INTELLILIGHT SERVICES

A. INTELLILIGHT® SHARED SINGLE PATH

1. Availability of Service

IntelliLight® Shared Single Path (**ISSP**) is available, subject to limitations set forth in this Product Guide, where facilities exist in Region 1 and Region 11. (C) (C)

2. Service Description

ISSP is an STS1 (Synchronous Transport Signal Level 1) channel for the SONET transmission of 51.84 Mbps of data between the following locations:

- Customer designated premises to Customer designated premises
- Customer designated premises to collocation arrangement Company wire centers associated with an IEF arrangement(s)
- An IEF arrangement and a Customer designated premises, collocation arrangement, or a Company wire center where STS1 to DS1 multiplexing is performed
- An IDSR central office node and a Customer designated premises, IEF arrangement, collocation arrangement, or Company wire center where STS1 to DS1 multiplexing is performed
- Collocated equipment used for interconnection with the Company or for access to the Company's unbundled network elements pursuant to Section 251(c)(6) of the Communications Act of 1934, as amended, subject to the terms set forth in The Verizon Telephone Companies Tariff FCC No. 1, Section 18, and The Verizon Telephone Companies Tariff FCC No. 11, Section 27, for Dedicated Transit Service.
- Customer designated premises, collocation arrangement, IEF arrangement or IDSR central office port/extension and an IBT multiplexing node.

The signal consists of overhead and a Synchronous Payload Envelope (**SPE**). The overhead portion of the signal is used for controlling, framing and maintaining the signal. The SPE contains the Customer information.

ISSP is provisioned over the Company's shared SONET network and provides Customers with 51.84 Mbps which is the electrical equivalent of the Optical Carrier 1 (**OC1**) or DS3 with additional megabits devoted to SONET overhead information.

ISSP Service may be transported through IOF (Interoffice facilities) as STS1, STS1 with VT1.5 mapping or STS1 with DS3 mapping.

ISSP Services are provided where SONET facilities are available with sufficient bandwidth capacity to meet the Customer's request. For Special Access transmission to a Customer designated premises, ISSP is provided with either an STS1 or DS3 interface. In all other cases, ISSP is provided with an STS1 interface only. The network channel interfaces define the bit rates that are available. Network Channel interfaces and codes may be found at the common language product of iconectiv.com.

INTELLILIGHT SERVICES

A. INTELLILIGHT® SHARED SINGLE PATH (Cont'd)

3. Optional Features and Functions

ISSP Service can be multiplexed. An STS1 can carry up to 28 DS1s when specifically formatted (mapped). Synchronous mapping of DS1s as VT1.5 occurs inside the SONET network and is provided with the ISSP optional feature STS1 to DS1 multiplexing at designated wire centers.

DS1s multiplexing up to DS3 occurs outside the SONET network and requires DS3 to DS1 multiplexing at Company wire centers capable of performing such functions.

4. Terms and Conditions

a. ISSP is available month-to-month, or as a 3-year or 5-year term plan.

b. The minimum Service period for ISSP is twelve months. ISSP Services which are provided on a month-to-month basis are subject to a one year minimum Service requirement. If Service is disconnected during the first year, the minimum period charge is 100% of the monthly rate from the date of disconnection through the end of the first year.

c. Term Plan Services and optional features must remain in service to the end of their commitment period(s) or termination liability will apply.

d. Customers who order an ISSP must specify how the signal is to be mapped, i.e., VT1.5 or DS3 mapped (see definitions for Virtual Tributary and SONET in Part 0, Section 3.

e. ISSP channel terminations, channel mileage and optional features are subject to the guarantees set forth in Part 0, Section 2 for service interruptions.

f. All connections of ISSP Service to a physical or virtual* collocation arrangement must be a 2-fiber connection. Rates and charges for Collocated Interconnection Fiber Optic Cross-Connect Service and SPOT Bay Frame and Terminations are set forth in The Verizon Telephone Companies Tariff FCC No. 1, Sections 19.7.1 and 19.7.2. See The Verizon Telephone Companies Tariff FCC No. 1, Section 19 for additional information.

* Connections to virtual collocation are not available in the operating territories of Region 11.

INTELLILIGHT SERVICES

A. INTELLILIGHT® SHARED SINGLE PATH (Cont'd)

5. Termination Liability

Termination liability applies when Service is terminated prior to completing an existing term plan (including without limitation conversions to a longer term plan and changes to a different bandwidth). (C) (C)

(D) (D)

Termination liability applies when the jurisdiction of ISSP is changed from interstate to intrastate. (C) (C)

(D) (D)

Except as otherwise set forth in this Section E, the Customer must fulfill its term plan for the entire capacity, or be subject to termination liability for that portion of the capacity that was not in place for the entire term. Termination liability charges are in addition to any charges associated with the Customer satisfying the minimum Service requirement of one year on its ISSP Services.

