the TNII Association Partners.
b. On-line monthly report retention shall be archived on the NetTN Operations Group Web Server for the current month and for the 2 previous months.
c. A Server (provided by NetTN Contractor) for downloading of raw ASCII text with delimiters such that the NetTN Operations Groups can run their own Performance Management reports as part of the auditing and verification procedures that may be initiated.

G.9.c.xiii The TNII Association reserves the right to have the Performance Management reports audited by an outside third party.

G.10 Security and Administration Management Requirements

G.10.a The Contractor shall enforce each TNII Association Partners' Security, Incident Handling and Administration policies to ensure the integrity, confidentiality and availability of the infrastructure and data transversing the NetTN network. Periodic policy updates and revision shall be coordinated between the Contractor and TNII Association Partner.

G.10.b The Contractor's Security and Administration's scope of responsibility covers the entire NetTN infrastructure including but not limited to:

i. Data services
ii. Internet services
iii. IP Telephony services
iv. Video services

G.10.c The Contractor will have bi-annual security audits and penetration analysis performed by a third party company against the NetTN infrastructure and equipment that is managed by the Contractor. The conclusions of these audits will be presented to the State CISO and TNII Association Partners with recommendations regarding the findings of these audits.

G.10.d The TNII Association and State CISO reserves the right to conduct full security audits for all facets of the provided NetTN infrastructure and its service provided components.

G.10.e The Contractor shall develop a secure architecture designed to protect the NetTN infrastructure which will include but is not limited to:

i. Physical security
ii. Network based attacks
iii. Unauthorized access

G.10.f The Contractor's offering shall be capable of recording, capturing and/or monitoring network traffic on the NetTN infrastructure for correlating and/or analyzing security events. The TNII Association requires the Contractor to maintain the confidentiality and integrity of this information for investigative/prosecution purposes.

G.10.g The Contractor's offering shall provide a monthly security report to the State CISO and TNII Association Partners regarding any security violations and/or breaches. The reports shall include at a minimum the following:

i. Security violations or intrusion attempts on NetTN infrastructure
ii. Report of lost or damaged data and/or equipment
iii. Remedies and solutions to prevent similar occurrences from happening in the future
iv. Report shall have a secure means of distribution

G.10.h The Contractor shall provide a security incident response plan and escalation procedures to the State CISO and TNII Association for rapid response to violations and/or breaches.

G.10.i Contractor employees working on NetTN shall sign a State approved acceptable use policy and a non-disclosure agreement.

G.11 Configuration Management Requirements

G.11.a The Configuration Management service offering shall include two distinct categories:

i. Reactive Configuration Management – shall pertain to immediate problem resolutions in the event that a fault or problem is identified pertaining to an End Site's connection and the only corrective measure to be taken involves configuration or reconfiguration of a network component.

ii. Proactive Configuration Management – shall pertain to planning for a change or an upgrade based on historical data or new functional requirements for an existing End Site. Upgrades to network and system hardware or software elements will be categorized under Proactive Configuration Management.

G.11.b The Configuration Management service offering must include an asset management database service to perform End Site location inventory management (e.g., each End Site location's complete video and network hardware and software inventory database information). This database must be made available to each TNII Association Partner on an as needed basis throughout the life of this contract.

G.11.c **OIR** – To maintain accurate configuration management information for OIR, the Action Request (AR) System requirements stated in the Network Management section provides the necessary software as it relates to OIR services. OIR shall maintain the Remedy software at the OIR Data Center. The Contractor shall provide a link to the OIR's database where all adds, moves or changes will be recorded. The Contractor will be required to complete all information fields that OIR deems necessary.

G.11.d **SDE/TBR/UT/Local Government** – For all other TNII Association Partners, the Contractor must maintain a configuration management database that incorporates the information on all adds, moves or changes. This database will house information on all NetTN End Site circuits as well as any End Site edge device information.

G.11.d.i The TNII Association must be provided access to this database via a web link or other means and shall receive un-altered electronic copies of this database in its entirety on a quarterly basis.

G.11.e The Configuration Management service offering must include a network topology service through the use of a Visio drawing that depicts and documents each TNII Association Partner virtual private network infrastructure through the NetTN WAN infrastructure.

G.11.f For OIR, the Configuration Management service offering must include on-going change management as part of its function and be supplemented with automated configuration documentation process using Remedy.

G.11.g For OIR, the Configuration Management service offering must utilize an automated, on-line system where a centralized database repository can readily interface with external systems such as inventory, change control, network management databases, and other NetTN Service Contractor's technical information sources using Remedy.

G.11.h The Configuration Management service offering must include a directory of services on a secured Web server for conducting pre-scheduled moves/adds/changes for an End Site location that can be accessed by members of each TNII Association Partner as part of the overall Universal Service Access pricing.

G.11.i The Change Management service offering must be supported by audit trails of triggered events that are part of the life cycle of a change from submission through implementation. This means that if additional configuration, security, and accounting modifications are triggered as a result of the change, those specific modifications must have the ability to be readily traceable to the change that caused them.

G.11.j The Change Management service offering must also be able to provide statistics on change activity in order to assess volume trends. In this way appropriate resources are given to the function to ensure that service levels for change processing are maintained.

G.11.k The Change Management service offering must be supported by an automated database system that will allow someone to look up a specific component and review the change history for that component as well as allow someone to plan for future changes.

G.11.l The NetTN Service Contractor must be flexible in working with the TNII Association in defining and adopting a comprehensive set of policies, procedures, functions, and systems for the Change Management process that is mutually agreeable to all parties.

G.11.m The Configuration Management service offering must include at a minimum the following monthly network management reports and be made available to each specific TNII Association Partner via a secured Web server account where the reports can be viewed or downloaded for archiving:

i. NetTN Level 1 and Level 2 Configuration Change Summary Report

ii. Individual End Site Reactive Configuration Change Summary

iii. Individual End Site Proactive Configuration Change Summary (e.g., configuration changes that are pre-scheduled for the following month)

iv. Updates or Changes to Configuration Documentation Summary

v. Up-to-Date Inventory Summary for each End Site Sorted by End Site

vi. NetTN End Site Installation, Network Acceptance Testing, and End Site Certification Summary Report.

vii. Remote Access Configuration Change Summary Report

G.11.n Any Proactive or Reactive Configuration Management request or change to be conducted by the NetTN Service Contractor must be scheduled and approved by the respective TNII Association Partner prior to implementation and execution.

Attachment H – General Responsibilities

This section describes the general programmatic, reporting and coordination the TNII Association expects the NetTN Contractor to provide during the length of the contract. It also addresses the responsibilities of the TNII Association in interfacing with the NetTN Contractor.

H.1 The NetTN Contractor shall prepare monthly progress reports and provide such reports to the TNII Association project management team. The progress reports must be in a format approved by the TNII Association and include accomplishments, critical issues, key staff utilized and items planned for the next reporting period. Upon request of the TNII Association Project Manager, the Contractor shall report more frequently.

H.2 The NetTN Contractor's Project Manager shall meet formally with the TNII Association Project Management Team on a monthly basis (or more frequently at the Association's option) to review the project's progress.

H.3 Prior to commencement of each major phase of this project, the NetTN Contractor will be required to submit a detailed project plan describing the tasks and functions to be performed by the NetTN Contractor as well as the TNII Association Partners. This detailed project plan must be submitted to the TNII Association for approval prior to commencement of the tasks and functions. The project plan must include a table of contents, schedule, resource assignments, deliverables, and TNII Association staff involvement.

H.4 At the conclusion of each phase, the NetTN Contractor must obtain written approval from the TNII Association on all deliverables before the phase will be considered completed by the TNII Association.

H.5 The NetTN Contractor shall perform quality control on all deliverables before submission for TNII Association review and maintain records of those activities.

H.6 The TNII Executive Director will provide the direction of the NetTN Executive Steering Committee.

H.7 The TNII Executive Director will approve project organization by meeting with the NetTN Contractor's project management team to finalize and document areas of responsibility, personnel reporting relationships and administrative procedures.

H.8 The TNII Association project manager will establish evaluation mechanisms by setting up procedures for day-to-day control of the project as defined by the combined (TNII Association and NetTN Contactor) project management team.

H.9 The TNII Association project manager will provide information and answer questions requested by the NetTN Service Provider.

H.10 The NetTN Contractor is required to create and maintain a project management plan in electronic format covering the entire project and each individual phase. The plan shall include project organization, work break down structures, resource loading, schedules, critical path determination, and other features required to track and manage this project.

H.11 The TNII Association requires that the NetTN Contractor use Microsoft Project as the project management tool.

H.12 The TNII Association Partners comprised of OIR, TBR, UT, SDE and local government will work in partnership to assist the NetTN Service Provider in the design, installation, migration and implementation planning for transitioning the existing network infrastructures onto the new, NetTN wide area network. The TNII Association Partners will designate a Project Representative to interface with the Contractor.

H.13 The TNII Association Executive Director will be responsible for ensuring that the project is in compliance with the contract and satisfies the technical requirements stated in the RFP.

H.14 The TNII Association Project Manager will provide technical leadership and assistance. Individual OIR, TBR, UT, SDE, and local government Project Representatives will be identified and will act as the technical and implementation interface between the NetTN Contractor and the respective TNII Association Partner's End Site locations. The TNII Association Project Manager in conjunction with an OIR, TBR, UT, SDE, and local government Project Representative will provide expertise, assistance, and leadership in areas regarding technology migration and implementation.

H.15 The NetTN Contractor will have full responsibility for providing adequate staff to complete the project in the specified time frame. Each TNII Association Partner will assign staff from each of the OIR, TBR, UT, SDE, and local government technical staff to assist the NetTN Contractor in the migration, implementation, and cutover of existing and new End Site locations onto the new, NetTN wide area network infrastructure. This integration of staff will expedite the ultimate interfacing between the NetTN Contractor's NOC and the individual OIR, TBR, UT, SDE and local government NOC operations for network management interfacing. Expanded reporting will be required during the migration phase.

H.16 Each TNII Association Partner will define OIR, TBR, UT, SDE and local government personnel that will work with the NetTN Contractor once the project commences. At the TNII Association's discretion, other personnel may be substituted or used as needed. The TNII Association reserves the right to add or remove members of the TNII Association's project staff with or without replacement.

H.17 The TNII Association will convene a Quality Review Board (QRB). This board, made up of the TNII Executive Director and other TNII Association Partners, will provide executive-level guidance during the first 16 months of this project. It will evaluate the project at set critical review points especially during the first 22 months of this project. The evaluation will consider information from quality assurance assessments, project management, and areas supporting the project.

H.18 The NetTN Contractor shall establish a quality management and improvement program. The on-going quality control and management of business processes must encompass but not be limited to the following areas: Project management, NetTN Wide Area Network Infrastructure Quality, NetTN End Site Installations, Fault Management, Performance Management, Configuration Management and Security Management.

H.19 The NetTN Contractor's quality management program must utilize appropriate tools (e.g. control charts, histograms, on-going statistical analysis of data, etc.). Specific examples of the use of these tools are determining process capability, identifying special causes of variation and negative trends, and determining where process improvement efforts should be focused first.

H.20 The NetTN Contractor shall provide and maintain a public web site and shall be updated at least monthly. All information, data and forms must be approved by the TNII Association before it is posted to this web site. The web site shall include the following, but not limited to:

- A list of all products and services with descriptions, availability and unique identifier, including features.
- Product and service rates, including features.
- Contract language and amendments.

- TNII Association Partner FAQs.
- TNII Association ordering instructions.
- End-User Escalation Process.
- List of available Contractor-offered training.
- News.
- A link to TNII Association Partner web sites.

H.21 The NetTN Contractor shall provide and maintain a private web site. The Contractor shall use this portal to provide the TNII Association Partners with access to, but not limited to, service level agreement reports, fiscal management reports, inventory management reports, invoice management, Contract performance reports, and contracted service project work reports.

Attachment I – Migration and Implementation

With the magnitude of the NetTN network requiring the potential installation of over 3,000+ end site locations for multiple TNII Association Partners, much consideration and planning is required of the Contractor to accomplish this project without interruption of network availability for the end site users. This section will help establish the timeframes the Contractor has to work within as well as define the migration and implementation requirements the State demands. Priority lists from each TNII Association Partner will be given to the Contractor to establish the order of installation of End Sites within that group's entity. Close coordination shall be required between the Contractor and the operational personnel within each TNII Association's group. Additionally, each End Site will be subject to stringent acceptance testing. The Contractor shall have a contingency plan for End Site's that fail to come up or do not comply with the State's requirements.

I.1 Migration and Implementation Timeframe Requirements

The Contractor shall be expected to work within the following timeframes and meet the deadlines associated with the implementation of the core backbone and the TNII Association End Sites.

I.1.a The first phase (Phase I) of the NetTN implementation involves the build-out of the NetTN Core network and the NOC facility operation. From the date of contract signing and acceptance, the Contractor shall have six months to build the backbone core network consisting of both the Level 1 and Level 2 network hierarchy. This consists of the Core Network locations and the associated Optical Carrier level circuits between Core Network locations. Additionally, the backbone build-out includes provisioning all of the Contractor's necessary equipment within the Core Network to operate the NetTN WAN. All required redundancy and diversity shall be installed, complete, and ready for use. All network management equipment and software shall be operational to assist in the provisioning process and to be available to initiate the necessary required reports for configuration, performance, fault, and security management.

