

**AT&T Switched Ethernet Service<sup>SM</sup>**

AT&T Switched Ethernet Service is a switched Ethernet transport service providing Ethernet transport functionality using fiber and or copper facilities and a switched Ethernet core network.

The AT&T Switched Ethernet Service Guide consists of the following Parts:

- Service Description (SD)
- Service Level Agreements (SLAs)
- Pricing (P)

**Service Description (SD)****SD-1 General****SD-1.1 Overview**

AT&T Switched Ethernet Service is a switched Ethernet transport service providing Ethernet transport functionality using fiber and copper facilities and a switched Ethernet core network. AT&T Switched Ethernet Service is provided by the applicable AT&T participating carrier. AT&T Switched Ethernet Service provides a port with full duplex transport of data signals between a Customer's premises and an Ethernet switch in an AT&T central office which then may be interconnected with other such ports.

AT&T Switched Ethernet Service supports point-to-point, point-to-multipoint or multipoint-to-multipoint configurations. Point-to-point service provides a connection between two ports. Point-to-multipoint service provides multiple point-to-point connections to multiple ports in the network. Multipoint-to-multipoint service provides a connection between three or more designated ports on the AT&T Switched Ethernet Service network. AT&T shall determine the interface specifications for AT&T Switched Ethernet Service in its sole discretion.

Some material previously appearing on this page now appears on Original Page 5.1.

SECTION 2 - Service Description

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**SD-1.2 Definitions**

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As used in this Service Guide, the following terms are defined as appears below:

“AT&T” means the participating carriers identified in the Participating Carrier Table in Section SD-1.3.

“Customer” as used in this Service Guide means any individual, partnership, association, joint-stock company, trust, corporation, or governmental entity or any other entity which subscribes to the services offered under this Service Guide, including both wholesale customers and end user customers of AT&T.

“Customer’s premises” and "Customer location" (or similar terms) shall mean the location at which the service is terminated, and shall be construed to include an end user’s premises, as appropriate in the context, where the Customer is a wholesale Customer and service is terminated at the premises of an end user that is not the Customer of AT&T.

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“End User” shall mean any customer of a telecommunications service that is not a carrier, except that a carrier shall be deemed to be an "end user" when such carrier uses a telecommunications service for administrative purposes, and a person or entity that offers telecommunications services exclusively as a reseller shall be deemed to be an "end user" if all resale transmissions offered by such reseller originate on the premises of such reseller.

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Some material appearing on this page previously appeared on Original Page 5.



SECTION 2 - Service Description

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**SD-1.4.2 Design Change Charge**

The Customer may request a design change to an Order for AT&T Switched Ethernet Service. (C)  
A design change is any change to an order which requires engineering review. An engineering review is a review by AT&T personnel of the service ordered and the requested changes to determine what change in the design, if any, are necessary to meet the changes requested by the Customer. Design changes include such things as the addition or deletion of optional features or functions or a change in the type of port configuration, type of channel interface, type of Class of Service or Committed Information Rate or technical specification package. Design changes do not include a change of Customer premises, end user (C)  
premises, Ethernet serving switch, port speed, or port speed type. Changes of this nature will require the issuance of a new order and the cancellation of the original order with appropriate cancellation charges applied.

AT&T will review the requested change and notify the Customer whether the change is a design change, if it can be accommodated and if a new service date is required. If a change of service date is required, the Service Date Change Charge will also apply.

The Design Change Charge will apply on a per order per occurrence basis, for each order requiring a design change.

Certain material previously appearing on this page now appears on Original Page 7.1

**SD-1.4.3 Service Date Change Charge/Dispatch Charge**

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If a Customer is unable to accept service on the original due date, the Customer may issue one or more supplements to an order to change the original due date to a date no more than 120 calendar days after the original due date. When such requests are made, AT&T will accordingly delay the start of service and the Customer will incur a Service Date Change Charge. The first supplement to the order must be received by AT&T on or before 30 calendar days after the original due date.

If a Customer issues a supplement to an order to extend the original due date but is unable to accept Service within 121 calendar days after the original due date, one of the following will apply:

- If Service has not been fully provisioned, AT&T will cancel the order on the 121st calendar day after the original due date and the charges specified will apply, or
- If Service has been fully provisioned, AT&T will begin billing for the Service on the 121st calendar day after the original due date.

If a Customer is unable to accept Service within 31 calendar days after the original due date, and AT&T has not received a supplement to the order to extend the due date within 30 calendar days after the original due date, one of the following will apply:

- If Service has not been fully provisioned, AT&T will cancel the order on the 31st calendar day after the original due date and charges specified will apply, or
- If Service has been fully provisioned, AT&T will begin billing for the Service on the 31st calendar day after the original due date.

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If an AT&T technician is dispatched to the Customer's premises on the scheduled service date and the Customer is not ready to accept service or the Customer has failed to notify AT&T before 3:00 PM (CT) on the business day prior to the scheduled service date that the service date needs to be changed, a Service Date Change Charge will apply, in addition to the Service Date Change Dispatch Charge.

(N)

(N)

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**SD-1.4.4 Cancellation Charges**

A Customer may cancel an order for the installation of service at any time prior to notification by AT&T that service is available for the Customer's use. The Cancellation Date is the date AT&T receives written notice from the Customer that the order is to be cancelled. When a Customer cancels an order (or a part of an order) for associated service, applicable cancellation charges will be assessed, even when nonrecurring installation charges would otherwise be waived. (C)  
(C)

Applicable cancellation charges will be calculated based on the number of calendar days between AT&T's receipt of the order and the Cancellation Date. A cancellation charge will apply on a per Port Connection basis as shown in the table below:

<b>Cancellation Charge For AT&amp;T Switched Ethernet Service</b>	
<b>Cancellation Date – Calendar Days after Receipt of Order</b>	<b>Cancellation Charge (Per Port Connection)</b>
0-10	\$0.00
11-30	\$0.00
31-60	\$2,000.00
61+	\$3,000.00

**SD-1.4.4.1 When Cancellation Charges Do Not Apply**

For AT&T Switched Ethernet Service, Cancellation Charges do not apply: (C)

- When a customer cancels an order for the termination of existing service. (N)
- If AT&T misses a service due date by more than 30 days due to circumstances over which it has direct control (excluding, e.g., acts of God, governmental requirements, work stoppages and civil commotion), the Customer may cancel the order without incurring cancellation charges. (C)  
(C)
- If the customer cancels a network reconfiguration order (e.g., move, change or disconnect). (N)  
(N)
- If an order is cancelled because the Customer does not agree to pay applicable Special Construction charges as described in Section SD-4.11. (D)

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SECTION 2 - Service Description

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**SD-1.5 Billing****SD-1.5.1 Deposits**

AT&T will, in order to safeguard its interests, only require a Customer which has a proven history of late payments to AT&T or does not have established credit to make a deposit prior to or at any time after the provision of a service to the Customer to be held by AT&T as a guarantee of the payment of rates and charges.