Termination charges are calculated as follows:

- Termination liability is calculated at 100% of the monthly charges for the unexpired portion of the term plan, regardless of the time when termination occurs during the term plan. (C) (C)

(D) (D)

INTELLILIGHT SERVICES

A. INTELLILIGHT® SHARED SINGLE PATH (Cont'd)

6. Expiration of Term Plan

(D)
(D)

a. At the expiration of a 3 or 5 year term plan, the Service will be converted to month-to-month billing and rated at the then prevailing rates for month-to-month Service. (C) (C)

7. Application of Rates and Charges

ISSP Service rate elements include Channel Terminations, Channel Mileage and the optional feature of STS1 to DS1 Multiplexing, when applicable.

The Channel Termination rate element provides for the communications path between a Customer designated premises and the SWC of that premises. Included as part of the Channel Termination is a standard interface. ISSP is provided with either a DS3 or STS1 interface. In the operating territories of Verizon New England Inc. and Verizon New York Inc., the channel termination rate element is divided into two categories: Standard Channel Termination and Office Channel Termination (provided under FCC Tariff).

The Channel Mileage provides transport between SWCs and through the IOF. The rates and charges for ISSP include channel mileage, which consist of a Fixed rate and a rate Per Mile. The manner in which the Channel Mileage rate element is measured and applied is in accordance with Part 0, Section 7C.

The STS1/DS1 Multiplexing rate element applies when the optional feature of ISSP to DS1 Multiplexing is ordered.

Any Company provided service connected to ISSP is subject to the rates and charges for that specific service.

Nonrecurring charges apply for the installation of each Channel Termination and for the installation of STS1/DS1 Multiplexing.

For the avoidance of any doubt, all rates and charges (both during a term plan and for month-to-month service) are subject to changes that Verizon may implement from time to time in accordance with Part 0, Section 1 of this Product Guide. (N) | (N)

INTELLILIGHT SERVICES

B. INTELLILIGHT® SHARED DUAL PATH

1. Availability of Service

IntelliLight® Shared Dual Path (**ISDP**) is available, subject to limitations set forth in this Product Guide, where facilities exist in Region 1. (C) (C)

2. Service Description

ISDP is an optional feature that provides High Capacity Special Access Customers with a fully diverse and redundant transmission path through another wire center as a standby facility should there be a wire center fault at the Customer's serving wire center (**SWC**), or should there be a cable cut between the Customer's premises and the SWC or between wire centers.

ISDP may terminate at a Hub where the underlying Service may be multiplexed to higher or lower speed Services. Also, multiplexing may be provided at the Customer's premises and will be charged additionally as a network interface conversion.

ISDP will provide a Special Access High Capacity Customer a near-100% protected connection from point-to-point when both designated premises and SWCs are on the same or interconnected SONET rings.

3. Terms and Conditions

ISDP will only be available as an end-to-end Service between Customer premises located where the Company has multi-wire center SONET-based fiber rings deployed in its local loop and Inter-Office Facilities (**IOF**).

ISDP may also be provided on a portion of the circuit path as end-to-hub Service, in cases where full SONET facilities do not exist or are not required.

ISDP Service at the Customer premises will consist of a fiber ring routed through at least two wire centers, one of which is the Customer's SWC. Interoffice rings connecting multiple wire centers will provide transport between Customer premises rings or to wire center Hubs.

ISDP Service is available for the same term plan period (if any) to which a DS1, DS3, or IEF service is subscribed. When ordered on an existing Service, the ISDP optional Service is assigned the same expiration period as the underlying Service. (C) (C)

ISDP Service intervals are negotiated as described in Part 0, Section 5.

When STS1 signals are transmitted, the Customer must specify how the signal is mapped, Virtual Tributary (VT) or DS3-mapped. A VT is a SONET structure designed for transport of sub-STS1 payloads. A DS1 is mapped into the SONET format using a VT1.5 as a packaging mechanism that is internal to the SONET signal.

INTELLILIGHT SERVICES

B. INTELLILIGHT® SHARED DUAL PATH (Cont'd)

3. Terms and Conditions (Cont'd)

Extended Superframe Format (**ESF**) is required on all DS1 Services in order to ensure performance objectives.

The Company will determine the other wire center(s) included in provisioning ISDP.

The Company will determine the type (e.g., bidirectional) of self-healing ring that will be utilized and the path of the primary and secondary signals within interconnected rings.

