

Service Attachment 1
Metro Ethernet (NLAN, SNLAN) and Long Haul Intermarket Ethernet (ENLAN)

This Service Attachment (the "Service Attachment"), is between tw telecom holdings inc. "Vendor" having an office at 10475 Park Meadows Drive, Littleton, CO 80124, and the State of Ohio, Department of Administrative Services, Office of Information Technology ("the State"), having its principal place of business at 30 East Broad Street 40th Floor, Columbus, OH 43215 (jointly referred hereto as the "Parties"), and it is effective as of the date signed by the State. It amends that certain Master Services Agreement between the Parties dated *11/22/09*

WHEREAS, Vendor desires to include additional services and the corresponding general provisions thereof; and

WHEREAS, the above named Parties desire to execute this Service Attachment to said Agreement;

NOW THEREFORE, in accordance with the Agreement, and in consideration of the conditions and covenants contained herein, the Parties mutually agree as follows:

1. The Addition of Service Attachment 1 – Ethernet Services.
2. All other terms and conditions of the Master Service Agreement not otherwise supplemented and/or amended shall remain unchanged and in full force and effect.

This Service Attachment provides the Subscribing Entity(s) with the ability to purchase Metro and Long Haul Intermarket Ethernet Services (ENLAN) from Vendor.

Additional information regarding these services has been included in an Appendix located at the end of this document.

- Appendix 1: Service Level Agreement Information

1 Service Overview

This section provides an overview of the following types of Ethernet Services:

- **Metro Ethernet (NLAN, SNLAN)** - For Subscribing Entity locations within the same Vendor Metropolitan Service Area.
- **Long Haul Intermarket Ethernet (ENLAN)** - For Subscribing Entity locations that are in different Vendor Metropolitan Service Areas.

These Services provide an alternative to the traditional Frame Relay, ATM, or SONET methods of data transfer.

1.1 Metro Ethernet Services

The Subscribing Entity(s) will have the following options for purchasing Metro Ethernet Services under this Service Attachment:

Option 1 - Elite Native LAN ("Elite NLAN") service is available in the following configurations:

- Point-to-Point

Option 2 - Switched NLAN (SNLAN) service is available in the following configurations:

- Point-to-point
- Multipoint
- Individual Tag Service
- Unlimited Tag Service
- Untagged Service

Option 3 - Customer Direct NLAN

- Non-monitored by NOC
- Unprotected circuit

1.2 Long Haul Intermarket Ethernet Services (ENLAN)

The Subscribing Entity(s) will have the following option for purchasing Long Haul Intermarket Ethernet Services (ENLAN) under this Service Attachment:

Long Haul Intermarket Ethernet Services (ENLAN) will be offered over the IP Backbone encapsulating the customer traffic using layer 2 tunnels.

Service has the following two (2) options:

- Basic
- Enhanced

2 Description of Service

This section provides a description for the Metro Ethernet (NLAN, SNLAN) and Long Haul Intermarket Ethernet Service (ENLAN) options listed in Section 1.

Metro Ethernet Services

Provides either On-Net or Off-Net connectivity between Subscribing Entity locations within the same Metropolitan Area.

- **On-Net Service** means Services that are provisioned entirely on Vendor's Network.
- **Off-Net Service** means a Service that is not provisioned entirely on Vendor's Network in that either the origination or termination point of the Service (or both) is/are on telecommunication facilities that are operated by another telecommunication provider(s). Services may be provided over various telecommunication transport facilities either protected or unprotected.

The Subscribing Entity(s) will be able to select from the following options/configurations:

Option 1 - Elite NLAN

- **Point-to-Point Configuration** - Provides the Subscribing Entity(s) with a dedicated point-to-point SONET-protected transport solution between its locations via Vendor's Next Generation SONET equipment. The offered Ethernet Services consist of various bandwidth increments as described below.

Option 2 – Switched Native LAN

The Switched Native LAN (“SNLAN”) service will provide a switched Ethernet network that utilizes new Layer 2 Ethernet switch equipment. The general architecture consists of a centralized Ethernet switch deployed in the Vendor Central Office (“CO”) with smaller Ethernet switches deployed on the Subscribing Entity(s) premises. The Subscribing Entity location switches and the CO Ethernet switch are interconnected in a ring topology, using fiber Gigabit Ethernet links. The Ethernet switches will serve to aggregate incremental bandwidth SNLAN Subscribing Entity(s) onto the high-speed, Gigabit Ethernet transport back to the various destination locations. The SNLAN Central Office Switch will be the larger switch deployed in the Vendor CO and will provide the backbone to the SNLAN Metro Ethernet services. The Vendor SNLAN application is deployed as a Layer 2 data service.