All aspects of the Core Network including all aspects of the Contractor's NOC and Core Network connectivity to the existing TNII Network shall be fully operational and able to reliably and consistently pass traffic as required of the Contractor's services. The Core Network shall be fully operational for End Site connectivity including NOC support within the stated six month timeframe. The Contractor must be ready to assume responsibility for managing the NetTN Network. This includes the trouble ticketing process, migration, provisioning new sites in addition to all required reports.

I.1.b The TNII Association shall have two weeks to test and validate that the Core Network including the Contractor's NOC and connectivity to the existing TNII Core Network of Phase I are operational and ready to accept the migration of End Sites.

I.1.c The following phases will involve the migration of all current TNII End Sites. These phases shall be completed within a 16 month timeframe from the Phase I Core Network and Contractor's NOC completion date.

I.1.d During the NetTN End Site implementation, the Contractor shall be required to provide installation of new End Sites while migrating the existing sites to the NetTN Network.

I.2 Migration and Implementation Technical Requirements

I.2.a The Contractor shall comply with the SLA requirements for completion periods on all installs.

I.2.b The Contractor shall comply with the TNII Association Partner's request pertaining to the scheduling of installation times. End Site installation may occur during normal business hours, after hours and on weekends or holidays depending on that End Site's operations schedule.

I.2.c The Contractor shall provide a written migration and implementation plan.

I.2.d The Contractor's written migration plan shall address how connectivity shall be maintained between End Sites on the existing TNII network and End Sites on the new NetTN network for all data communications. The Contractor's written migration plan shall address how connectivity shall be maintained between End Sites on the existing K-12 network and End Sites on the new NetTN network.

I.2.e The Contractor's written migration plan shall explain the technology and techniques used for integration and acceptance testing of a data only, video only, and data/video End Site.

I.2.f The Contractor's written migration plan shall include a map of the Core Network locations that will support the NetTN network.

I.2.g The Contractor's written migration plan shall include a schedule of when the Core Network locations will be ready for migration of the End Site locations.

I.2.h The Contractor shall be responsible for any costs associated with maintaining Core Network connectivity between the existing TNII network and the new NetTN network for any End Site's communications needs (data, video, etc.).

I.2.i Upon equipment installation, the Contractor's Network Operations and TNII Association engineering staff will conduct tests to ensure that the end site can successfully communicate over the NetTN Network service. The acceptance test will verify the proper operation of the equipment, the local access facility, site routings, and the Contractor's backbone infrastructure. Any costs associated with these services are the responsibility of the Contractor.

I.2.j Connection activation for the TNII Association Partners is considered complete and service billing is initiated for an End Site when the following criteria have been met;

i. Reliable completion with adequate response times through an extended Ping test, up to 100 pings to applicable IP address(s)

ii. Reliable completion of a DHCP test by releasing and renewing IP address

iii. Verification of successful DNS response

iv. Verification of successful access to application servers

v. Verification of successful email access

vi. Verification of NAT, where applicable (End Site using 10.X.X.X addresses)

vii. SLAs as specified in Attachment A (SLAs A.2, A.5, A.6, and A.8) have been met for a period of ten business days.

I.2.k Contractor must provide standard procedures for ordering and implementing NetTN services. Implementation coordination includes scheduling the due date, addressing facility issues, capturing circuit information, and providing that circuit information to the TNII Association Partner post implementation.

I.2.l The Contractor must provide, at minimum, the following installation and testing criteria at the customer premise:

i. Contractor must provide all required termination components.

ii. Installation to include all planning/engineering, termination, cross connects, terminating hardware setup, programming, mounting, and related documentation, as well as rack-and-stack of end-site equipment and associated circuits approximately one week prior to actual cutover.

iii. Contractor must perform all installations according to applicable codes, licenses, certifications, and standards.

iv. Contractor must test the circuit for the requested services and performance levels. The Contractor must provide supporting documentation of the test results if so requested by the State.

I.2.m The Contractor Senior Management Team shall meet monthly with the TNII Executive Steering Committee through Phase I and Phase II of the NetTN Network.

I.2.n Each TNII Association Partner will be responsible for providing a shelf or rack space, inside wiring, power requirements and appropriate environment for the contractor's NetTN WAN end site service offering.

I.2.o The Contractor shall submit a plan for migrating existing end sites to the NetTN WAN to include options for conducting end site surveys and gathering information related to order processing to end site connectivity requirements and generating the orders to migrate the end sites to NetTN.

The site survey plan must include on-site visit(s) by the Contractor to verify site readiness for migration and to document site preparation work that must be completed prior to migration. Site readiness must include a review of power, premise cabling requirements, space, racks, security/access, and any other special requirements for the placement and operation of NetTN equipment. The site survey plan must also address processes to notify the end site customer and Association member of pending site prep work as well as logging and tracking of completion of work prior to migration.

The end site order processing migration plan must include processes required to gather information for each end site that is required to generate an end site cutover work order and using Remedy to enter, log and track that work order through end site cutover completion. Tracking processes must include site-specific scheduling and communications planning to keep the end site points of contact and Association members informed on cut over schedules and resource coordination. Information gathering and cutover work order processing must include all necessary information required to generate and execute an end site migration work order to include, at a minimum, site location/contact information, bandwidth requirements, IP address range(s), LAN interface requirements, access control requirements such as firewalls or router ACLs, and any additional information required for the placement and operation of NetTN equipment in each specific end site environment.

Attachment J – Billing Requirements

The following list of requirements is necessitated to lessen the demands for unnecessary work placed upon the State's personnel who process the bills and provide payments to the Contractor. The State is looking to the Contractor to provide detailed and accurate information in a format provided by the State the first time the invoice is submitted. Therefore, the Contractor for NetTN shall be required to comply with the following list of instructions and requirements.

J.1 OIR Billing Requirements

J.1.a The State requires three CD'S (one original and two duplicates) to be provided as invoicing on CD ROM to the Department of Finance and Administration, Billing Services by the 10th of the month at no additional charge to the State of Tennessee. The CD provided must be compatible with computer equipment (hardware and software) used by the State and must be operational.

J.1.b Billing Services will assist in the formatting of such CD invoicing to insure the proper information is in place. The CD ROM invoicing shall be delivered each month in lieu of paper invoicing covering the service of the contract.

J.1.c The CD ROM must provide all billing information of all usage associated with each request for service. The billing information on the CD ROM shall be matched with the contract line commodity codes used by the State.

J.1.d All charges based on the appropriate line commodity code shall be presented on the CD invoicing and billed to the appropriate number that incurred said charges. All one time charges (OC&C charges) must be referenced to the appropriate line commodity code and associated with the proper request for service number and billing number that incurred said charges.

J.1.e The format of the billing CD must be provided to Billing Services, in writing, within 30 days of award of contract. Format of the CD is required to be in three types of billing records: airtime charges, OC&C charges, and monthly charges. The following formats are not inclusive and additional fields may be required as determined by the State. If the State does require additional fields, the vendor will have 30 days to send a revised hard-copy format to the State, and 90 days to add the new field(s) to the CD and provide a new test CD.

J.1.f Format of usage call records must include:

i. Account Number
ii. Billing Number
iii. Call Date
iv. Time of call
v. Duration of call
vi. Call to city
vii. Call to State
viii. Call to number
ix. Call from city
x. Call from State
xi. Call from number
xii. Call charges
xiii. Commodity code

J.1.g Format of OC&C (other charges & credits) must include:

i. Account number
ii. Billing number

iii. Invoice date
iv. Commodity code
v. Quantity
vi. RFS number
vii. Charges and credits

J.1.h Format of monthly charges must include:

i. Account number
ii. Billing number
iii. Invoice date
iv. Commodity code
v. Charges and credits

J.1.i At the bottom of the billing records a summary record must be provided that summarizes the billing by the commodity code and the amount billed to each commodity code.

J.1.j Records that do not conform to the above criteria shall be rejected from the CD ROM received and charges associated with those records must be credited to the State of Tennessee's account.

J.1.k Upon receiving the file from the Contractor, if the State finds errors on the file, the State will produce an error report and will send this report to the Contractor. If the Contractor sends the file to the State by the 1st of the month, the Contractor will receive an error report by the 6th of that same month. If the Contractor submits the file to the State later than the 1st, the Contractor's receipt of the error report will be delayed accordingly. Regardless of when the Contractor receives the error report, the Contractor has until the 17th of the same month to resubmit three corrected CD's. The State of Tennessee will not consider rejected records after the said date. For each corrected CD, the State will deduct a reprocessing fee of $500 from the Contractor's montly bill to the State. If the Contractor elects not to send a corrected CD and wants the State to calculate a corrected bill for the Contractor, an additional fee of $1,500 will be charged to the Contractor as a reduction to the monthly bill.

J.1.l An operational sample of the CD must be provided and approved by the Department of Finance and Administration, Billing Services as functional within 90 calendar days of contract award.

J.2 **Billing/Invoices**

J.2.a For local government, TBR and UT, invoices shall be sent directly to the ordering TNII Association's location.

J.2.b For OIR and SDE services, invoices are to be sent to:

State of Tennessee
Department of Finance and Administration
Billing Services
20TH FLOOR, WRS Tennessee Tower
312 8TH AVE. North
Nashville, TN 37243

J.2.c If at anytime, the Contractor is unable to submit accurate invoice information in the required format, the State of Tennessee, Department of Finance and Administration, Billing Services, may at its sole option refuse payment of Contractor's invoice, or may delay payments.

J.2.d The State will only be responsible for associated fees and taxes applicable by law to the State of Tennessee. The State will pay applicable E911 charges, as long as they are billed to the State by

billing number, not bulk billed. The State of Tennessee will not pay for any charges that are not driven down to a billing number (circuit, telephone number or unique billing number).

J.3 Billing Acceptance

J.3.a Upon satisfactory completion of a 90 calendar day billing acceptance period, the State shall issue written notification of billing acceptance. Contractor's invoices will not be paid until billing acceptance by the State.

J.3.b For OIR and SDE services, the Contractor shall complete and sign an "Authorization Agreement for Automatic Deposit (ACH Credits) Form". This form shall be provided to the Contractor by the State. Once this form has been completed and submitted to the State by the Contractor, payments shall be made by Automated Clearing House (ACH). The Contractor shall not invoice the State for services until the Contractor has completed this form and submitted it to the State.

J.4 CD ROM Contractor Payments

J.4.a The Contractor will be required to pay $1,000 if a readable CD ROM for billing purposes is not delivered after the initial 90 day award period, by the 10th day of the following month. An additional charge of $200 a day will be imposed on the Contractor for each additional day of the contract that the Contractor does not have a readable CD ROM.

J.5 Billing Analyzer for OIR Related Services

J.5.a Contractor must supply the State of Tennessee software that will analyze the Contractor data. This software must be able to sort, query and filter Contractor billing information into Word/Excel type files. The software must be supported by Windows XP or be browser based. The Contractor will supply at no cost to the State of Tennessee eight licenses. All billing information must be on the analyzer. If the vendor is requesting payment of services, both the analyzer and the three required CDs must have the same information and balance in total.

J.6 Special Contractor Instructions for SDE Billing

J.6.a The Contractor shall submit monthly invoices, in form and substance acceptable to the State with all of the necessary supporting documentation, prior to any payment.

J.6.b Such invoices shall be submitted for completed units of service or project milestones for the amount stipulated.

J.6.c The Contractor shall also submit an invoice, in form and substance acceptable to the Federal Communications Commission (FCC) and Universal Service Administrative Corporation (USAC) E-Rate Program Fund Administrator and with all of the necessary supporting documentation, and receive payment according to FCC E-Rate Program rules and regulations.

J.6.d The State shall in no way be responsible for the discounted portion that the FCC/USAC E-Rate Program Fund Administrator has agreed to pay to the Contractor other than the State's obligations to submit various filings in compliance with the FCC E-Rate Program.

J.6.e The State will only be responsible for the applicant portion of the E-Rate eligible services. Upon successful switchover to the Contractor's bundled internet access services for SDE as described herein, the Contractor will receive compensation from the State based upon the net difference of the total E-Rate eligible bundled Internet access service amounts and the actual E-Rate funding amount for those services. A maximum compensation liability of the State will be established by the State prior to the implementation of bundled Internet access services for SDE. In the event the E-Rate funding level is reduced, then the monthly amount for bundled Internet access will be adjusted accordingly based on the Contractor's proposed State costs as depicted in the Catalog of Services for SDE.

J.7 Moves, Adds, Changes and Deletions (MACD)

J.7.a The TNII Association requires that all charges associated with any work order activity appear on the invoice to the TNII end site within a maximum of two billing cycles from acceptance date.

J.8 Travel Cost

J.8.a Travel costs and per diem for Contractor services under this agreement will not be paid by the TNII Association. The Contractor is responsible for all associated travel costs.