AT&T will notify the Customer of a deposit requirement by Certified Mail or Overnight Delivery. The Customer will be required to make payment of such deposit prior to the provision of new service in those cases where the Customer has not established credit with AT&T, or otherwise within fifteen (15) business days of such notice for Customers with existing services. Such notice period will start the day after the notice is rendered by Certified Mail or Overnight Delivery. If the Customer fails to pay the deposit by the due date, as described above, AT&T may send the Customer a written notice by Overnight Delivery stating that if the deposit is not received within 15 calendar days of the original deposit due date, AT&T may refuse additional applications for service or discontinue the provision of services.

No such deposit will be required of a Customer which is a successor of a Company which has established credit and has no history of late payments to AT&T. Such deposit may not exceed the actual or estimated rates and charges for the service for a two month period. The fact that a deposit has been made in no way relieves the Customer from complying with AT&T's conditions as to the prompt payment of bills. At such time as the provision of the service to the Customer is terminated, the amount of the deposit will be credited to the Customer's account and any credit balance which may remain will be refunded.

Such a deposit will be refunded or credited to the Customer's account when the Customer has established credit or, in any event, after the Customer has established a one-year prompt payment record at any time prior to the termination of the provision of the service to the Customer. In the case of a cash deposit, for the period the deposit is held by AT&T, the Customer will receive simple interest at rates shown in the Deposit Interest Rate Table below. The rate will be calculated from the date the Customer's deposit is received by AT&T up to and including the date such deposit is credited to the Customer's account or the date the deposit is refunded by AT&T. Should a deposit be credited to the Customer's account, as indicated above, no interest will accrue on the deposit from the date such deposit is credited to the Customer's account.

SECTION 2 - Service Description

In the event the provision of all service to the Customer is terminated and AT&T maintains a cash deposit from the Customer, the deposit and any accrued, uncredited interest will be applied to any outstanding sums owed to AT&T, and any remaining balance will be returned to the Customer.

Deposit Interest Rate Table	
States	Deposit Interest Rate
AL, AR, FL, GA, KS, KY, LA, MO, MS, NC, NV, OK, SC, TN, TX	In the case of a cash deposit, for the period the deposit is held by AT&T, the Customer will receive simple interest at the rate of 1.5% per month (.0004931 per day) or 18% annually.
IL, IN, MI, OH, WI	The lower of:  (i) the highest interest rate (in decimal value) which may be levied by law for commercial transactions, applied on a simple interest basis for the number of days from the payment due date to and including the date that the Customer actually makes the payment to AT&T, or  (ii) 0.000493 per day, (annual percentage rate of 18.0%) applied on a simple interest basis for the number of days from the payment date to and including the date that the Customer actually makes the payment to AT&T.
CA	The Customer will receive simple interest at the rate of 1.5 percent per month (18% per year) for each month or portion thereof that a deposit is held.

**SD-1.5.2 Payment of Rates and Charges**

AT&T shall bill on a current basis all charges incurred by and credits due to the Customer attributable to services established or discontinued during the preceding billing period. In addition, AT&T shall bill in advance charges for all services to be provided during the ensuing billing period except for charges associated with service usage and for the Federal Government which will be billed in arrears.

All bills are due when rendered and shall be paid no later than 30 days or 31 days of the bill date, dependent upon the policy of the individual AT&T participating carrier, or by the next bill date, whichever is sooner.

Further, if any portion of the payment is received by AT&T after the payment due date as set forth in (a) preceding, or if any portion of the payment is received by AT&T in funds which are not immediately available to AT&T, then a late payment charge may be due to AT&T. A late payment charge will apply to the unpaid balance less disputed amounts when any portion of the payment is received by AT&T after the payment due date or if any portion of the payment is made in funds which are not immediately available to AT&T.



SECTION 2 - Service Description

The late payment charge shall be the portion of the payment not received by the payment due date times a late factor. The late factor shall be simple interest as shown in the Late Payment Charge Table below.

Late Payment Charge Table	
State	Late Payment Charge
AL, AR, FL, GA, KY, KS, LA, MS, NC, OK, SC, TN	The late payment charge shall be simple interest at the rate of 1.5% per month (.0004931 per day) or 18% annually.
MO	The late payment charge shall be simple interest at the rate of 1.5% per month (.0004931 per day) or 18% annually.  Until such time as AT&T receives authorization to assess late payment charges, late payment charges will not apply to services purchased by the government of the State of Missouri.
TX	The late payment charge shall be simple interest at the rate of 1.5% per month (.0004931 per day) or 18% annually.  Until such time as AT&T receives authorization to assess late payment charges, late payment charges will not apply to services purchased by the government of the State of Texas, including service to an agency in any branch of government.
IL, IN, MI, OH, WI	The late payment penalty shall be the portion of the payment not received by the payment due date times a late factor. The late factor shall be the lesser of:  (i) the highest interest rate (in decimal value) which may be levied by law for commercial transactions, applied on a simple interest basis for the number of days from the payment due date to and including the date that the Customer actually makes the payment to AT&T, or  (ii) 0.000493 per day, (annual percentage rate of 18.0%) applied on a simple interest basis for the number of days from the payment date to and including the date that the Customer actually makes the payment to AT&T.
CA, NV	The late payment charge shall be calculated at 1.5% per month or portion thereof for the period from the due date until the payment is received.

SECTION 2 - Service Description

**SD-1.5.3 Billing Disputes**

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In the event that a billing dispute occurs concerning any charges billed to the Customer by AT&T, the following conditions will apply.

A good faith dispute requires the Customer to provide a written claim to AT&T. Instructions for submitting a dispute can be obtained by calling the billing inquiry number shown on the Customer's bill. Such claim must identify in detail the basis for the dispute, the account number under which the bill has been rendered, the date of the bill and the specific items on the bill being disputed, with the dispute date being the date on which the Customer furnishes AT&T all of the aforementioned information to permit AT&T to investigate the merits of the dispute.