The Subscribing Entity(s) will have the following Tag Service Options:

- **Individual Tag Service Option** - The Subscribing Entity(s) may be required to pay per tag for each of the tags that it wishes to transport across the network. Specific VLAN tag numbers are available to the Subscribing Entity(s) on a first-come, first-served basis.
- **Unlimited Tag Service Option** - Allows the Subscribing Entity(s) to transport as many VLAN tags and any VLAN tag numbers desired across Vendor’s Network. For this Service, Vendor enables a capability in Vendor’s Network that makes the Subscribing Entity(s) tags transparent to Vendor’s Network. Consequently, the Subscribing Entity(s) do not need to contact Vendor to determine tag availability, order the tags, or to have them provisioned.
- **Untagged Service Option** – Subscribing Entity Untagged Traffic: the Subscribing Entity does not Tag their internal Ethernet traffic. Therefore, this traffic enters the Vendor SNLAN network without Tags already attached to the Ethernet frames. This type of traffic is referred to as Untagged Subscribing Entity traffic.

Option 3 – Customer Direct NLAN

Customer Direct NLAN is a stand alone, non-network protected Ethernet Private Line service. This option provides the benefit of Ethernet connections at 1000Mbps, but the service is not managed by the Vendor National Operations Center, and there is no associated service level agreement. This service is available only for On-Net locations.

Long Haul Intermarket Ethernet Services (ENLAN)

Provides connectivity between Subscribing Entity locations in different Metropolitan Areas.

The Long Haul Intermarket Ethernet Service (ENLAN) is an interstate/intrastate Ethernet Service that provides a managed end-to-end solution for the Subscribing Entity(s). Long Haul Intermarket Ethernet Service (ENLAN) is offered over the Vendor IP Backbone, encapsulating Subscribing Entity traffic using layer 2 tunnels as a best effort service. To transport Ethernet frames across the IP Backbone, an Ethernet connection will be made between the NLAN Central Office Ethernet switch and an aggregation router on the Internet infrastructure. The IP ingress point is responsible for encapsulating Ethernet frames into a Layer 2 logical frame.

There are two levels of Long Haul Intermarket Ethernet Services (ENLAN) for PTP which are offered in a redundant manner. Redundant offering means that an IP Backbone Service Outage would result in packets being rerouted over an alternate path:

- Enhanced Service – The Subscribing Entity(s) traffic is sent with a higher Class of Service from Provider Edge (“PE”) to PE.
- Basic Service – The Subscribing Entity(s) will not receive a premium class of service in the event its traffic needs to be re-routed.

3 Standard Service Features

This section provides an outline of the standard Metro Ethernet and Long Haul Intermarket Ethernet Service (ENLAN) features which are included as part of the monthly recurring charge as outlined in Section 5 of this Service Attachment.

Metro Ethernet Services

The following features are common to all Metro Ethernet Services:

- Port sizes range from 10Mbps to 1000 Mbps (except for CDNLAN, which is only available at 1000 Mbps).
- Service available as both On-Net and Off-Net. (CDNLAN is for On-Net locations only)
- Full-duplex services

4 Optional Service Features

The following features are option specific:

Option 1 - Elite NLAN - Point-to-Point Configuration

- Dedicated Point-to-Point connectivity and bandwidth between two Subscribing Entity locations.
 - SONET Protected service (hybrid SONET platform)
 - Tagged or untagged Subscribing Entity Ethernet traffic
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- ITS, UTS and Untagged Services are available

Option 2 - Switched Native LAN

- Any-to-any connectivity.
- Shared infrastructure in which multiple Subscribing Entity(s) traverse the same links.
- Vendor securely differentiates Subscribing Entity(s) traffic on the shared infrastructure through unique logical connections for each Subscribing Entity.
- Gigabit Ethernet ring topology (No SONET Layer).
- Rapid spanning tree network restoration protocol (Sub-second convergence time).
- Virtual separation between Subscribing Entity(s) traffic streams (802.1q VLAN tagging).
- SNLAN will carry both Subscribing Entity tagged and untagged traffic
- Subscribing Entity tagged and untagged traffic transported to all Subscribing entity Ethernet ports.
- The Subscribing Entity(s) may be required to pay a per tag charge for ITS and no charge for UTS or Untagged.
- Oversubscribed network bandwidth.

Option 3 - Customer Direct NLAN

Customer Direct NLAN is service without any special features. It is a stand alone, non-network protected Ethernet Private Line service. This option provides the benefit of Ethernet connections at 1000 Mbps, but the service is not managed by the Vendor National Operations Center, and there is no associated service level agreement. Customer Direct NLAN is offered only on an individual case basis and can be ordered for On-Net locations only.

Long Haul Intermarket Ethernet Services (ENLAN)

The Long Haul Intermarket Ethernet Service (ENLAN) does not have any special features.

