STATE OF CALIFORNIA
STANDARD AGREEMENT AMENDMENT
STD. 213 A (Rev 6/03)

[X] CHECK HERE IF ADDITIONAL PAGES ARE ATTACHED 60 Pages

AGREEMENT NUMBER	AMENDMENT NUMBER
5-06-58-20 (DTS 06E1390)	7
REGISTRATION NUMBER	
1760050830251 9.7	

1. This Agreement is entered into between the State Agency and Contractor named below:
   STATE AGENCY'S NAME
   Department of Technology Services
   CONTRACTOR'S NAME
   SBC Global Services, Inc. dba AT&T Global Services
2. The term of this Agreement is 1/30/2007 through 1/29/2012
3. The maximum amount of this agreement after this amendment is: N/A
4. The parties mutually agree to this amendment as follows. All actions noted below are by this reference made a part of the Agreement and incorporated herein:

   a. Replace the following pages:
   i. Attachment 3 Section 6.1.3.2.5 Metropolitan Area Network (MAN) Services (1-18) with amended section (1-28).
   ii. Attachment 4 Section 6.1.3.2.5 Metropolitan Area Network (MAN) Services (1-10) with amended section (1-13).

(continued on page 2 of 2)

This Agreement is effective upon the start date, or DGS approval, whichever is later.
All other terms and conditions of the original agreement shall remain the same.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CONTRACTOR	CALIFORNIA Department of General Services Use Only
CONTRACTOR'S NAME (If other than an individual, state whether a corporation, partnership, etc.) SBC Global Services, Inc. dba AT&T Global Services	RLB 6/26/09 GENERAL SERVICES LEGAL SERVICES
BY (Authorized Signature) Alice M. Oliver-Harvey — DATE SIGNED (Do not type) 4/23/09	DEPARTMENT OF GENERAL SERVICES PROCUREMENT DIVISION
PRINTED NAME AND TITLE OF PERSON SIGNING Alice M. Oliver-Harvey Contract Manager	APPROVED
ADDRESS 2600 Camino Ramon, Room 2S400L San Ramon, CA 94583	BY [signature]
AGENCY NAME Department of Technology Services	DATE 7/6/09
BY (Authorized Signature) [signature] — DATE SIGNED (Do not type) 4/29/09	
PRINTED NAME AND TITLE OF PERSON SIGNING M. Driver, Chief, Administrative Services Branch	[ ] Exempt per:
ADDRESS P.O. Box 1810, MS 304, Rancho Cordova, CA 95741-1810	

a. Replace the following pages in the <u>Final Proposal, MSA 1, Volume 1, Section 6.1.11, Service Level Agreements (SLA's)</u>:

iii. Section 6.1.11.2.3.a, Service Availablity (M) (6-766) with (6-766 through 6-766A)
iv. Section 6.1.11.2.4, Catastrophic Outage 1 (M) (6-772) with (6-772)
v. Section 6.1.11.2.5, Catastrophic Outage 2 (M) (6-776) with (6-776)
vi. Section 6.1.11.2.6, Catastrophic Outage 3 (M) (6-779) with (6-779)
vii. Section 6.1.11.2.7, Transmission Delay (M) (6-783 through 6-784) with (6-783 through 6-784)
viii. Section 6.1.11.2.9, Excessive Outage (M) (6-791) with (6-791)
ix. Section 6.1.11.2.12, Provisioning (M) (6-799 through 6-801) with (6-799 through 6-801)
x. Section 6.1.11.2.13, Time to Repair (TTR) – Major (M) (6-803) with (6-803)
xi. Section 6.1.11.2.14, Time to Repair (TTR) – Minor (M) (6-807) with (6-807)
xii. Section 6.1.11, OPT-E-MAN (6-817 through 6-819) with (6-817 through 6-819)
xiii. Section 6.1.11, Ethernet Switched Service (ESS-MAN) **(Deleted)** (6-824) with (6-824)

b. Add the following pages to the <u>Final Proposal, MSA 1, Volume 1, Section 6.1.11, Service Level Agreements (SLA's)</u>:

i. Section 6.1.11.2.14.b, Time to Repair (TTR) – Minor (M)-GigaMAN/DecaMAN (6-810A)
ii. Section 6.1.11.2.14.c, Time to Repair (TTR) – GigaMAN/DecaMAN with Protection (6-810B)

6.1.3.2.5 Service Identifier: Metropolitan Area Network (MAN) Services

Description of Service

The following services can support the transmission of digital signals at 1 Gbps in Ethernet format:

- GigaMAN
- SONET
- Multi-Service Optical Network Ring (MON)
- Optical Ethernet Transparent LAN (OPT-E-MAN)
- Customized Switched Metro Ethernet Service (CSME)

AT&T Fibre Channel Metropolitan Area Network (FibreMAN) is capable of high-speed transmissions but uses the fibre channel protocol.

We provide details about our SONET offering in the SONET attachment.

Availability

AT&T provides a variety of high-capacity transport media within our Local Service areas in California.

Service is only available where facilities and operating conditions permit. Where facilities and/or operating conditions do not permit, special construction will apply.

GigaMAN® / DecaMAN® / FibreMAN®

GigaMAN and DecaMAN are fiber based, intra-lata, point-to-point, Ethernet services that transport data at rates of 1 Gigabit Per Second (Gbps) and 10 Gbps, respectively.
This allows customers to transport data signals between local area networks (LANs). GigaMAN transports data signals at the rate of 1 Gbps. DecaMAN transports data signals at the rate of 10 Gbps.

DecaMAN is available with two different customer interfaces:

- 10 Gigabit Ethernet (LAN-PHY) - A version of Ethernet that allows data transmission rates of 10.3125 Gbps with a LAN-PHY only interface (10GBase-LR 1310nm single mode fiber).

- 10 Gigabit Ethernet (WAN-PHY) - A version of Ethernet that allows data transmission rates of 9.953 Gbps with a WAN-PHY only interface (10GBase-LW 1310nm, single mode fiber)

GigaMAN provides the following customer interface:

- 1 Gigabit Ethernet (1000Base-SX & 1000Base-LX)

FibreMAN is an intra-lata, point-to-point service based on the same optical platform as GigaMAN and DecaMAN above, but provides a Fibre Channel interface to the customer.

FibreMAN is based on the Fibre Channel protocol, which is a unique and highly reliable interconnection protocol that supports rapid transfer of data between workstations, mainframes, servers, and data storage systems. The FibreMAN product offering is a dedicated fiber based point-to-point transport service. This service is used to connect customer provided Fibre Channel switches or routers from one customer location to another at a 1 Gbps or 2 Gbps line rate.

FibreMAN supports two optical interface versions:

- the 1000Base-SX interface—short wavelength design and
- the 1000Base-LX interface—long wavelength design.

The SX interface uses multi-mode (MM) fiber. AT&T only uses 50 micron multimode fiber for the connection between the Nortel equipment and the demarcation point. Customers can use either one of two types of multi-mode fiber between their CPE and the demarcation point:

--- 62.5 micron multimode fiber for interconnections up to 275 meters (902 feet) for unprotected services only between the CPE and demarcation point.

--- 50 micron multimode fiber for interconnections up to 550 meters (1804 feet) between the CPE and demarcation point.

As FibreMAN is provided by the same network equipment as GigaMAN/DecaMAN, the general network descriptions and diversity options described below also apply to FibreMAN. Protection Options apply only to GigaMAN and DecaMAN.

General Network Descriptions:

AT&T provisions GigaMAN/DecaMAN service on the Nortel Networks OPTera 5100/5200 platform using Wavelength Division Multiplexing (WDM) technology, a highly efficient way to keep your data moving fast. CPE can be a router with a gigabit Ethernet blade or an Ethernet switch equipped to support gigabit Ethernet. The Nortel equipment adheres to the Telcordia Network Equipment Building System (NEBS) requirements, which lay out the specifications for carrier-class equipment. The equipment is tested by a third-party laboratory to ensure that it meet such parameters as Zone 4 earthquake, relative humidity and temperature ranges, voltage range, resistance to electromagnetic interference (EMI) and appropriate levels of radio frequency interference (RFI).

GigaMAN/DecaMAN service provides an easy and straightforward migration path for upgrading backbone networks to higher performance levels without major disruptions. Because GigaMAN/DecaMAN/DecaMAN service carries your LAN traffic in its native Ethernet format, it won't affect your existing LAN management systems or support software. GigaMAN/DecaMAN service also interconnects with standard LAN devices. GigaMAN is a single-protocol Ethernet service, so it minimizes the need for additional equipment, protocol conversion, and extensive training.

GigaMAN/DecaMAN service saves on installation costs because it simply connects to your existing gigabit Ethernet LAN or Ethernet-ready switch router. And, there's no need to worry about additional network security issues, since GigaMAN/DecaMAN service securely contains your organization's data on your own private, dedicated facilities.
With GigaMAN/DecaMAN service, you can expect high-speed performance and nearly error-free transmission of those bandwidth-intensive applications at the core of your business. Users can transmit large files typical of document imaging, medical imaging, CAD/CAM systems, video conferencing, and graphics applications in real time, without compromising network performance. GigaMAN/DecaMAN service is not limited to one application—multiple applications can share the same link. Where technology and facilities permit, GigaMAN/DecaMAN service can extend across the geographic reach of most LATAs. Using optical transport and end-to-end network monitoring, GigaMAN/DecaMAN service is extremely reliable. These features enable streamlined network maintenance, faster service, and early detection of potential problems to keep your business operating smoothly.

GigaMAN/DecaMAN are "designed services". This means that equipment used will depend on the type and quantity of service ordered, existing fiber and equipment, and customer reliability requirements.

AT&T engineers will design each circuit to meet current and forecasted network needs:

- May use WDM to deliver multiple circuits over same fiber pair, conserving customer entrance facilities
- May use on-site intelligent network equipment to support edge-monitoring and to extend signal and/or provide specified interface
- May use on-site passive network equipment to support edge-monitoring
- Requirements for customer provided space, power, conduit, etc. will be provided by your AT&T representative

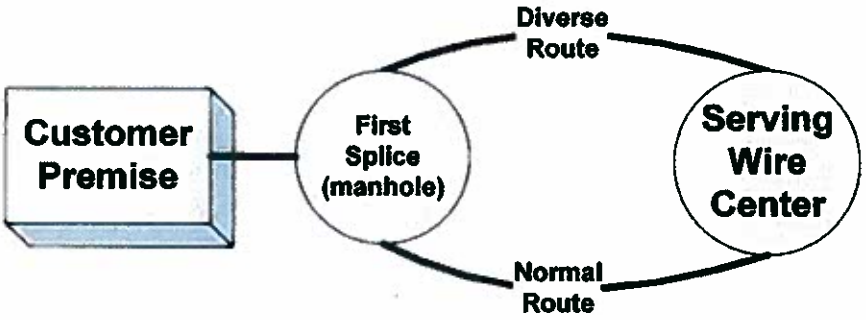
GigaMAN and DecaMAN are deployed over the same WDM infrastructure, and both offer the same optional features to meet service reliability greater than the standard point-to-point service. Upon review of specific reliability requirements, the following service options can be incorporated into the service design:

- Basic service is unprotected
- Optional design features include Diversity and Protection
- Diversity assures 2 unprotected circuits will be separated

- Protection uses 2 pairs (4 fibers) for a single circuit, to provide separate paths thru the network with automatic fail-over
- Each design option provides elements of redundancy
- Best option varies by customer need

Diversity Options:

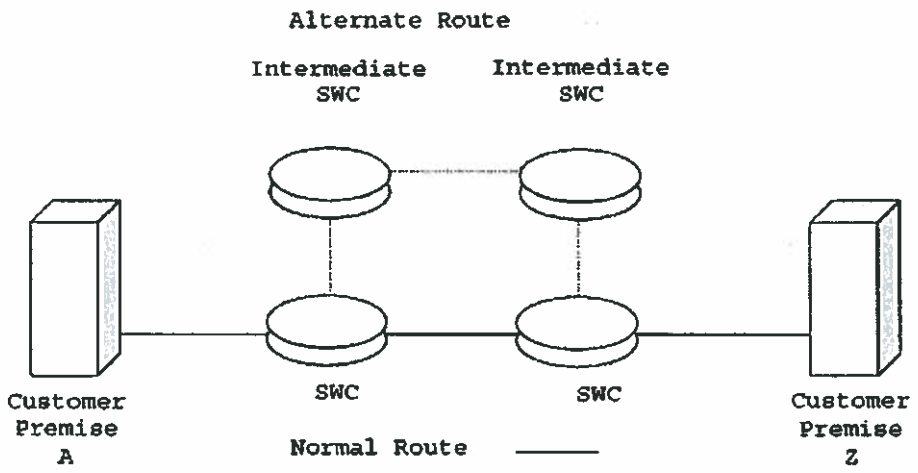
1) Local Channel Diversity provides for a transmission path between a designated customer premises and the standard service wire center (SWC) that is diverse from the normal/standard transmission path. Local Channel Diversity requires two GigaMAN/DecaMAN services purchased by the same customer of record. With this arrangement, one or more local distribution channels will be provisioned over the standard route, and one or more local distribution channels will be provisioned over the diverse route. Local Channel Diversity does not provide for all diversity, it only allows for diversity from the splice point closest to the customer's property line to the SWC. If a customer desires full diversity, arrangements must be made for constructing dual entrance facilities into the customer's premises, at the customer's expense.