J.9 Credits and Contractor Payments

J.9.a The TNII Association requires that all credits including, but not limited to, billing errors and SLA payments be refunded in a form acceptable to the TNII Association Partners.

J.9.b The TNII Association requires all refunds, credits, and Contractor payments must be resolved within a maximum of three billing cycles.

J.9.c If a billing error on the Contractor's part results in a loss of any federal funds, the Contractor shall be responsible for crediting the State agency for that amount.

J.10 Single Point of Contact

J.10.a The TNII Association requires that Contractor provide the TNII Association a single point of contact for all billing issues/inquiries including a toll free number and email address. Collection agencies or collection departments are not allowed to contact any member of the TNII Association. All communications will go through the Contractor single point of contact.

J.11 Billing Escalation

J.11.a The TNII Association requires that the Contractor establish and document a billing escalation process to resolve any billing issue including discrepancies, errors, omissions, or unrecognized charges.

J.12 Video Conferencing Billing Services

The Contractor shall provide billing information that can be used to bill the TNII Association Partners for Video Services.

J.12.a The NetTN multipoint video conferencing and scheduling services shall be included in the billing structure for each individual video conferencing session that is purchased through the NetTN Contractor.

J.12.b The Contractor shall generate billing for services that will be based solely upon per minute usage and will be billed in 30 minute increments identified by end site user, date and time of day. No point to point calls are included in the billing service.

J.12.c Billing reports should be no more than 35 days in arrears and must have the ability to be imported into excel spreadsheets, and be web accessible.

J.12.d The Billing system must have the capability of generating usage reports, sorted by end site that includes the date, start and end times for all multipoint calls.

Attachment K – Renegotiation and Competitive Rates

K.1 Renegotiation Requirements

The TNII Association requires a renegotiation process to begin at least 60 days prior to the end of each one-year term of the Contract. The Contractor shall submit all price reductions to the TNII Association by the end of each one year anniversary date. Any such renegotitions shall result only in decreases to Contract rates given in Contract Attachment B; Contract rates may not be increased.

K.2 Competitive Rates Requirements

K.2.a The TNII Association requires that the pricing, rates and terms offered to the TNII Association during each one-year term of the Contract is at least as favorable as the pricing, rates and terms offered to Contractor's similarly situated customers. The TNII Association will create a competitive assessment team that will routinely ensure services associated with NetTN are maintained at a competitive level.

K.2.b The TNII Association requires that the pricing, rates and terms offered to the TNII Association during each one-year term of the Contract remains competitive with the pricing, rates and terms offered in the market. The TNII Association reserves the right to obtain three competitive quotes for functionally equivalent NetTN services whereas the Contractor must be equal to or less than the lowest of comparable quotes. Otherwise, as deemed necessary according to the terms of this contract, the Contractor will adjust pricing downward accordingly. The NetTN Contractor is to provide on an annual basis proof that the NetTN contract rates are competitive and the best in the State of Tennessee, along with a comparison of other states in the southern region.

K.2.c The TNII Association requires that the Contractor submit to audits performed by the State Comptrollers Office, the TNII Association, and/or third parties at any reasonable time during its normal business hours, to inspect and audit any and all records.

K.2.d. The foregoing notwithstanding, rates in Contract Attachment B may be decreased, but cannot be increased during the term this Contract.

Attachment L – Local/State Account Team

The State has found it to be beneficial to have a dedicated account team to form a partnership with the TNII Association. Sub-account teams for local representation in certain markets of the State may also be requested. This working partnership affords the Contractor insight into how the State operates through a direct business relationship. It shall be required that the Contractor and all associated sales staff sell all services/products exclusively through the NetTN Catalog of Services to the partners of the TNII Association, members of State Initiatives and non-profit corporations with government related services.

Attachment M – Evolving and Emerging Technologies Requirements

M.1 The TNII Association requires that the Contractor have a method for incorporating evolving and emerging technologies. A Technology Plan is one method of achieving this goal.

M.2 As other services become available through technological developments, the Contractor will be required to make these services available to the TNII Association. The Contractor and the TNII Association will mutually decide if the service is beneficial to TNII Association Partners and should be added to the contract. Services added will require agreement regarding the service level factors and the cost.

M.3 The State realizes that because of the long-term nature of this contract, there will be the need for regular changes to the services and products initially proposed under this contract. The Contractor must agree to work closely with the TNII Association and abide by the service substitution guidelines as defined by the Schools and Libraries Division of the USAC in evaluating new or emerging services or products and commit to expedite the process to add those services to this contract, should it be determined to be in the best interest of the State.

Attachment N – Ongoing Technology Refresh Requirements

N.1 A paramount concern of the NetTN initiative is to obtain a Contractor committed to providing services under a philosophy of rapidly accommodating change. This is commonly referred to as "future proofing". Furthermore, the TNII Association is seeking long-term professional assistance that is committed to meeting newly defined service needs and technological advances within advantageous timeframes and within a framework of cost effectiveness. The installed Contractor provided CPE shall not be of a beta state, pre-release, end-of-life, fully matured, or outdated.

N.2 All hardware, firmware, and software utilized in the NetTN network shall be maintained at current levels supported by the manufacturer. When a product reaches end-of-life, the Contractor will replace it with new hardware, firmware, and software that is supported by the manufacturer.

Attachment O – Communications Assistance for Law Enforcement Act (CALEA)

The Communications Assistance for Law Enforcement Act (CALEA) was passed in 1994. The U.S. Congress passed CALEA to aid law enforcement in its effort to conduct surveillance of citizens via digital telephone networks. The Act obliges telephone companies to make it possible for law enforcement agencies to tap any phone conversation carried out over its networks, as well as making call records available. The act also stipulates that it must not be possible for a person to detect that his or her conversation is being monitored by the respective government agency.

In 2004, the DOJ, FBI and DEA took steps to accelerate CALEA compliance to cover citizens' communications that travel over the internet. On August 9, 2004, the FCC concluded the CALEA applies to facilities-based broadband Internet access Contractors and Contractors of interconnected VoIP services.

Moving forward it is unknown what further requirements the FCC or Federal government agencies may pass for safeguarding our country and the citizens of the United States. However, as the NetTN infrastructure unfolds with new capabilities for VoIP and IP telephony, and this technology is utilized to a greater degree, it shall be the responsibility of the Contractor to comply with CALEA when it becomes applicable to NetTN. The TNII Association will work closely with the Contractor to address any requirements.

O.1 CALEA Requirements

O.1.a Upon request of the TNII Association, and as applicable by law, the Contractor shall comply with all CALEA requirements applicable to the NetTN network or End Site users.

Attachment P – eHealth Requirements

P.1 The State of Tennessee though Executive Order 35 established the statewide eHealth Advisory Council to coordinate the various eHealth initiatives across the state with a common goal, the successful development and implementation of electronic medical records. The Tennessee eHealth Council initiative will accelerate the adoption and use of Health Information Technology to improve healthcare quality, increase patient safety, reduce healthcare cost and enable individuals and communities to make the best possible health decision. The Council's mission is to drive improvement in the quality, safety and efficiency of healthcare for the State of Tennessee healthcare consumers by providing leadership, education, support and engaging the entire community to accelerate the implementation of eHealth solutions. The six main components of the mission are:

i. Interconnect clinicians and providers for sharing of electronic health information
ii. Support the appropriate Security and Privacy controls as required by State and Federal Law
iii. Support interoperability between all healthcare stakeholders
iv. Minimize and eliminate redundant or duplicate services among stakeholders
v. Define and implement policy and procedures to ensure proper use and full transparency
vi. Ensure public trust through appropriate safeguard and transparency

In an effort to accelerate eHealth deployment across the State of Tennessee, the NetTN network will serve as the main and the most affordable broadband choice eHealth participants, which include licensed health care professionals and health care stakeholders.

P.1.a. A private network, the eHealth Exchange Zone, will be provided by the NetTN contractor for the purposes of exchanging protected health information for purposes of treatment and other appropriate uses permitted by HIPAA.

P.1.b. The NetTN contractor will provide a hosted identity management solution with the capability to federate within the eHealth exchange zone and/or other defined TNII Association Partner VRFs.

P.1.c. The NetTN contractor will provide a Level 1 help desk for eHealth participants and second and third level support for the hosted identity management solution. The NetTN Help Desk will provide End Point Application support, based on documentation and training provided by End Point Application owners. End-point Application owners must provide the NetTN Service provider the documentation and provide End Point Application training, thirty (30) Business Days before the Application going "live" to provide sufficient time for training of the Help Desk and updating of the Help Desk documentation. End Point-provided documentation should adhere to the following guidelines:

i. The End Point Application documentation must not exceed three (3) pages of medium size print.

ii. The Application "Knowledge Base" or "Kbase" documentation must be in English and follow a mutually agreed Application Kbase documentation format. "Knowledge Base" is defined as the tool used by the Help Desk personnel to retrieve Application support documentation and frequently asked questions.

P.1.d. State of Tennessee Health agencies/employees will authenticate to NetTN eHealth member services. Such State of Tennessee Health agencies/employees will not be subject to authentication charges by the NetTN contractor.

P.1.e. Health providers and/or TNII Association end sites with identity management systems will be charged a one-time consulting fee for set-up in lieu of the monthly authentication charge.

P.1.f. The contractor will promote NetTN eHealth services for both private and public Healthcare facilities/eHealth participants. The contractor will be responsible for promoting NetTN services, Catalog of Service line items, to healthcare providers. The contractor account team will promote the NetTN services as the first choice to Healthcare providers. The private healthcare facilities/eHealth

participants will contract directly with the NetTN Contractor for use of the NetTN eHealth Exchange Zone and State of Tennessee NetTN Catalog of Service rates and meet the following specifications:

i. eHealth participants must execute the Proposer's Commercial Contract of which this Catalog of Services is attached;
ii. Execute data sharing agreements with other eHealth participants;
iii. Participate in the authentication solution for access within the eHealth Exchange Zone;
iv. Exchange a minimum core data set with other eHealth participants for treatment purposes as well as other acceptable uses permitted by HIPAA;
v. Abide by the recommended guidelines for the exchange of protected health information as endorsed by the eHealth Council, the entity created by the Governor's Executive Order #35 and any applicable State and/or Federal laws or regulations.

P.1.g. The eHealth participant's use of the NetTN catalog of services and eHealth Exchange Zone may be suspended or terminated immediately with cause by the State of Tennessee with written notice to the NetTN contractor. Furthermore, either party may terminate this agreement with 30 days written notice to all parties, including the NetTN contractor.

P.1.h. The NetTN contractor will provide a web site for eHealth services including but not limited to the following: ordering of NetTN services, federal and state level grant information with easy access to funding forms and grant applications.

P.1.i. The NetTN Service Provider will be responsible for the following Hosted Identity Management Service objectives:

i. Hosted Identity Management System Monthly Availability – 99.0%

ii. Hosted Identity Management average monthly response time for system and application response time – 20 Seconds (login to System and access to administrative tools from main System page)

iii. Hosted Identity Management Help Desk response objectives:

(1) Average speed to answer – 60 seconds of all calls (The average time it takes a user to speak to an agent)
Time is measured once the caller has made a final selection from the telephone prompt and is placed in queue until the caller is working with an agent.

Measurement Calculation: This Service Level is averaged monthly and calculated by dividing the number of calls answered in a specified time by the total number of calls to the Service Desk in the measurement window and expressed as a percentage.

Numerically: (Calls answered in a specified time) / (All calls answered) * 100 = Level of Service percent

(2) Abandon rate of all global inbound calls – 10% (The percentage of users that call in to the Help Desk and hang up before being connected with a live agent.)

Service Level Description: "Call Abandon Rate" measures those calls that are disengaged by a caller after being placed in a call queue, but before being handled by an agent as reported through telephone switch metrics.

Measurement Calculation: This key metric is averaged monthly and calculated by dividing the number of calls placed in a call queue, but were disengaged by a caller, by the total number of calls placed in a call queue to the Service Desk during the measurement window and expressed as a percentage.
Numerically: Metric Calculation (Calls disengaged by caller) / (Total calls placed in call queue) = Call Abandon Rate.

(3) Call Duration – 20 minutes or less

The duration of time a user is on the telephone with an agent resolving an issue and time used to the call once the call has ended (time agent enters comments or notes pertaining to the call).

iv. Exceptions to Service Level Objectives

Any of the following events will not be used in the calculation of any service level objective or key metrics, or (ii) will excuse NetTN' performance to the extent any such event impacted the NetTN Service Providersability to perform the eHealth Services:

(1) Planned outages, scheduled maintenance, and external events.

(2) Failure to follow reasonable instructions and training with regard to the use of NetTN eHealth Services.

Attachment Q – Terms and Acronyms

This section is to define terms and acronyms used throughout this RFP. If a term or acronym is in question and is not defined in this section or elsewhere in the RFP, it is the responsibility of the Contractor to contact the State RFP coordinator and receive clarification.