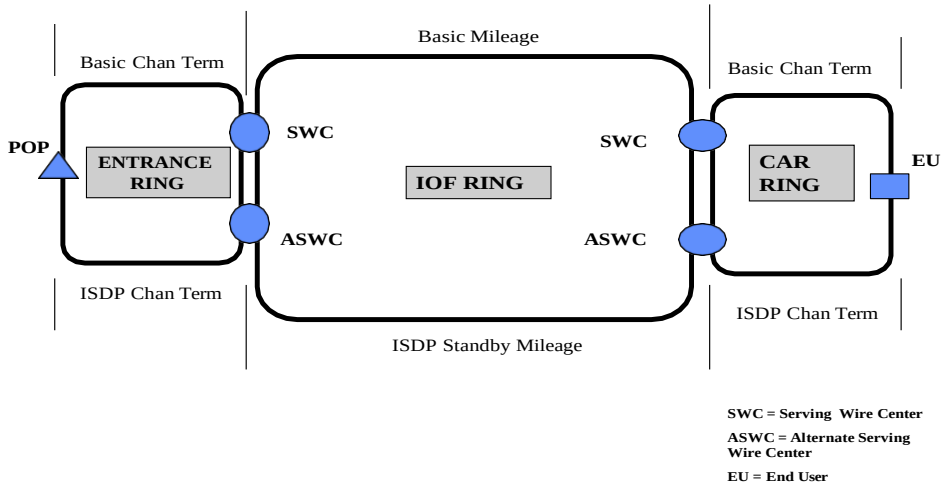
Standby mileage for ISDP is the same as the per mile measurement for the main or underlying Service.

The Customer will be billed additional charges for any charges levied the Company for space and power required for the ADMs on the Company's side of the network interface.

4. Application of Rates and Charges

The rates for ISDP apply per point of termination and are in addition to the Channel Termination and Channel Mileage rates and charges for the underlying High Capacity Service(s). In addition to the ISDP Channel Termination, Standby Mileage and Network Interface recurring charges, one-time nonrecurring charges also apply for each Network Interface and Channel Termination. See below:

IntelliLight® SHARED DUAL PATH



For the avoidance of any doubt, all rates and charges (both during a term plan and for month-to-month service) are subject to changes that Verizon may implement from time to time in accordance with Part 0, Section 1 of this Product Guide. (N) | (N)

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS)

1. Availability of Service

Effective August 17, 2018, no Customers may place orders for IDSR in a ring configuration. Subject to the Company's right to discontinue IDSR in accordance with this Product Guide, the Company will continue to provide any IDSR that is in service as of August 17, 2018. (C) (C)

Effective December 9, 1999, no Customers may place orders for IDSR in a two-point service configuration. Subject to the Company's right to discontinue IDSR in accordance with this Product Guide, the Company will continue to provide IDSR in a two-point service configuration that is in service as of December 9, 1999. Subject to the Company's right to discontinue IDSR in accordance with the Product Guide, the Customer may retain Service until such time as (i) Customer designated Premises is moved; (ii) it requests that the Wire Center in which a CO Node is located be changed to a different Wire Center; (iii) it requests a change to the Service which results in a discontinuance and installation of a new Service; or (iv) its term plan Commitment Period is completed. (C) | | (C)

2. Definitions

IDSR ATM Port: IDSR is a private Company-provided SONET network dedicated to a specific Customer. An IDSR ATM Port is a connection to the network based ATM switch from an IDSR network, and requires that the IDSR Extension be terminated in the central office where the ATM switch is located.

IDSR Customer Surveillance Point: The term "IDSR Customer Surveillance Point" denotes a Wire Center through which surveillance information is accessible to a Customer for its Company provided IDSR network elements. It is considered a Customer Premises for purposes of administering the terms and conditions, rates and charges of this Product Guide.

3. Service Description

IDSR is an optical carrier Channel for synchronous transmission of 155.52 Mbps (OC3 provided as three STS1 channels), 622.08 Mbps (OC12 provided as 12 STS1 channels) and 2.488 Gbps (OC48 provided as 48 STS1 channels) data with inherent protection. IDSR Channels are provided between Customer designated Premises or between a Customer designated Premises and a Central Office Node and may be configured in a ring architecture or as a two-point, non-ring Service. Service configured in a ring architecture must include a minimum of three Nodes, two of which must be provided by the Company. A Node has a designation of either a Customer location or Company Wire Center that has Add/Drop Multiplexing (**ADM**) capability. At wire centers with a CO Node, IDSR channels may be connected with other IDSR channels of the same or different speed, with DS3 or DS1 asynchronous services or with Enterprise ATM Cell Relay Service, IntelliLight® Entrance Facility, IntelliLight® Broadband Transport, or IntelliLight® Shared Single Path.

IDSR service components consist of SONET Distribution Channels, CO Nodes, Premises Nodes, Premises Ports, Central Office Extensions, Channel Mileage and the Premises Node Diversity option.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)
3. Service Description (Cont'd)

a. SONET Distribution Channel

(1) The SONET Distribution Channel (**SDC**) provides for the portion of the optical carrier Channel which connects the Customer designated Premises and its associated SWC and is provided with Facility redundancy for protection in the event of a failure. The level of protection inherent in the IDSR transmission Facilities may be limited by the Customer's selection of Premises Node equipment or the manner in which such Premises Node equipment is configured. Network designs comprised of two or more SDCs and three or more Nodes will experience on average a transmission capacity loss per SDC.