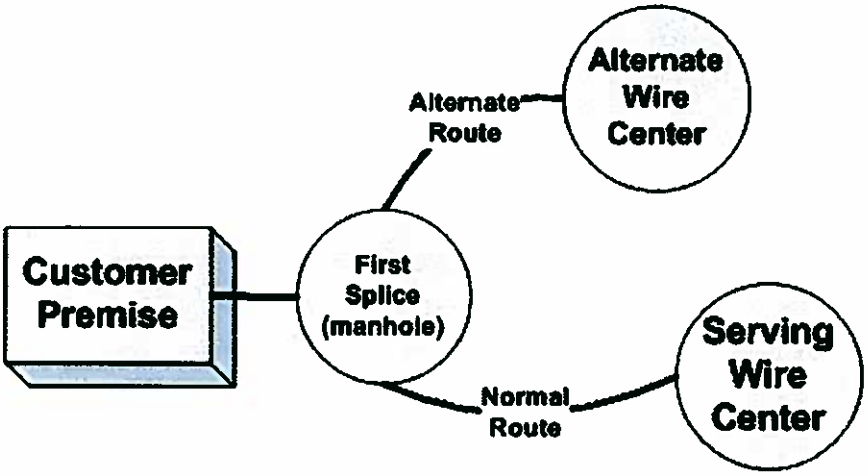
2) Inter-Wire Center (IWC) Diversity arrangements presume that each end of a GigaMAN/DecaMAN local distribution channel is serviced out of a different serving wire center (SWC). Inter-Wire Center Diversity requires two GigaMAN/DecaMAN services purchased by the same customer of record. This arrangement provides a transmission path for GigaMAN/DecaMAN local distribution channels between the customer's designated SWC and the SWC at the distant end of the circuit over a transmission path that is separate from the standard transmission path between the two wire centers. IWC diversity does not provide for full diversity. It only offers interoffice diversity. If a customer desires full diversity, Alternate Wire Center Diversity must be implemented along with IWC Diversity. Additionally, arrangements must be made for constructing dual entrance facilities at the customer's premises, at the customer's expense.

Inter-Wire Center Diversity (IWC) Mileage Measurement:
Mileage measurements for Access Services, provisioned via an Inter-Wire Center Diversity, will be based on the diverse routing; i.e. mileage measurements will be calculated between the Intermediate Serving Wire Centers along the circuit path of the diversely routed

GigaMAN/DecaMAN service.



3) Alternate Wire Center Diversity is for the local loop only. It provides a local channel transmission path for GigaMAN/DecaMAN service between the customer's designated premises and a wire center that is not the normal (or standard) service wire center. The Telephone Company will choose the alternate wire center closest to the customer's designated premises that is capable of providing GigaMAN/DecaMAN service over the alternate route. If a customer desires full diversity, arrangements must be made for constructing dual entrance facilities into the customer's premises, at the customer's expense. If the circuit routed to the alternative wire center has Interoffice Mileage, measurements will be based on the alternate routing; i.e. mileage measurements will be made to the alternate wire center rather than the serving wire center from which the customer designed premises would normally obtain dial tone.



Protection Options:

Protection options are provisioned on the customer's GigaMAN/DecaMAN service, and the customer is not required to purchase a second GigaMAN/DecaMAN circuit for protection options. Protection options are applied on a per GigaMAN/DecaMAN circuit basis only. Protection options are available where facilities and/or operating conditions permit. Where facilities and/or operating conditions do not permit, Special Construction charges may apply. Protection options provide additional levels of reliability to GigaMAN/DecaMAN service. There are multiple protection options offered. The options do not need to be the same, but both Channel Terminations of the GigaMAN/DecaMAN service must include some form of protection for the service to be considered protected.
The Telephone Company will design the protection option based upon the configuration of the customer's GigaMAN/DecaMAN service.

GigaMAN/DecaMAN Protection Options are offered as follows:

(A) Equipment Only Protection – per Termination Point
(B) Equipment Plus Fiber Path Protection
  (1) Equipment Plus Alternate Wire Center Path Protection – per Terminating Point
  (2) Equipment Plus Channel Termination Path Protection – per Terminating Point
(C) Inter Wire Center Path Protection – per Interoffice Segment
(D) Power Protection

A) Equipment Only Protection offers one GigaMAN/DecaMAN signal routed on two different fiber pairs that co-exist in the same cable and conduit structure that terminates in two distinct and separate network terminating equipment devices at the customer's premises. All protected configurations have one working and one standby path. In the event of a failure of the customer's transmission path, the GigaMAN/DecaMAN equipment will switch the customer's transmission to a dedicated standby path within 50 milliseconds of detection. In the event of a failure to both fiber transmission paths, an out of service condition will result. This form of protection can only be ordered per channel termination for each protected GigaMAN/DecaMAN service, and may also apply to the Inter-Wire center segment if the GigaMAN/DecaMAN service is served by more than one serving wire center. If a customer requests complete protection extending to the Telephone Company serving wire center from their premises location when utilizing Equipment Protection, they must request diverse entrance facilities into their premises at each end from the nearest Telephone Company splice point closest to the customer premises location. This work is subject to Special Construction charges.

B) Equipment Plus Fiber Path Protection offers varying degrees of path protection for each channel termination of the GigaMAN/DecaMAN service, plus the inter-wire segment if the service is served by more than one serving wire center, and is offered as follows:

(B.1) Equipment Plus Alternate Wire Center Path Protection offers one GigaMAN/DecaMAN signal routed over one fiber pair of the protected GigaMAN/DecaMAN service from the customer's premises to the customer's normal serving wire center, and a duplicate GigaMAN/DecaMAN signal routed over a diversely routed fiber pair to the Alternate Wire center selected by the Telephone Company. If any location between the two fiber paths is closer than ten feet, the location will be disclosed to the customer. The customer will determine whether to accept the engineered path or agree to pay Special Construction charges to provide a completely diverse route. Where facilities are not available, the customer may select Equipment Only Protection for an inter-office segment. This option can be selected for one or both channel terminations of the GigaMAN/DecaMAN service. All protected configurations have one working and one standby path. In the event of a failure of the customer's transmission path, the GigaMAN/DecaMAN service will switch to a dedicated standby path within 50 milliseconds of detection. In the event of failure to both fiber transmission paths, an out of service condition will result. This form of protection can only be ordered per channel termination for each protected GigaMAN/DecaMAN service. If a customer requests complete protection extending to the Telephone Company serving wire center from their premise location when utilizing Equipment Protection Plus Alternate Wire Center Path Protection, they must request diverse entrance facilities into their premises at each end, from the nearest Telephone Company splice point closest to the customer premise location. This work is subject to Special Construction charges.

(B.2) Equipment Plus Channel Termination Path Protection offers a duplicate GigaMAN/DecaMAN signal routed over two diversely routed fiber paths to the customer's normal serving wire center. If any location(s) between two fiber paths is closer than ten feet, the location(s) will be disclosed to the customer. The customer will determine whether to accept the engineered path or agree to pay Special Construction charges, to provide a completely diverse route. All protected configurations have one working and one standby path. In the event of a failure of the customer's transmission path, GigaMAN/DecaMAN technology will switch the customer's transmission to a dedicated standby path within 50 milliseconds of detection. In the event of failure to both fiber transmissions to a dedicated standby path and/or failure to both fiber transmission paths, an out of service condition will result. This form of protection can only be ordered per Channel Termination for each protected GigaMAN/DecaMAN service from the customer's premises location, or from the manhole/splice point nearest the customer premises to the Telephone Company serving wire center. If a customer requests complete protection extending to the Telephone Company serving wire center from their premises location when utilizing Equipment Protection Plus Channel Termination Path Protection, they must request diverse entrance facilities into their premises at each end from the nearest Telephone Company splice point closest to the customer premises location. This work is subject to Special Construction charges.

(C) Inter-Wire Center Path Protection offers a duplicate GigaMAN/DecaMAN signal routed over two diversely routed fiber paths between the two serving wire centers or alternate wire centers. Path protection starts at the nearest manhole outside the Telephone Company serving wire center. Inter Wire Center Path Protection must be ordered with either Equipment Only, Channel Termination Path Protection or Alternate Wire Center Path Protection. If any location(s) between the two fiber paths is closer than ten feet, the location(s) will be disclosed to the customer. The customer will determine whether to accept the engineered path or agree to pay Special Construction charges, to provide a completely diverse route. All protected configurations have one working and one standby path. In the event of a failure of the customer's transmission path, GigaMAN/DecaMAN technology will switch the customer's transmission to a dedicated standby path within 50 milliseconds of detection. In the event of failure to both fiber transmission paths, an out of service condition will result.

(D) Power Protection provides GigaMAN/DecaMAN customers with battery backup for up to eight (8) hours to maintain GigaMAN/DecaMAN equipment in the event of a commercial AC power failure. Power Protection is offered on a per equipment bay capacity basis, per customer premises, and is dependent upon the number of GigaMAN/DecaMAN services for the GigaMAN/DecaMAN customer of record. The Telephone Company will apply the power protection rate elements based upon the circuit capacity. More than one rate element may be applicable. The Telephone Company will determine the design and engineering requirements for Power Protection for GigaMAN/DecaMAN customers. Customers in multi-tenant buildings will require separate equipment and bays dedicated to each customer. The addition of Power Protection to existing GigaMAN/DecaMAN service may result in temporary service interruption. Power Protection is not available for installations using a wall mounted cabinet. Customers are responsible for providing floor space for power equipment.

SLA Enhancement:

GigaMAN/DecaMAN with protection:

A service interruption will result in a credit equal to 100% of the monthly recurring charge for the entire circuit. Only one such credit in a billing period will apply.

This outage must be reported by the customer and the circuit made available to AT&T for testing. The outage must be determined by AT&T to be in its network and the failure occurred in the part of the service with path protection.