The date of resolution shall be the date on which AT&T completes its investigation and credits the disputed amount to the Customer's bill, if the dispute is resolved in the Customer's favor.

If the dispute is decided to be in favor of AT&T, then the resolution date will be the date upon which a written decision on the dispute is sent to the Customer.

If the dispute is resolved in favor of AT&T and the Customer has paid the disputed amount on or before the payment due date, no credits or late payment charges will apply to the disputed amount.

If the dispute is resolved in favor of AT&T and the Customer has withheld the disputed amount, any payments withheld pending settlement of the dispute shall have a late payment charge determined and applied at interest rates as set forth in the Late Payment Charge Table above.

If the dispute is resolved in favor of the Customer and the Customer has withheld the disputed amount, no credits or late payment charges will apply to the disputed amount and the Customer will receive a credit equal to the overcharged amount.

If the dispute is resolved in favor of the Customer and the Customer has paid the disputed amount, the Customer will receive an interest credit from AT&T. The interest credit shall be calculated based upon the portion of the disputed amount resolved in the Customer's favor multiplied by the interest rate shown in the Interest Credit Table below:

<b>Interest Credit Table</b>	
<b>State</b>	<b>Interest Credit</b>
AL, AR, FL, GA, KS, KY, LA, MO, MS, NC, NV, OK, SC, TN, TX	Simple interest at the rate of 1.5% per month (.0004931 per day) or 18% annually.
IL, IN, MI, OH, WI	.000493 per day (annual rate of 18.0%) applied on a simple interest basis.
CA	1.5% per month or portion thereof.

SECTION 2 - Service Description

**SD-1.5.4 FUSF and Other Charges, Taxes and Fees**

A FUSF percentage surcharge factor is assessed monthly on billed recurring interstate charges of end user services. For applicable FUSF Charges, see <https://www.fcc.gov/general/contribution-factor-quarterly-filings-universal-service-fund-usf-management-support>.

Rates and charges set forth in this Service Guide are exclusive of and Customer will pay all taxes (excluding those on AT&T’s net income), surcharges, recovery fees, customs clearances, duties, levies, shipping charges and other similar charges (and any associated interest and penalties resulting from Customer’s failure to timely pay such taxes or similar charges) relating to the sale, transfer of ownership, installation, license, use or provision of services provided by AT&T, except to the extent Customer provides a valid exemption certificate prior to the delivery of services.

**Cost Assessment Charge**

A Cost Assessment Charge (CAC) is assessed on a percentage basis against all billed revenue for business customers subscribing to AT&T Switched Ethernet Service. The CAC is established to recover property taxes. This charge is not a tax or fee that the government requires AT&T to collect from customers. The CAC will not apply to Federal, State or Local Government Accounts, or to any accounts identified in the billing systems of AT&T as being exempt from application of the Federal Universal Service Fund (FUSF).

<u>Service</u>	<u>Monthly % Rate</u>
AT&T Switched Ethernet Service	
Alabama	1.87%
Arkansas	1.27%
California	0.99%
Florida	1.74%
Georgia	0.00%
Illinois	0.70%
Indiana	1.57%
Kansas	2.37%
Kentucky	0.00%
Louisiana	0.00%
Michigan	1.15%
Mississippi	1.72%
Missouri	1.51%
Nevada	1.08%
North Carolina	1.06%
Ohio	0.00%
Oklahoma	1.24%
South Carolina	2.85%
Tennessee	1.47%
Texas	1.56%
Wisconsin	2.00%

(N)

(N)

Certain material previously appearing on this page now appears on Original Page 13.1.

**SD-2 Service Availability**

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AT&T Switched Ethernet Service provides transport service where suitable equipment and facilities are available in selected geographic areas within the operating territories of AT&T. Where facilities are not available, facilities may be constructed subject to terms as set forth in Section SD-4.11. Special Construction charges may apply.

**SD-3 Provisioning and Service Arrangements**

AT&T Switched Ethernet Service will be provisioned using the service components described below.

AT&T Switched Ethernet Service is available in two serving arrangements and two types of Customer Port Connections - the Basic Service Arrangement and Basic Ports described in Section SD-3.1 and the Per Packet Class of Service (PPCoS) Arrangement and PPCoS Ports described in Section SD-3.2. Unless specifically stated otherwise, all references to Customer Port Connections or ports in Sections SD-3.1 and SD-3.2 shall be deemed to refer to Basic Ports and PPCoS Ports, respectively, and all references to Customer Port Connections or ports in other sections of this Service Guide shall be deemed to refer to both Basic Ports and PPCoS Ports.

**SD-3.1 Basic Service Arrangement**

This type of service provides transport of data using a fixed class of service for each Ethernet Virtual Connection.

**SD-3.1.1 Basic Customer Port Connection (Basic port)**

This component provides the physical transport facilities from the Customer's premises to an Ethernet switch at an AT&T central office. The Customer Port Connection is available at transmission speeds of 100 Mbps, 1 Gbps and 10 Gbps.

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Certain material on this page previously appeared on 2nd Revised Page 13.

## SECTION 2 - Service Description

**SD-3.1.2 Committed Information Rate (CIR) and Class of Service (CoS)**

CIR, sometimes referred to as the “Logical Channel” of the port, provides the bandwidth available on a Customer Port Connection. CIR is available in increments ranging from 2 Mbps to 100 Gbps. (C)

The Table below shows the CIR available for each Customer Port Connection.