(2) Except when IDSR is provided in certain two-point service configurations, the SDC must be connected to a Company provided or Customer provided Premises Node at the Customer designated Premises.

b. CO Node

(1) The CO Node provides the ADM capability at a Wire Center selected by the Customer. ADM capability provides for lower level Services to be added to, or dropped from, the optical carrier Channel. The CO Node also performs electrical to optical conversions and controls the operation of the ring, when Service is configured in a ring architecture. CO Nodes may be included in a ring architecture by connecting one CO Node to another CO Node(s), for which the Channel Mileage component will apply, and/or by connecting one CO Node to a Premises Node(s), for which the SDC component will apply.

(2) In wire centers equipped with a CO Node, asynchronous Services may be connected to IDSR.

(3) For IDSR provided in certain two-point service configurations, the serving wire center(s) of the Customer designated premises involved must be equipped with CO Nodes, unless the two-point service is derived from Company provided premises node equipment.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)
3. Service Description (Cont'd)

c. Channel Mileage

(1) Channel Mileage provides for the transmission Facilities, with back-up protection, between the SWCs of the Customer designated Premises, between an SWC associated with a Customer designated Premises and a Wire Center equipped with a CO Node, between an IDSR and a Company Intermediate or Super-Intermediate Hub for the purpose of interconnecting two multiplexed Facilities, or between an IDSR and a multiplexed or groomed Facility with a channel of lesser capacity. For example, when an OC48 that is channelized to OC12 at a Wire Center with a CO Node is transported to a different Wire Center, OC12 Channel Mileage will apply between the two Wire Centers.

(2) When ISSP STS1 provides the transport from an IDSR CO Node to an end office or access tandem, channel mileage applies between the wire center at which the STS1 is added to, or dropped from, the IDSR Service and the end office or access tandem to which the STS1 transport terminates.

d. Premises Node

The Premises Node provides the ADM capability necessary to terminate channelized OC3, channelized OC12 or channelized OC48 services at the Customer designated Premises. The Premises Node may be provided by either Verizon or the Customer as follows.

(1) Company Provided

(a) The Premises Node will be installed in a common space at the Customer designated Premises and will be under Company control.

(b) Lower level Services (e.g., DS3) may be added to, or dropped from, the channelized optical carrier through a Premises Port on the Premises Node equipment, allowing for termination of lower level Services at Customer designated Premises.

(2) Customer Provided

(a) The Premises Node equipment must be compatible with the Company CO Node equipment. At the option of the Customer, timing may be provided by the Customer by a stratum 3 source or may be derived from Company Wire Center serving the Premises where the Premises Node is located. The level of protection inherent in the IDSR transmission Facilities may be limited by the Customer's selection of Premises Node equipment or the manner in which such Premises Node equipment is configured.

(b) When the Customer provides the Premises Node equipment at its designated Premises, Premises Ports will not be provided.

(c) At the Customer's option, traffic may be split between two Premises Nodes at the Customer designated Premises, subject to the Premises Node Diversity option.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)
3. Service Description (Cont'd)

e. Central Office Extension

(a) DS1, STS1 and DS3 Central Office Extensions provide for off-ring connections between IDSR and other Company services.

(b) When a DS1 Central Office Extension is provided from an OC-3 Service which was derived from an OC-12 or OC-48 Service, the maximum number of STS-3 channels on the OC-12 or OC-48 Service may be reduced.

(c) IEF services may be connected to IDSR for which an STS1 Central Office Extension will apply.

(d) The Central Office Extensions which may be used with Frame Relay Service are the DS1 and DS3 Central Office Extensions.

(e) The Central Office Extensions which may be used with ATM Cell Relay Service are the DS1, DS3 and OC-3 Central Office Extensions.

f. Premises Port

(1) DS1, DS3 and STS1 Premises Ports provide for on-ring terminations of a Customer's lower bit rate Service to a Verizon provided Premises Node. Premises Ports are not provided with a Customer provided Premises Node.

(2) OC3 and OC12 Premises Ports may be provided in a concatenated as an STS-3c or STS-12c signal.

(3) When Service is provided between two OC-3 Premises Ports derived from an OC-12 or OC-48 Service or two OC-12 Premises Ports derived from an OC-48 Service, the two-point OC-3 or OC-12 service is also subject to the terms and conditions set forth in (B) following.

(4) IEF services may be connected to IDSR for which an STS1 Premises Port will apply.

(5) IBT services may be connected to IDSR for which an OC-3 or OC-12 Premises Port will apply, as appropriate.

