

ACCESS SERVICE

30. (1)

(D)

(1) Material in this section has been de-tariffed as required by the Commission upon use of the forbearance relief pursuant to FCC Memorandum Opinion and Order No. 07-180 released October 12, 2007. Terms and Conditions associated with de-tariffed services are available at [www.att.com/guidebook](http://www.att.com/guidebook).

(This page filed under Transmittal No. 385 )

---

Issued: January 24, 2008

Effective: February 8, 2008

Four AT&T Plaza, Dallas, Texas 75202

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

## ACCESS SERVICE

30. OC-192 Dedicated SONET Ring Service (Cont'd)

(N)

30.3 Rate Regulations (Cont'd)(A) Rate Elements (Cont'd)(1) Nodes (Cont'd)(ii) Sub-Ring Node

A sub-ring node is a lower speed optical extension off a main ring. It traverses one or more main ring nodes via the use of OC-N port connections on and off the main ring. The primary use of sub-ring nodes is to provide the ability to fully utilize the bandwidth around the ring when the customer requires DS1/VT1.5 circuit paths.

An optional sub-ring node is available at OC-3, OC-12 and OC-48 speeds from an OC-192 main ring. A sub-ring node may only connect to the main ring at the same, or an adjacent, main ring node. A sub-ring node may not connect directly to another sub-ring node.<sup>(1)</sup>

Any service that enters the main ring via a port on a sub-ring node must also exit via a port on another sub-ring node (sub-ring on - sub-ring off).<sup>(1)</sup> Cascading sub-rings are not allowed off a main ring. Service circuits may not be established between sub-ring nodes connecting to the same main ring node, or between a sub-ring node and a port on the same main ring node to which it connects.

Each sub-ring must be implemented as an OC-M on an OC-N ring with full complement of STS-1s, STS-3s or STS-12s, depending on the bandwidth of the sub-ring, appearing together at all associated sub-ring nodes on a given sub-ring.

Two OC-N ports and associated node charges apply for each sub-ring node connected to the main ring, as well as applicable mileage for the sub-ring.

A sub-ring node which is collocated with a main ring node at the customers premises (for the same dedicated ring) will be billed as an "Additional Node" per 30.4(A), following. A sub-ring is not available with a two-node main ring configuration.

A sub-ring node is only available in the Uni-Directional Path Switched Ring (UPSR) mode.

<sup>(1)</sup> This restriction does not apply for Next Generation SONET equipment.

(N)

(This page filed under Transmittal No. 380 )

ACCESS SERVICE

30. OC-192 Dedicated SONET Ring Service (Cont'd)

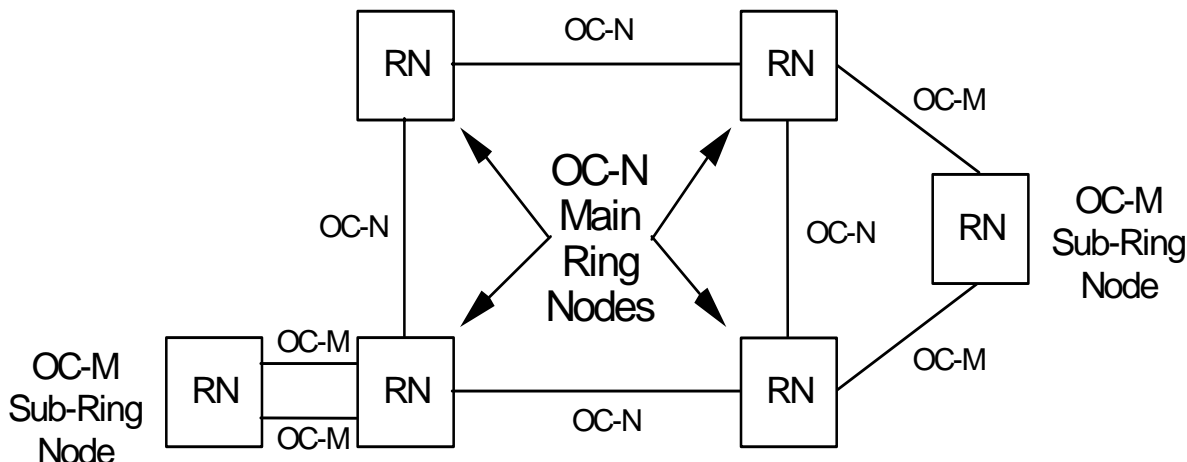
30.3 Rate Regulations (Cont'd)

(A) Rate Elements (Cont'd)

(1) Nodes (Cont'd)

(ii) Sub-Ring Node (Cont'd)

Sub-Ring Node Diagram



Sub-Ring Nodes, OC-M < OC-N

(iii) Arc Sub-Ring Node

Arc sub-ring nodes are only available on Next Generation SONET equipment with service installed after November 2, 2007. An Arc sub-ring node is a lower speed optical extension off a main ring. It connects to one main ring node via the use of OC-N port connections from and to a main ring. The primary use of Arc sub-ring nodes is to add other locations to the ring that will utilize minimal amounts of bandwidth from the main ring.

Arc sub-rings are only available off of UPSR main rings. Arc sub-rings are only available where facilities and/or operating conditions permit, as determined by the Telephone Company.

An optical Arc sub-ring node is available at OC-3, OC-12 and OC-48 speeds from an OC-192 main ring. An Arc sub-ring node may connect to the main ring at any main ring node.

Cascading Arc sub-rings are not permitted off a main ring. Service entering an Arc sub-ring node cannot drop from the directly connecting main ring node (haripinning).