5 Fee Structure

This section provides the following information for the Metro and Long Haul Intermarket Ethernet Service (ENLAN) options:

- Pricing for Metro and Long Haul Intermarket Ethernet Service (ENLAN) options
- Installation Charge Information
- Disconnection Fee Service Charge Information
- Service Call Information

Pricing - Metro Ethernet Services

Pricing is provided for both Off-Net and On-Net service configurations, subject to the terms and conditions of this Agreement. **Off-Net** – Pricing for any Off-Net service will be quoted on an Individual Case Basis (“ICB”).

- **On-Net** – The MRC for the three (3) On-Net service options as described in Section 1 of this document is the same regardless of the option selected. The following table provides the per port MRC for a 12, 36 and 60 month commitment terms for a variety of access speed options:
- **Other Port Speeds** – Are available within the range listed in the pricing tables to be quoted on an Individual Case Basis.

- **Tag Service** – Is available for all options and configurations except CD NLAN. Pricing is the same regardless of commitment term, On-Net or Off-Net.
- **Service Pricing** – The per port pricing for all Metro Ethernet services is the same regardless of the options and or configurations selected by the Subscribing Entity(s).
- **Service Configuration Pricing** – A Metro Ethernet Service may contain per port pricing for Off-Net and On-Net service configurations.

Metro Ethernet (NLAN, SNI-LAN)				
Port Speed	12 Month Term	36 Month Term	60 Month Term	NRC
1.5M	ICB	ICB	ICB	
3M	ICB	ICB	ICB	\$ -
4.5M	ICB	ICB	ICB	\$ -
6M	ICB	ICB	ICB	\$ -
10M	\$ 715.00	\$ 650.00	\$ 496.00	\$ -
20M	\$ 850.00	\$ 770.00	\$ 539.00	\$ -
40M	\$ 950.00	\$ 850.00	\$ 625.00	\$ -
50M	\$ 1,000.00	\$ 900.00	\$ 650.00	
100M	\$ 1,120.00	\$ 965.00	\$ 667.00	\$ -
Exceeding 100M but less than a GIG	ICB	ICB	ICB	
1GIG	ICB	ICB	ICB	\$ -
1GIG < 10 GIG	ICB	ICB	ICB	\$ -
10 GIG	ICB	ICB	ICB	
40 GIG	ICB	ICB	ICB	
Individual Tag Service Cost (Per Tag)	\$ 10.00	\$ 10.00	\$ 10.00	\$ -
Unlimited Tag Service	\$ -	\$ -	\$ -	\$ -
Untagged Service	\$ -	\$ -	\$ -	\$ -

Pricing - Long Haul Intermarket Ethernet Service (ENLAN)

Pricing for Long Haul Intermarket Ethernet Service (ENLAN) service will be quoted on an Individual Case Basis.

Installation Charge / NRC- Has been waived.

Month-to-Month Service Continuation

The above services will continue to be available to the Subscribing Entity on a month to month basis after completion of the initial term of service at the MRC quoted or the then-current MRC for the same duration as the initial service term. This MRC will then apply for the duration of this MSA and this Service Attachment, or any renewal thereof, until either the Vendor or the Subscribing Entity terminates the applicable order upon thirty days' written notice.

Modification Charge

If a Subscribing Entity requests modification(s) to a pending TSR Order prior to the In-Service Date, then Vendor will submit a revised Service Quote for the Subscribing Entity(s) approval which may contain, in addition to the requested modification(s), a modification charge not to exceed the Actual Costs the Vendor will incur.

Order Cancellation Information - Prior to In-Service Date

This section applies when a TSR order is cancelled prior to the In-Service Date. Note: This only applies to Service Orders placed through the TSR system and does not apply to Service Quotes.

If a Subscribing Entity cancels a TSR Order before Vendor has completed installation of the Service, the Subscribing Entity must reimburse Vendor for its Actual Costs. If a Subscribing Entity cancels a TSR Order after the Service has been installed, the Disconnection Service Charges set forth below will apply. All requests by a Subscribing Entity to cancel a pending TSR Order are effective only if provided in writing.

Disconnection Service Charge Information – After In-Service Date

If the Subscribing Entity has lawfully appropriated funds to pay for the Disconnection Charge described in this section, the Subscribing Entity may cancel an order for convenience. The Subscribing Entity(s) shall remain liable for charges accrued but unpaid as of the disconnection date. Additionally, should the State or any Subscribing Entity terminate any order for services for convenience, or for reasons other than permitted under Sections 1.5, 1.19, 7 and 8.1(b) in the MSA or nonrenewal of the MSA or Service Attachment under 6.1 or 6.2 of the MSA, or should Vendor terminate any order for services pursuant to Section 8.2(a) in the MSA, the Subscribing Entity shall pay to Vendor from funds properly appropriated therefore fifty percent (50%) of all monthly recurring charges for the remainder of the Service Term applicable to the disconnected service(s).