(7) ISSP STS1 Service may be connected to IDSR for which a DS3, DS1 or STS1 Premises Port will apply, as appropriate.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

3. Service Description (Cont'd)

f. Premises Port (Cont'd)

Premises Node Bandwidth Capacity	Available Premises Ports				
	DS1	DS3	STS1	OC3	OC12
OC3	X	X	X		
OC12	X	X	X	X	
OC48	X	X	X	X	X

g. Premises Node Diversity Option

Premises Node Diversity option provides for traffic to be split between two Premises Nodes at a single Customer designated Premises. Verizon will work cooperatively with the Customer in determining the proportion of traffic which is delivered to each of the Premises Nodes. The two Premises Nodes arranged in this manner will be connected to the same SDC.

h. The technical specifications for IDSR are delineated in GR-253-CORE, Issue 5, including technical and timing requirements for Premises Node equipment. Technical specifications are subject to change in accordance with changes adopted by standards-setting industry bodies. Such updates to technical specifications, as they occur, and as determined by the Company, shall be automatically incorporated without the requirement to amend this Product Guide.

4. Two-Point Service Configurations

a. Two-point service configurations allow for the synchronous transmission of 155.52 Mbps data between Customer designated Premises. The connection may be made as a derived OC3 service from Company provided OC12 or OC48 Premises Node equipment, OC12 or OC48 CO Node equipment or a combination of the two. When two-point service is derived from CO Node equipment, an OC3 Central Office Extension as set forth in Section (A)(5) preceding applies. The OC3 capacity may be provided in either a channelized format as an STS3 signal or in a concatenated format as an STS3c signal (a single signal of 3 combined STS1s) as determined by the Channel interface selected by the Customer. The Customer must provide equipment at its Customer designated Premises which is capable of receiving the 155.52 Mbps optical signal delivered by the Company.

b. Company provided OC3 Premises Node equipment is not provided at any Customer designated Premises to which the two-point service configuration has been ordered. However, when the two-point service is derived from Company provided OC12 or OC48 Premises Node equipment, the termination at the Customer designated Premises will be an OC3 Premises Port.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

4. Two-Point Service Configurations (Cont'd)

c. The rates and charges for two-point service configurations are differentiated by the manner in which two-point service is configured. For two-point service which is derived from a Company provided OC12 or OC48 Premises Node, an OC3 or OC12 Premises Port applies for each OC3 or OC12 derived from the Premises Node. For two-point service which is derived from an OC12 or OC48 Central Office Node, an OC3 or OC12 Central Office Extension and an OC3 or OC12 SONET Distribution Channel applies to each OC3 or OC12 extended. In addition, the rates for the OC12 or OC48 CO Node(s) and any associated Channel Mileage also apply.

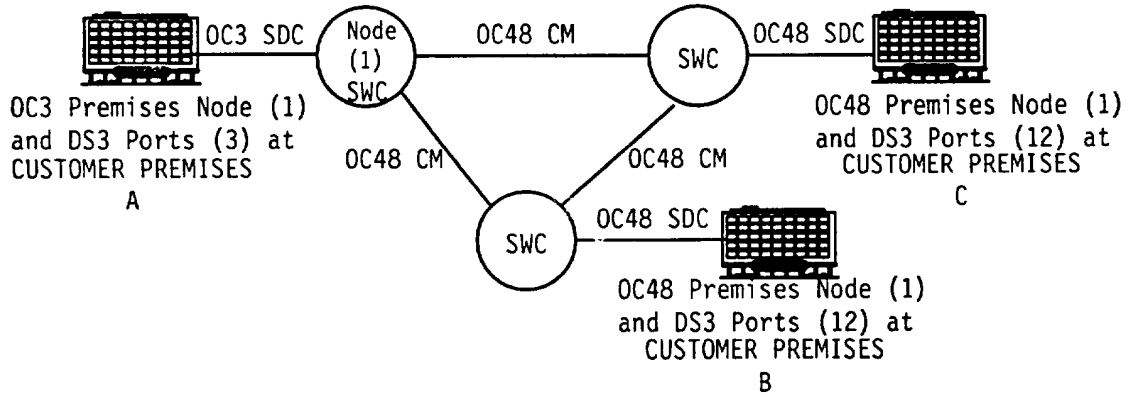
d. When DS1 Premises Ports are provided from an OC3 Service which was derived from an OC12 or OC48 Service, rates and charges apply as specified in Diagram 1 of Section (IV)(D) preceding. The maximum number of STS3 channels may be reduced in this configuration.

5. Service Configurations

a. Diagram 1 illustrates the application of rates for an IDSR ring connecting three (3) Customer designated Premises utilizing Verizon provided Premises Nodes.