<b>Supported CIR by Port Speed</b>	
<b>Customer Port Connection</b>	<b>CIR Bandwidth Supported</b>
100 Mbps	2 Mbps – 100 Mbps
1 Gbps	2 Mbps – 1000 Mbps
10 Gbps	1000 Mbps – 10,000 Mbps
100 Gbps	10,000 Mbps – 100,000 Mbps

(N)

The Customer must select a CIR for each Basic Port. The CIR selected cannot exceed the Customer Port Connection capacity. CIR is offered with multiple choices for CoS. CoS establishes the performance characteristics of the network that are suitable for certain applications. Each Customer Port Connection (port) has a single CIR and CoS associated with it. CoS options are listed as a hierarchy, from “highest” to “lowest” based on network prioritization and performance as follows:

- **Real-Time**  
Supports applications that require minimal loss, are latency-sensitive and require low latency variation (jitter), including voice. The service parameters associated with Real-Time CoS are Packet Delivery Rate (PDR), Latency, Jitter, and Network Availability.
- **Interactive**  
Supports high-priority business data applications or jitter-sensitive applications such as voice and video. The service parameters associated with Interactive CoS are PDR, Latency, Jitter, and Network Availability.
- **Business Critical-High**  
Supports most business data applications with moderate tolerance for delay and which are more sensitive to jitter and have a higher priority than Business Critical-Medium. The service parameters associated with Business Critical-High CoS are PDR, Latency, and Network Availability.
- **Business Critical-Medium**  
Supports most business data applications with moderate tolerance for delay and which are less sensitive to jitter. The service parameters associated with Business Critical-Medium CoS are PDR, Latency, and Network Availability.
- **Non-Critical High**  
Supports low priority business applications with more tolerance for delay and availability. The service parameters associated with Non-Critical High CoS are PDR, Latency, and Network Availability.

SECTION 2 - Service Description

**SD-3.1.3 Ethernet Virtual Connections (EVC)**

An EVC provides a logical connection to enable the flow of Ethernet traffic for point-to-point and multipoint Customer configurations. EVCs may be established between ports located in the same LATA or in different LATAs (due to current systems limitations, interLATA EVCs are not available at all locations or for all port types). Standard EVCs are not billed to the Customer as a separate rate element. Each EVC is assigned a CIR and CoS that must be equal to or lower than the CIR and CoS of the Port. EVCs can be ordered in any 1 Mbps increment up to the maximum EVC CIR of 1000 Mbps, except for point-to-point EVCs between two ports in the same LATA which have a maximum of 2000 Mbps on 10 Gbps ports. 100 Gbps ports will allow the ordering of EVC CIR of 10 Gbps to 100 Gbps. Requests for EVC CIR above these limits will be evaluated on an Individual Case Basis, taking into consideration factors such as facility conditions and the impact of the requested configuration on network performance. (N)

The total assigned bandwidth (sum of the CIR for all EVCs) on a single port cannot exceed the selected CIR of that port. Point-to-point EVCs must be symmetrical; the EVC CIR at each port must be the same (except when one end of a point-to-point EVC terminates on a Broadband Port, in which case the end terminating on the Broadband Port will not have a subscribed CIR). For multipoint EVCs, the CIR for any EVC may be set according to the bandwidth needed at that port and does not need to be the same at all ports. Ports that do not meet SLA objectives due to overloading of traffic in a multipoint arrangement will not be eligible for the PDR SLA.

The following chart provides the maximum number of EVCs supported for point-to-point and multipoint configurations on each Customer Port Connection:

Per Customer Port Connection	EVCs
100 Mbps	Up to 8 EVCs
1 Gbps	Up to 64 EVCs
10 Gbps	Up to 508 EVCs
100 Gbps	Up to 4089 EVCs

(N)

Customers may configure EVCs as point-to-point (connecting two locations) or as multipoint (connecting three or more locations), as defined above. Point-to-point EVCs can be associated with an unlimited number of MAC addresses. Multipoint EVCs will be limited to 250 MAC addresses per EVC on each port, unless the Customer purchases the Additional MAC Addresses optional feature. For example, a port that is provisioned with 3 separate multipoint EVCs may have up to 250 MAC addresses associated with each of those EVCs, for a total of 750 MAC addresses in use on that port, but each EVC is still limited to a maximum of 250 MAC addresses.

SECTION 2 - Service Description

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**SD-3.1.4 Frame Size**

AT&T Switched Ethernet Service ports will support Ethernet frame sizes up to 9126 bytes with the following exceptions:

- Ports deployed using Ethernet over copper loop transport (EoCu) will be limited to 1526 bytes.
- 100 Mbps Ports installed prior to July 2013 may be limited to 1526 bytes.

**SD-3.2 Per Packet Class of Service Arrangement**

This service arrangement provides transport of data with variable Classes of Service within an Ethernet Virtual Connection, using a feature called “Per Packet Class of Service” or “PPCoS.” With this serving arrangement, the Customer applies a priority identifier to each Ethernet frame (packet) within an EVC, and the packet is given the associated CoS priority level within the AT&T network. PPCoS Service Arrangement is offered where suitable PPCoS facilities exist, and may not be available at all locations for which the Basic Service Arrangement is available.

**SD-3.2.1 PPCoS Customer Port Connection (PPCoS port)**

This component provides the physical transport facilities from the Customer’s premises to an Ethernet switch at an AT&T central office. The Customer Port Connection is available at transmission speeds of 100 Mbps, 1 Gbps, 10 Gbps, and 100 Gbps.

(N)

SECTION 2 - Service Description

**SD-3.2.2 Committed Information Rate (CIR) and Class of Service (CoS) Packages**

CIR, sometimes referred to as the “Logical Channel” of the port, provides the bandwidth available on a Customer Port Connection. CIR is available per Customer Port Connection in increments ranging from 2 Mbps to 100 Gbps as set forth in the Table below.

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<b>Supported CIR Bandwidth by Port Speed</b>	
<b>Customer Port Connection</b>	<b>CIR Bandwidth Supported</b>
100 Mbps	2 Mbps – 100 Mbps
1 Gbps	2 Mbps – 1000 Mbps
10 Gbps	1000 Mbps – 10,000 Mbps
100 Gbps	10,000 Mbps – 100,000 Mbps

(N)

The Customer must select a CIR for each PPCoS Port. The CIR selected cannot exceed the Customer Port Connection capacity. Under the PPCoS Service Arrangement, CIR is offered in “packages” that specify the maximum percentage of traffic that may be assigned a given Class of Service in a variety of combinations. Each PPCoS port will be ordered with one PPCoS CIR package. Customers may select a PPCoS CIR package that best matches the characteristics of their data and its associated priority levels.

PPCoS Packages (listed in hierarchical order from highest priority to lowest priority):

- Multimedia High - Allows Customer to designate up to 100 percent of port CIR as "Real Time" and remaining percentage (if any) can be divided among any/all CoS (below Real Time) as ordered.
- Multimedia Standard - Allows Customer to designate up to 50 percent of port CIR as "Real Time" and the remaining percentage can be divided among any/all CoS (below Real Time) as ordered.
- Critical Data - Allows Customer to designate up to 80 percent of port CIR as "Business Critical - High" and the remaining percentage can be divided among any/all CoS (below Business Critical - High) as ordered.
- Business Data - Allows Customer to designate up to 90 percent of port CIR as "Business Critical - Medium" and the remaining percentage can be divided among any/all CoS (below Business Critical - Medium) as ordered.