Service Calls

If Vendor responds to a service call initiated by the Subscribing Entity(s), and Vendor and the Subscribing Entity(s) mutually agree that the cause of the problem is not due to Vendor's Network or Equipment, but is due to the Subscribing Entity(s) equipment or facilities, the Subscribing Entity(s) must compensate Vendor for the service call on a time and materials basis at Vendor's then applicable reasonable rates.

6 Service Specific Terms and Conditions

Service Availability

Vendor offers all Services subject to availability and has the right to accept or reject a TSR submitted by the Subscribing Entity(s) in accordance with Section 5.1(A) of the Agreement.

Ordering Process

The Ordering Process for the services contained in this Service Attachment is comprised of the following two (2) steps:

- **Step 1 – Service Quote** – The Subscribing Entity(s) may submit through the TSR system a request for a Service Quote.
- **Step 2 – Service Order** – The Subscribing Entity(s) will review the Service Quotes with the State. The order for service will then be placed with the selected vendor through the TSR system.

Service Quote

The Service Quote will contain the following information:

- **Description of Proposed Service** – Will include the following documentation:
 - **Service Description** – A narrative providing a detailed description of the proposed service.
 - **Network Diagram** – To provide a graphical representation of the proposed service.
- **MRC** – Identified per port
- **Installation Charges / NRC** – Note: These charges have been waived.
- **Build Out Charges** – These are the quoted costs associated with the design, engineering, labor and materials required to extend Vendor's Network and the Service to the agreed termination point on Subscribing Entity's premises in order to deliver the service. Vendor will provide the Subscribing Entity(s) with the following two (2) payment options:
 - **Lump Sum** – The amount will be paid as a one time charge.
 - **Monthly** – The amount spread over the initial term of the service as a monthly charge. Note: This charge will not apply to any renewal of service.
- **Expedite Charges** – These are the quoted costs associated with expediting the installation of a Service which may include a per circuit charge for On-Net Services and/or third party charges for Off-Net Services. Note: Vendor reserves the right to determine if it can accommodate an expedite installation request.

The Subscribing Entity(s) will not be responsible for any costs not identified in the Service Quote.

Service Order – Time Frames

Once the Service Order has been placed via the TSR system, Vendor will commit to working the order(s) within the following timeframes.

- **On-Net Services** – Within one (1) business day of receiving a TSR order for Service, Vendor will review the order for accuracy and completeness. Once verified, Vendor will provide the Subscribing Entity(s) with the following:
 - A design layout record within four business days, and
 - A Firm Order Commitment ("FOC") within five business days.
- **Off-Net Service** – The design layout record and FOC will be provided on a case by case basis.

Requests to Delay Installation

The Subscribing Entity(s) may request to delay installation for up to thirty (30) days following the original FOC due date for no charge if Vendor is notified of the request in writing at least three business days prior to the original FOC due date.

If the Subscribing Entity(s) submits its request to delay installation less than three days prior to the original FOC due date, Vendor may impose an Installation Delay Charge. This Installation Delay Charge will be based on the service MRC prorated from the original FOC date to the new installation date.

Acceptance of Service

Vendor will notify the Subscribing Entity(s) by e-mail to the primary service contact identified in the TSR when the Service has been successfully installed and is available for the Subscribing Entity(s) use ("Bill Date"). Unless the Subscribing Entity(s) notifies Vendor by the close of business on the Bill Date that the Service is not operational, the Service Term will commence. The Subscribing Entity(s) also has thirty days following the Bill Date to conduct additional testing of the Services. If such testing indicates that the Service is not operating properly, and the Subscribing Entity(s) notifies Vendor by contacting the Vendor Account Team shown in the TSR and reasonably identifies the problem, Vendor will work with the Subscribing Entity(s) to remedy the problem. If Vendor and the Subscribing Entity(s) mutually agree that the problem is due to Vendor's Network or Vendor Equipment or third-party telecommunications facilities arranged by Vendor on Vendor's side of the demarcation point, then the Subscribing Entity(s) will be credited for the MRCs associated with the Service from the Bill Date through the date that the Service is made operational. If Vendor and the Subscribing Entity(s) mutually agree that the problem is not being caused by Vendor's Network, Vendor Equipment, or third-party telecommunications facilities arranged by Vendor on Vendor's side of the demarcation point, the Bill Date will remain unchanged. Vendor is not responsible for testing failures resulting from problems with the Subscribing Entity(s) equipment.