Diagram 1

DIAGRAM OF APPLICABLE RATES



Applicable Rate Elements

- OC3 Basic Design SDC (1 applies)
- OC48 Reduced SDC (2 apply)
- OC48 Reduced Channel Mileage (**CM**)
  (one First CM Component and two 2nd and over CM components apply)
- OC3 Premises Node (1 applies)
- OC48 Premises Node (2 apply)
- OC48 CO Node (1 applies)

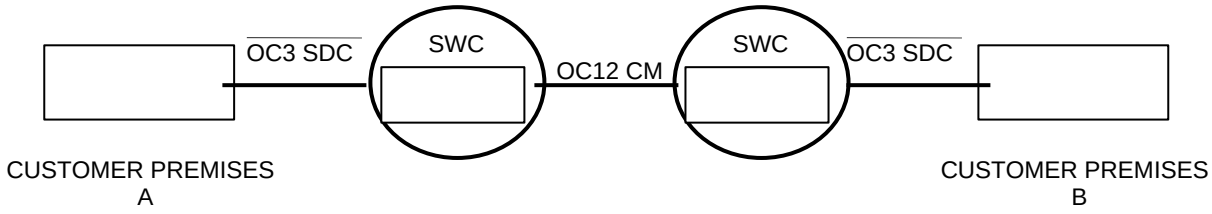
INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

5. Service Configurations (Cont'd)

b. Diagram 2 illustrates the application of rates for an IDSR two-point service which is derived from two (2) OC12 CO Nodes.

Diagram 2

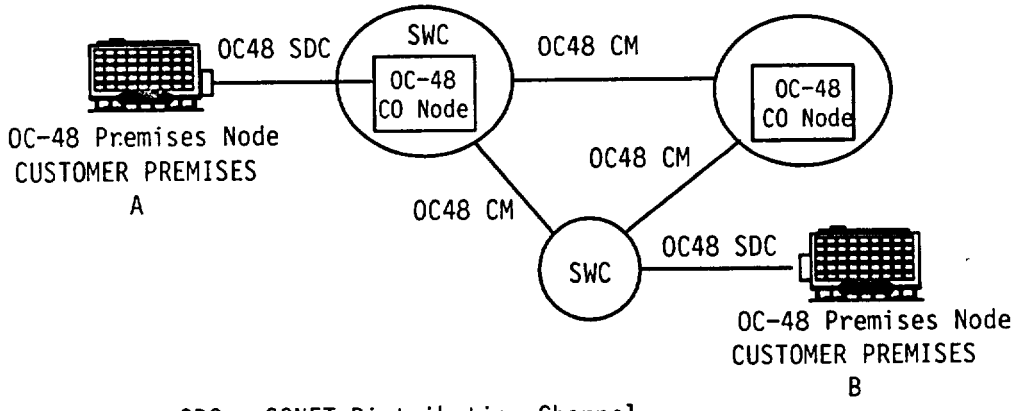


Applicable Rate Elements
OC3 Basic Design SDC (2 apply)
OC12 Channel Mileage (1 component applies)
OC12 CO Node (2 apply)
OC3 Central Office Extension (2 apply)

c. Diagram 3 illustrates the application of rates for an IDSR two-point service which is derived from two (2) Verizon provided OC48 Premises Nodes.

Diagram 3

DIAGRAM OF APPLICABLE RATES



SDC - SONET Distribution Channel
CM - Channel Mileage
SWC - Serving Wire Center
[] - OC3 Premises Port

Applicable Rate Elements
OC48 Ring SDC (2 apply)
OC48 Channel Mileage (3 components apply)
OC48 CO Node (2 apply)
OC48 Premises Node (2 apply)
OC3 Premises Port (2 apply)

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

6. Application of Rates and Charges

Subject to Section C1 preceding, IDSR is available only on a month-to-month basis. (C)
For the avoidance of any doubt, all rates and charges are subject to changes that Verizon may implement from time to time in accordance with Part 0, Section 1 of this Product Guide. (N) | (N)

a. SONET Distribution Channel

(1) The SDC rate applies per Point of Termination for the portion of the optical carrier Channel which connects the Customer designated Premises with its SWC. The SDC rate is differentiated by the bandwidth capacity of the optical carrier Channel. When IDSR is provided in a ring architecture, the SDC rate is also differentiated by the total number of SDCs and Nodes on the ring. IDSR Customer Surveillance Points are considered to be Customer designated Premises for purposes of administering this Product Guide.

(2) When IDSR is provided with the Premises Node Diversity option, or in any other configuration for which two Premises Nodes are provided at the same Customer designated Premises, only one SDC applies to connect the two Premises Nodes to the SWC. If two Premises Nodes are not the same bandwidth capacity, the SDC rate to be applied is the rate for the SDC with the higher bandwidth capacity.

(3) When the SDC is connected to Premises Node equipment, the SDC rate applies whether the Company or the Customer provides the Premises Node equipment.

b. CO Node

(1) The CO Node rate applies for each CO Node provided and is differentiated by the bandwidth capacity of the CO Node.

(2) A nonrecurring charge applies only when a new CO Node is installed on a ring subsequent to the initial installation of the ring or when a CO Node which is included in the ring is moved to a new Wire Center.

c. Channel Mileage

(1) Channel Mileage rates apply between the SWCs of the Customer designated Premises or between a SWC of a Customer designated Premises and a Wire Center equipped with a CO Node. Channel Mileage rates, which consist of a fixed and per mile rate element, are differentiated by the bandwidth capacity of the interoffice Channel, number of Nodes involved and, when applicable, the number of Wire Centers.