(This page filed under Transmittal No. 380 )

(N)

(N)

## ACCESS SERVICE

30. OC-192 Dedicated SONET Ring Service (Cont'd)

(N)

30.3 Rate Regulations (Cont'd)(A) Rate Elements (Cont'd)(1) Nodes (Cont'd)(iii) Arc Sub-Ring Node (Cont'd)

More than one Arc sub-ring may be added to a main ring. Each Arc sub-ring must be implemented as an OC-M on an OC-N ring with a full compliment of STS-1s, 3s or 12s, depending on the bandwidth of the Arc sub-ring, appearing together at all associated Arc sub-ring nodes on a given Arc sub-ring.

Two OC-N ports apply for each Arc sub-ring connected to the main ring. A node charge applies for each Arc sub-ring location. Mileage charges are applicable when the sub-ring is in a different location than the main ring.

An Arc sub-ring node which is collocated in the same room with a main ring node at the customer's premises (for the same dedicated ring) will be billed as an "Additional Node."

Arc sub-rings do not reduce the bandwidth capacity of the main ring. As services are added to the main or sub-ring, only the bandwidth capacity of the service is reduced.

Arc sub-rings can be provisioned in two basic configurations:

1. Single-node, single-homed ARC
2. Multi-node, single-homed ARC

Circuit traffic can be added/dropped from an Arc sub-ring node to another Arc sub-ring node within the same Arc (known as intra-ARC), or between ARCs (known as inter-ARC). Intra-ARC circuits can only be provisioned as unprotected due to technical limitations. Circuit traffic can also originate on an Arc sub-ring node and route across and drop from a main ring node, but only when UPSR protection schemes are used.

(N)

(This page filed under Transmittal No. 380 )



ACCESS SERVICE

30. OC-192 Dedicated SONET Ring Service (Cont'd)

(N)

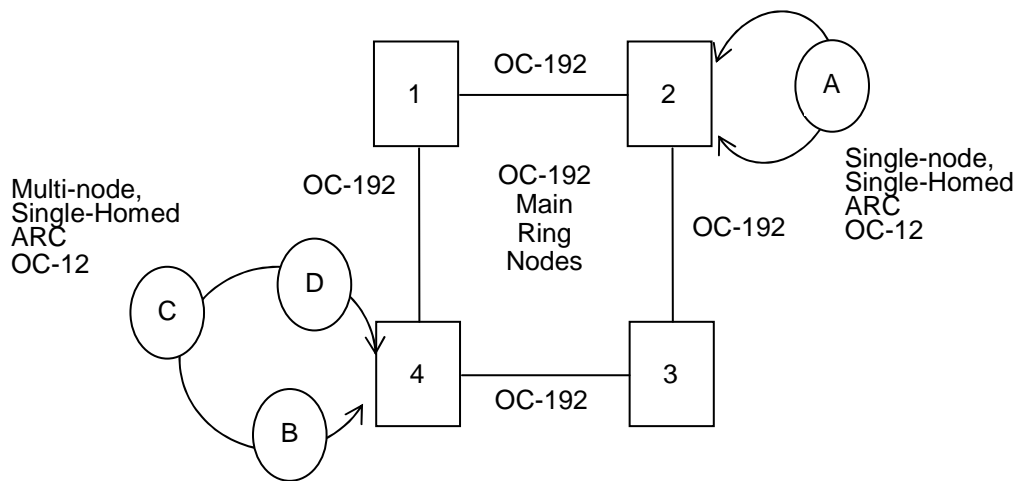
30.3 Rate Regulations (Cont'd)

(A) Rate Elements (Cont'd)

(1) Nodes (Cont'd)

(iii) Arc Sub-Ring Node (Cont'd)

ARC Sub-Ring Node Diagram



ARC Sub-Ring Nodes, OC-M < OC-N

OC-192 Dedicated Ring shown as example.

(N)

(This page filed under Transmittal No. 380 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

## ACCESS SERVICE

30. OC-192 Dedicated SONET Ring Service (Cont'd)30.3 Rate Regulations (Cont'd)(B) Dedicated Ring Connection Capacity

Maximum transport capacity of OC-192 Dedicated Ring Service is characterized by the total quantity of individual port-to-port connections allowed between all nodes on the ring.

For OC-192 Dedicated SONET Ring Service, the maximum ring capacity between adjacent nodes is not to exceed 96 STS-1 equivalents.

OC-192 Dedicated SONET Ring Service will provide capability for node-to-node connection of STS-1 or STS-3C channels using OC-3, OC-3c, OC-12, OC-12c, OC-48, OC-48c, 100 Mbps Ethernet or 1 Gbps Ethernet ports on the OC-192 ring.

OC-192 Dedicated SONET Ring Service will provide capability for node-to-node connections of STS-12C channels using OC-12, OC-12c, OC-48, OC-48c or 1 Gbps Ethernet ports on the OC-192 ring.

OC-192 Dedicated SONET Ring Service will provide capability for node-to-node connections of STS-48C channels using OC-48 or OC-48c ports on the OC-192 ring.

Virtual Concatenation (VCAT) provides the ability and flexibility to size the customer's bandwidth, sub-rate VT1.5 and super-rate STS-1 and 3c service payloads, based on their traffic requirements. For transport of payloads that do not fit efficiently into the standard set of VT1.5, STS-Nc payload envelopes, virtual concatenation can be used.

The maximum transport capacity of an OC-3, OC-12 or OC-48 sub-ring or Arc sub-ring is characterized by the total quantity of individual port connections allowed between all nodes on the ring. Refer to DSRS Section 29.3(A)(7) for combinations.

(N)  
|  
(N)

(This page filed under Transmittal No. 380 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )



ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )



ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )

ACCESS SERVICE

30.<sup>(1)</sup>

(D)

<sup>(1)</sup> See footnote (1) on page 30-1

(This page filed under Transmittal No. 385 )