- **ACH** – Automated Clearing House is a highly reliable and efficient nationwide batch-oriented electronic funds transfer system governed by the NACHA OPERATING RULES that provide for the interbank clearing of electronic payments for participating depository financial institutions.
- **ACL** – Access Control List
- **ASN** – Autonomous System Number
- **BGP** – Border Gateway Protocol is used to autonomously route IP packets of information over the Internet.
- **CALEA** – Communications Assistance for Law Enforcement Act the U.S. Congress passed the Communications Assistance for Law Enforcement Act (CALEA) to aid law enforcement in its effort to conduct surveillance of citizens via digital telephone networks. The Act obliges telephone companies to make it possible for law enforcement agencies to tap any phone conversations carried out over its networks, as well as making call detail records available. The act also stipulates that it must not be possible for a person to detect that his or her conversation is being monitored by the respective government agency.
- **Contractor** – The primary corporate entity (individual or consortium) that will be under contract by the State to provide the services and products that are defined and requested in this RFP for the NetTN network.
- **Core Network** – Also referred to as Core Backbone and Core. The Core Network consists of all elements and components operating the WAN.
- **CoS** – Class of Service is a way of managing traffic in a network by grouping similar types of traffic (for example, e-mail, streaming video, voice, large document file transfer) together and treating each type as a class with its own level of service priority.
- **CPE** – Customer Premise Equipment is equipment located at an End Site or Data Center location.
- **DACS** – Digital Access Cross-connect System is a digital switching device in telecommunications for routing T1 lines.
- **DHCP** – Dynamic Host Configuration Protocol is an Internet protocol for automating the configuration of computers that use TCP/IP. DCHP can be used to automatically assign IP addresses, to deliver TCP/IP stack configuration parameters such as the subnet mask and default router, and to provide other configuration information such as the addresses for printer, time and news servers.
- **DIA** – Direct Internet Access
- **DLSW** – Data-link Switching (SNA over TCP/IP networks)
- **DNS** – Domain Name Server is an Internet service that translates domain names into IP addresses.
- **DSCP** – Differentiated Services Code Point value corresponds to a specific QoS.
- **DSL** – Digital Subscriber Line
- **DS3** – Digital Signals 3, 44.736 Mbps on a T3 facility or 34.368 Mbps on E3 facility.
- **DTE** – Data Terminal Equipment
- **Wavelength** – Dense Wave Division Multiplexing
- **DIFFSERV** – Differential Services
- **EBGP** – External Border Gateway Protocol
- **Edge Device** – Equipment that interfaces between the WAN circuit, End Site's LAN and, or other devices.
- **Egress** – Connecting point where the NetTN network peers with another network.
- **Eligible Private Entities** - End sites that can purchase from the state's NetTN contract. At this time there are 6 identified TNII Association partners. They are: (State agencies), TBR (Universities, Community Colleges and Technology schools), UT (UT campuses and affiliate agencies), SDE (K12 schools), Local Government (cities and counties), and eHealth (end sites). Other eligible entities include private schools and both private and not-for-profit entities.
- **End Site** – User location.

- **FERPA** – Family Education Rights and Privacy Act of 1974 (20 U.S.C. § 1232g)
- **FCC** – Federal Communications Commission
- **FEC** – Forwarding Equivalence Classes is a term used in Multiprotocol Label Switching (MPLS) to describe a set of packets with similar or identical characteristics.
- **HIPAA** – Health Insurance Portability and Accountability Act of 1996
- **IDS** – Intrusion Detection System
- **IHD** – Integrated Help Desk (OIR level one support)
- **ILEC** – Incumbent local exchange carriers
- **Implementation** – The act of implementing, providing a practical means for accomplishing something.
- **IP** – Internet Protocol
- **IPS** – Intrusion Prevention System
- **ISP** – Internet Service Provider
- **LAN** – Local Area Network
- **LATA** – Local Access and Transport Area
- **LEA** – Local Education Agency
- **LDAP** – Lightweight Directory Access Protocol
- **Local Government** – State of Tennessee county, city, or other forms of local government.
- **MAN** – Metropolitan Area Network
- **MACD** – Moves, adds, changes and deletes
- **Managed Services** – for the purposes of this RFP, Managed Services are End Site services provided by and fully managed by the Contractor. It is the responsibility of the Contractor to provide all implementation, changes, and maintenance of the network circuit and edge device.
- **MCU** – Multipoint Control Units
- **MPLS** – Multi-protocol Label Switching.
- **MSA** – Metropolitan Service Area. The metropolitan area includes all major cities and their surrounding counties within the State of Tennessee.
- **NAP** – Network Access Points. The NAPs shall be the aggregation locations sites that interconnect the core backbone segments together in redundant diverse paths.
- **NAT** – Network Address Translation technique in which the source and/or destination addresses of IP packets are converted from private to public.
- **Network Administration Access Control** – the systems or mechanisms used to control administrative access to data equipment or services.
- **NMS** – Network Management System.
- **NOC** – Network Operations Center is the physical space from which a typically large telecommunications network is managed, monitored and supervised.
- **NOSC** – OIR Network Operations and Security Center
- **NTP** – Network Time Protocol.
- **OIR** – Office for Information Resources. This department supports State agencies and their needs for data, voice and video communications.
- **POP** – Point of Presence. A POP is a regional aggregation site for all circuits and traffic from End Site locations within that region. The POP is then connected to a NAP through a larger bandwidth circuit.
- **PRI** – Primary Rate Interface
- **Prime Contractor** – See Contractor.
- **QoS** – Quality of Service
- **RA** – Remote Access
- **RAL** – Receipt Acknowledgement Letter (relating to E-Rate).
- **Redundancy** – the provision of additional or duplicate systems, equipment, etc., that function in case an operating part or system fails.
- **RFP** – Request for Proposal
- **SA** – System Administrator
- **SAN** – Storage Area Network
- **SDE** – State Department of Education K-12
- **SLA** – Service Level Agreement
- **SLD** – Schools and Libraries Division

- **SNA** – System Network Architecture
- **SNMP** – Simple Network Management Protocol
- **SPIF** – Service Provider Invoice Form
- **SPIN** – Service Provider Identification Number
- **SPOC** – Single Point of Contact
- **SSH** – Secure Shell
- **Subcontractor** – This may be one or more entities contracted by the Prime Contractor to fulfill all NetTN requirements.
- **TACACS** – Terminal Access Controller Access Control System
- **TBR** – The Board of Regents. This TNII Association partner is the governing body responsible for 19 State Universities and community colleges throughout the State of Tennessee in addition to technology centers.
- **TCP** – Transfer Control Protocol
- **TCRS** – Tennessee Consolidated Retirement System
- **TDM** – Time Division Multiplexing
- **TFTP** – Trivial File Transfer Protocol
- **TNII** – Tennessee Information Infrastructure. TNII is the current statewide private network.
- **TNII Association Partners** – The association consisting of; the Office for Information Resources (OIR), Tennessee Board of Regents (TBR), University of Tennessee (UT), Tennessee State Department of Education (K-12), and local governments.
- **TSP** – Telecommunications Service Priority System
- **UDP** – User Datagram Protocol
- **Unmanaged Services** – Unmanaged services" refer to end site services provided by the contractor and managed by the TNII Association Partners requesting the unmanaged service. Such services include an outsourced, statewide, state of the art, private communications network and require the selected Contractor to be responsible for the engineering, implementation, maintenance and management of NetTN.
- **URL** – Uniform Resource Locator
- **User Access Control** – the systems or mechanisms used to control user access to data services.
- **USAC** – Universal Services Administrative Company
- **UT** – the University of Tennessee colleges and institutes including UT-Knoxville, UT–Chattanooga, UT-Martin, UT-Memphis, and UT-Space Institute.
- **VSAT** – Very Small Aperture Terminal
- **VLAN** – Virtual LAN
- **VoIP** – Voice-over-Internet Protocol. The technology used to transform audio (voice) communications into Internet protocol packets for transmitting across an Internet Protocol network.
- **VPN** – Virtual Private Network is a private communications network
- **VRF** – Virtual Route Forwarding
- **WAN** – Wide Area Network

Attachment R – Contract Clarifications

Item #	RFP Proposal Document Name and Sub Section	Clarification
1.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.1, page 1)	D.1 The TNII Association requires a core network that supports the Multiprotocol label Switching. Confirm your compliance with this mandatory requirement and describe the approach. **Suggested Contract Language Clarification:** How will the routing between VRFs be handled with sites that have VRF connections and DIA circuits?
	Response:	First, NetTN will provide the capability to route traffic on a NetTN InterVRF basis, as dynamically as possible based on the requirement. This would use a particular VRF's globally legal routes or route aggregates, advertising them into other, target NetTN VRFs. This would allow for InterVRF traffic to prefer the NetTN "network fabric" rather than send such traffic through the Internet. For NetTN sites that will use both a NetTN VRF connection and a separate DIA (a non-NetTN VRF) connection, then the use of BGP on the NetTN VRF connection to the customer site is generally recommended. This allows the customer site to receive NetTN VRF or interVRF routes as BGP routes, allowing the site to make better routing and return decisions on routes received via the NetTN VRF connection. To accomplish this, the following is one recommended example. There will be an eBGP peering session supported within the VRF across the connection from the NetTN PER to the NetTN CER (NetTN Provider Edge Router to the NetTN Customer Edge Router). VRF route prefixes (VPN routes) will be exchanged across this link. This propagates the VPN route prefixes to the NetTN CER. From the NetTN CER to the customer router (C router), the use of iBGP is recommended. The use of virtual or physical interfaces for iBGP peering are available. The NetTN CER can be placed into the customer's BGP ASN sending VPN routes to the Customer router as iBGP routes. These iBGP routes can use BGP attributes to appropriately mark the routes. Since the customer site router (C router) will also have a DIA (non-NetTN) connection, a separate BGP session or static route default via the DIA connection will be used to provide Internet routing, depending on the customer relationship with the DIA provider. If the DIA routes received are eBGP routes, than the C router will have learned globally legal prefixes via that connection and can use BGP attributes to sort and manage any duplicate prefixes received by both DIA and NetTN VRF connections. For example, if a globally legal prefix is seen across both the NetTN VPN connection regardless of source VRF and the DIA connection, then the NetTN VPN connection will be preferred because the AT&T managed CER will be configured to set the Local Preference attribute to a higher value than default (default local preference is a value of 100), which will make the NetTN VPN route preferred throughout the customer AS for prefixes learned from the NetTN VPN connection. Another option is the use of eBGP for the NetTN VPN connection. Generally, when eBGP is used, the customer will become responsible for determining routing of prefixes to the preferred NetTN or DIA connection. If using eBGP for both NetTN and DIA connections, a shorter AS Path

Item #	RFP Proposal Document Name and Sub Section	Clarification
		should be evident in the prefixes learned from the VPN eBGP peer, also causing these routes to be preferred over those learned from the DIA eBGP peer.
2.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.3, page 2)	D.3 Specify how traffic or packet classification will be handled throughout the NetTN WAN infrastructure. **Suggested Contract Language Clarification:** How will this be handled if NetTN manages the entire endsite to include LAN services?
	Response:	LAN services packet classification will be handled using the same DSCP mechanism and classes as the WAN services. We would perform Layer 2 802.1p frame priority marking and mapping it to DSCP at Layer 3, based on class, at the Customer Edge Router. There are multiple methods depending on the customer/provider requirements. The host device could mark the packet with 802.1p frame priority/CoS, and the NetTN LAN switch accepts and passes these thru to the NetTN CER router. Another option is to dedicate ports on the NetTN LAN switch based on desired customer priority and connect host devices to the appropriate NetTN LAN switch ports based on customer need. These different options, and percentage of standardization, influence their respective costs. These options are subject to review and pricing efforts for LAN mgmt service. The RFP did not require pricing for these options; however, such services may be added by amendment at a later date.
3.	08 –D-Network Concept – D.6	What are processes/procedures for determining flat line of service and loss of circuit or circuits for bonded T1s 1 - Flat line of services? 2 - Loss of single circuit in MLPP group?
	Response:	1 - Please refer to AT&T response in T9 for more detail. At a high level service outage events and performance errors per the defined SLA measures are tracked and monitored on a 24x7 basis. As soon as an outage event is detected or a performance threshold is surpassed a ticket is auto-generated via AOTS. OIR will be notified via the eBond interface into their Remedy system at the same instance. 2 - Smarts builds a correlation between each individual T-1 and the virtual Multi-link PPP interface. If the T-1's are connected via T-1 Controller (CSU) built into the router, it would recognize that interface and monitor the T-1 at the Layer 1/2 level.
4.	08_NetTN_Section_D_Network Concept and Connectivity.doc (Section D, D.12, page 18)	D.12 Specify the technical approach to establishing logical network partitions (VRF) and future TNII Association Partners/Initiatives. **Suggested Contract Language Clarification:** No specifics on approach other then saying they can do it.
	Response:	The technical approach is conforming to RFC 4364, BGP/MPLS VPNs, which supersedes RFC2547. Refer to link http://www.rfc-editor.org/rfc/rfc4364.txt for more information.
5.	08_NetTN_Section_D_Network Concept and	D.13 Specify your solution(s) for supporting this requirement: OIR has locations with multiple agencies, each requiring their own separate LAN segment. OIR requires that multiple Virtual Local Area