(2) When IDSR is provided in a ring architecture (i.e., three (3) or more Nodes of the same speed), the first Channel Mileage rate component consists of a fixed and per mile rate and the second and over Channel Mileage component consists of a per mile rate only. When IDSR is provided in a configuration for which two CO Nodes are provided in the same Wire Center, only one Channel Mileage element is applicable to connect the two CO Nodes to the ring. If the two CO Nodes are not the same bandwidth capacity, the Channel Mileage element applied will be that of the higher bandwidth capacity.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

6. Application of Rates and Charges (Cont'd)

c. Channel Mileage (Cont'd)

(3) Channel Mileage rates are shown in terms of mileage bands. To determine the rate to be billed, first compute the mileage using the Vertical and Horizontal coordinates method, as set forth in the NECA Tariff FCC No. 4. Then, find the band into which the computed mileage falls and apply the rates shown for that band. When the calculation results in a fraction of a mile, always round up to the next whole mile before determining the mileage band and applying the rates.

(4) The Channel Mileage rate category also applies for the transmission Facilities between:

- an IDSR and a Company hub for the purpose of interconnecting two multiplexed Facilities; or
- an IDSR and a multiplexed or groomed Facility with a Channel of lesser capacity.

d. Premises Node

(1) The Premises Node rate applies for each Premises Node provided and is differentiated by the bandwidth capacity of the Premises Node.

(2) A nonrecurring charge applies only when a new Premises Node is installed on a ring subsequent to the initial installation of the ring or when a Premises Node which is included in the ring is moved to a new location. The nonrecurring charge does not apply to install a new Premises Node subsequent to the initial installation of the ring if the new Premises Node is not part of the ring. For example, when an OC3 Premises Node is installed subsequent to the installation of the Customer's IDSR ring, and the new Node is not part of the Customer's existing IDSR ring, the nonrecurring charge is not applicable.

e. Central Office Extension

(1) The Central Office Extension rate applies for each asynchronous service which is connected to IDSR at a CO Node; for each synchronous OC3 or OC12 which is derived from a CO Node in the provision of a two-point service; for each STS1 which is connected to IEF service; or for each OC3 or OC12 which is connected to IBT service. The rate is differentiated by the data rate of the asynchronous service being connected (e.g., an asynchronous DS1 will require a DS1 Central Office Extension) or the capacity of the synchronous derived Channel (i.e., OC3). For two-point service configurations, an OC3 Central Office Extension applies for each OC3 derived from an OC12 or OC48 CO Node and an OC12 Central Office Extension applies for each OC12 derived from an OC48 CO node.

(2) An OC3 or OC12 Central Office Extension applies to connect an OC3/3c or OC12/12c capacity of an IDSR to IEF service or IBT service. Additionally, an STS1 Central Office Extension applies to connect to an STS1 provided from an IEF service.

INTELLILIGHT SERVICES

C. INTELLILIGHT® DEDICATED SONET RING (formerly NESPNS) (Cont'd)

6. Application of Rates and Charges (Cont'd)

f. Premises Port

The Premises Port rate applies for each Premises Port provided and is differentiated by the data rate of the Service being terminated. Premises Ports are not applicable when the Customer provides the Premises Node equipment.

g. Premises Node Diversity Option

The rates and charges for Premises Node Diversity option are the rates and charges for the two Premises Nodes being provided and one SONET Distribution Channel.

h. Minimum Period

The minimum period for the Premises Port and Central Office Extension rate elements is three (3) months. If IDSR rate elements are disconnected during the minimum period, Customer shall pay to the Company one hundred percent (100%) of the monthly recurring rates from the date of disconnection through the end of the minimum period.

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES

IntelliLight Entrance Facilities (**IEF**) provided with an electrical interface under a 3-year commitment period is available, subject to limitations set forth in this Product Guide, where facilities exist in Region 1 and Region 11. (C)

IEF provided with an optical interface is limited to in-service arrangements of existing Customers who were not receiving such Service pursuant to a private carriage agreement in Region 1 and Region 11.

Effective December 1, 2020, orders for IEF with an electrical interface under a 5-year commitment period in Region1 and Region 11 are no longer permitted, and orders for IEF with an electrical interface in Region 14 and Region 16 are no longer permitted. Subject to the Company's right to (C)
discontinue IEF in accordance with this Product Guide, the Company will continue to provide such (C)
IEF pursuant to this Section on any existing IEF that was in-service as of December 1, 2020 or any order for such IEF that was placed with the Company prior to December 1, 2020 (collectively, Existing 5-year IEF with an electrical interface in Regions 1 and 11 and Existing IEF in Regions 14 and 16), subject to the following conditions and the Company's right to discontinue IEF in (C)
accordance with this Product Guide: (C)

- The Company will continue to provide Existing 5-year IEF with an electrical interface in Regions 1 and 11 until (i) the Customer discontinues service; or (ii) a valid order for a new 3-year term plan is requested by the Customer.
- The Company will continue to provide Existing IEF in Regions 14 and 16 until the Customer discontinues service.
- Renewals of Existing 5-year IEF with an electrical interface in Regions 1 and 11 and Existing IEF in Regions 14 and 16 with an electrical interface is not permitted.
- Moves and changes are permitted provided that they do not require a new minimum service period.