GigaMAN® Service and Features

Feature Name	Identifier	Feature Description
GigaMAN Local Distribution Channel	LNVX5	Local Distribution Channel (Same as Channel Termination) is the termination of GigaMAN at a customer designated premise (node), consisting of the following two elements:

Feature Name	Identifier	Feature Description
		(a) the termination for the fiber optic facilities at each node and its serving wire center. (b) the fiber optic facility between each node and its serving wire center.
GigaMAN Repeater	VU4X5	Repeaters (Circuit Regenerators) provide essential detection and retransmission of GigaMAN® signals. Repeaters are provided as required by the Telephone Company when actual fiber facility loss between customer designated premises and/or central office locations exceed design limits. Repeaters will be located exclusively in Telephone Company central offices and are required for each successive transport segment of approximately 21.4 db.
GigaMAN Interoffice Mileage	1L5X3	Interoffice Transport facilities, which provide the transmission path between Serving Wire Centers associated with two customer designated premises, are comprised of Fixed and Per Mile rate elements.
GigaMAN Channel Termination Diversity (Local Channel Diversity)	CPAL5	Channel termination diversity (i.e., local channel diversity) provides for a transmission path between a designated customer premises and the standard serving wire center that is diverse from the standard transmission path of the GigaMAN service.
GigaMAN Alternate Wire Center Diversity	CPAA5	Alternate Wire Center Diversity provides for a Local Distribution Channel from the customer premises to a serving wire center that is not the customer's standard serving wire center.
GigaMAN Inter-Wire Center Diversity	CPAT5	Inter-Wire Center Diversity provides for a transmission path that is not the standard transmission path between the serving wire centers of a GigaMAN service.
GigaMAN Equipment Only Protection	CPAE3	Equipment Only Protection offers one GigaMAN signal routed on two different fiber pairs that co-exist in the same cable and conduit structure that terminates in two distinct and separate network terminating equipment devices at the customer's premises.
GigaMAN Equipment	CPAF3	Equipment Plus Alternate Wire Center Path

Feature Name	Identifier	Feature Description
plus Alternate Wire Center Path Protection		Protection offers one GigaMAN signal routed over one fiber pair of the protected GigaMAN service from the customer's premises to the customer's normal serving wire center, and a duplicate GigaMAN signal routed over a diversely routed fiber pair to the Alternate Wire center.
GigaMAN Equipment plus Channel Termination Path Protection	CPAG3	Equipment Plus Channel Termination Path Protection offers a duplicate GigaMAN® signal routed over two diversely routed fiber paths to the customer's normal serving wire center.
GigaMAN Inter-Wire Center Path Protection	CPAH3	Inter-Wire Center Path Protection offers a duplicate GigaMAN® signal routed over two diversely routed fiber paths between the two serving wire centers or alternate wire centers.
GigaMAN Power Protection	VBBG3	Provides up to 8 hours of battery back-up power protection for equipment. Per end, as required.
GigaMAN Administration Charge	NRBAO	Administration charge, one per order.

DecaMAN® Service and Features

Feature Name	Identifier	Feature Description
DecaMAN Local Distribution Channel WAN-PHY	1RSTX	Local Distribution Channel (Same as Channel Termination) is the termination of DecaMAN at a customer designated premise (node), consisting of the following two elements: (a) the termination for the fiber optic facilities at each node and its serving wire center. (b) the fiber optic facility between each node and its serving wire center.
DecaMAN Local Distribution Channel LAN-PHY	1RSTX	Local Distribution Channel (Same as Channel Termination) is the termination of DecaMAN at a customer designated premise (node), consisting of the following two elements: (a) the termination for the fiber optic facilities at each node and its serving wire center.

Feature Name	Identifier	Feature Description
		(b) the fiber optic facility between each node and its serving wire center.
DecaMAN Interoffice Mileage	JZ68S	Interoffice Transport facilities, which provide the transmission path between Serving Wire Centers associated with two customer designated premises, are comprised of Fixed and Per Mile rate elements.
DecaMAN Repeater	VU4	Repeaters (Circuit Regenerators) provide essential detection and retransmission of DecaMAN signals. Repeaters are provided as required by the Telephone Company when actual fiber facility loss between customer designated premises and/or central office locations exceed design limits. Repeaters will be located exclusively in Telephone Company central offices and are required for each successive transport segment of approximately 21.4 db.
DecaMAN Channel Termination Diversity (Local Channel Diversity)	CPALX	Channel termination diversity (i.e., local channel diversity) provides for a transmission path between a designated customer premises and the standard serving wire center that is diverse from the standard transmission path of the DecaMAN service.
DecaMAN Alternate Wire Center Diversity	CPAAX	Alternate Wire Center Diversity provides for a Local Distribution Channel from the customer premises to a serving wire center that is not the customer's standard serving wire center.
DecaMAN Inter-Wire Center Diversity	CPATX	Inter-Wire Center Diversity provides for a transmission path that is not the standard transmission path between the serving wire centers of a DecaMAN service.
DecaMAN Equipment Only Protection	CPAEX	Equipment Only Protection offers one DecaMAN signal routed on two different fiber pairs that co-exist in the same cable and conduit structure that terminates in two distinct and separate network terminating equipment devices at the customer's premises
DecaMAN Equipment plus Alternate Wire Center Path Protection	CPAFX	Equipment Plus Alternate Wire Center Path Protection offers one DecaMAN signal routed over one fiber pair of the protected DecaMAN service from the customer's premises to the customer's normal serving wire center, and a duplicate DecaMAN signal routed over a diversely routed fiber pair to the Alternate Wire center.
DecaMAN Equipment plus Channel Termination Path Protection	CPAGX	Equipment Plus Channel Termination Path Protection offers a duplicate DecaMAN signal routed over two diversely routed fiber paths to the customer's normal serving wire center.

Feature Name	Identifier	Feature Description
DecaMAN Inter-Wire Center Path Protection	CPAHX	Inter-Wire Center Path Protection offers a duplicate DecaMAN signal routed over two diversely routed fiber paths between the two serving wire centers or alternate wire centers.
DecaMAN Power Protection	VBBGX	Provides up to 8 hours of battery back-up power protection for equipment. Per end, as required.
DecaMAN Administration Charge	NRBAO	Administration charge, one per order.

FibreMAN® Service and Features

Feature Name	Identifier	Feature Description
FibreMAN Local Distribution Channel 1 Gbps	25P8X	Local Distribution Channel (Same as Channel Termination) is the termination of FibreMAN at a customer designated premise (node), consisting of the following two elements: (a) the termination for the fiber optic facilities at each node and its serving wire center. (b) the fiber optic facility between each node and its serving wire center.
FibreMAN Local Distribution Channel 2 Gbps	25P9X	Local Distribution Channel (Same as Channel Termination) is the termination of DecaMAN at a customer designated premise (node), consisting of the following two elements: (a) the termination for the fiber optic facilities at each node and its serving wire center. (b) the fiber optic facility between each node and its serving wire center.
FibreMAN Repeater	VU4	Repeaters (Circuit Regenerators) provide essential detection and retransmission of FibreMAN signals. Repeaters are provided as required by the Telephone Company when actual fiber facility loss between customer designated premises and/or central office locations exceed design limits. Repeaters will be located exclusively in Telephone Company central offices and are required for each successive transport segment of approximately 21.4 db.

Feature Name	Identifier	Feature Description
FibreMAN Alternate Wire Center Diversity	AVOYX	Alternate Wire Center Diversity provides for a Local Distribution Channel from the customer premises to a serving wire center that is not the customer's standard serving wire center.
FibreMAN Channel Termination Diversity(Local Channel Diversity)	DJVYX	Channel termination diversity (i.e., local channel diversity) provides for a transmission path between a designated customer premises and the standard serving wire center that is diverse from the standard transmission path of the FibreMAN service.
FibreMAN Inter-Wire Center Diversity	DEQYX	Inter-Wire Center Diversity provides for a transmission path that is not the standard transmission path between the serving wire centers of a FibreMAN service.
FibreMAN Interoffice Mileage	JZ4XS	Interoffice Transport facilities, which provide the transmission path between Serving Wire Centers associated with two customer designated premises, are comprised of Fixed and Per Mile rate elements.

Multi-Service Optical Network Ring (MON Ring)

AT&T Multi-Service Optical Network Ring (MON Ring) Service provides high-volume optical transport using DWDM technology in a dedicated-ring configuration. Multiple data signals transmit over fiber-optic cable using different wavelengths of light. Each of these wavelengths represents a transmission channel in the MON Ring system and is protocol-independent of every other channel in the system.

AT&T Multi-Service Optical Network (MON) Service can extend customer networks to off-site locations. These include, but are not limited to, disaster recovery, storage area networking (SAN) connections, data center mirroring, and mainframe-to-mainframe communications. AT&T MON Ring Service allows customers to combine their multiple data signals so that they can be amplified and transported over one network. MON Ring Service provides dedicated capacity over a single pair of fiber in two directions, increasing capacity without limiting customer-required data interfaces.

MON Ring Service is available in either a 16-wavelength or a 32-wavelength configuration. A 16-wavelength MON Ring Service can handle a maximum of 16 wavelengths or 80 Gbps of protected channels or 160 Gbps of unprotected channels. Our 32-wavelength MON Ring Service can handle a maximum of 32 wavelengths or 160 Gbps of protected channels or 320 Gbps of unprotected channels.

You can combine protected and unprotected circuits on a single MON. The increase in "unprotected"capacity is simply because the extra channels go unused for protection and can be used for data. This effectively doubles the capacity available for each circuit left unprotected. This assumes that the customer has either opted not to require protection on a channel because of the nature of the traffic, or that the customer performs the protection themselves using CPE. Each channel can handle 2.5 Gbps of traffic.

MON Ring Service and Features

Feature Name	Identifier	Feature Description
MON Ring Customer Prem Node	F2ND1	Includes 1st shelf; Provides termination of the service on a per-shelf basis, and presents the various selected ports to the customer's equipment. Minimum two nodes required
MON Ring Customer Prem Node	F2NDS	Per Subsequent shelf; Provides termination of the service on a per-shelf basis, and presents the various selected ports to the customer's equipment. Minimum two nodes required
MON Ring Central Office Node	F2NC1	Includes 1st shelf; Provides for the termination of service in an AT&T serving wire center for various port bandwidth to the customer's ring.
MON Ring Central Office Node	F2NCS	Per subsequent shelf; Provides for the termination of service in an AT&T serving wire center for various port bandwidth to the customer's ring.
MON Ring Interoffice Mileage	1L5X5	Per Mile; Interoffice mileage is calculated using the V&H coordinate method. There is always a two-mile minimum (one mile in each direction—node-to-node connection).
MON Bulk Power - Shelves 1-4	CBVDX	Provides power for customer premises node which may be required, at the request of the customer, when nodes are added to or dropped from a ring.
MON Bulk Power - Subsequent shelves 5-8	CVBDS	Provides power for customer premises node which may be required, at the request of the customer, when nodes are added to or dropped from a ring.
MON Ring Central Office Optical Amplifier - Per location	67QXX	Provides for an optical signal boost if the distance between nodes exceeds the transmission loss parameters (link loss specific).

Feature Name	Identifier	Feature Description
C-Band		
MON Ring Central Office Optical Amplifier - Per location L-Band	67QSX	Provides for an optical signal boost if the distance between nodes exceeds the transmission loss parameters (link loss specific).
MON Ring Central Office Regenerator - Up to 2.5 Gbps, Per shelf	V8RXX	Provides for re-timing, re-shaping, and regeneration of the signal if degradation exceeds the dispersion limits.
MON Ring Central Office Regenerator - Up to 10 Gbps, per Circuit	V8R2C	Provides for re-timing, re-shaping, and regeneration of the signal if degradation exceeds the dispersion limits.
MON Ring Port ETR - 8 Mbps ETR unprotected	POYKW	8 Mbps—Manchester Encoded—External Timing References. This protocol is used for IBM GEOPLEX architecture for multiple-location host processors. ETR limited to a maximum distance of 40 km.
MON Ring Port Fibre Channel - 1.0625 Gbps Unprotected	POYNW	1.0625 Gbps—an industry-standard protocol used to interconnect storage area networks (SANs).
MON Ring Port Fibre Channel Protected - 1.0625 Gbps Protected	POYNP	1.0625 Gbps—an industry-standard protocol used to interconnect storage area networks (SANs).
MON Ring Port Fibre Channel 2G - 2.125 Gbps Unprotected	POYYW	2.125 Gbps—an industry-standard protocol used to interconnect storage area networks (SANs).
MON Ring Port Fibre Channel 2G Protected - 2.125 Gbps Protected	POYYP	2.125 Gbps—an industry-standard protocol used to interconnect storage area networks (SANs).
MON Ring Port FICON - 1.0625 Gbps Unprotected	POYMW	1.0625 Gbps—a higher-speed evolution of ETRTM, enabling 1 Gbps connectivity among mainframes, storage devices, and peripherals.
MON Ring Port FICON Protected - 1.0625 Gbps Protected	POYMP	1.0625 Gbps—a higher-speed evolution of ETRTM, enabling 1 Gbps connectivity among mainframes, storage devices, and peripherals. Protected.
MON Ring Port FICON 2G - 2.125 Gbps Unprotected	POYWW	2.125 Gbps—a higher-speed evolution of ETRTM, enabling 1 Gbps connectivity among mainframes, storage devices, and peripherals.
MON Ring Channel Port FICON 2G - 2.125	POYWP	2.125 Gbps—a higher-speed evolution of ETRTM, enabling 1 Gbps connectivity among mainframes, storage devices, and peripherals.