Technology Upgrades

After the first twelve (12) full months of service under a service order, the Subscribing Entity(s) have the option anytime during the Agreement period to submit to the Vendor a new service order for an upgrade to a new technology or new service offering, for a new service term, without incurring termination charges as more specifically outlined, and under the conditions contained in, the individual Service Attachments. In no case will the fees under the Service Attachments increase as a result of any such negotiation before the 2013 renewal of this Agreement, should this Agreement be renewed beyond the State's 2013 biennium. The upgrade will require a new service order.

Vendor Equipment

Vendor will own and control all Vendor Equipment that is used to provide this service, which will remain Vendor's personal property regardless of where located or attached. Vendor may upgrade, replace or remove Vendor Equipment, regardless of where located, so long as the Services continue to perform. The Subscribing Entity(s) may not alter, move or disconnect Vendor Equipment and is responsible for any damage to, or loss of, Vendor Equipment caused by the Subscribing Entity(s) breach of this provision or as the result of the Subscribing Entity(s) or its End User's negligence or willful misconduct. Vendor has no obligation to install, maintain or repair any equipment owned or provided by the Subscribing Entity(s).

Subscribing Entity(s) Equipment

The Subscribing Entity(s) is responsible for any special interface equipment or facilities necessary to achieve compatibility with the service.

Access

Vendor may require access to the Subscribing Entity(s) premises to install and maintain the Services and Vendor Equipment. Subject to Vendor's compliance with the Subscribing Entity(s) safety and security rules under Section 3.15 of the Agreement, Vendor shall not be liable for delays in installation, maintenance or repair arising from a Subscribing Entity's delay in availability or providing access. The Subscribing Entity(s) also must provide reasonable access rights and/or rights of way from third parties, space, power and environmental conditioning as

may be required for installation of and maintaining Vendor Equipment at the Subscribing Entity(s) premises.

No Letter of Authorization or Carrier Facility Assignment

No Subscribing Entity intends to, or will, connect the Services to facilities that it does not own or lease. As a result, Vendor will not require a Letter of Authorization or Carrier Facility Assignment.

Scheduled Maintenance

Vendor will monitor its Network and Equipment 24 hours per day, 7 days per week. Scheduled Maintenance will be performed between the hours of midnight and 6:00 a.m. (local time where the maintenance is being performed) unless another time is agreed to in writing by Vendor and the Subscribing Entity(s). Vendor will endeavor to provide the Subscribing Entity(s) with at least five business days notice before performing Scheduled Maintenance unless a shorter notice period is required under the circumstances.

Emergency Maintenance

If Vendor has to perform maintenance outside of the Scheduled Maintenance window set forth above, then Vendor will provide as much prior notice to the Subscribing Entity(s) as is practicable under the circumstances by e-mail to the primary service contact for the Subscribing Entity listed in the applicable TSR.

7 Service Level Agreement Information

This section provides the following information regarding the Service Level Agreement (“SLA”) provided by Vendor for the Ethernet Services as described herein.

- SLA Recap
- Description of Outages
- SLA credits

Please refer to Appendix 1 for the complete SLA.

SLA Recap

The Vendor SLA for Ethernet Services is comprised of the following:

- Service Availability
 - On-Net Elite NLAN
 - Switched Native LAN
 - Long Haul Intermarket Ethernet Services (ENLAN)
- Network Latency
 - Long Haul Intermarket Ethernet Services (ENLAN)
- Packet Delivery
 - Long Haul Intermarket Ethernet Services (ENLAN)

Reporting Service Outages

The Subscribing Entity(s) must contact Vendor's Customer Network Reliability Center (“CNRC”) at 800-829-0420 or log into the Vendor portal: <https://customerportal.twtelecom.com/> to report a Service Outage, and Vendor will open a trouble ticket and provide the Subscribing Entity(s) with a trouble ticket number for tracking purposes.

Duration of Service Outages

A Service Outage begins when the Subscribing Entity contacts the Vendor to report the problem or the Vendor identifies the problem internally, and a trouble ticket is opened. The Service Outage ends when the service is restored. The closing of the trouble ticket will occur by agreement of the Parties, which will not be withheld unreasonably. The duration of the Service Outage will be calculated as the elapsed time between the time the trouble ticket is opened and the service is restored. Service Outages and failures to meet the performance objectives identified in the applicable service level agreements do not include outages and failures caused by the Subscribing Entity's equipment, acts or omissions of Subscribing Entity(s) or its End Users, Force Majeure events, fiber cuts caused by third-parties not acting for or under the control of Vendor, or outages occurring during Scheduled or Emergency Maintenance. Subject to the Vendor's obligations under Section 3.15 of the MSA, the duration of the Service Outage also does not include any time during which Vendor is not allowed access to the premises necessary to restore the Service.

Application of Outage Credits

A Service Outage begins when Subscribing Entity(s) contacts the Vendor to report the problem or the Vendor identifies the problem internally, and a trouble ticket is opened. The Service Outage ends when the service is restored.