Item #	RFP Proposal Document Name and Sub Section	Clarification
	Connectivity.doc (Section D, D.13, page 18)	Networks (VLANs) be available at these end sites. These VLANs should be delivered via a trunk interface unless separate interfaces are ordered. **Suggested Contract Language Clarification:** Within the physical WAN link? Need clarification
	Response:	For same VRF (e.g. OIR only) requirements: The NetTN CER device will use the CER Ethernet LAN interface to connect to the customer site switch, where VLANs are required. The NetTN CER LAN interface configuration will include sub-interfaces of the physical interface, one for each separate VLAN that is required. Each CER LAN sub-interface will use the encapsulation command of "encapsulation dot1q vlan-id". For multiple VRF requirements: The NetTN CER LAN interface will be configured for sub-interfaces using "encapsulation dot1q vlan-id". Since these different VLANs are intended for different VRFs, then separate IP subnets are recommended per sub-interface/vlan. The VLANs will be trunked across the same physical NetTN CER to NetTN PER WAN link using 802.1q tagging to maintain multiple VRF assignments to the separate sub-interfaces/vlans at the NetTN CER.
6.	09 – E-Bandwidth Requirements – E.5	What is process for obtaining additional QoS markings and is there a charge associated?
	Response:	The Life Cycle Management will work with the association via a Service Request Form (SRF) to determine best practice for adding additional QoS markings. If the State requests additional markings beyond those required by the RFP, the cost would be based upon consulting rates as defined in the CoS; however, if the additional markings involve insignificant changes, ATT would anticipate adding the markings free of charge.
7.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.8, page 39) And 09c_Section_E_Attachment_2_Fast Access DSL Product Information.doc	E.8 Specify the Digital Subscriber Line (DSL) solutions that will be offered to the State for direct access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** Direct Access is mentioned, but no details on how to provide Direct Access. Attachment says 2 year warranty. How does this factor into NetTN? How will DSL communicate directly to each VRF while keeping each VRF separate? Are their separate DSL networks per VRF? In the event of any conflict between the terms or provisions contained in the referenced sections and the State's Contract, the terms of the Contract shall prevail.
	Response:	The NetTN core backbone network will integrate AT&T DSL service as a direct access type into the NetTN solution. This is an AT&T exclusive as we plan to integrate DSL connectivity via our standard AT&T NetVPN platform (an MPLS VPN product), which is available in franchise, in our nine-state, Southeast region. We'll create the appropriate VPNs on the NetVPN platform and integrate the NetTN MPLS VPNs with the NetVPN platform using the MPLS 10A inter-provider network specifications (back to

Item #	RFP Proposal Document Name and Sub Section	Clarification
		back VPNs/VRFs). This allows NetTN to extend VPNs/VRFs into this nine-state regional platform. A DSL direct access method can therefore be used for a customer site, connecting to the appropriate NetVPN provider edge router and placed into the appropriate "extended" NetTN VPN/VRF. The customer traffic will pass from the NetVPN VPN/VRF, via the 10A inter-provider link, into the matching NetTN VPN/VRF. Each DSL sub-interface will be assigned to the VRF instance specified by the customer at the NetVPN PE router that terminates the PVC provisioned for that customer link. Separation between site groups that are in different VRFs is inherent in the RFC4364 compliant architecture in the NetTN network design. Each DSL site connection is kept separate at layer two through the DSL infrastructure, obviating the need for a separate DSL network per VRF.
8.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.9,page 40)	E.9 Specify any broadband Cable solutions, through Cable TV contractors, that may be offered to the State for direct access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** Does not appear to meet requirements for direct connect **Need discussion on which type of VPN will be used SSL or IPSEC? Is the NETGATE or 831 needed? What about customer provided IPSEC VPN devices?**
	Response:	AT&T can support managed VPN broadband Cable solutions for access to the NetTN Core Backbone. These include SSL, IPSEC and L2TP. For Remote Access Single VPN users the AT&T Global Network Client VPN (AGN software) is required. For SOHO sites with multiple users either a Cisco 831 or Netgate router will be required to establish the VPN tunnel.
9.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.10, page 41)	E.10 Specify any broadband wireless solutions that may be offered to the State for direct access to the NetTN Core Backbone network. Wireless solutions shall include but not limited to broadband access from cellular networks as well as satellite options. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** VPN or FR or both? Clarify when VPN vs. FR would be used.
	Response:	AT&T Mobility 3G users will have direct access to the core as the NetTN core will be directly connected to AT&T Mobility infrastructure using diverse high speed circuits to Chicago and Atlanta. Other Mobility users not using an AT&T service will use the VPN service as defined by the RFP. AT&T has also included the cost of connecting two diverse Mobility locations in the overall cost of the 3G cards.
10.	09_NetTN_Section_E_Bandwidth Requirements.doc (Section E, E.11 page 44)	E.11 The TNII Association Partners desire the capability of obtaining increases in bandwidth within a short timeframe. Beyond the logical service of altering CIR values, describe the technical features of the proposed NetTN network that will provide for the bandwidth of specific Service Addresses to be increased within a few hours or days. For example:

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		The NetTN Contractor could install high capacity Access Circuits and offer a reduction in monthly fees for unused capacity. **Suggested Contract Language Clarification:** Add burstable Ethernet services to CoS if required – vendor states only CBW for managed services Didn't address the question of bandwidth throttling. Not sure this meets short timeframe! The State understands that it was not a requirement of the RFP to price the ability to increase bandwidth of specific addresses within a few days or hours.
	Response:	The TNII Association Partners can specify a list of "readily upgradeable" sites where fast-response upgrades will be needed. With a list of those sites specified, AT&T could provision as low as 10M service on as large as a 1G port, for example. This will be accomplished through rate limiting of the traffic via Committed Bandwidth (CBW). With that configuration, we could turn the services up from 10M or 20M to as high as 1G in a short timeframe with a change in the site configuration within the AT&T network. The requirements to accomplish this scenario are as follows: • CE will have to be a Cisco 3750 Switch, or equipment with similar throughput capabilities, at each of these locations • One 1G port will be utilized on the PE for each of these locations • We will provision sites in this manner at a premium monthly charge (amount TBD) where specifically requested for particular locations at the time of initial service installation. The additional monthly charge will defray expenses for the additional hardware components required to support these "readily upgradeable" locations. This will be specified in a future amendment and pricing will be determined at that time. These options will be defined and priced within the Catalog of Services via that future amendment.
11.	10-F-Higher Education – F.3	Specify how Internet 2 will be connected into NetTN & provided to K12, Higher Education & ehealth. Define security sandwich. Where is connection? The proposed NetTN network will provide Internet2 service to the eligible TNII Association partners via a connection to the University of Memphis, (the State I2 connector site).
	Response:	AT&T has proposed to provide Internet 2 connectivity for NetTN qualified end sites from a recognized State of Tennessee Internet 2 SEGP connector. AT&T will continue to support the current Internet 2 connectivity to the University of Memphis with the security being provided by the University. AT&T has ability to provide additional security beyond that which required in the RFP, and can, at the State's request, develop a Statement of Work for that service offering.
12.	10-F-Higher Education –	Collocation must connect to AT&T services – clarify

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	F.5	
	Response:	As part of the NetTN bid response AT&T provided pricing for AT&T Network Collocation Services (NCS). NCS is provided in available AT&T central office space and is intended for locating customer equipment within the AT&T services environment for direct connectivity to the AT&T's portfolio of service offerings. The NCS services is not intended to be a Data Center offering or a "Carrier Hotel" type solution for connectivity to multiple carriers. Data Center and Carrier Hotel options were not a requirement of the RFP. AT&T does have Data Center options available for State of Tennessee that can be priced and offered as part of NetTN. Also, if a "Carrier Hotel" type solution is required, then AT&T can pursue a third party vendor that would support the services required by State of Tennessee.
13.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H4, page 4)	H.4 Specify in detail the proposed Remote Access used for direct dial up access to the NetTN Core Backbone network and the cost-effective approach. **Suggested Contract Language Clarification:** Password aging? Password resets with challenge questions? How is ANIRA connected to NetTN, size of connection, what is covered under the $10.95 charge for remote access? VPN access is not direct access Remote Access, customers has a few questions A. VRF built per NetTN VPN? B. What are the IP who assigns them are they public ips or private? C. Password Aging, Password Reset and challenge questions? D. Do they get IP ranges per entity?
	Response:	ANIRA (AT&T Network-based IP VPN Remote Access service is an AT&T managed platform that provides nationwide Dial (Layer2) and Broadband Internet (Layer 3) remote access service. NetTN will use dedicated connections from Nashville and Memphis NAPs to the AT&T VPN service (AVPN) which runs across the AT&T Common Backbone (CBB) which includes the ANIRA platforms. These NetTN to AVPN/AT&T CBB dedicated connections are anticipated to be GbE or some subset, appropriately sized to carry all remote access VRFs as required. The NetTN to AVPN/AT&T CBB connection forms a "VRF extension" allowing a VRF, e.g. OIR VRF, to extend all the way to the ANIRA platform interface. In our NetTN remote access solution, the ANIRA platforms L2TP Interface Gateway and Virtual Interface Gateways (LIG/VIG, etc) connects to the AT&T CBB with AVPN connections, which is an MPLS connection method, then reaches the NetTN backbone via our dedicated AVPN connections. When a direct dial user dials an appropriate telephone number, the user session is connected to the ANIRA LIG/VIG which will perform the appropriate radius authentication, or optional token-based authentication, before allowing the user session into the assigned users NetTN VRF, an "extended" VRF which effectively sets at the AVPN connection to the ANIRA platform. The authenticated user session is assigned an IP address from the following ANIRA options: Both Dynamic and Fixed IP addressing are supported.

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		Dynamic IP addresses may be: (i) ordered and managed by AT&T; or (ii) Customer may elect to provision and manage their dynamic IP addresses via their own DHCP server. Fixed IP addresses are provided to AT&T by the Customer such that AT&T shall pass out the same Customer RA user or VPN device site unique IP address each and every time that user or site uses this service (Due to the Dual VIG infrastructure each Fixed IP User or device will have 2 IP addresses). • A technical flow is as follows: 1. The user dials the LIG and enters account ID, userID and password 2. The LIG passes the user logon information to the AT&T Service Manager, where authentication takes place (the user ID is revoked after three unsuccessful logon attempts, providing an additional layer of security) 3. User logon information is encrypted via full Commercial Data Masking Facility (CDMF) when using the dialer 4. Upon successful user authentication, the Service Manager passes to the LIG a list of all IP addresses with which the user may communicate. This list is not sent to the end user but rather maintained on, and used by, the LIG to determine whether to pass or discard the packet. • Supports either customer provided or AT&T provided addressing (Registered or unregistered RFC1918 addressing) • Supports fixed IP addressing- User receives the same address each time they connect to the network Once the remote access user session has authenticated and been assigned an IP address, the session flows into the appropriate NetTN firewall context for the appropriate VRF. The NetTN VRF therefore "extends" all the way to the output of the ANIRA platform to accept user sessions into the proper NetTN VRF. Dial access at Layer 2 is therefore a direct access method into the NetTN VRF. The beauty of the ANIRA platform is that it provides direct dial up access nationally. The "Administration Tools for Service Manager" application allows CPOCs to perform password resets and retrieve a list of User IDs in an account for the Remote Access feature. Although the "Administration Tools for Service Manager" application can perform many functions, it is strongly recommended that use be limited to password resets and retrieving a User ID list. Password Aging can be set anywhere from 1 - 998 days, or it can be set to never expire. With passwords managed by a service manager the customer can also force users to use an Extended Password - Indicates whether the user is subjected to IESC (Inter-Enterprise System Connection) controls. A value of Y indicates IESC controls are to be enforced. IESC controls require users to have extended passwords for network logon. An extended password must contain one of the following characters: .?;"()':&

Item #	RFP Proposal Document Name and Sub Section	Clarification
14.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.5 page 18)	H.5 Specify broadband Virtual Private Network (VPN) access to the NetTN Core Backbone from a commercial Internet Service Provider other than NetTN. **Suggested Contract Language Clarification:** IPSEC or SSL? Supports both but no indication of preference. Is it SSL or IPSec what is the Client, IP ranges etc. etc.