Feature Name	Identifier	Feature Description
Gbps Protected		Protected.
MON Ring Port Gigabit Ethernet - 1 Gbps Ethernet Unprotected	POYLW	A version of Ethernet that allows data transmission rates of 1 Gbps.
MON Ring Port Gigabit Ethernet Protected - 1 Gbps Ethernet Protected	POYLP	A version of Ethernet that allows data transmission rates of 1 Gbps. Protected.
MON Ring Port 10W Gigabit Ethernet - 10 Gbps Ethernet Unprotected (WAN PHY)	POYTW	A version of Ethernet that allows data transmission rates of 10 Gbps, compatible with OC-192 transport (WAN PHY).
MON Ring Port 10W Gigabit Ethernet Protected - 10 Gbps Ethernet Protected (WAN PHY)	POYTP	A version of Ethernet that allows data transmission rates of 10 Gbps, compatible with OC-192 transport (WAN PHY). Protected.
MON Ring Port 10L Gigabit Ethernet - 10 Gbps Ethernet Unprotected (LAN PHY)	POYUW	A version of Ethernet that allows data transmission rates of 10 Gbps (LAN PHY).
MON Ring Port 10L Gigabit Ethernet Protected - 10 Gbps Ethernet Protected (WAN PHY)	POYUP	A version of Ethernet that allows data transmission rates of 10 Gbps (LAN PHY). Protected.
MON Ring Port SONET OC-12/OC-12c Unprotected	POYFW	OC-12/OC-12c Port Unprotected
MON Ring Port SONET OC-12/OC-12c Protected	POYFP	OC-12/OC-12c Port Protected
MON Ring Port SONET OC-48/OC-48c	POYGW	SONET OC-48/OC-48c Port
MON Ring Port SONET OC-48/OC-48c Protected	POYGP	SONET OC-48/OC-48c Port. Protected

Feature Name	Identifier	Feature Description
MON Ring Port SONET OC-192/OC-192c	POYOW	SONET OC-192/OC-192c Port
MON Ring Port SONET OC-192/OC-192c Protected	POYOP	SONET OC-192/OC-192c Port. Protected.
MON Ring Fibre Channel SRM Port	POY6W	Fibre Channel riding sub-rate multiplexer (SRM). Unprotected.
MON Ring FibreChannel SRM Port Protected	POY6P	Fibre Channel riding sub-rate multiplexer (SRM). Protected.
MON Ring SRM Port	POY7W	FICON riding sub-rate multiplexer (SRM). Unprotected.
MON Ring FICON SRM Port Protected	POY7P	FICON riding sub-rate multiplexer (SRM). Protected.
MON Gigabit Ethernet SRM Port	POY4W	Gigabit Ethernet riding sub-rate multiplexer (SRM). Unprotected.
MON Gigabit Ethernet SRM Port Protected	POY4P	Gigabit Ethernet riding sub-rate multiplexer (SRM). Protected.
MON SONET OC-12/OC-12c SRM Port	POY5W	SONET OC-12/OC-12c riding sub-rate multiplexer (SRM). Unprotected.
MON SONET OC-12/OC-12c SRM Port Protected	POY5P	SONET OC-12/OC-12c riding sub-rate multiplexer (SRM). Protected.
MON SONET OC-3/OC-3c SRM Port	POYEW	SONET OC-12/OC-12c riding sub-rate multiplexer (SRM). Unprotected.
MON SONET OC-3/OC-3c SRM Port Protected.	POYEP	SONET OC-12/OC-12c riding sub-rate multiplexer (SRM).
MON ESCON SRM Port	POYHW	ESCON riding sub-rate multiplexer (SRM). Unprotected.
MON ESCON SRM Port Protected	POYHP	ESCON riding sub-rate multiplexer (SRM). Protected.

Optical Ethernet Transparent LAN (OPT-E-MAN®)

Service Note:

OPT-E-MAN® is a shared, switched Ethernet service and not the appropriate solution for customers who require high bandwidth, two node, point to point Ethernet connectivity. GigaMAN® is a private line (dedicated) Ethernet service, and it is better suited for point to point, high bandwidth applications. For this reason the following restrictions apply:

- Customers may connect any two or more locations together when utilizing a point-to-point or point-to-multipoint configuration, and a minimum of three or more locations when utilizing a multipoint-to-multipoint configuration as long as they are in the same MAN and the service is available.

- The aggregate assigned Committed Information Rate (CIR) across all Ethernet Virtual Connections (EVCs) between any two customer connections cannot exceed 600Mbps per Basic or Basic Plus connection.

AT&T Optical Ethernet Transparent LAN Service (OPT-E-MAN) is an advanced switched Ethernet product that provides point-to-point and point-to-multipoint transparent LAN service (TLS) for a metro area. Fiber facilities are required, as is AT&T-owned network terminating equipment (NTE) located at the customer premises. The current OPT-E-MAN product supports both 10/100 Mbps and 1 Gbps customer handoffs with bandwidth CIR options ranging from 10 Mbps to 1 Gbps. OPT-E-MAN can be used for interconnecting multiple customer LANs within the same LATA (i.e., IntraLATA) appearing as segments on the same LAN. OPT-E-MAN is also available as a high-speed connection to AT&T Ethernet Dedicated Internet Access (EDIA) service.

The AT&T local phone company uses Cisco 7609 switches to form the core Ethernet over MPLS (EoMPLS) network. We use Cisco 3550 switches, placed at your premises, as Layer 2 switch devices to provide both routing and switching. The Cisco 3550 also serves as NTE. The Cisco 3550 allows AT&T to extend the EoMPLS network to the customer premises. A Cisco 3550 repeater may be placed in the network between the Cisco 7609-equipped wire center to the customer premises on distance and condition of fiber.

ELinks are built using Ethernet virtual connections (EVCs). EVCs are logical connections between two or more customer locations across the OPT-E-MAN network. We can provide an Ethernet virtual private LAN (EVPL) service using EVCs. From the Cisco 3550 perspective, the EVCs are constructed using either Ethernet Wire Service (EWS) or Ethernet Relay Service (ERS). We can configure these port-based services as single or multiple EVCs.

OPT-E-MAN service includes the transport from the customer premises to the Ethernet network, a port on the Ethernet network, and an assigned bandwidth usage, which includes the

CIR and one EVC. We include the 1 Gbps connection and 1 Gbps usage in the network overhead.

You must order OPT-E-MAN via an OPT-E-MAN standard interface, described as follows (and in the figure below):

- 100BASE-T bandwidth limitation of 100 Mbps
- 1 Gbps Ethernet (1000BASE-SX, 1000BASE-LX/LH or 1000BASE-ZX) is a fiber handoff with a bandwidth limitation of 1 Gbps

Provisioning of this service is subject to the availability and operational limitations of AT&T equipment and associated facilities.

Grades of service, which are similar to quality of service, will be available with the OPT-E-MAN product. Three grades of service are available—Best Effort, Bronze and Silver. The grades of service are associated with the bandwidth usage rate (committed information rate [CIR]) ordered by the customer for each connection at the customer locations. If the customer requests multiple EVCs per location, then a grade of service will be associated with each EVC. Service levels are available as listed below.

Best Effort: This Grade of Service supports non-critical data applications with more tolerance for delay and/or those that are lower in priority (i.e. LAN traffic). There are no service performance parameters associated with this Grade of Service.

Bronze: The applications best suited for this grade of service are data applications with more tolerance for delay and/or those that are lower in priority. This grade of service is the appropriate selection for LAN traffic since it tolerates bursty and time-varying traffic. The service parameters associated with this grade of service are packet delivery rate (PDR) and latency.

- PDR guarantee for Bronze grade of service is 99.5% of total traffic
- Latency guarantee for Bronze grade of service is less than 27 ms one way, end-to-end (54 ms roundtrip)

Silver: Supports applications that require minimal loss and low latency variation (i.e., jitter). The network will provision data in this grade of service in a priority queue indicating that it is delay sensitive. The service parameters associated with this grade of service are PDR, latency and jitter.

- PDR guarantee for Silver grade of service is 99.9% of total traffic
- Latency guarantee for Silver grade of service is less than 18 ms one way, end-to-end (36 ms roundtrip)
- Jitter guarantee for Silver grade of service is 12 ms one way, end-to-end

OPT-E-MAN Service and Features

Feature Name	Identifier	Feature Description
OPT-E-MAN Basic Connection 10/100 Mbps	P9FEX	10/100 Mbps Ethernet port per location; Assessed per interface at bandwidths of 10/100 Mbps (10/100BASE-T). The OPT-E-MAN connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
OPT-E-MAN Basic Connection Gigabit Ethernet	P9FGX	1000 Mbps Ethernet port per location; Assessed per interface at bandwidths of 1Gbps Ethernet. The OPT-E-MAN connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
OPT-E-MAN Basic Plus Connection 10/100 Mbps	P9FFX	Assessed per interface at bandwidths of 10/100 Mbps (10/100BASE-T). The OPT-E-MAN connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
OPT-E-MAN Basic Connection Gigabit Ethernet	P9FHX	Assessed per interface at bandwidths of 1Gbps Ethernet. The OPT-E-MAN connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
OPT-E-MAN Additional MAC Addresses (51-100)	M2CAX	MAC Address rate element is a data link layer protocol used for Layer 2 connectivity and is assessed per MAC address group 51-100. A limit of 100 MAC addresses total per Basic Connection. A technical review via will be necessary to determine if service can be provided.
OPT-E-MAN Repeater Service	VU4	Repeater technology may be used for customers: requesting OPT-E-MANSM service from a service wire center not equipped to provide OPT-E-MANSM service; or customers outside the technical limits of an Ethernet equipped Central Office.
OPT-E-MAN Service Order Change Charge	NHCEO	Service order change charge for pending service orders and is assessed per location:
OPT-E-MAN Miscellaneous Change	NHCEN	Assessed per location when customer requests changes to existing OPT-E-MAN Service

Feature Name	Identifier	Feature Description
Charge		
OPT-E-MAN Service Order Cancellation Charge	OGCEO	If the customer cancels service prior to installation being completed, a Cancellation charge (per port, per location) will apply.
OPT-E-MAN Expedite Charge	EODEO	Expedite change is assessed per location when customer requests service to be installed sooner than AT&T agreed upon due date.
OPT-E-MAN Ethernet Virtual Connection (EVC)	OMEVC	EVC rate element assessed in ranges of 5-1000 Mbps and provided at no charge. EVCs can be assigned in 1 Mbps increments within each range. Customer may order additional EVCs to establish additional virtual connections over the same physical connections. When additional EVCs are ordered, the customer must designate the portion of the CIR bandwidth assigned to each EVC.
Best Effort Grade of Service		
OPT-E-MAN Committed Information Rate – 2 Mbps Best Effort	R6E2E	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Best Effort grade of service (GoS).
OPT-E-MAN Committed Information Rate – 4 Mbps Best Effort	R6E4E	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Best Effort grade of service (GoS).
OPT-E-MAN Committed Information Rate – 8 Mbps Best Effort	R6E8E	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Best Effort grade of service (GoS).
Bronze Grade of Service		
OPT-E-MAN Committed Information Rate – 2 Mbps Bronze	R6E2B	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 4 Mbps Bronze	R6E4B	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).

Feature Name	Identifier	Feature Description
OPT-E-MAN Committed Information Rate – 5 Mbps Bronze	R6EAB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 8 Mbps Bronze	R6E8B	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 10 Mbps Bronze	R6EBB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 20 Mbps Bronze	R6EDB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 50 Mbps Bronze	R6EHB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 100 Mbps Bronze	R6ELB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 150 Mbps Bronze	R6ENB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 250 Mbps Bronze	R6EQB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 500 Mbps Bronze	R6ETB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of

Feature Name	Identifier	Feature Description
		service (GoS).
OPT-E-MAN Committed Information Rate – 600 Mbps Bronze	R6EUB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
OPT-E-MAN Committed Information Rate – 1000 Mbps Bronze	R6EZB	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR. Bronze grade of service (GoS).
Silver Grade of Service		
OPT-E-MAN Committed Information Rate – 2 Mbps Silver	R6E2C	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 4 Mbps Silver	R6E4C	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 5 Mbps Silver	R6EAC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 8 Mbps Silver	R6E8C	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 10 Mbps Silver	R6EBC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 20 Mbps Silver	R6EDC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN	R6EHC	A statistically guaranteed level of transmission or

Feature Name	Identifier	Feature Description
Committed Information Rate – 50 Mbps Silver		guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 100 Mbps Silver	R6ELC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 150 Mbps Silver	R6ENC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 250 Mbps Silver	R6EQC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 500 Mbps Silver	R6ETC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 600 Mbps Silver	R6EUC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).
OPT-E-MAN Committed Information Rate – 1000 Mbps Silver	R6EZC	A statistically guaranteed level of transmission or guaranteed bandwidth that the network will provide to the EVC. The sum total of the EVCs should not exceed the CIR Silver grade of service (GoS).