8 Reporting Requirements

This section provides a description of the reports required from a state level perspective by the State, which includes Monthly Expenditure and Quarterly Inventory reports. Reports shall be submitted to the State in an electronic format within a month of the ending period of the report. Information on reporting options available to the Subscribing Entity(s) may be obtained from the account team.

Monthly Expenditure Report

To facilitate reporting continuity, all services purchased under this Service Attachment will be put on the same month end billing cycle. Reports will be provided to the state on a monthly basis for each service provided hereunder. At a minimum, these reports will contain totals for the following data elements:

- Monthly Recurring Charges
- Non Recurring Charges
- Taxes, Surcharges, and Governmental Fees
- Credits
- Grand Total Expenditure

This information will then be recapped in the following reporting hierarchy:

Level 0	Entire Contract					
Level 1	Executive Branch	Legislative Branch	Judicial Branch	Cooperative Purchasing		
Level 2	ABC's* Contract Mandatory	ABC's Contract Optional		Higher Education	K-12 & Libraries	Cooperative Purchasing Members
Level 3	Individual ABC			Individual Colleges & Universities	Individual School Districts & Libraries	Individual Co-op Members
Level 4	Division or Work Group Level					
Level 5	Account Level					
Level 6	BTN Level**					

*Agencies, Boards and Commissions

**Billing Telephone Number

Quarterly Inventory Report

The Vendor will provide the State with an inventory of all active services purchased under this Service Attachment for the quarter. At a minimum, this report will contain the following data elements:

- Master Account Number
- Subscribing Entity Account Number
- Subscribing Entity Name
- Begin Service Date
- End Service Date
- Circuit Count by Service
- Circuit Count by Commitment Term
- Service Location
- TSR Number

SLA Performance Report

The Vendor will provide the State and the Subscribing Entity(s) with a monthly report detailing its SLA performance. At a minimum, this report will contain performance results for the following SLA criteria:

- Service Availability
 - On-Net Elite NLAN
 - Switched Native LAN
 - Long Haul Intermarket Ethernet (ENLAN)
- Network Latency
 - Long Haul Intermarket Ethernet (ENLAN)
- Packet Delivery
 - Long Haul Intermarket Ethernet (ENLAN)

9 Definitions

"Affected Service(s)" mean physical or virtual circuits that are operationally integrated because they are operated on, or are dependent upon, the same equipment or circuitry.

"Actual Costs" means the reasonable time and materials actually incurred and documented by Vendor in engineering and installing a Service cancelled or modified by Customer, and includes any third-party charges assessed against Vendor as a result of such cancellation.

"Chronic Trouble Service" means a physical or virtual circuit that has experienced two or more Service Outages within a thirty-day period and the cause of each such trouble is determined to be in Vendor's Network.

"Customer Network and Reliability Center" or "CNRC" means Vendor's network operating center which the Subscribing Entity(s) must contact to report any problems with the Services. The CNRC can be reached at 800-829-0420.

"FOC" means the firm order confirmation that Vendor provides to the Subscribing Entity(s) establishing the date that Vendor will install the Services.

"In-Service Date" means the date Service has been successfully installed, tested and is made available for the Subscribing Entity by Vendor.

"IP Ingress" means the Vendor-defined entry point into Vendor's IP backbone. This point is the ingress port on the router located at the Vendor IP backbone network edge.

"Installation Charge(s)" means the costs, other than Build-Out Charges (as defined above), associated with the labor and materials required to delivery Service(s) to the required location on the Subscribing Entity's premises.

"Layer 2" means the Data Link layer of the commonly-referenced multiayered communication model, Open Systems Interconnection ("OSI").

"Metropolitan Area" means a Vendor metropolitan Service Area. Vendor reserves the right to select the Metro Network to provide the service.

"MRC" means the monthly recurring charge associated with a Service.

"NRC" means the non-recurring charge associated with a Service.

"Off-Net Service" means a Service that is not provisioned entirely on Vendor's Network in that either the origination or termination point of the Service (or both) is/are on telecommunication facilities that are operated by another telecommunication provider(s). Off-Net Services are priced on an individual case basis ("ICB").

"On-Net Services" means Services that are provisioned entirely on Vendor's Network.

"PTP" means Point-to-Point

"Service(s)" means telecommunications services provided by Vendor pursuant to this Service Attachment in the form of physical or virtual circuit(s) connecting individual locations to one another or to a network.

"Service Order" means an order from a Subscribing Entity through the TSR system containing the information required by Section 6 of this Service Attachment and identifying the Service being requested, quantity of circuits, A & Z locations, protocols, Service Term, requested start of service date and any other information reasonably necessary to describe the requested Service.