These CoS settings may be ordered in 5 percent increments (between 5 percent and 30 percent) and in 10 percent increments (from 40 percent to 100 percent).



SECTION 2 - Service Description

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**SD-3.2.3 Per Packet Class of Service – Classes of Service**

The PPCoS CIR packages are provisioned on PPCoS ports and allow the Customer to apply a CoS priority indicator to each Ethernet frame (packet) and AT&T will route the packet with the assigned CoS priority. The Customer-assigned priority will signify which of the following six Classes of Service AT&T will apply to that frame. PPCoS Ports support the same Classes of Service as are supported by the Basic Service Arrangement, plus an additional Class of Service (Non-Critical - Low) as described below. CoS options are listed as a hierarchy, from “highest” to “lowest” based on network prioritization and performance as follows:

- Real-Time
- Interactive
- Business Critical-High
- Business Critical-Medium
- Non-Critical High
- Non-Critical Low (Supports the lowest priority traffic)

**SD-3.2.4 PPCoS Scheduling Method**

The AT&T Switched Ethernet Service network components will create a separate queue for each CoS served according to its weight/priority to ensure that higher CoS packets are prioritized over lower, but that even the lowest CoS is not “starved”. PPCoS ports can be ordered in one of two available configurations in order to support different “egress scheduling methods.” Requests to change the type of PPCoS Scheduling Method of an existing port may require a new port to be ordered.

**SD-3.2.4.1 Port-Level Egress Scheduling**

Under this method, AT&T will prioritize all egress traffic on the port using a single queue schedule, so that the specified percentages of each priority are allowed to egress the network according to a single egress schedule for the port. This is the only option applicable to “port-based” service. This method can also be used for VLAN-based ports if the Customer desires CoS priority to be applied as a single queue at the port level.

**SD-3.2.4.2 VLAN Level Egress Scheduling**

Under this method, there are individual egress scheduling queues for each EVC (VLAN) on the port and the priority or volume of packets on one EVC have no impact on another EVC. This may be appropriate when the Customer needs each EVC to have its own egress prioritization schedule without impacting other EVCs on the port.

SECTION 2 - Service Description

**SD-3.2.5 Ethernet Virtual Connections (EVC)**

An EVC provides a logical connection to enable the flow of Ethernet traffic for point-to-point and multipoint Customer configurations. EVCs may be established between ports located in the same LATA or in different LATAs (due to current systems limitations, interLATA EVCs are not available at all locations or for all port types). Standard EVCs are not billed to the Customer as a separate rate element. Each EVC is assigned a CIR that must be equal to or lower than the CIR of the Port. Under the PPCoS serving arrangement, each EVC must also be given a CoS profile specifying the proportion of each desired CoS (% of each CoS) on that EVC. The CoS allocation must be within the limits of the CIR package subscribed to on that PPCoS port. EVCs can be ordered in any 1 Mbps increment up to the maximum EVC CIR of 1000 Mbps, except for point-to-point EVCs between two ports in the same LATA which have a maximum of 2000 Mbps. Requests for EVC CIR above these limits will be evaluated on an Individual Case Basis, taking into consideration factors such as facility conditions and the impact of the requested configuration on network performance. The total assigned bandwidth (sum of the CIR for all EVCs) on a single port cannot exceed the selected CIR of that port. Point-to-point EVCs must be symmetrical; the EVC CIR at each port must be the same (except when one end of a point-to-point EVC terminates on a Broadband Port, in which case the end terminating on the Broadband Port will not have a subscribed CIR).

For multipoint EVCs, the CIR for any EVC may be set according to the bandwidth needed at that port and does not need to be the same at all ports. Ports that do not meet SLA objectives due to overloading of traffic in a multipoint arrangement will not be eligible for the PDR SLA.

The following chart provides the maximum number of EVCs supported for point-to-point and multipoint configurations on each Customer Port Connection:

Per Customer Port Connection	EVCs
100 Mbps	Up to 8 EVCs
1 Gbps	Up to 64 EVCs
10 Gbps	Up to 508 EVCs
100 Gbps	Up to 4089 EVCs

(N)

Customers may configure EVCs as point-to-point (connecting two locations) or as multipoint (connecting three or more locations), as defined above. Point-to-point EVCs can be associated with an unlimited number of MAC addresses. Multipoint EVCs will be limited to 250 MAC addresses per multipoint EVC on each port, unless the Customer purchases the Additional MAC Addresses optional feature. MAC addresses associated with point-to-point EVCs do not count against this limit. For example, a port that is provisioned with 3 separate multipoint EVCs may have up to 250 MAC addresses associated with each of those EVCs, for a total of 750 MAC addresses in use on that port, but each EVC is still limited to a maximum of 250 MAC addresses.

SECTION 2 - Service Description

**SD-3.2.6 Frame Size**

AT&T Switched Ethernet Service ports will support Ethernet frame sizes up to 9126 bytes with the following exceptions:

- Ports deployed using Ethernet over copper loop transport (EoCu) will be limited to 1526 bytes.
- 100 Mbps Ports installed prior to July 2013 may be limited to 1526 bytes.

**SD-3.3 Broadband Service Arrangement**

(N)

This type of service provides transport of data using a single, fixed class of service for each Ethernet virtual connection. This class of service does not include any defined service parameters or SLAs (e.g., Latency, Packet Delivery Rate (PDR), Jitter or Network Availability).

**SD-3.3.1 Broadband Customer Port Connection (Broadband Port)**

This component provides the physical transport facilities from the Customer’s premises to an Ethernet switch at an AT&T central office. The Customer Port Connection has a maximum transmission speed of 1 Gbps, and can synchronize with Customer-owned equipment at lower transmission speeds using Auto-Negotiation.

**SD-3.3.2 Broadband Speed Tiers and Class of Service (CoS)**

Broadband Speed Tiers define the maximum bandwidth available on any Customer Port Connection.