Customized Switched Metro Ethernet (CSME)

Customized Switched Metro Ethernet Service (CSME) is a sub-set of the OPT-E-MAN service offerings (available in most locations where OPT-E-MAN is not available). CSME is a switched Ethernet service that connects your LANs within the same metropolitan area to create a metropolitan area network (MAN). CSME service is available in a wide range of metropolitan areas and provides scalable optical service at speeds of 10 Mbps, 100 Mbps, or 1 Gbps. Unlike OPT-E-MAN, CSME does not have MPLS in the core network.

CSME is a fiber-based, Layer 2 switched Ethernet service that provides a VPN that connects to multiple metropolitan area locations over a public network. The network will act as an Ethernet bridge to the connected LANs enabling any-to-any connectivity.

CSME supports many transport data configurations (point-to-point, point-to-multipoint, multipoint-to-multipoint with the network acting as a broadcast domain). You can assign VLANs to segregate your traffic as necessary. CSME uses physical and virtual connections to satisfy your specific business requirements.

CSME connects into the Ethernet cloud and establishes logical EVCs traversing the network to connect your locations transparently. It uses fiber optics and Ethernet to provide you with a VPN. You connect to the network using a router, bridge, or switch. You can connect to locations within a MAN as if they were segments on the same LAN. CSME features include:

- Customer Handoff—10/100BASE-T, 1000BASE-SX, 1000BASE-LX/LH, 1000BASE-ZX (RJ-45 patch panel for the 10/100 Mbps connection or fiber patch panel for 1 Gbps Ethernet connection)
- Network components include a Layer 2/Layer 3 switch in the Core (Cisco 7609) and the Cisco Catalyst 3550s as the Network Terminating Equipment
- Full-duplex operation (communications are bi-directional)

To establish the service, AT&T will place a Cisco 7609 in the central office core network and a Cisco 3550 at the customer premises. The Cisco 3550 is AT&T network terminating equipment, and it will enable AT&T to push a portion of the core functionality to the network edge for better service management. Customers will connect to our network using a router, bridge, or switch, and fiber transport AT&T provides to the customer premises.

CSME Service and Features

Feature Name	Identifier	Feature Description
CSME Basic Connection 10 Mbps	P9FYX	10 Base T Ethernet Port, First Per Location; Assessed per interface at bandwidths of 10 Mbps Base T. The CSME connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
CSME Basic Connection - subsequent 10 Mbps	P9FZX	10 Base T Ethernet Port, Subsequent Per Location; Assessed per interface at bandwidths of 10 Mbps Base T. The CSME connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
CSME Basic Connection 100 Mbps	P9FKX	100 Base T Ethernet Port, First Per Location; Assessed per interface at bandwidths of 100 Mbps Base T. The CSME connection rate

Feature Name	Identifier	Feature Description
		element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
CSME Basic Connection Subsequent 100 Mbps	P9FPX	10 Base T Ethernet Port, Subsequent Per Location; Assessed per interface at bandwidths of 100 Mbps Base T. The CSME connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
CSME Basic Connection 1 Gigabit	P9FLX	Gigabit Ethernet Port Per Location; Assessed per interface at bandwidths of 1 Gbps. The CSME connection rate element includes the physical connection between the customer's demarcation and the core Ethernet network, and a port on the NTE.
CSME Ethernet Virtual Connection (EVC)	EVNDE	Virtual Connection between CSME ports - Per connection; A total of eight Ethernet Virtual Connections (EVCs) may be configured per 100 Base T port should the customer wish to segregate traffic. A total of 64 EVCs may be configured per 1 Gbps port. Should the customer request more than 64 EVCs on 1 Gbps port, a technical review will need to be conducted to determine whether the network will support more than 64 EVCs.
CSME Media Access Control (MAC) Addresses	M2CAX	Additional (51-200); MAC addresses rate element is a data link layer protocol used for Layer 2 connectivity and is assessed per MAC address—up to 150 addresses per port at no additional charge. Should the customer require additional MAC addresses over the first 150, customers will be assessed an additional charge per block of 150-200 addresses with a limit of 200 MAC addresses per port.
CSME Repeater	VU4	A repeater may be required when a customer requests CSME service from a serving wire center not equipped to provide CSME service. If the technical review indicates that the service can be provided using a repeater from the customer's connection to the Ethernet network, a repeater charge will be applied.
CSME Service Order Change Charge	NHCEO	Service order change charge for pending service orders and is assessed per location.

Feature Name	Identifier	Feature Description
CSME Miscellaneous Change Charge	NHCEN	Assessed per location when customer requests changes to existing CSME Service
CSME Service Order Cancellation Charge	OGCEO	If the customer cancels service prior to installation being completed, a Cancellation charge (per port, per location) will apply.
CSME Service Expedite Charge	EODEO	Expedite change is assessed per location when customer requests service to be installed sooner than AT&T agreed upon due date.

AT&T Ethernet Private Line Service (EPLS-WAN)

AT&T Private Line Service Ethernet Interoffice Channel (IOC) will provide inter-city, full-duplex, point-to-point transport of Ethernet packets over the AT&T Corp. long-haul transport infrastructure. We deploy the Ethernet IOC service using the multi-service platform (MSP), which will perform encapsulation of the customer's native Ethernet traffic into SONET frames for transport across the AT&T long-haul network. The Ethernet packet traffic is mapped to a SONET frame as payload and transported as an STS-N (N = 1, 3c, 12c) circuit across the AT&T long-haul network; provision of SONET-layer protection is on the high-speed facilities over which the Ethernet IOC circuit is routed. 50 Mbps, 150 Mbps, 600 Mbps, and 1000 Mbps Ethernet IOC circuits are mapped to STS-1, STS-3c, STS-12c, and STS-24c signals, respectively. EPLS-WAN includes local access from the customer premises to AT&T POP, generally using the OPT-E-MAN service described above.

EPLS-WAN Service and Features

Feature Name	Identifier	Feature Description
EPLS-WAN 50 Mbps	WAN50ae	Gigabit Ethernet port with point-point InterLATA Ethernet connections between equipped AT&T POPs at total throughput of 50 Mbps. Includes local access.
EPLS-WAN 150 Mbps	WAN15a-e	Gigabit Ethernet port with point-point InterLATA Ethernet connections between equipped AT&T POPs at total throughput of 150 Mbps. Includes local access.
EPLS-WAN 600 Mbps	WAN60a-e	Gigabit Ethernet port with point-point InterLATA Ethernet connections between equipped AT&T POPs at total throughput of 600 Mbps. Includes local access.
EPLS-WAN 1000Mbps	WAN1Ga-e	Gigabit Ethernet port with point-point InterLATA Ethernet connections between equipped AT&T POPs at total throughput of 1000 Mbps. Includes local access.

Customer Premises Equipment (CPE) and Services

AT&T offers a variety of CPE and pre-implementation, implementation and post-implementation services for CPE in support of all WAN access services.

See Required CPE and Other Equipment for descriptions of additional equipment and services offered.

6.1.3.2.5 Service Identifier: Metropolitan Area Network (MAN) Services

Pricing is for standard components only, additional buildout shall be considered on an ICB basis.