	Response:	AT&T can support a managed broadband VPN access to the NetTN Core Backbone from commercial Internet Service Providers through our AT&T Network-based IP VPN Remote Access service (ANIRA) offering. The AT&T ANIRA offering is integrated into the NetTN remote access solution and supports the use of other 3rd party IP providers. The VPN options include L2TP, IPSec, and SSL. For Remote Access Single users the AT&T Global Network Client (AGN software) will be required to establish the VPN. ANIRA users that require single-User access via dial, broadband, or WiFi can use the AT&T Global Network Client (AGN) software. For example, AGN V6.0 has the following features:
		
		• Software client for remote access and VPN
		• Single user interface and log on credentials for WiFi, dial, and broadband
		• Support for roaming WiFi networks, AT&T network and extended access
		• Support for multiple user profiles
		• For all recent versions of Windows
		• User friendly, easy to use, easy to set-up
		• Integrated global dialer software
		  • Single sign-on of dial & VPN connection
		  • Helps selection of local phone number to dial to avoid toll charges
		  • Automatic dialing rules (7, 10, or 11 digits)
		  • Updates to global dial POP database three times a week
		  • Alert the user if a closer dial POP is available at the location user is dialing from
		  • Automatic backup via toll-free 800# if local dial connection fails to establish
		• Support for 3rd party authentication (i.e., customer managed servers)
		  • RADIUS, SecurID, SafeWord, Defender (PassGo)
		• Updates
		  • Updated versions of the software posted on public web-site for download
		  • Users are pro-actively prompted to download updates when available
		• Graphic display of throughput (bytes sent and bytes received)
		• Dynamic configuration of DNS (original config restored after disconnect)
		• Traveling users can easily change set-up (old connections kept in memory)
		• Inactivity and duration timeouts (even for use with Instant Messaging)

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		• Connectivity records maintained for SLA/reporting
		• Help-desk information available, extensive online help
		• Customization & Branding (only available with previous version of the client—V5)
		  • Virtually all text & appearance is customizable (at extra cost, for requirements not specified in the RFP)
		  • Extra setup window can be added to prompt for customer-specific information
		  • Setup/Install options can be pre-configured and/or hidden
		  • Profiles and preferences can be pre-configured
		  • Access and helpdesk numbers can be customized (at extra cost, for requirements not specified in the RFP)
		  • Customized settings are preserved across future upgrades
		• Translations in other major languages (V5 only)
		
		The IP addressing options are as listed in the response to question 18 above.
		
		For SOHO sites with multiple users either a Cisco 831 or Netgate router will be required to establish the VPN tunnel to the VIG.

15.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.6 page 21)	H.6 Specify any Digital Subscriber Line (DSL) solutions that may be offered to the State for access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** CSS or client VPN? Different answer from earlier
	Response:	AT&T offers standard DSL in its territory. AT&T has also partnered with the ILECS in Tennessee and where available AT&T has structured resale agreements with those ILECS to provide those services. This service is based upon a VPN client offering.
16.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H7 page 30)	H.7 Specify the broadband Cable solutions, through Cable TV contractors, that will be offered to the State for access to the NetTN Core Backbone network. Provide areas of coverage, bandwidth availability. **Suggested Contract Language Clarification:** CSS ANRIA need explanation when each is used
	Response:	AT&T has partnered with the Cable companies to resale Cable Internet service. These users would access the NetTN backbone over a VPN connection.
17.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.9, page 47)	H.9 Specify how dial-up and VPN connections will be supported, implemented and managed by the Proposer to allow access to the NetTN Core Backbone network. **Suggested Contract Language Clarification:** A lot of standard information about what ANIRA can do but no specifies about what they propose. Will the ANIRA solution for VPN connections to ISP's etc.? Use NetTN internet bandwidth or some other dedicated connection to NetTN.
	Response:	The ANIRA client will provide an IPSec tunnel through underlying provider

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		networks back to the IPSec tunnel terminating device in the AT&T Common Backbone (CBB). Each user session must authenticate to the AT&T Radius service. The AT&T CBB has all NetTN VPNs configured on it. The Radius service on the AT&T CBB will place each IPSec tunnel termination into the corresponding VPN based on the authentication information provided by the user. Each VPN instance on the AT&T CBB will have connections across links into the NetTN network into the corresponding VPN instance on NetTN.
18.	12_NetTN_Section_H_Remote Access Requirements.doc (Section H, H.10, page 50)	H.10 Specify the security methods that will be used by RA. Describe how users will be multi-factor authenticated, how administration can be delegated and how usage and logging can be audited **Suggested Contract Language Clarification:** Information about capabilities but no specifics in exactly what will be used.
	Response:	Several Multi-factor authentication methods are available with ANIRA - • RADIUS • SecurID over RADIUS protocol • SafeWord over RADIUS protocol AT&T will work with the State and TNII Association Partners to determine the best available multi-factor authentication method available given their specific environment. Related to administration. AT&T will work with the State or the Associated TNII Partner to establish a "Customer Point of Contact". Available to the CPOC is the Direct Registration Facility which is offered via the BusinessDirect Web Portal.
19.	12-H –Remote Access – H.11	Clarify database is the same as TNII offering for OIR management of Remote Access see SRF?
	Response:	No. The Remote Access database that is currently used for TNII or OIR will no longer be used. Upon installation of the AT&T Remote Access Solution TNII and OIR will begin using the AT&T Business Direct database. It is AT&T's shared common management platform and tools.
20.	13-I-Quality of Service – I.6	Clarify tools used for QoS monitoring
	Response:	AT&T Advanced Application Traffic Analyzer. ATA is a *differentiator* for AT&T because of the following features: 1. Egress CoS simulation (key feature to fully understand and engineer QoS) 2. Link and CoS Utilization (correlation with link speed and CoS BW) 3. CoS changes simulation ("what if" analysis prior to change in prediction) The AT&T Business Direct Portal allows the authorized user to view the Application Traffic Analyzer reports, define your reports, select your sites; select you scale and select the time zone. The Business Direct Application

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		Analysis Portal allows for drill down capability for IP sources of unmapped traffic and can reveal unknown IP addresses report via a report.
21.	15-K-Multi-point – K.2	SIP not supported – why? RTSP?
	Response:	SIP support is not part of AVCS offering at this time due to varied number of SIP dialing plans. However; AVCS is working with leading manufacturers on this front and once a generally accepted SIP standard is adopted AVCS will work to incorporate SIP support in the future. RTSP stands for Real Time Streaming Protocol – The Real Time Streaming Protocol (RTSP), developed by the IETF and created in 1998 as RFC 2326, is a protocol for use in streaming media systems which allows a client to remotely control a streaming media server, issuing VCR-like commands such as "play" and "pause", and allowing time-based access to files on a server. The sending of streaming data itself is not part of the RTSP protocol. Most RTSP servers use the standards-based RTP as the transport protocol for the actual audio/video data, acting somewhat as a metadata channel.
22.	15_NetTN_Section_K_Multipoint Video Service Requirements.doc (Section K, K.3,page 3)	K.3 State the Multipoint Control Units (MCUs) maximum port size, the proposed ports installed and expansion process. Supply any upgrade information for additional features. **Suggested Contract Language Clarification:** How will MCUs be tied into NetTN? Port size proprietary – clarify how NetTN will be sized for MCU ports also port capability for supporting multiple 768K calls
	Response:	While exact port capacity and bridge configuration are proprietary, AVCS uses Polycom MGC 100 MCUs as the standard video bridge. The bridges are located in Video Network Operations Centers (VNOCs) in Denver, CO, Philadelphia, PA and London, UK. All bridge are controlled remotely via AVCS' in-house enterprise management control software and database. AVCS has produced single videoconferences with over 250 sites running at 384 Kbps with no adverse affect on normal daily videoconference volumes.
23.	15-K-Multi-point – K.6	Clarify features available at no additional charge under CoS rates and specify chargeable features
	Response:	Video Broadcast Meet & Greet - The AT&T conference producer greets all sites at once just prior to meeting start time, and turns the conference over to the host. The conference is then placed into a monitored scanned environment. For assistance, participants would call AT&T's main reservations and help desk number at 866-843-3606 or 303-415-3552. **Included With Service.** Screen Layouts - Since meetings are conducted in a variety of ways, AT&T offers various screen layouts designed to complement the meeting requirements. The desired conference mode must be selected at time of reservation request; otherwise, the default option is always voice activated switching.

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		The following options are available: Voice-Activated Switching - this conference mode is recommended for use in interactive meetings or when most of the participants are expected to share information. Here, all conference participants view the current speaker. The result is that all participants see natural video switching during the conference. Voice-activated switching is always the <u>default</u> conference mode. • Voice-Activated Switching displays the current speaker in full-screen **Included With Service** • When a different video site speaks, then they are viewed by all other participants **Included With Service** Presentation Mode - is ideal for classroom training and instructional meetings where there is one primary speaker and limited interaction from the other participants. Presentation mode allows you to broadcast a single video endpoint to all other endpoints in the conference. During the conference, all endpoints continue to view the presenter, while the presenter sees either the site asking a question or making a comment (through voice- activated switching), or may view multiple sites at once (through Continuous Presence). A specific endpoint must be pre-assigned as the presenter when placing a conference reservation request. This endpoint will remain fixed as the <u>only</u> broadcasting site that all other endpoints will view. **Included With Service** • All participating sites always view the Presenter in full-screen **Included With Service** • The Presenter may view one or several sites at a time (using Continuous Presence) **Upcharge** The following <u>Conference Features</u> are available as options and should be requested at time of conference reservation: Meet and Greet - Video Site by Site - the conference producer greets each site individually as they are added into the conference. This allows for a pre-conference quality check on video and audio connectivity at the specific site level. **Upcharge** Dedicated Conference Producer - ideal for meetings that require a special touch. When this option is selected a Conference Producer is assigned and dedicated to the individual conference to manage the call set-up, monitor the bridge activity and provide assistance during the conference (presentation assistance is included). With the *In-call* monitoring option the Conference Producer remains on the live call to monitor audio and video quality. Any problems and/or special requests are addressed in real-time. With the *Standby* monitoring option the Conference Producer exits the live conference and monitors bridge diagnostics only. The Dedicated Video Conference Producer can easily facilitate Voting and polling, Question and Answer, and Roll Call functionality. **Upcharge** Presentation Assistance - send AT&T your PowerPoint® slides and we will run your presentation for you. This option integrates your presentation with the videoconference. **Upcharge - Requires Dedicated Conference Producer**

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		Continuous Presence - this option displays multiple conference sites on a single screen. Several layout options are available, and they may be changed in real-time during the conference by the AT&T conference producer. **Upcharge** Common Layouts Available: 4 Quadrants (see 4 sites at a time) **Upcharge** Top & Bottom (see 2 sites at a time) **Upcharge** Side-by-Side (see 2 sites at a time) **Upcharge** Five plus one (see 6 sites at a time) **Upcharge** Nine Squares (see 9 sites at a time) **Upcharge** Transcoding - allows videoconferencing systems with different speeds or bit rates, resolution rates, frame rates and audio compression schemes to conference together without requiring all systems to drop to the lowest common denominator, and lets all systems perform at their highest capabilities without compromising quality. **Included With Service** Multipoint Data Collaboration - Through simultaneous video conferencing and data conferencing, multiple participants can view, edit, and collaborate on the same document, spreadsheet, or presentation. There are 2 standards available for Multipoint Data Collaboration: H.239 - Sometimes known as People+Content by Polycom® system users and Duo Video by Tandberg® system users, this standard has become the default for data collaboration in a video environment. More robust and easier to use than T.120, it is supported readily on all newer equipment. **Upcharge** T.120 Document Conferencing* - An older standard that has recently fallen out of favor as it is more difficult to master and not as robust as H.239. In order to utilize this optional feature each participant must have T.120 compliant equipment. **Upcharge** IP / ISDN Gateway Conversion - allows the connection of IP (H.323) video sites into a videoconference with ISDN (H.320) sites. **Included With Service** Audio-only add-on Port - select the number of audio ports for those participants without access to videoconferencing systems so that they may be able to join the meeting: **Upcharge** Unattended Audio Site - Toll Access - participants pay transport charges to the bridge **Upcharge** Unattended Audio Site - Toll Free Access - transport charges included **Upcharge** Communication Line - remain in direct contact with the AT&T conference producer at all times during the conference to provide specific instructions or to resolve troubles. Upcharge Custom Background - adds a professional touch by including your

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		company or organization's logo in the background during call set-up and Meet & Greet. **Upcharge** Conference Recording - simply record the videoconference and output to either videotape (VHS) or CD-ROM. Additional copies are also available upon request. **Upcharge** Satellite Downlink Connection* - allows AT&T to receive a satellite broadcast signal and then re-broadcast to all video sites connected to an AT&T bridged videoconference call. **Upcharge** Event Management Services - offers coordination and assistance with high-profile or special events. AT&T assigns a single point of contact to pull all the details together to customize production solutions for even the most complex events which may include, but is not limited to, the following: Consultation, Event Preparation, Production, and Follow-up. **Upcharge** Streaming Video and Audio - Live or Archive* **Upcharge** * Dedicated Conference Producer required for use of this feature or option The pricing information outlined above was not a requirement of the RFP; however, it may be included in a future amendment.
24.	15-K-Multi-point – K.8	What is rate for ISDN LD charges and how billed?
	Response:	The RFP did not require pricing for ISDN LD charges. The State should be clear that provided pricing did not include ISDN transport. The State may choose to add this service through a future amendment.
25.	K.13	Could a diagram/drawing of the proposed Polycom V2IU-based traversal solution be provided? (The need for H.460 traversal SPECIFIC to bridge connections is questionable for external entities communicating w/ OIR supported-agencies since OIR already provides H.460 traversal capability. If the vendor implements 323 zone controls for the bridging/MCU solution offered, they must describe how it would neighbor without conflict with any existing State (OIR, UT, TBR and/or LLG) H.323 zone control—including current or proposed E.164 and/or URI-based dialing plans for the bridging solution.
	Response:	A copy of the referenced diagram has been provided and is in the Project File.
26.	16-L-video Conferencing – L.2	Clarify process for router issues during video call – communication between video center and NOC
	Response:	AVCS conference producers will always troubleshoot any connection or quality issue during a conference. When the issue is beyond the abilities and tools of a conference producer to fix, the issue is escalated to a helpdesk engineer. The helpdesk engineer has additional network and video knowledge and tools at their disposal. When it is determined that the issue is a network issue outside of the control of AVCS, the helpdesk engineer interfaces with GCSC in order to report the issue and continue troubleshooting procedures. All efforts are made handle these issues during the conference or ideally, during pre-conference set-up time. In the event that an issue cannot be resolved during the conference or will unduly delay or interfere with other conferees, the effected conferee's endpoint will