Broadband Speed Tiers are offered in six asymmetric speeds (for which the downstream speed is higher than the upstream speed) and two symmetric speeds (for which the downstream and upstream speeds are the same). Broadband Speed Tiers represent the maximum downstream and upstream bandwidth that customer can achieve; however, the actual rate of transmission may vary. Therefore, Broadband Speed Tiers are not committed or guaranteed transmission rates. Broadband Ports and/or certain Broadband Speed Tiers may not be available in all areas.

<b>Broadband Speed Tiers (Maximum Bandwidth)</b>	
<b>Downstream</b>	<b>Upstream</b>
3 Mbps	1 Mbps
6 Mbps	1 Mbps
12 Mbps	1.5 Mbps
18 Mbps	1.5 Mbps
24 Mbps	3 Mbps
45 Mbps	6 Mbps
2 Mbps	2 Mbps
4 Mbps	4 Mbps

(N)

Some material previously appearing on this page now appears on Original Page 20.2.

The Customer must select a Broadband Speed Tier for each Broadband Port. Broadband Ports are offered with a single CoS, as follows: (N)

Broadband Basic CoS - Intended for non-critical business applications with more tolerance for delay and availability. This CoS does not include any specified service parameters or SLAs (including PDR, Latency, Jitter, or Network Availability).

### **SD-3.3.3 Ethernet Virtual Connections (EVC)**

An EVC provides a logical connection to enable the flow of Ethernet traffic for point-to-point and multipoint Customer configurations. Standard EVCs are not billed to the Customer as a separate rate element.

Each EVC terminating on a Broadband Port is capable of transmitting the full bandwidth of the Broadband Speed Tier; however, the aggregate transmission rate of all EVCs on that port cannot exceed the Broadband Speed Tier. The distant end port may be Broadband, Basic, or PPCoS Port. An EVC connecting a Broadband Port to a Basic or a PPCoS Port must have a CIR assigned to it at the end of the EVC terminating on the Basic or PPCoS Port. The Customer is responsible for allocating an appropriate amount of bandwidth to each EVC and for shaping traffic so as not to exceed the amount of traffic that the Broadband Port and distant end port(s) can receive.

Every EVC must be assigned a CoS at each port on which it terminates. At each such port, the EVC's CoS must be one of the CoS supported by that port; e.g., an EVC that connects a Broadband Port and a Basic Port must be assigned the Broadband Basic CoS at the Broadband Port and, at the Basic Port, must be assigned one of the CoS supported by a Basic Port.

A Broadband Port can support a maximum of eight (8) EVCs.

Customers should connect to a Broadband Port using a routing device rather than an Ethernet hub, bridge or switch. Only 64 MAC addresses will be available per Broadband Port. If the Customer transmits more than 64 MAC addresses and creates an impairment to services provided by AT&T to the Customer or any third party, AT&T may temporarily discontinue the Customer's service. During such period of temporary discontinuance, the credit allowance for service interruptions as set forth in Section SLA-3 is not applicable and AT&T will continue to bill the service. If Customer has not corrected impairment within 60 days after temporary discontinuance, AT&T may terminate the service by written notice to Customer.

### **SD-3.3.4 Frame Size**

Broadband Ports can support Ethernet frame sizes up to 1522 bytes. (N)

## **SD-4 Optional Features and Functions**

### **SD-4.1 Regenerator**

Regenerators provide detection and retransmission of Ethernet signals and are used to provide service when the distance to an Ethernet switch exceeds otherwise applicable design limits. AT&T will determine whether regenerators are needed and what transport medium and equipment will be used to provide regeneration. Regenerators are available on a per-port basis and are available for 100 Mbps, 1 Gbps, 10 Gbps and 100 Gbps ports. (C)

Regenerators are not available with Broadband Ports.

### **SD-4.2 Additional MAC Addresses**

The Additional MAC Address feature is offered on a per port basis. When a Customer subscribes to this feature, the MAC address limit associated with multipoint EVCs (as shown in Sections SD-3.1.3 and SD-3.2.5) shall be increased from 250 to 500 for each multipoint EVC present on that port.

A nonrecurring charge and monthly charge shall apply per port for increasing the MAC address limit to 500 MAC addresses per Multipoint EVC.

The Additional MAC Address feature is not available with Broadband Ports.

### **SD-4.3 AT&T BusinessDirect® Customer Network Management**

The AT&T BusinessDirect® web portal offers a Customer network management feature to all Customers subscribing to AT&T Switched Ethernet Service at no additional charge. Available functions include network inventory map, performance reporting, and maintenance. Customers must have a web interface to access and monitor their network using the AT&T BusinessDirect® web portal.

### **SD-4.4 Alternate Serving Switch**

The Alternate Serving Switch option allows Customers to order AT&T Switched Ethernet Service from an AT&T Switched Ethernet Service switch that is different from the AT&T Switched Ethernet Service switch that would normally serve the Customer's premises. The Alternate Serving Switch charges apply for mileage measured between the AT&T Switched Ethernet Service alternate switch wire center and the Customer's premises serving wire center. Monthly rates apply for mileage from the alternate AT&T Switched Ethernet Service switch to the Customer's premises serving wire center and are based on design and will be determined at the time of order.

The Alternate Serving Switch feature is not available with Broadband Ports.

Some material appearing on this page previously appeared on Original page 20.

SECTION 2 - Service Description

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**SD-4.5 Diverse Access**

Diverse Access is a feature that provides transmission paths, which are diverse from each other as provided in this Section, between two designated AT&T Switched Ethernet Service Port Connections at the same Customer premises and an AT&T Switched Ethernet Service switch. These two designated Port Connections must be purchased by the same Customer, and must be either 1 Gbps, 10 Gbps or 100 Gbps. Customers purchasing Diverse Access will be charged a Diverse Access feature charge associated with each of the two designated Port Connections. (N)

Each designated Port Connection will be provisioned on different Network Terminating Equipment (NTE). The fiber path from each designated Port Connection to the AT&T Switched Ethernet Service serving switch will be diverse from the path for the other designated Port Connection, from the closest available point of divergence (e.g., the closest manhole to the Customer premises or the closest Serving Wire Center to the Customer premises) and, where alternate switches are available, will be terminated on a different AT&T Switched Ethernet Service switch. In the event of an outage affecting one of the designated Port Connections, the Customer will be responsible for re-routing their traffic to the other designated Port Connection.

Diverse Access does not include construction of dual entrance facilities. If a Customer desires dual entrance facilities and they do not currently exist, arrangements must be made for constructing dual entrance facilities at the Customer's expense.