"Service Outage" means either; (a) a complete loss of transmit or receive capability for a Service and such inoperability is caused by Vendor's Equipment or Network, or (b) a material non-compliance with a specific performance metric in a service level agreement and such non-compliance is caused by Vendor's Equipment or Network.

"Service Quote" means the document containing the information described in Section 6 of this Service Attachment that is submitted by Vendor in response to a request from a Subscribing Entity.

"Service Term" means the committed service duration for a particular Service as set forth in the applicable Service Order, including any renewal periods.

"TSR" means Technology Service Request

"Vendor Equipment" means the telecommunications equipment, cable and facilities installed, operated and controlled by Vendor for provision of the Services to the Subscribing Entity(s).

"Vendor's Network" or "Network" means those telecommunication facilities operated by Vendor or its Local Entities, and excludes any telecommunication facilities that are operated by other telecommunication providers.

Appendix 1

SERVICE LEVEL AGREEMENT

10 Appendix 1 – Service Level Agreement

Appendix 1 provides the detailed information regarding the Vendor Service Level Agreement (“SLA”) for the Services described in this Service Attachment.

Reporting Service Outages

The Subscribing Entity(s) must contact Vendor’s Customer Network Reliability Center (“CNRC”) at 800-829-0420 or log into the Vendor portal: <https://customerportal.twtelecom.com/> to report a Service Outage, and Vendor will open a trouble ticket and provide the Subscribing Entity(s) with a trouble ticket number for tracking purposes.

Duration of Service Outages

A Service Outage begins when the Subscribing Entity contacts the Vendor to report the problem or the Vendor identifies the problem internally, and a trouble ticket is opened. The Service Outage ends when the service is restored. The closing of the trouble ticket will occur by agreement of the Parties, which will not be withheld unreasonably. The duration of the Service Outage will be calculated as the elapsed time between the time the trouble ticket is opened and the service is restored. Service Outages and failures to meet the performance objectives identified in the applicable service level agreements do not include outages and failures caused by the equipment, acts or omissions of Subscribing Entity(s) or its End Users, Force Majeure events, fiber cuts caused by third-parties not acting for or under the control of Vendor, or outages occurring during Scheduled or Emergency Maintenance. Subject to the Vendor’s obligations under Section 3.15 of the MSA, the duration of the Service Outage also does not include any time during which Vendor is not allowed access to the premises necessary to restore the Service.

Application of Outage Credits

A Service Outage begins when Subscribing Entity(s) contacts the Vendor to report the problem or the Vendor identifies the problem internally, and a trouble ticket is opened. The Service Outage ends when the service is restored.

Service Availability

Vendor’s On-Net Elite NLAN Services will be available to the Subscribing Entity(s) at least 99.999% of the time in a thirty day calendar month:

Per Service Outage	Percentage Credit
Under 1 minute (99.999% availability)	No Credit
1 minute up to 4 hours	5% of the MRC
4 hours up to 8 hours	10% of the MRC
8 hours up to 12 hours	15% of the MRC
12 hours up to 16 hours	20% of the MRC
16 hours up to 24 hours	35% of the MRC
24 hours up to 48 hours	50% of the MRC
48 hours or greater	100% of the MRC

Vendor's Switched Native LAN Services will be available at least 99.99% of the time in a thirty day calendar month. In the event of a Service Outage or failure to meet a service level objective, Vendor will issue credits as follows:

Per Service Outage	Percentage Credit
Under 5 minutes (99.99% availability)	No Credit
5 minutes up to 4 hours	5% of the MRC
4 hours up to 8 hours	10% of the MRC
8 hours up to 12 hours	15% of the MRC
12 hours up to 16 hours	20% of the MRC
16 hours up to 24 hours	35% of the MRC
24 hours up to 48 hours	50% of the MRC
48 hours or greater	100% of the MRC

Vendor's Long Haul Intermarket Ethernet Services (ENLAN) will be available at least 99.99% of the time in a calendar month ("Network Availability"). Upon request, the Subscribing Entity(s) will receive a Service Outage credit for Vendor's failure to meet the Network Availability standard. The Service Outage credit is based upon a percentage of the Subscribing Entity(s) MRC associated with the non-performing Service as follows:

Per Service Outage	Percentage Credit
Under 5 minutes (99.99% availability)	No Credit
5 minutes up to 4 hours	5% of the MRC
4 hours up to 8 hours	10% of the MRC
8 hours up to 12 hours	15% of the MRC
12 hours up to 16 hours	20% of the MRC
16 hours up to 24 hours	35% of the MRC
24 hours up to 48 hours	50% of the MRC
48 hours or greater	100% of the MRC

Network Latency

A. ENLAN. Vendor's Long Haul Intermarket Ethernet Services (ENLAN) will have an average round-trip transmission of 50 milliseconds or less between Vendor-designated regional route servers in the forty-eight contiguous United States. Vendor will calculate Latency as determined by averaging sample measurements taken during the most recent full calendar month between Vendor-designated regional route servers.