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		be isolated from the call and audio add-on capabilities will be offered. At all times the host of the call is consulted before this step is taken. All issues are followed-up between the GCSC and AVCS until resolved.
27.	L.3 (iii)	"No show" sites in any conference are charged bridge port fees for scheduled conference duration unless a request to drop that site is made during the duration of the conference. In this case, the charge will be to the next time/billing increment (e.g ¼ hour, etc.)
	Response:	AT&T's Policy is below: Policy on No Shows & Cancellations: (i) Conferences cancelled prior to scheduled setup time are not billable (ii) Conferences cancelled after the scheduled setup time are billed for all bridge ports and options reserved for the call. Network transport charges are not assessed on cancelled conferences, except for any actual bridge dial-out connect time. (iii) "No show" sites in any conference are charged bridge port fees for scheduled conference duration (scheduled start time to end time). For users who drop during a call or if a call ends the user will be billed only for the amount of time the site is active in the call. Public Video Room Rental Cancellations (i) Within 4 business days – Scheduling fee only (ii) Within 3 to 4 business days – Scheduling fee and 50% of room rental (iii) Within 2 business days – Scheduling fee and 100% of room rental Extending a Conference With AT&T's video bridging service, the conference will terminate at scheduled end time unless the Host or a conference participant contacts the AT&T video center to request a time extension at least 5 minutes prior to scheduled end time. However, when a dedicated conference producer is assigned to the conference, AT&T can automatically extend the conference simply by acknowledging that the meeting is still going on. To avoid conference termination issues, we recommend adding 30 minutes of time to your anticipated end time when making a reservation. This provides an extra "buffer" of time should a conference run beyond scheduled end time. In addition, the conference requestor may request a "warning tone" at time of reservation. A warning tone sounds 10 minutes prior to scheduled conference end time and serves as a reminder to the Host to either wrap-up the meeting, or call AT&T to extend the conference.

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		Self-service Conferences (AT&T *Auto Launch*) During the conference, the user may request to have a conference producer join the conference for assistance or call monitoring, etc. If this option is requested, then the conference will be billed using Bridge Port Charges for "Assisted" conferencing as specified in the Pricing section, in lieu of the Bridge Port Charges as specified for AT&T *Auto Launch*. The pricing information outlined above was not a requirement of the RFP; however, it may be included in a future amendment.
28.	18_NetTN_Section_N_Internet Connectivity.doc (Section N, N.7, page 12)	N.7 The Proposer shall provide information on the type of technologies listed below that can provide Internet coverage. If coverage is not available throughout the State, indicate areas of coverage where service is available and not available: a. DSL b. Leased Line c. Optical d. Ethernet e. Wavelength 1.23Gb, 10GB, etc. f. Cable g. Wireless h. Satellite **Suggested Contract Language Clarification:** DSL – Proposing different SLA's than in Specifications. Is DSL service available in entire AT&T area? Page 20 says it is. Notwithstanding any statements made in AT&T's proposal or in response to these questions, in the event of any conflict between the State's SLAs, as detailed in Contract Attachment A, and any statements made by AT&T in the proposal or herein, the State's SLAs shall prevail. Leased Line – A lot of standard AT&T marketing stuff and not really addressing the RFP requirements.
	Response:	AT&T provided response based upon standard Internet service offering not directly connected to the AT&T core. The SLA's are based upon AT&T standard Internet service offerings. AT&T DSL Internet is offered in AT&T territory where available. AT&T has also partnered with ILECS in Tennessee to offer Internet where available.
29.	18-N-Internet –N.8	Clarify -The AT&T Managed Token Authentication Service – additional charge or included in remote access rate?
	Response:	The RFP did not require AT&T Managed Token Authentication Service. AT&T offers Managed Token service from several providers. This is an additional charge and not currently proposed. AT&T can work with the Association to define requirements and the vendor of choice and offer a token service
30.	23-S-E-rate-S.5	Clarify SDE monthly bill to F&A will be at discounted rate
	Response:	The State Department of Education (SDE) in order to receive their e-rate benefits must have a bill reflecting the total amount of charges from which the e-rate benefits will be based. A discounted bill showing only the SDE out-of-pocket (after e-rate benefits) fails to document the Gross billing charges upon which the e-rate discount can be applied. Documenting the

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		pre-discount/gross billing figure is a vital audit requirement used to justify the e-rate benefits which SDE will receive. Depending upon the product that SDE elects to purchase and the billing system supporting that product, SDE will be able to minimize their cash flow requirements to the level necessary to pay only their out-of-pocket expenses. The FCC has approved two methods of handing the distribution of these benefits to the applicant without pursuing a reimbursement process where SDE would have been asked to pay their bill in full and then seek reimbursement. Depending upon the product or service being purchased, the billing system in support of that product and the SPIN utilized, SDE will use either the Service Provider Invoice (SPI) process or the AT&T Reimbursement Form (ARF) process. Under the SPI process, SDE would work with our E-rate Support Center to group/detail how their funding request was made. This information contained in a template called the Pre-discount Calculation Grid, will be used to identify the relationship between our various billing items and SDE's funding request numbers (FRN). Once the relationship has been established, the product/service installed and funding approved by USAC, AT&T's E-rate Support Center will work to establish a special Term and Condition (T&C) within the billing system which will calculate an e-rate credit based upon the prior month's eligible product and services and place it on SDE's monthly bill. The bill would then have a full audit trail of services purchased less e-rate credits applied resulting in an adjusted billing amount which SDE would pay. AT&T would then aggregate monthly all of the e-rate credits which they have applied to applicant bills and invoice USAC directly for this amount. This invoice is referred to as USF Form 474 Service Provider Invoice. Unfortunately, not all of our billing systems currently have this capability, for those systems which do not currently have this feature an alternative approach exists The alternative approach is called the AT&T Reimbursement Form (ARF). Under this approach, the process is very similar as SDE will once again work with our E-rate Support Center to build the Pre-discount Calculation Grid, verify the installation to their satisfaction of the product/services and the approval of their funding request. In cooperation with the E-rate Support Center a calculation of monthly e-rate benefits will be determined. This amount will be entered online by SDE requesting that the benefits be provided to them immediately. AT&T will generate a check within approximately two weeks in this amount which SDE could use to pay their bill. The advantage of this process to SDE is that it is much faster and more timely than the BEAR process and doesn't require full payment of the bill prior to its use. AT&T would then aggregate the benefits which were provided under this payment process and once again seek reimbursement from USAC using the USF Form 474 Service Provider Invoice. SDE will be provided on a quarterly basis from USAC a report showing the benefits paid AT&T on their behalf by FRN. Should this amount differ from what SDE has received from AT&T during this timeframe, instructions will be provided to

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		assist SDE from stopping all future payments to AT&T by USAC until these figures can be reconciled. A detailed explanation of the benefit payment process for each of AT&T's SPIN numbers along with E-rate Support Center contact information can be found at www.att.com/erate. In addition, a demo of the AT&T Reimbursement Form (ARF) process can also be found at this site.
31.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.1,page 1)	T.1 Identify the NOC that will serve the TNII Association and the NetTN network. Specify how TNII Association technical staff will communicate with NetTN Contractor technical staff in the NOC, including telephone, e-mail, and other online contact. Identify which secondary NOC, will be used as a backup. **Suggested Contract Language Clarification:** This description does not mention Remedy. How do we access information on orders?
	Response:	The attached presentation covers all aspects of eBonding and does give customer reference examples. As far as development work as it relates to eBonding, the issue becomes how the fields map via the XML interface between the systems. The State will need to have their Remedy personal available to go through the field mappings and there may be some updates necessary on both sides, the State and AT&T, to ensure the fields are mapped appropriately and are passing the necessary information. A copy of the referenced presentation is in the Project File.
32.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.2, page 2)	T.2 Confirm Proposer's Network management System(NMS) and specify in detail, the system that supports the TNII Association: a. Clearly identify the devices and capabilities of the system for generating alarms and alerts. b. Provide examples of output from such system or application screen-shots. c. Specify Contractor policies and procedures that are followed to notify the TNII Association NOSC/NOCs when major or catastrophic alarms/alerts are received. d. Specify the backup system e. Viewing/receiving Alarms and Alerts: Specify what types of alarms and alerts are available for viewing/receiving and how and when they are generated. f. Time Intervals: Identify time intervals Proposer has established that determine when an outage has occurred and when reported to the TNII Association. g. Reaction to Alarms: Specify what immediate steps are taken once an alarm is received. h. Recurring Events: Specify what procedures are in place to mitigate recurring events. i. Scope of Monitoring: Clearly identify, with examples, at what point monitoring ends.

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		Suggested Contract Language Clarification: Page 14 - Do the tickets generated and update intervals match RFP requirements? Page 16 – Does this criteria match RFP requirements?
	Response:	Page 14 - The tickets generated timeframe is significantly improved as compared to the requirements of the RFP for all ticket classifications. There is immediate ticket generation and notification provided through the AT&T iGEMS and eBonding platforms, which exceeds the 10 minute and 30 minute notification requirements defined as part of the SLAs. The first critical notification is sent at 30 minutes and then subsequently every hour as defined in the RFP requirements. Page 16 - The escalation and internal notification process of the GCSC and its executive team was disclosed as part of the RFP response to demonstrate AT&T's commitment to service excellence. The chart on Page 16 does not demonstrate the notification process to the State or how tickets are generated, managed, updated and resolved, and should not be viewed as relevant to SLA compliance or non-compliance.
33.	24_NetTN_Section_T_Contractors NOC and Monitoring.doc (Section T, T.3, page 26)	T.3 Integration with the Trouble Ticketing System: Specify how the alarm and alert system or application is integrated into the Trouble Ticketing System used to support the NetTN network so that Trouble Tickets can automatically be opened when an alarm or alert is discovered. **Suggested Contract Language Clarification:** Not clear on how Trouble Tickets will move back and forth between AOTS & Remedy. Clarify how eBonding will interface with OIR's remedy system for Trouble tickets and orders. Will OIR be required to do development work? Where, identify customer, is this working today?
	Response:	The attached presentation covers all aspects of eBonding and does give customer reference examples. As far as development work as it relates to eBonding, the issue becomes how the fields map via the XML interface between the systems. The State will need to have their Remedy personal available to go through the field mappings and there may be some updates necessary on both sides, the State and AT&T, to ensure the fields are mapped appropriately and are passing the necessary information. A copy of the referenced presentation is in the Project File.
34.	24-T-Contractor's NOC-T.17	Specify SNMP commands allowed for read only access. Clarify charges for TACACS Read Only access to routers via Telnet

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	Response:	The RFP did not require pricing for TACACS Read Only access to routers via Telnet. There is an additional cost for TACACs access via telnet. The TACACs access cost is $10.00 OTC and $1.66 recurring charge per router. SNMP Commands can be referenced in Attachment A on page 9 of the RFP response.
35.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.1, page 1)	U.1 **Core Backbone Availability.** The Core Backbone network infrastructure of the NetTN WAN shall have a minimum monthly network availability factor of 99.999%. Note: the network availability factor must be calculated for the entire Core Backbone network infrastructure and not for a per circuit basis. Specify the formula, metrics and data elements monitored for calculating Core Backbone availability in a 30-day calendar month. Specify your proposed Core Backbone availability factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Change calculation to reflect all core components not just devices The calculation should also include circuits. They only mention devices. What are they counting as a core device?
	Response:	(Total number of WAN interfaces in core x {total number of possible uptime hours - total number of service affecting downtime hours})/ by (total number of WAN interfaces in core x total number of possible uptime hours)
36.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.2,page 1)	U.2 **End Site to Core Backbone Availability.** The network infrastructure consisting of WAN services and the edge devices managed by the Contractor as part of the availability requirement shall have a minimum monthly network availability factor of 99.95%; based on a 30-day month, this equates to 21 minutes of un-scheduled network downtime per end site. Specify the formula, metrics and data elements monitored for calculating End Site to Core Backbone availability in a 30-day calendar month. Specify your proposed End Site to Core Backbone availability factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Calculation should be for connection vs. just circuit. U.2 - Clarify daily measurement Change response to reflect all components – WAN circuit plus edge and PE device and include formula – (total minutes/month minus (Total outage minutes) divided by (minutes/month)
	Response:	([CE+circuit+PE interface] x {total number of possible uptime hours - total number of service affecting downtime hours})/ by (([CE+circuit+PE interface] x total number of possible uptime hours)
37.	25 –U-Service Levels – U.3	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
38.	25 –U-Service Levels – U.4	Change response to include formula – (total minutes/day minus (Total