The Diverse Access feature is not available with Broadband Ports.

**SD-4.6 Advanced Access Failover**

Advanced Access Failover (AAF) provides automatic failover to a redundant facility in the event of a failure of a protected facility. When a port is ordered with an AAF serving arrangement, it will be constructed with a single Customer interface, but with additional facilities within the network. There will be two fiber pairs (instead of the normal single pair) connecting the Network Terminating Equipment (NTE) to two different core Ethernet switches in the AT&T Switched Ethernet core network. These two fiber pairs will be diverse from each other from the closest available point of divergence (e.g., the closest manhole to the Customer premises or the closest Serving Wire Center to the Customer premises). The two facilities will operate in a "hot/standby" arrangement where "hot" represents the actively used transmission path and "standby" represents an alternate path that is unused until needed. In the event the AT&T Switched Ethernet Service network senses a disruption to a diverse portion of the facilities, it will automatically failover from the hot path to the standby path and the Ethernet Virtual Connections (EVCs) associated with that port will continue to operate over the standby path. AAF does not include construction of dual entrance facilities. If a Customer desires dual entrance facilities and they do not currently exist, arrangements must be made for constructing dual entrance facilities at the Customer's expense. AAF is available only for 1 Gbps, 10 Gbps or 100 Gbps Customer Port Connections and is ordered on a per port basis. (T) (C)

The Advanced Access Failover feature is not available with Broadband Ports.

## SECTION 2 - Service Description

**SD-4.7 Enhanced Multicast**

The Enhanced Multicast feature allows the broadcast/ unknown unicast/multicast/ (BUM) traffic limit associated with multipoint EVCs to be increased from 2 Mbps to 30 Mbps per EVC. The Enhanced Multicast feature is offered on a per port basis. Once the feature is ordered on a port, each multipoint EVC on that port may be provisioned to allow up to 30 Mbps of combined BUM traffic, orderable in 1 Mbps increments. Multipoint EVC orders for such ports that do not specify a higher limit as allowed under this feature will be limited to the standard default of 2 Mbps BUM limit. Monthly rates apply to each port provisioned with the feature. An additional charge will apply for adding or removing the Enhanced Multicast Feature on an existing port.

The Enhanced Multicast feature for Broadband Ports applies only to Broadband Speed Tiers of 24Mbps Downstream - 3Mbps Upstream, 45Mbps Downstream – 6Mbps Upstream, and 4Mbps Downstream – 4Mbps Upstream. (N)  
(N)  
(N)

**SD-4.8 Meet Point Arrangements**

In some cases, AT&T and an unaffiliated Incumbent Local Exchange Carrier (ILEC, sometimes also referred to as an Independent Company or ICO) may agree to jointly provide an Ethernet service where such service will be provided to locations in both AT&T's and the ILEC's serving territories within the same LATA. In such cases, AT&T and the other ILEC may mutually agree to meet at a location (i.e., meet point) within the LATA utilizing facilities suitable for delivery of AT&T Switched Ethernet Service. The rates and charges for AT&T Switched Ethernet Service are applicable for the AT&T provided portion of such service. AT&T is responsible for the ordering, provisioning, billing and maintenance of such AT&T Switched Ethernet Service up to the meet point.

Meet point arrangements, where available, may be offered in two configurations:

- Direct LEC is a dedicated AT&T Switched Ethernet Service port connection that provides connectivity from an AT&T Ethernet switch to a meet point with the other service provider. In addition to port, CIR and any other rates and charges applicable to the AT&T Switched Ethernet Service, Direct LEC Additional Mileage charges will apply based on the airline distance measured from the meet point to the wire center in which the Ethernet switch for AT&T Switched Ethernet Service is located. Mileage is provided in four mileage bands up to 50 miles. DirectLEC is not available with Broadband Ports. (N)  
(N)
- ICO NNI Arrangement (ICO Trunking Arrangement) provides a shared trunk connection from the AT&T Switched Ethernet Service switch to the meet point that is then connected to the ILEC (ICO) Ethernet switch, for purposes of providing multiple Ethernet Virtual Connections (EVCs) for the same or different Customers over this shared facility. The ICO Trunk Connection charge is applied to each EVC that is transported on the ICO Trunking Arrangement. The Additional Mileage rate is based on the distance measured from the AT&T Switched Ethernet Service switch to the meet point for mileage that exceeds 10 miles and is applicable to each ICO Trunking Arrangement EVC transported across the shared facility. EPP monthly rates apply for each EVC provisioned on the ICO NNI Arrangement.

SECTION 2 - Service Description

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**SD-4.9 Additional Engineering and Additional Labor****SD-4.9.1 Additional Engineering**

Additional Engineering is not an ordering option but will be applied to an order when AT&T determines additional engineering is necessary to accommodate a Customer request. When additional engineering is required, the Customer will be notified and furnished with a written statement setting forth the justification for the additional engineering as well as an estimate of the charges.

If the Customer agrees to the additional engineering, a firm order will be established. If, after being notified that additional engineering of AT&T facilities is required, the Customer does not want the service or facilities, the order will be withdrawn and no charges will apply. Once a firm order has been established, the total charge to the Customer for the additional engineering may not exceed the estimated amount by more than 10 percent.

Additional Engineering will be provided by AT&T at the request of the Customer only when:

- A Customer requests additional technical information after AT&T has already provided the technical information normally included on the Design Layout Report (DLR). (C)
- Additional engineering time is incurred by AT&T to engineer a Customer's request for a customized service.

AT&T will notify the Customer that Additional Engineering Charges will apply before any additional engineering is undertaken.



SECTION 2 - Service Description

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**SD-4.9.2 Additional Labor**

Additional Labor is that labor requested by the Customer on a given service and agreed to by AT&T as set forth in the following. (C)

AT&T will notify the Customer that Additional Labor Charges, as set forth in the pricing section of this Service Guide, will apply before any additional labor is undertaken. Additional Labor Charges apply for each half hour or fraction thereof unless otherwise specified herein.

A call-out of AT&T personnel requiring Additional Labor will be charged a minimum of four (4) hours on an Overtime and/or Premium Time basis when the call-out is attributed to a Customer request/problem. However, at no time will the Customer be charged if trouble is found to be on AT&T's side of the demarcation point.