The Subscribing Entity(s) will receive Service Outage credit for Vendor's failure to meet the Network latency standard stated herein. The Service Outage credit is based upon a percentage of the Subscribing Entity(s) MRC associated with the non-performing Service as follows:

0.00 to 50.00 ms	No Credit
50.01 to 60.00 ms	5% of the MRC
60.01 to 65.00 ms	10% of the MRC
65.01 to 70.00 ms	15% of the MRC
70.01 to 75.00 ms	20% of the MRC
75.01 to 80.00 ms	35% of the MRC
80.01 ms or greater	50% of the MRC

Latency numbers are based on IP POP to IP POP and exclude Subscribing Entity(s) host to host latency readings. Optimum TCP throughput may require adjustments to the default TCP stack settings.

B. Metro Ethernet (NLAN and SNLAN). Vendor's NLAN and SNLAN Services will have as an objective a round-trip transmission of 30 milliseconds or less between Vendor's central office switch and the Customer's demarcation point. Exceeding this objective does not constitute a Service Outage. After Customer opens a trouble ticket, Vendor will mobilize to the Customer's premise and will take sample round-trip measurements between Vendor's central office switch and the Customer's demarcation point (or will do so remotely if possible).

(i) *Jitter*. Vendor's NLAN and SNLAN Services will have as an objective a latency variation of 20 milliseconds or less between Vendor's central office switch and the Customer's demarcation point. Exceeding this objective does not constitute a Service Outage. After Customer opens a trouble ticket, Vendor will mobilize to the Customer's premise and will take sample one-way measurements between Vendor's central office switch and the Customer's demarcation point (or will do so remotely if possible).

Packet Delivery

Vendor's Long Haul Intermarket Ethernet Services (ENLAN) will have a packet delivery of 99.5% or greater between Vendor-designated regional route servers in the forty-eight contiguous United States. Packet Delivery is determined by averaging sample measurements taken during the most recent full calendar month between Vendor-designated regional route servers.

The Subscribing Entity(s) will receive a Service Outage credit for Vendor's failure to meet the packet delivery standard stated above. The Service Outage credit is based upon a percentage of the Subscribing Entity(s) MRC associated with the non-performing Service as follows:

99.5% or greater	No Credit
99% to 99.4%	5% of the MRC
98% to 98.9%	10% of the MRC
97% to 97.9%	15% of the MRC
96% to 96.9%	20% of the MRC
95% to 95.9%	35% of the MRC
Less than 95%	50% of the MRC

Vendor's NLAN and SNLAN Services will have as an objective a one-way packet delivery of 99.90% or greater between Vendor's central office switch and the Customer's demarcation point. Not meeting this objective does not constitute a Service Outage. After Customer opens a trouble ticket, Vendor will mobilize to the Customer's premise and take one-way sample measurements between Vendor's central office switch and the Customer's demarcation point (or will do so remotely if possible).

Additional Information Applicable to Long Haul Intermarket Ethernet Services (ENLAN) Service Level Agreement

Failures to meet the performance objectives herein do not include outages and failures caused by the failure of elements of the IP Backbone outside of Vendor's control. Vendor's monthly network latency averages and packet delivery averages can be viewed at the following web address: <http://www.twtelecom.com/performance>

Chronic Outage

If a Service Outage occurs on a Chronic Trouble Service within thirty days following the second Service Outage, or if Customer experiences one continuous Service Outage lasting longer than seven (7) days (provided Vendor has been given adequate access to all premises necessary for repair), Customer may terminate the Affected Service without termination liability, but Customer shall be responsible for charges accrued prior to the termination date, less any applicable Service Outage credits. Customer must provide Vendor with written notice by no later than thirty days following the last qualifying Service Outage that it is terminating the Affected Service.

Methods

The resources, equipment and methodology used to measure performance with respect to the service level metrics are determined by Vendor in its discretion.

Maximum Credit

Credits issued during any calendar month will not exceed the monthly recurring charge associated with the Affected Service that experienced the Service Outage(s).

In Witness Whereof, the Parties have executed this Service Attachment, which is effective on the date the State's duly authorized representative signs it on behalf of the State, ("Effective Date").

SIGNATURE PAGE TO FOLLOW

VENDOR

**STATE OF OHIO,
DEPARTMENT OF
ADMINISTRATIVE
SERVICES**

Joan T Blount

Signature

Hugh Quill

Signature

JOAN T BLOUNT

Printed Name

Hugh Quill

Printed Name

COO

Title

Director, ODAS

Title

9-15-09

Date

9-22-09

Effective Date

Federal Tax ID