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		outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
39.	25 –U-Service Levels – U.5	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
40.	25 –U-Service Levels – U.6	Change response to include formula – (total minutes/day minus (Total outage minutes) divided by (minutes/day)
	Response:	AT&T agrees to the suggested response change based upon circuit availability on a 30 day calendar month
41.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc (Section U, U.7, page 3)	U.7 **NetTN Edge Device to NAP Average Jitter Measurement**. The NetTN Edge Device to NAP Average Jitter shall be =< 5 ms. Specify the formula, metrics and data elements monitored for calculating the NetTN Edge Device to NAP Average Jitter Measurement. Specify your proposed NetTN Edge Device to NAP Average Jitter Measurement. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Response doesn't make sense. Cut and paste error? What does jitter availability mean? Jitter is not an availability calculation. Change response to include the following: Jitter, the variation in the delay of received packets in a flow, is measured by comparing the interval when RTP packets were sent to the interval at which they were received. For instance, if packet #1 and packet #2 leave 50 milliseconds apart and arrive 60 milliseconds apart, then the jitter is 10 milliseconds. Formula: rtp-jitter-sum / rtp-jitter-count 120 samples/day minus bandwidth utilization >=80% and averaged for 10-hour daily measurement
	Response:	AT&T agrees to the suggested response change
42.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc U.8	U.8 **NetTN Edge Device Errored Packets**. The NetTN Edge Device Errored Packets shall be =< 75% total Errored Packets (e.g., bad packets) per 24 hour day for the entire calendar month. Specify the formula, metrics and data elements monitored for calculating the NetTN Edge Device Hourly Device Errored Packets. Specify your proposed NetTN Edge Device Hourly Device Errored Packets factor. Specify compliance with this SLA. **Suggested Contract Language Clarification:** U.8 - AT&T amend response to specify =<75%
	Response:	AT&T agrees with the suggested response change of =<.75%
43.	25_NetTN_Section_U_Service Level Agreement Management Requirements.doc	U.11 **Report for End Site to Core WAN Circuit Hourly Average Bandwidth Utilization.** The NetTN Edge Device to Core WAN Circuit Average Hourly Inbound Bandwidth Utilization and the Hourly Average Outbound Bandwidth

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	(Section U, U.11, page 4)	Utilization: =< 80% average bandwidth utilization per 24 hour day per calendar month. Specify the formula, metrics and data elements monitored for calculating End Site to Core Bandwidth Utilization. Specify compliance with this SLA. **Suggested Contract Language Clarification:** Change response to include formula No specifics on calculation method.
	Response:	The NetTN End Site to Core WAN circuit hourly average bandwidth utilization (inbound/outbound) is measured on an average hourly basis. A reading will be taken every 5 minutes, 12 samples per hour, and 288 samples per 24 hours. The 288 samples minus any 5 minute samples where the average bandwidth utilization is >=80% utilization or minus any samples that were otherwise unavailable, will then be averaged together for the 24 hour measurement, for both inbound and outbound directions. The formulae for determining raw interface utilization for full duplex facilities is listed below: Input utilization = ^ifInOctetsx8x100 ---------- (number of seconds in ^)x IfSpeed Output utilization = ^ifOutOctetsx8x100 ---------- (number of seconds in ^)x IfSpeed [^ refers to Delta] All of the MIB attributes listed above are found in RFC1213 MIB. Details of the MIB variables used in these formulas are as follows: .1.3.6.1.2.1.2.2.1.10 ifInOctets OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Counter MAX-ACCESS read-only STATUS Mandatory DESCRIPTION "The total number of octets received on the interface, including framing characters." ::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 10 } .1.3.6.1.2.1.2.2.1.16 .1.3.6.1.2.1.2.2.1.16

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		ifOutOctets OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Counter MAX-ACCESS read-only STATUS Mandatory DESCRIPTION "The total number of octets transmitted out of the interface, including framing characters." ::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 16 } .1.3.6.1.2.1.2.2.1.5 ifSpeed OBJECT-TYPE -- FROM RFC1213-MIB, IF-MIB SYNTAX Gauge MAX-ACCESS read-only STATUS Mandatory DESCRIPTION "An estimate of the interface's current bandwidth in bits per second. For interfaces which do not vary in bandwidth or for those where no accurate estimation can be made, this object should contain the nominal bandwidth." ::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1) 5 }
44.	27-W- Performance management – W.1	Change following response to reflect 5 minute sampling - Health Reports are generated over 24 hours using 15 minute samples gathered via SNMP.
	Response:	AT&T plans on polling the devices every minute as defined in the service level agreements, via ICMP or other like technology. AT&T will also poll every 2 minutes via SNMP, which exceeds the requirement as set forth in the service level agreements. For end of month SLA reporting, AT&T will use 5 minute samples, or a more frequent sample, to determine compliance. The 15 minute reference is solely a reference to how the data will be presented in the online reports that will be available via the Business Direct portal.
45.	27-W- Performance management – W.4	Clarify 1 - Unless specifically requested by the TNII Association Partner, alarming will occur weekdays only. Time periods shown are based on local time. Clarify 2 - In addition, at any time, a TNII Association Partner may request a network consultation for specific performance issues or network enhancement opportunities, which may require capacity planning. Additional charge? Ad hoc reports? Define special report request.
	Response:	(1) The thresholds can be easily set up to exclude certain times that are not of interest (such as overnight or weekends). Finally, the thresholds can be

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		established for GMT or local time (fixed hour offset from GMT). (2) The TNII Association Partners may request a network consultation for specific performance issue or network enhancement opportunities which may require additional capacity planning. There is no additional charge for the consultation and the development of ad hoc capacity management reports.
46.	27-W- Performance management – W.6	Provide procedures that specify when event correlation analysis is initiated and how the results are applied.
	Response:	The Global Client Support Center (GCSC) is responsible for proactively monitoring the NetTN infrastructure to immediately respond and resolve performance issues and errors. As part of the Integrated Global Enterprise Management System (iGEMS), the GCSC tracks events and performance errors utilizing a suite of industry leading tools, including HP OpenView, EMC/SMARTS, and Concord eHealth. The Network Node Mgr accepts the SNMP messages which are then correlated the Smarts In Charge and triggers an alarm even in HP/OVO and a subsequent ticket in AOTS ticketing system.
47.	27-W- Performance management – W.7	Clarify - Unless specifically requested by the TNII Association Partner, alarming will occur weekdays only. Time periods shown are based on local time. Clarify fault outage- A chronic problem is defined as an AT&T fault outage, which occurs 3 times in a rolling 30-day period. Once a problem has been identified as chronic, AT&T GCSC will open a trouble ticket and it will remain open until the Client's Point of Contact agrees the problem is resolved.
	Response:	During on-going operations of the network, there may be faults, which are complex in nature, difficult to resolve or reoccur on a regular basis. A chronic problem is defined as an AT&T fault outage, which occurs 3 times in a rolling 30-day period. Once a problem has been identified as chronic, AT&T GCSC will open a trouble ticket and it will remain open until the Client's Point of Contact agrees the problem is resolved. While a chronic trouble ticket is open, AT&T GCSC will take all reasonable actions to identify and resolve the root cause. This may include running extended stress tests, enlisting the assistance of equipment manufacturers, dispatching on-site technicians and upgrading or replacing suspect equipment. AT&T also utilizes an auditing platform called ACTION- Audit Control to Insure Operations Needs to provide audit control, flagging of critical issues and escalations, and identification "chronic" sites for immediate investigation
48.	27-W- Performance management – W.8	Clarify how incident reports are created and reviewed with Association

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	Response:	The AT&T Business Direct Portal contains the information for the TNII Association Partners for Incident Management. The AT&T LCM team will provide regular reports for each TNII Association Partner on a regular basis as mutually agreed upon by the LCM team and the TNII Association partners. Monthly reports will also be produced.
49.	27-W- Performance management – W.10	Verify trouble tickets will be updated as specified in SLAs, A.14, A.15 & A.16
	Response:	Yes, tickets will be updated as specified in the SLA's.
50.	27-W- Performance management – W.11	Verify application monitoring is inherent in managed service
	Response:	The Application Traffic Analyzer (ATA) product performs application level monitoring on the specified devices within the State of Tennessee network. It may not be reasonable to install ATA on all State of TN devices due to capacity constraints at individual site locations. The RFP did not require that ATA be installed on all State of TN devices.
51.	27-W- Performance management – W.12	Change response to 5 minute samples - Health Reports are generated over 24 hours using 15 minute samples gathered via SNMP.
	Response:	AT&T plans on polling the devices every minute as defined in the service level agreements, via ICMP or other like technology. AT&T will also poll every 2 minutes via SNMP, which exceeds the requirement as set forth in the service level agreements. For end of month SLA reporting, AT&T will use 5 minute samples, or a more frequent sample, to determine compliance. The 15 minute reference is solely a reference to how the data will be presented in the online reports that will be available via the Business Direct portal.
52.	28.X.Security- X.5	*(It is assumed that malicious and General NetTN network traffic must traverse the network monitored by the security device in order to be captured) Clarify
	Response:	All traffic must traverse the network monitored by the security device in order to be captured. The goal of a good security posture is to verify that all traffic is monitored. Once the traffic is monitored, network tools are in place to parse the data into meaningful alerts.
53.	28.X.Security- X.6	Clarify - Managed security offering as part of NetTN offering – Is the response for the core or for end sites?
	Response:	The AT&T managed security offering protects both core and end sites through firewall context and IDS and IPS with regard to traffic received from the NetTN Internet Egress connections, passing from these connections through the NetTN security perimeter to the targeted NetTN VRF. This security extends to the managed router service at the end-site, which is the demark for managed WAN services. The RFP did not require managed LAN services; however, if the customer chooses to purchase managed LAN services, this service would then extend to those AT&T managed devices as well. While this seeks to protect the described end sites from Internet based attacks, it doesn't protect Intra-VRF site-to site traffic, since this traffic is already inside the NetTN security perimeter. For enhanced, intraVRF, end site to end site protection, AT&T NetTN is offering options for premise-based firewall/IDS/IPS solution for each end

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		site seeking such protection. Since OIR end sites are anticipated to receive their Internet service from OIR directly, and not the NetTN Internet service, then OIR end sites are subject to the level of firewall/IDS/IPS and security policy that the OIR Internet service is capable of providing. In otherwards, OIR end sites on NetTN receive their Internet service from within the OIR VRF (IntraVRF), traffic which passes from the OIR data center(s) directly into the OIR VRF and then directly to OIR end sites. The AT&T managed security offering is therefore bypassed in these instances. An enhanced, intraVRF, OIR Internet to end site or endsite to end site protection would require an optional premise-based firewall/IDS/IPS solution for each site seeking such protection.
54.	28.X.Security-X.7	Security controls for Inter-VPN traffic will be directed by default routing through the centralized firewall installation to the internet border router (IBR). The IBR, as it has to maintain the return paths from the Internet for every legal prefix within NetTN, will direct the traffic back into the central firewall where it will be forwarded into the destination VPN. Sites within a VPN that have a need for protection from other end-sites in the same VPN will need to purchase managed firewall or IDS services from AT&T Managed Routing Services (MRS). Is this the service included in the CoS – Managed IOS Why reference to AT&T CPE Maintenance?
	Response:	The reference to AT&T CPE Maintenance is because the Central firewalls will be located in the AT&T Central Offices and monitored and managed by GCSC.
55.	29-Y-Configuration – Y.3	Emergency changes must follow defined change mgmt process - The NetTN requester will assume all risk associated to the emergency change request. Any outages or negative impact incurred as a result of the emergency change request will NOT count against SLAs/SLOs. This includes any and all large ticket volumes of Sev.1 outages caused because of the emergency change. AT&T will assume fault (change results in an outage) if the parameter information provided is not properly implemented. The customer will own any impacts with Operational databases being out of step due to the emergency change. Clarify emergency changes must follow defined change mgmt process before the change is implemented, the requesting NetTN engineer request must be reviewed by NetTN vendor engineers to ensure will not impact other customers.
	Response:	AT&T will assume fault (change results in an outage) if the parameter information provided is not properly implemented. The AT&T LCM team and the State of Tennessee will jointly define the emergency change process to ensure impact to the overall network.
56.	29-Y-Configuration – Y.5	Clarify migration orders for NetTN will be input by NetTN vendor with full access by Association partner
	Response:	AT&T will input into the system all migrated orders.

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57.	30.Z-General responsibilities – Z.3	Identify by name person with overall responsibility
	Response:	Greg Brown – Resume to follow
58.	32_NetTN_Section_BB_ Billing_Requirements.doc	J.9.b The TNII Association requires all refunds, credits, and Contractor payments must be resolved within a maximum of three billing cycles. Note: J.9.b is found on page 154 of the NetTN RFP and J.1.k is found on page 151 of the NetTN RFP **Suggested Contract Language Clarification:** Add the following sentence: OIR and SDE billing disputes must be resolved in accordance with Contract Attachment J, Section J.1.k.
	Response:	AT&T agrees to the sentence addition.