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
GigaMAN®					
GigaMAN Local Distribution Channel	LNVX5	$ 1,350.00	$ 2,280.00	Per Channel	N/A
GigaMAN Repeater	VU4X5	N/A	$ 550.00	per additional repeater	N/A
GigaMAN Inter-Office Mileage - Variable	1L5X3	N/A	$ 10.00	per mile	N/A
GigaMAN Inter-Office Mileage Fixed	1L5X3	$ -	$ 160.00	channel	N/A
GigaMAN Channel Termination Diversity (Local Channel Diversity)	CPAL5	$ -	$ 600.00	channel	N/A
GigaMAN Alternate Wire Center Diversity	CPAA5	$ -	$ 960.00	channel	N/A
GigaMAN Inter-Wire Center Diversity	CPAT5	$ -	$ 475.00	circuit	N/A
GigaMAN Equipment Only Protection	CPAE3	$ 625.00	$ 840.00	channel	N/A
GigaMAN Equipment plus Alternate Wire Center Path	CPAF3	$ 1,400.00	$ 1,280.00	channel	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
Protection					
GigaMAN Equipment plus Channel Termination Path Protection	CPAG3	$ 1,225.00	$ 1,140.00	channel	N/A
GigaMAN Inter-Wire Center Path Protection	CPAH3	$ 625.00	$ 120.00	channel	N/A
GigaMAN Power Protection	VBBG3	$ 475.00	$ 384.00	rack or cabinet	N/A
GigaMAN Administration Charge	NRBAO	$ 46.00	N/A	order	N/A
DecaMAN®					
DecaMAN Local Distribution Channel LAN-PHY	1RSTX	$ 1,500.00	$ 8,400.00	channel	N/A
DecaMAN Local Distribution Channel WAN-PHY	1RSTX	$ 1,500.00	$ 10,560.00	channel	N/A
DecaMAN Interoffice Channel Mileage - Fixed	JZ68S	N/A	$ 1,260.00	channel	N/A
DecaMAN Interoffice Channel Mileage - Variable	JZ68S	N/A	$ 175.00	mile	N/A
DecaMAN Repeater	VU4	N/A	$ 1,920.00	per additional repeater	N/A
DecaMAN Channel Termination Diversity (Local Channel Diversity)	CPALX	$ 850.00	$ 2,160.00	channel	N/A
DecaMAN Alternate Wire Center Diversity	CPAAX	$ 950.00	$ 3,456.00	channel	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
DecaMAN Inter-Wire Center Diversity	CPATX	$ 700.00	$ 1,440.00	circuit	N/A
DecaMAN Equipment Only Protection	CPAEX	$ 3,000.00	$ 5,880.00	channel	N/A
DecaMAN Equipment plus Alternate Wire Center Path Protection	CPAFX	$ 4,500.00	$ 8,832.00	channel	N/A
DecaMAN Equipment plus Channel Termination Path Protection	CPAGX	$ 4,200.00	$ 7,920.00	channel	N/A
DecaMAN Inter-Wire Center Path Protection	CPAHX	$ 625.00	$ 480.00	circuit	N/A
DecaMAN Power Protection	VBBGX	$ 475.00	$ 420.00	rack or cabinet	N/A
DecaMAN Administration Charge	NRBAO	$ 46.00	N/A	order	N/A
FibreMAN®					
FibreMAN Local Distribution Channel - 1 Gbps	25P8X	$ 1,500.00	$ 2,850.00	channel	N/A
FibreMAN Local Distribution Channel - 2 Gbps	25P9X	$ 1,500.00	$ 4,000.00	channel	N/A
FibreMAN Repeater	VU4	$ -	$ 1,150.00	per additional repeater	N/A
FibreMAN Alternate Wire Center Diversity	AVOYX	$ -	$ 1,200.00	channel	N/A
FibreMAN Channel Termination Diversity (Local Channel Diversity)	DJVYX	$ -	$ 750.00	channel	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
FibreMAN Inter-Wire Center Diversity	DEQYX	$ -	$ 500.00	circuit	N/A
FibreMAN Inter-Office Mileage - Fixed	JZ4XS	$ -	$ 200.00	channel	N/A
FibreMAN Inter-Office Mileage - Variable	JZ4XS	$ -	$ 100.00	mile	N/A
MON Ring					
MON Ring Customer Prem Node	F2ND1	$ -	$ 4,680.00	node	N/A
MON Ring Customer Prem Node	F2NDS	$ -	$ 3,510.00	node	N/A
MON Ring Central Office Node	F2NC1	$ -	$ 4,680.00	node	N/A
MON Ring Central Office Node	F2NCS	$ -	$ 3,510.00	node	N/A
MON Ring Interoffice Mileage	1L5X5	$ -	$ 195.00	ring	N/A
MON Bulk Power	CBVDX	$ -	$ 1,240.00	node	N/A
MON Bulk Power	CVBDS	$ -	$ 992.00	node	N/A
MON Ring Central Office Optical Amplifier	67QXX	$ -	$ 3,240.00	amplifier	N/A
MON Ring Central Office Regenerator	V8RXX	$ -	$ 4,500.00	regenerator	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
MON Ring Central Office Regenerator	V8R2C	$ -	$ 9,000.00	regenerator	N/A
MON Ring Port ETR Unprotected	POYKW	$ -	$ 585.00	port	N/A
MON Ring Port Fibre Channel	POYNW	$ -	$ 720.00	port	N/A
MON Ring Port Fibre Channel Protected	POYNP	$ -	$ 1,440.00	port	N/A
MON Ring Port Fibre Channel 2G	POYYW	$ -	$ 1,020.00	port	N/A
MON Ring Port Fibre Channel 2G Protected	POYYP	$ -	$ 2,040.00	port	N/A
MON Ring Port FICON	POYMW	$ -	$ 585.00	port	N/A
MON Ring Port FICON Protected	POYMP	$ -	$ 1,170.00	port	N/A
MON Ring Port FICON 2G	POYWW	$ -	$ 1,020.00	port	N/A
MON Ring Channel Port FICON 2G	POYWP	$ -	$ 2,040.00	port	N/A
MON Ring Port Gigabit Ethernet	POYLW	$ -	$ 720.00	port	N/A
MON Ring Port Gigabit Ethernet Protected	POYLP	$ -	$ 1,440.00	port	N/A
MON Ring Port 10W Gigabit Ethernet	POYTW	$ -	$ 9,000.00	port	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
MON Ring Port 10W Gigabit Ethernet Protected	POYTP	$ -	$ 12,000.00	port	N/A
MON Ring Port 10L Gigabit Ethernet	POYUW	$ -	$ 9,225.00	port	N/A
MON Ring Port 10L Gigabit Ethernet Protected	POYUP	$ -	$ 12,300.00	port	N/A
MON Ring Port SONET OC-12/OC-12c	POYFW	$ -	$ 780.00	port	N/A
MON Ring Port SONET OC-12/OC-12c Protected	POYFP	$ -	$ 1,560.00	port	N/A
MON Ring Port SONET OC-48/OC-48c	POYGW	$ -	$ 2,640.00	port	N/A
MON Ring Port SONET OC-48/OC-48c Protected	POYGP	$ -	$ 3,960.00	port	N/A
MON Ring Port SONET OC-192/OC-192c	POYOW	$ -	$ 9,000.00	port	N/A
MON Ring Port SONET OC-192/OC-192c Protected	POYOP	$ -	$ 12,000.00	port	N/A
MON Ring Fibre Channel SRM Port	POY6W	$ -	$ 300.00	port	N/A
MON Ring FibreChannel SRM Port Protected	POY6P	$ -	$ 600.00	port	N/A
MON Ring Ficon SRM Port	POY7W	$ -	$ 240.00	port	N/A
MON Ring Ficon SRM Port Protected	POY7P	$ -	$ 480.00	port	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
MON Gigabit Ethernet SRM Port	POY4W	$ -	$ 300.00	port	N/A
MON Gigabit Ethernet SRM Port Protected	POY4P	$ -	$ 600.00	port	N/A
MON SONET OC-12/OC-12c SRM Port	POY5W	$ -	$ 300.00	port	N/A
MON SONET OC-12/OC-12c SRM Port Protected	POY5P	$ -	$ 600.00	port	N/A
MON SONET OC-3/OC-3c SRM Port	POYEW	$ -	$ 60.00	port	N/A
MON SONET OC-3/OC-3c SRM Port	POYEP	$ -	$ 60.00	port	N/A
MON ESCON SRM Port	POYHW	$ -	$ 60.00	port	N/A
MON ESCON SRM Port Protected	POYHP	$ -	$ 60.00	port	N/A
OPT-E-MAN®					
OPT-E-MAN Basic Connection 10/100 Mbps	P9FEX	N/A	$ 520.00	port	N/A
OPT-E-MAN Basic Connection Gigabit Ethernet	P9FGX	N/A	$ 800.00	port	N/A
OPT-E-MAN Basic Plus Connection 10/100 Mbps	P9FFX	N/A	$ 520.00	port	N/A
OPT-E-MAN Basic Plus Connection Gigabit Ethernet	P9FHX	N/A	$ 800.00	port	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
OPT-E-MAN Additional MAC Addresses (51-100)	M2CAX	N/A	$ 4.00		N/A
OPT-E-MAN Repeater Service	VU4	N/A	$ 260.00	repeater	N/A
OPT-E-MAN Service Order Change Charge	NHCEO	$ 75.00	N/A		N/A
OPT-E-MAN Miscellaneous Change Charge	NHCEN	$ 50.00	N/A		N/A
OPT-E-MAN Service Order Cancellation Charge	OGCEO	$ 200.00	N/A		N/A
OPT-E-MAN Expedite Charge	EODEO	$ 300.00	N/A		N/A
OPT-E-MAN Ethernet Virtual Connection (EVC)	OMEVC	$ -	$ -	virtual circuit	N/A
Best Effort Grade of Service					
OPT-E-MAN Committed Information Rate – 2 Mbps Best Effort	R6E2E	N/A	$ 204.00	port	N/A
OPT-E-MAN Committed Information Rate – 4 Mbps Best Effort	R6E4E	N/A	$ 236.00	port	N/A
OPT-E-MAN Committed Information Rate – 8 Mbps Best Effort	R6E8E	N/A	$ 372.00	port	N/A
Bronze Grade of Service					

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
OPT-E-MAN Committed Information Rate – 2 Mbps Bronze	R6E2B	N/A	$ 240.00	port	N/A
OPT-E-MAN Committed Information Rate – 4 Mbps Bronze	R6E4B	N/A	$ 280.00	port	N/A
OPT-E-MAN Committed Information Rate – 5 Mbps Bronze	R6EAB	N/A	$ 360.00	port	N/A
OPT-E-MAN Committed Information Rate – 8 Mbps Bronze	R6E8B	N/A	$ 440.00	port	N/A
OPT-E-MAN Committed Information Rate – 10 Mbps Bronze	R6EBB	N/A	$ 520.00	port	N/A
OPT-E-MAN Committed Information Rate – 20 Mbps Bronze	R6EDB	N/A	$ 720.00	port	N/A
OPT-E-MAN Committed Information Rate – 50 Mbps Bronze	R6EHB	N/A	$ 820.00	port	N/A
OPT-E-MAN Committed Information Rate – 100 Mbps Bronze	R6ELB	N/A	$ 960.00	port	N/A
OPT-E-MAN Committed Information Rate – 150 Mbps Bronze	R6ENB	N/A	$ 1,100.00	port	N/A
OPT-E-MAN Committed Information Rate – 250 Mbps Bronze	R6EQB	N/A	$ 1,260.00	port	N/A
OPT-E-MAN Committed Information Rate – 500 Mbps Bronze	R6ETB	N/A	$ 1,520.00	port	N/A
OPT-E-MAN Committed Information Rate – 600 Mbps	R6EUB	N/A	$ 1,780.00	port	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
Bronze					
OPT-E-MAN Committed Information Rate – 1000 Mbps Bronze	R6EZB	N/A	$ 2,060.00	port	N/A
Silver Grade of Service					
OPT-E-MAN Committed Information Rate – 2 Mbps Silver	R6E2C	N/A	$ 400.00	port	N/A
OPT-E-MAN Committed Information Rate – 4 Mbps Silver	R6E4C	N/A	$ 440.00	port	N/A
OPT-E-MAN Committed Information Rate – 5 Mbps Silver	R6EAC	N/A	$ 520.00	port	N/A
OPT-E-MAN Committed Information Rate – 8 Mbps Silver	R6E8C	N/A	$ 600.00	port	N/A
OPT-E-MAN Committed Information Rate – 10 Mbps Silver	R6EBC	N/A	$ 680.00	port	N/A
OPT-E-MAN Committed Information Rate – 20 Mbps Silver	R6EDC	N/A	$ 880.00	port	N/A
OPT-E-MAN Committed Information Rate – 50 Mbps Silver	R6EHC	N/A	$ 980.00	port	N/A
OPT-E-MAN Committed Information Rate – 100 Mbps Silver	R6ELC	N/A	$ 1,120.00	port	N/A
OPT-E-MAN Committed Information Rate – 150 Mbps Silver	R6ENC	N/A	$ 1,420.00	port	N/A
OPT-E-MAN Committed Information Rate – 250 Mbps Silver	R6EQC	N/A	$ 1,580.00	port	N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
OPT-E-MAN Committed Information Rate – 500 Mbps Silver	R6ETC	N/A	$ 1,840.00	port	N/A
OPT-E-MAN Committed Information Rate – 600 Mbps Silver	R6EUC	N/A	$ 2,100.00	port	N/A
OPT-E-MAN Committed Information Rate – 1000 Mbps Silver	R6EZC	N/A	$ 2,380.00	port	N/A
CSME					
CSME Basic Connection 10 Mbps	P9FYX	$ 1,600.00	$ 967.20	port	NRC applies
CSME Basic Connection - subsequent 10 Mbps	P9FZX	$ 1,150.00	$ 725.00	port	NRC applies
CSME Basic Connection 100 Mbps	P9FKX	$ 1,925.00	$ 1,246.20	port	NRC applies
CSME Basic Connection Subsequent 100 Mbps	P9FPX	$ 1,200.00	$ 1,012.00	port	NRC applies
CSME Basic Connection 1 Gigabit	P9FLX	$ 2,500.00	$ 2,717.00	port	NRC applies
CSME Ethernet Virtual Connection (EVC)	EVNDE	$ -	$ -	virtual circuit	
CSME Media Access Control (MAC) Addresses	M2CAX	$ 70.00	$ 5.00	block	NRC applies
CSME Repeater	VU4	$ 250.00	$ 320.00	repeater	NRC applies
CSME Service Order Change Charge	NHCEO	$ 75.00	N/A		N/A

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
CSME Miscellaneous Change Charge	NHCEN	$ 50.00	N/A		N/A
CSME Service Order Cancellation Charge	OGCEO	$ 200.00	N/A		N/A
CSME Service Expedite Charge	EODEO	$ 300.00	N/A		N/A
EPLS-WAN					
EPLS-WAN 50Mbps SCRM-OKLD (includes local access)	WAN50A	$ 9,300.00	$ 10,700.00	circuit	NRC applies
EPLS-WAN 50Mbps SCRM-ANHM (includes local access)	WAN50B	$ 9,300.00	$ 11,800.00	circuit	NRC applies
EPLS-WAN 50Mbps SCRM-SNDG (includes local access)	WAN50C	$ 9,300.00	$ 11,900.00	circuit	NRC applies
EPLS-WAN 50Mbps OKLD-ANHM (includes local access)	WAN50D	$ 9,300.00	$ 11,100.00	circuit	NRC applies
EPLS-WAN 50Mbps ANHM-SNDG (includes local access)	WAN50E	$ 9,300.00	$ 10,500.00	circuit	NRC applies
EPLS-WAN 150Mbps SCRM-OKLD (includes local access)	WAN15A	$ 9,300.00	$ 12,500.00	circuit	NRC applies
EPLS-WAN 150Mbps SCRM-ANHM (includes local access)	WAN15B	$ 9,300.00	$ 15,800.00	circuit	NRC applies
EPLS-WAN 150Mbps SCRM-SNDG (includes local access)	WAN15C	$ 9,300.00	$ 16,100.00	circuit	NRC applies
EPLS-WAN 150Mbps OKLD-ANHM (includes local access)	WAN15D	$ 9,300.00	$ 13,600.00	circuit	NRC applies