Types of Additional Labor are:

- Overtime Installation is that AT&T installation effort outside of a normal business day.
- Stand by includes all time in excess of one-quarter (1/4) hour during which AT&T personnel stand by at the Customer's request.
- Testing and Maintenance with Other Service Providers: Additional testing, maintenance or repair of facilities which connect to facilities of other service providers, is that which is in addition to the normal effort required to test, maintain or repair facilities provided solely by AT&T. (C)
- Other Labor: Other Labor is that additional labor not included in the preceding items, including but not limited to labor incurred to accommodate a specific Customer request that involves only labor which is not covered by any other section of this Service Guide. (C)

Hourly rates for Additional Labor are based upon the time of day, day of the week, and if the work is performed on an AT&T holiday as set forth below:

- Basic Time - Work related efforts of AT&T performed during a normal business day, 8:00 a.m. – 5:00 p.m., Monday through Friday.
- Overtime - Work related efforts of AT&T performed outside of a normal business day (Monday through Friday), and on Saturdays.
- Premium Time - Work related efforts of AT&T performed on Sundays and/or AT&T holidays.

SECTION 2 - Service Description

---

**SD-4.10 Testing**

Additional Cooperative Acceptance Testing and Nonscheduled Testing are testing services available to Customers.

- **Additional Cooperative Acceptance Testing (ACAT)**

When a Customer provides a technician at its premises or at an end user's premises, (C)  
with suitable test equipment to perform the requested tests, AT&T will provide a (C)  
technician at its office for the purpose of conducting Additional Cooperative Acceptance  
Testing. At the Customer's request, AT&T will provide a technician at the Customer's  
premises or at the end user premises.

- **Nonscheduled Testing (NST)**

When a Customer provides a technician at its premises with suitable test equipment to (D)  
perform the required tests, AT&T will provide a technician at its office for the purpose of (C)  
conducting Nonscheduled Testing. At the Customer's request, AT&T will provide a  
technician at the Customer's premises.

When the Customer subscribes to testing services, the Customer shall make the facilities to be (C)  
tested available to AT&T at times mutually agreed upon.

**SD-4.11 Special Construction****SD-4.11.1 General**

This section contains the conditions and charges applicable for special construction of facilities.

When special construction of facilities is required, the conditions following apply in addition to all conditions, rates and charges set forth in this Service Guide.

**SD-4.11.2 Conditions****SD-4.11.2.1 Ownership of Facilities**

AT&T retains ownership of all specially constructed facilities provided under this Service Guide.

**SD-4.11.2.2 Interval to Provide Facilities**

Based on available information and the type of service ordered, AT&T will establish a completion date for the specially constructed facilities. If the scheduled completion date cannot be met due to circumstances beyond the control of AT&T, a new completion date will be established and the Customer will be notified.

SECTION 2 - Service Description

---

**SD-4.11.3 Payments for Special Construction****SD-4.11.3.1 Payment of Charges**

Where AT&T is requested to provide special construction, a lump sum upfront payment equal to the additional non-recoverable cost will apply unless other payment arrangements are agreed upon with AT&T. This upfront payment must be paid prior to the start of construction.

**SD-4.11.3.2 Nonpayment of Charges**

If a Customer fails to pay special construction charges due, refusal and discontinuance of the services using the specially constructed facilities shall be in accordance with the appropriate Conditions under which service is being provided.

**SD-4.11.4 Charges for Special Construction****SD-4.11.4.1 General**

Various charges may apply when AT&T provides special construction of facilities in accordance with an order for service. Written approval of all charges must be provided to AT&T prior to the start of construction.

**SD-4.11.4.2 Conditions Requiring Special Construction**

Special construction is required when:

- (1) Facilities are not available to meet an order for service,
- (2) AT&T constructs facilities, and
- (3) One or more of the following conditions exist:
  - AT&T has no other requirement for the facilities constructed.
  - It is requested that service be furnished using a type of facility, or via a route, other than that which AT&T would normally utilize in furnishing the requested service.
  - More facilities are requested than would normally be required to satisfy an order.
  - It is requested that construction be expedited, resulting in added cost to AT&T.

**SD-4.11.4.3 Development of Charges**

Special construction charges and liabilities will be developed based on estimated costs.

SECTION 2 - Service Description

---

**SD-4.11.4.3.1 Types of Charges**

Depending on the specifics associated with each individual case, one or more of the following special construction charges may be applicable:

- Nonrecurring Charge

A nonrecurring charge always applies and includes one or more of the following components:

- Case Preparation Charge

A nonrecurring charge always includes a case preparation charge component to cover the administrative expenses associated with preparing a special construction case.

- Expediting Charge

A nonrecurring charge may include an expediting charge when it is requested that special construction be completed on an expedited basis. The charge equals the difference in estimated cost between expedited and non-expedited construction.

- Lease Charge

This charge applies when AT&T leases equipment in order to meet service requirements. The amount of the charge is equal to the net added cost to AT&T caused by the lease.

- Cancellation Charge

This charge includes all nonrecoverable costs incurred by AT&T in association with the special construction up to and including the time of cancellation, where the Customer cancels the special construction prior to the start of service.

- Rearrangement Charge

If AT&T is requested to rearrange existing specially constructed facilities, a nonrecurring charge equal to the cost of any additional special construction will apply.

SECTION 2 - Service Description

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**SD-4.12 Billing Media**

The Customer may, without charge, receive the initial copy of their monthly bill and service and feature record in a standard media format provided by AT&T. Billing media formats include:

- Paper
- Electronic Data Interchange (EDI)
- Electronic data transmission
- Floppy diskette
- CD-ROM
- DVD
- Magnetic tape
- Microfiche

Not all billing media formats are available from every AT&T participating carrier. Additional copies of bills and secondary bills may be available subject to an additional charge.

Changes involving billing format changes or changes to the billing period are also subject to an additional charge.

**SD-5 Traffic Controls and Limitations**

AT&T may use controls to limit the amount of broadcast, unknown unicast, and multicast (BUM) traffic to protect the AT&T Switched Ethernet network against traffic storms. The maximum throughput of combined BUM traffic will be set at 2 Mbps per multipoint EVC, unless the Customer purchases the Enhanced Multicast optional feature in SD-4.7. Packets dropped by traffic controls are not included in SLA calculations. AT&T recommends that Customers enable controls for BUM traffic within the Customer network(s). There is no BUM restriction on point-to-point EVCs.

(C)  
(D)  
(N)  
(N)