Feature Name	Identifier	Non-Recurring Charge	Recurring Charge	Unit of measure	Change Charge
EPLS-WAN 150Mbps ANHM-SNDG (includes local access)	WAN15E	$ 9,300.00	$ 12,000.00	circuit	NRC applies
EPLS-WAN 600Mbps SCRM-OKLD (includes local access)	WAN60A	$ 9,300.00	$ 21,100.00	circuit	NRC applies
EPLS-WAN 600Mbps SCRM-ANHM (includes local access)	WAN60B	$ 9,300.00	$ 34,400.00	circuit	NRC applies
EPLS-WAN 600Mbps SCRM-SNDG (includes local access)	WAN60C	$ 9,300.00	$ 35,600.00	circuit	NRC applies
EPLS-WAN 600Mbps OKLD-ANHM (includes local access)	WAN60D	$ 9,300.00	$ 25,300.00	circuit	NRC applies
EPLS-WAN 600Mbps ANHM-SNDG (includes local access)	WAN60E	$ 9,300.00	$ 19,100.00	circuit	NRC applies
EPLS-WAN 1000Mbps SCRM-OKLD (includes local access)	WAN1GA	$ 9,300.00	$ 30,400.00	circuit	NRC applies
EPLS-WAN 1000Mbps SCRM-ANHM (includes local access)	WAN1GB	$ 9,300.00	$ 57,000.00	circuit	NRC applies
EPLS-WAN 1000Mbps SCRM-SNDG (includes local access)	WAN1GC	$ 9,300.00	$ 59,400.00	circuit	NRC applies
EPLS-WAN 1000Mbps OKLD-ANHM (includes local access)	WAN1GD	$ 9,300.00	$ 38,800.00	circuit	NRC applies
EPLS-WAN 1000Mbps ANHM-SNDG (includes local access)	WAN1GE	$ 9,300.00	$ 26,400.00	circuit	NRC applies
See Required CPE and Other Equipment for descriptions of additional equipment and service offered					

6.1.11.2.3.a Service Availability (M)

Services	Service Availability Percentage
Analog Asynchronous Transfer Mode (ATM) Carrier (DS0,DS1,DS3) Frame Relay Managed Frame Relay ISDN Primary Rate Interface (PRI) SONET (Ring and Point-to-Point) Switched 56 AVPN FibreMAN MON Ring	**Definition** Scheduled uptime is based on 60 minutes x 24 hours x calendar days in the month. **Measurement Process** All outage durations applied to other SLAs, which result in a remedy, will be excluded from the monthly accumulative total. Monthly Network Availability (%) = 1– [(total minutes of connection outage per month)/(days in month x 24hours x 60mins)] x 100. **Objectives** Analog >99.2 percent DS0 >99.2 percent DS1 >99.5 percent DS3 >99.8 percent OCX >99.8 percent PRI ISDN > 99.5 percent FibreMAN >99.8 percent MON Ring >99.8 percent **Immediate Rights and Remedies** End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** First month to fail to meet the SLA objective shall result in a 15% rebate of the TMRC. Next consecutive month to fail to meet the SLA objective shall result in a 25% rebate of TMRC. Each additional consecutive month to fail to meet the SLA objective shall result in a 50 percent rebate of the TMRC.

6.1.11.2.3.a Service Availability (M)

Services	Ethernet Service Availability Percentage
GigaMAN AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN	**Definition** Scheduled uptime is based on 60 minutes x 24 hours x calendar days in the month. **Measurement Process** All outage durations applied to other SLAs, which result in a remedy, will be excluded from the monthly accumulative total. Monthly Network Availability (%) = 1– [(total minutes of connection outage per month)/(days in month x 24hours x 60mins)] x 100. **Objectives** 10/100 Mbps > 99.5 percent 1000 Mbps (1 Gbps) > 99.5 percent LAN-PHY (10.3 Gbps) > 99.5 percent WAN-PHY (9.95 Gbps) > 99.5 percent **Immediate Rights and Remedies** End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** First month to fail to meet the SLA objective shall result in a 15%

6.1.11.2.4 Catastrophic Outage 1 (M)

Services	Catastrophic Outage 1
Analog Asynchronous Transfer Mode (ATM) Business Access Lines Carrier (DS0,DS1,DS3) Central Office Exchange Basic Services Central Office Trunk Service Frame Relay Managed Frame Relay Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) ISDN Primary Rate Interface (PRI) GigaMAN SONET (Ring and Point-to Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring Switched 56 Voice Mail	**Definition** The total loss of either the service or circuits, 25 or greater at the same address location, or any "protected" Service. **Measurement Process** The outage start shall be determined by the network alarm resulting from the outage-causing event or the opening of a trouble ticket by a Customer, whichever occurs first. The Contractor shall open a trouble ticket and compile a list for each circuit or service affected by the common cause. Each circuit or service is out of service from the first notification until the Contractor determines the circuit or service is restored. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. (7X24) **Objectives** Less than 2 hours **Immediate Rights and Remedies** 100 percent of the TMRC for each circuit/service not meeting the per occurrence objective for a single Cat 1 fault End-User Escalation Process DTS/STND Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.5 Catastrophic Outage 2 (M)

Services	Catastrophic Outage 2
Analog Asynchronous Transfer Mode (ATM) Business Access Lines Carrier (DS0,DS1,DS3) Central Office Exchange Basic Services Central Office Trunk Service Frame Relay Managed Frame Relay Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) ISDN Primary Rate Interface (PRI) Intra-LATA Calling GigaMAN SONET (Ring and Point-to-Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring Switched 56	**Definition** A total failure of a service type in a central office. Or, a backbone failure or failure of any part of the Equipment associated with the backbone that causes a service failure. **Measurement Process** The outage duration start shall be determined by the network alarm resulting from the outage-causing event or the opening of a trouble ticket by the Customer, whichever occurs first. Outage duration shall be measured on a per circuit or per-port basis from information recorded from the network Equipment or trouble ticket The Contractor shall open a trouble ticket and compile a list for each circuit or service affected by the common cause. Each circuit or service is out of service from the first notification until the Contractor determines the circuit or service is restored. Any circuits or service reported by the End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. (7X24) **Objectives** Less than 30 minutes **Immediate Rights and Remedies** 100 percent of the TMRC and 2 days of the AMUC for each phone number/service not meeting the per occurrence objective for a single Cat 2 fault End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.6 Catastrophic Outage 3 (M)

Services	Catastrophic Outage 3
Analog Asynchronous Transfer Mode (ATM) Business Access Lines Carrier (DS0,DS1,DS3) Central Office Exchange Basic Services Central Office Trunk Service Frame Relay Managed Frame Relay Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) ISDN Primary Rate Interface (PRI) Intra-LATA Calling GigaMAN SONET (Ring and Point-to-Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring Switched 56 Voice Mail	**Definition** The total loss of more than one service type in central office, or the loss of any service type on a system wide basis. **Measurement Process** The outage duration start shall be determined by the network alarm resulting from the outage-causing event or the opening of a trouble ticket by the Customer, whichever occurs first. Outage duration shall be measured on a per circuit or per-port basis from information recorded from the network switches or trouble ticket. The Contractor shall open a trouble ticket and compile a list for each circuit or service affected by the common cause. Each circuit or service is out of service from the first notification until the Contractor determines the circuit or service is restored. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. (7X24) **Objectives** Less than 15 minutes **Immediate Rights and Remedies** Senior Management Escalation Process 100 percent of the TMRC for each circuit/service not meeting the per occurrence objective for a single Cat 3 fault **Monthly Rights and Remedies** N/A

6.1.11.2.7 Transmission Delay (M)

Services	Transmission Delay
Asynchronous Transfer Mode (ATM) Frame Relay Managed Frame Relay GigaMAN SONET (Ring and Point-to-Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring	**Definition** Average round trip transfer delay measured from MPOE to MPOE. **Measurement Process** End-User/Customer is responsible for opening a trouble ticket with the Contractor Customer Service Center (helpdesk) when the frame/packet/cell transfer delay is below the committed level. DTS/STND shall determine the sample interval, provided that a minimum of 100 pings or more shall constitute test. The process requires timely verification, consistent with industry Standards (e.g., a protocol analyzer), by the Contractor. Trouble shall be tracked as a Quality of Service (QoS) problem using a special disposition code on the trouble ticket. QoS tickets shall not count in availability or Time to Repair measurements unless and until the End-User reports circuit as unusable for its intended uses. (7x24) **Objectives** *DS0 to DS1* 64 byte ping: <120ms 1000 byte ping: <400ms *DS1* 64 byte ping: <60ms 1000 byte ping: <120ms *DS3* 64 byte ping: <65 ms 1000 byte ping: <110 ms

6.1.11.2.7 Transmission Delay (M)

Services	Transmission Delay
	OC3 64 byte ping: <65 ms 1000 byte ping: <100 ms *OC12* 64 byte ping: <55 ms 1000 byte ping: <100 ms *OC48* 64 byte ping: <55 ms 1000 byte ping: <100 ms *Ethernet:* --- 10/100 Mbps --- 1000 Mbps (1 Gbps) --- LAN-PHY (10.3 Gbps) ---WAN-PHY (9.95 Gbps) 64 byte ping: <60 ms 1000 byte ping: <100ms **Immediate Rights and Remedies** 15 percent of TMRC per occurrence for the reported circuit. Next consecutive month to fail to meet the SLA objectives shall result in a 25 percent rebate of TMRC. Each additional consecutive month to fail to meet the SLA objective shall result in a 50 percent rebate of the TMRC. End-User Escalation Process DTS/STND Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.9 Excessive Outage (M)

Services	Excessive Outage
Analog Asynchronous Transfer Mode (ATM) Business Access Line Carrier (DS0,DS1,DS3) Central Office Exchange Basic Services Central Office Trunk Service Frame Relay Managed Frame Relay ISDN Primary Rate Interface (PRI) Intra-LATA Calling GigaMAN SONET (Ring and Point-to-Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring Switched 56 Voice Mail Locally Based ACD Interactive Voice Response (IVR) Specialized Call Routing Computer Telephone Integration	**Definition** An Excessive outage shall be defined as a trouble ticket that remains opened with the Contractor on a circuit or service, for more than twelve hours. **Measurement Process** The circuit or service is unusable during the time the trouble ticket is reported as opened until restoration of the circuit or service, minus stop clock conditions. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. (7 x 24) **Objectives** Less than 12 hours **Immediate Rights and Remedies** Senior Management Escalation Customer may request from Contractor an Excessive Outage restoration briefing 100 percent of the TMRC per occurrence for each circuit or service out of service greater than 12 hours. **Monthly Rights and Remedies** N/A

6.1.11.2.12 Provisioning (M)

Services	Business Days	Provisioning
Locally Based ACD	Contracted Service Project Work – Section 6.1.9	**Definition** Provisioning shall be defined as new service, adds, moves, changes and deletes completed by the Contractor on or before the due dates. Provisioning SLAs are two-fold: Individual Service Order and Monthly Average Percentage by Service Type. Note: Provisioning timelines include extended demarcation wiring, when appropriate. **Measurement Process** Individual Service Order: Install intervals are based on the intervals provided in the adjacent column or Customer/Contractor negotiated due dates documented on the order form/system. **Monthly Average Percentage by Service Type:** The sum of all individual service orders meeting the objective in the measurement period divided by the sum of all individual service orders due in the measurement period equals the monthly average. The entire installation fee is refunded to the Customers for all orders that did not complete on time during the month if the monthly objective is not met **Objective** Individual Order: Service provisioned on or before the due date per install order. **Monthly Average percent by Service Type:** Greater than 95 percent
Analog Expedite	10 Days XX Days	
Asynchronous Transfer Mode (ATM)	Contracted Service Project Work – Section 6.1.9	
Business Access Lines Feature Change	1 Day 1 Hour Using automated system	
Carrier (DS0,DS1,DS3) DS0 DS1 Expedite DS3	15 Days 15 Days XX Days Contracted Service Project Work – Section 6.1.9	
Central Office Exchange Basic Services (includes station wiring) Feature Change	3 Day 1 Hour using automated system	
Central Office Trunk Service	10 Days if less than 15 trunks	
Agency Hosted Digital Subscriber Line (DSL)	45 Days	
DSL Virtual Private Network (VPN)	45 Days	

6.1.11.2.12 Provisioning (M)

Services	Business Days	Provisioning
Frame Relay DS0 DS1 Expedite DS3 Managed Frame Relay	 15 Days 15 Days XX Days Contracted Service Project Work – Section 6.1.9	**Immediate Rights and Remedies** Individual Order: 50 percent of installation fee refunded to Customer for any missed due date. End-User Escalation Process DTS/ONS Escalation Process
Inside Wiring	Contracted Service Project Work – Section 6.1.9	
Integrated Services Digital Network (ISDN) Basic Rate ISDN (BRI) Data BRI, only Voice and Data BRI BRI, if site work required Expedite	 1 Day 3 Days 10 Days XX Days	**Monthly Rights and Remedies:** - Monthly Average percent by Service Type: The entire installation fee refunded to Customer for all orders that did not complete on time during the month if the monthly average objective is not met. N/A
Primary Rate ISDN (PRI) Expedite	10 Days XX Days	
Interactive Voice Response (IVR)	Contracted Service Project Work – Section 6.1.9	
Intra-LATA Calling	1 Days	
GigaMAN	Contracted Service Project Work – Section 6.1.9	

6.1.11.2.12 Provisioning (M)

Services	Business Days	Provisioning
SONET (Ring and Point-to-Point) AVPN OPT-E-MAN CSME DecaMAN EPLS-WAN FibreMAN MON Ring NBFW ANIRA	Contracted Service Project Work – Section 6.1.9	
Specialized Call Routing	Contracted Service Project Work – Section 6.1.9	
Station Cabling	Contracted Service Project Work – Section 6.1.9	
Switched 56	Contracted Service Project Work – Section 6.1.9	
Voice Mail per box	3 Days	

6.1.11.2.13 Time to Repair (TTR) – Major (M)

Services	Time to Repair (TTR)-Major
Analog Asynchronous Transfer Mode (ATM) Carrier (DS0,DS1,DS3) Frame Relay Managed Frame Relay ISDN Primary Rate Interface (PRI) GigaMAN SONET (Ring and Point-to-Point) AVPN OPT-E-MAN DecaMAN CSME EPLS-WAN FibreMAN MON Ring Switched 56	**Definition** A Major Fault shall be defined as five (5) or more physical circuit (DS-1 or higher speed) at the same address location affected by a common cause. Or The loss of 2 or more service types to a single End-User at the same address location. **Measurement Process** This Service Level Agreement (SLA) applies to the services listed in the adjacent column. This SLA is based on a trouble ticket outage durations. The circuit or service is unusable during the time the trouble ticket is recorded as opened in the Contractors trouble ticket system minus stop clock conditions. This SLA is applied per occurrence. Trouble reporting shall be 7X24. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. **Objectives** Analog=less than 2 hours DS0=less than 2 hours DS1=less than 2 hours DS3=less than 2 hours ISDN=less than 2 hours PRI ISDN=less than 2 hours 10/100 Mbps = less than 2 hours 1000 Mbps (1 Gbps) = less than 2 hours LAN-PHY (10.3 Gbps) = less than 2 hours WAN-PHY (9.95 Gbps) = less than 2 hours OC-X = less than 2 hours **Immediate Rights and Remedies** Failing to meet the SLA objective shall result in a 25 percent rebate of the TMRC per occurrence. End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.14 Time to Repair (TTR) – Minor (M)

Services	Time to Repair (TTR)-Minor
Analog Asynchronous Transfer Mode (ATM) Carrier (DS0,DS1,DS3) Frame Relay Managed Frame Relay ISDN Primary Rate Interface (PRI) SONET (Ring and Point-to-Point) AVPN OPT-E-MAN CSME EPLS-WAN FibreMAN MON Ring Switched 56	**Definition** A Minor Fault shall be defined as a trouble ticket opened with the Contractor's helpdesk on the loss of any circuit or service to a single End-User at a site. **Measurement Process** This Service Level Agreement (SLA) applies to the services listed in the adjacent column. This SLA is based on a trouble ticket outage durations. The circuit or service is unusable during the time the trouble ticket is recorded as open in the Contractors trouble ticket system minus stop clock conditions. This SLA is applied per occurrence. Trouble reporting shall be 7X24. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. **Objectives** Analog=less than 5 hours DS0=less than 5 hours DS1=less than 4 hours DS3=less than 2 hours PRI ISDN=less than 5 hours 10/100 Mbps = less than 4 hours 1000 Mbps (1 Gbps) = less than 4 hours OC-X = less than 3 hours **Immediate Rights and Remedies** Failing to meet the SLA Objective shall result in a 15 percent rebate of the TMRC per occurrence. End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.14.b Time to Repair (TTR) – Minor - GigaMAN/DecaMAN

Services	Time to Repair (TTR) – Minor - GigaMAN/DecaMAN
GigaMAN DecaMAN	**Definition** A Minor Fault shall be defined as a trouble ticket opened with the Contractor's helpdesk on the loss of any circuit or service to a single End-User at a site. **Measurement Process** This Service Level Agreement (SLA) applies to the services listed in the adjacent column. This SLA is based on a trouble ticket outage durations. The circuit or service is unusable during the time the trouble ticket is recorded as open in the Contractors trouble ticket system minus stop clock conditions. This SLA is applied per occurrence. Trouble reporting shall be 7X24. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. **Objective:** < 10 seconds **Immediate Rights and Remedies:** Failing to meet the SLA objective shall result in a rebate of the TMRC based on the credit schedule below: **Outage Duration** — **Credit** 10 seconds to 4 hours — 10% credit of TMRC 4 hours to 12 hours — 25% credit of TMRC End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** N/A

6.1.11.2.14.c Time to Repair (TTR) – GigaMAN/DecaMAN with Protection

Services	Time to Repair (TTR)- GigaMAN/DecaMAN with Protection
GigaMAN with protection option(s): • Equipment only Protection • Equipment plus Alternate Wire Center Path Protection • Equipment plus Channel Termination Path Protection • Inter-Wire Center Path Protection) • Power Protection DecaMAN with protection option(s): • Equipment only Protection • Equipment plus Alternate Wire Center Path Protection • Equipment plus Channel Termination Path Protection • Inter-Wire Center Path Protection • Power Protection	**Definition** A Minor Fault shall be defined as a trouble ticket opened with the Contractor's helpdesk on the loss of any circuit or service to a single End-User at a site with path protection. **Measurement Process** This Service Level Agreement (SLA) applies to the services listed in the adjacent column. This SLA is based on a trouble ticket outage durations. The circuit or service is unusable during the time the trouble ticket is recorded as open in the Contractors trouble ticket system minus stop clock conditions. This SLA is applied per occurrence. Trouble reporting shall be 7X24. Any circuits or service reported by End-User/Customer as not having been restored shall have the outage time adjusted to the actual restoration time. TROUBLE MUST BE DETERMINED TO BE IN PORTION OF THE SERVICE WITH A PROTECTION OPTION. **Objective:** < 10 seconds **Immediate Rights and Remedies:** Failing to meet the SLA Objective shall result in a 100 percent rebate of the TMRC (includes all protect service components and the GigaMAN/DecaMAN service) End-User Escalation Process DTS/ONS Escalation Process **Monthly Rights and Remedies** N/A

Services	Packet Delivery Rate (PDR)
OPT-E-MAN	**Definition** Packet Delivery Rate (PDR) is a measurement of the actual amount of useful and non-redundant information that is transmitted or processed from end-to-end across the network. It is a function of bandwidth, error performance, congestion and other factors. PDR is expressed as a percentage of Ethernet frames offered to the network that successfully traverse the network, end-to-end, within the CIR, and within a 30 day period. PDR is calculated as the total number of effective Ethernet frames, per port, that successfully traverse the network divided by the total number of effective Ethernet frames, per port, offered to the network within a 30 day period. Those frames that violate the maximum range will be excluded from the calculation. PDR is measured by averaging sample measurements taken during a 30 day period from network terminating equipment to network terminating equipment to which the Customer ports are attached when the OPT-E-MAN network is available. This SLA does not apply to OPT-E-MAN Best Effort Grade of Service. **Measurement Process** Grade of Service SLAs are provided for OPT-E-MAN® Service. If the Contractor fails to meet service parameters defined for each Grade of Service, a service credit will be offered to the Customer given certain conditions are met: • The Customer is responsible for (1) notifying the Contractor within 45 days after the end of the month when the service parameter falls below (or above) the committed level, and (2) requesting a service credit. • Upon notification by the Customer that the actual service performance for that parameter was less than the committed level, the Contractor has 30 days to correct the problem. • Packet Delivery Rate, Latency and Jitter calculations will be measured only when the OPT-E-MAN® network is available. **Objective(s)** Bronze Grade of Service: 99.5% Silver Grade of Service: 99.9% **Immediate Rights and Remedies** End-User Escalation Process DTS/STND Escalation Process **Monthly Rights and Remedies** If after 30 days, the service performance for that parameter is still less than the committed level, the Customer will be provided a service credit equal to 25% of the monthly recurring charge for that service parameter for all affected ports for the month in which the service parameters fall *below* the committed level.

Services	Latency
OPT-E-MAN	**Definition** Latency is the amount of time necessary for a typical frame to traverse the network. Latency is calculated as the measurement of time taken for a Customer frame to go from one end of the network (origination point) to the other end (termination point). The measurement will consist of measuring the time it takes to "ping" or travel from the origination to termination ports for the connection in question. Latency is measured by averaging sample measurements taken during a 30 day period between network terminating equipment to which the Customer ports are attached when the OPT-E-MAN® network is available. Latency is limited to a delay across a one-way end-to-end connection within the Contractor's network for packets 1,500 bytes or less. This SLA does not apply to OPT-E-MAN Best Effort Grade of Service. **Measurement Process** Grade of Service SLAs are provided for OPT-E-MAN Service. If the Contractor fails to meet service parameters defined for each Grade of Service, a service credit will be offered to the Customer given certain conditions are met: • The Customer is responsible for (1) notifying the Contractor within 45 days after the end of the month when the service parameter falls below (or above) the committed level, and (2) requesting a service credit. • Upon notification by the Customer that the actual service performance for that parameter was less than the committed level, the Contractor has 30 days to correct the problem. • Packet Delivery Rate, Latency and Jitter calculations will be measured only when the OPT-E-MAN network is available. **Objective(s)** Bronze Grade of Service: <27ms one way Silver Grade of Service: <18ms one way **Immediate Rights and Remedies** End-User Escalation Process DTS/STND Escalation Process **Monthly Rights and Remedies** If after 30 days, the service performance for that parameter is still less than the committed level, the Customer will be provided a service credit equal to 25% of the monthly recurring charge for that service parameter for all affected ports for the month in which the service parameters fall *above* the committed level.

Services	Jitter
OPT-E-MAN	**Definition** Jitter is the delay that occurs between two packets or Ethernet frames that are traversing the network. Jitter is calculated as the delay variance of the packets transported across the network or the delta of delay between two consecutive packets. It is measured between two endpoints, and will consist of measuring the time between a set of packets. Jitter is measured by averaging sample measurements taken during a 30 day period between network terminating equipment to which the Customer ports are attached when the OPT-E-MAN® network is available. This SLA does not apply to OPT-E-MAN Best Effort Grade of Service. **Measurement Process** Grade of Service SLAs are provided for OPT-E-MAN Service. If the Contractor fails to meet service parameters defined for each Grade of Service, a service credit will be offered to the Customer given certain conditions are met: • The Customer is responsible for (1) notifying the Contractor within 45 days after the end of the month when the service parameter falls below (or above) the committed level, and (2) requesting a service credit. • Upon notification by the Customer that the actual service performance for that parameter was less than the committed level, the Contractor has 30 days to correct the problem. • Packet Delivery Rate, Latency and Jitter calculations will be measured only when the OPT-E-MAN network is available. **Objective(s)** Bronze Grade of Service: N/A Silver Grade of Service: 12ms **Immediate Rights and Remedies** End-User Escalation Process DTS/STND Escalation Process **Monthly Rights and Remedies** If after 30 days, the service performance for that parameter is still less than the committed level, the Customer will be provided a service credit equal to 25% of the monthly recurring charge for that service parameter for all affected ports for the month in which the service parameters fall *above* the committed level.

[Ethernet Switched Service (ESS-MAN) deleted]

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