IEF provides high capacity DS3s with enhanced survivability between a Customer Designated Location (**CDL**) and the Serving Wire Center (**SWC**) of that CDL. IEF is provisioned over the Company's shared SONET network that includes a self-healing ring that passes through the CDL, the SWC of that CDL, and another wire center as determined by the Company. When IEF is provided with an OC48 optical fiber interface, the entire bandwidth of the OC48 interface is committe4d to the Customer. Additionally, the Customer's SONET facilities are spliced with the Company's SONET facilities at a designated meet point (i.e., midspan meet).

1. IEF Terminations

IEF Terminations provide STS1 bandwidth between the CDL and the SWC of that CDL. The IEF Terminations carry DS3 services and are delivered with enhanced survivability over the Company's self-healing SONET network. As a result, the Customer is assured continuity of communication for the DS3 service even if there is a fiber facility failure between the CDL and the SWC of that CDL.

The IEF Termination is a rate category that provides STS1 bandwidth or at least an STS1 aggregate of bandwidth between the Customer's designated Premises and the SWC of that Premises. It can also be provided in multiples of STS1, i.e. STS3 or STS12.

2. IEF Interfaces

The IEF Interface defines the engineering characteristics of the service hand-off at the CDL. The Customer must specify an electrical or optical interface for each IEF Termination.

a. Electrical Interface

The electrical IEF Interface defines the type of service that is to be provided over the Company provided SONET network. The electrical interface type that is available is DS3 (44.736 Mbps).

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd)
2. IEF Interfaces (Cont'd)

b. Optical Interface

The optical IEF Interface defines the optical handoff at the CDL. Three optical interfaces are available: OC3 (155.52 Mbps), OC12, (622.08 Mbps), and OC48 (2.488 Gbps). The OC3 and OC12 optical interfaces are provided in a manner that allows fractional capacity to be activated in increments of STS1s. The optical interface is used for DS3 services connecting to IEF Terminations and being mapped to an optical interface at OC3, OC12, or OC48 bandwidth. For example, Customer has the option of connecting multiple DS3 services to IEF Terminations and mapping multiple DS3 services to a single OC3 optical interface. (M)

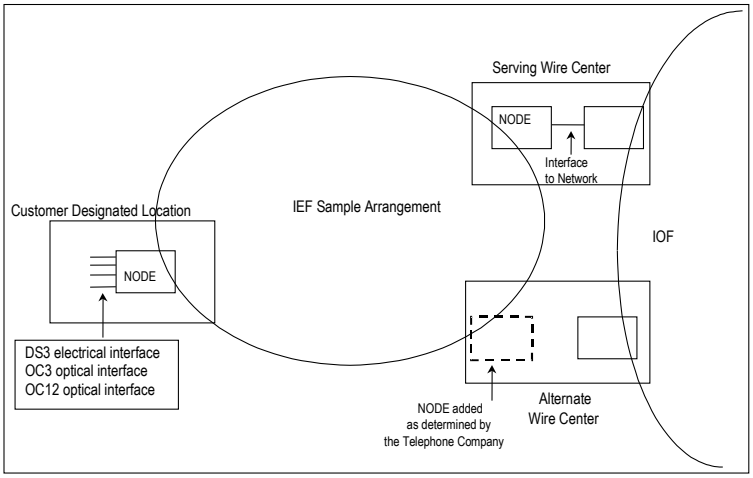
The IEF OC48 is an optical fiber interface option in which SONET based transport is provided between SONET-based equipment at the Company serving wire center offering a fiber interconnection (midspan meet) and the associated Customer designated premises. The entire bandwidth of the IEF OC48 optical fiber interface is committed to the Customer. It operates in a terminal/linear mode with diversely routed fiber between the serving wire center and the Customer's designated premises. At the Customer's designated premises, the Customer must provide and maintain SONET based equipment which complies with Company SONET based equipment located in the Company serving wire center and with the requirements for SONET transmission in Technical Reference GR-253-CORE, Issue 4. Mapping over the IEF OC48 interface is allowed at DS3, STS1 and OC#s as well, however, mapping at OC48 is prohibited. The Customer's optical cable will be spliced to the Company's optical cable (i.e., midspan meet) at a site which is considered the best use of existing Company and Customer facilities and contains a suitable environment for the midspan meet. The Customer's fiber for the midspan meet must be compatible with the fiber employed by the Company. The physical interface for the connecting fiber optic cables will be at a fiber connector panel situated in a location which is mutually agreeable to both the Company and the Customer. The handoff will be 4-fiber, 1 x 1 protection.

Certain material on this page formerly appeared on Original Page 17.

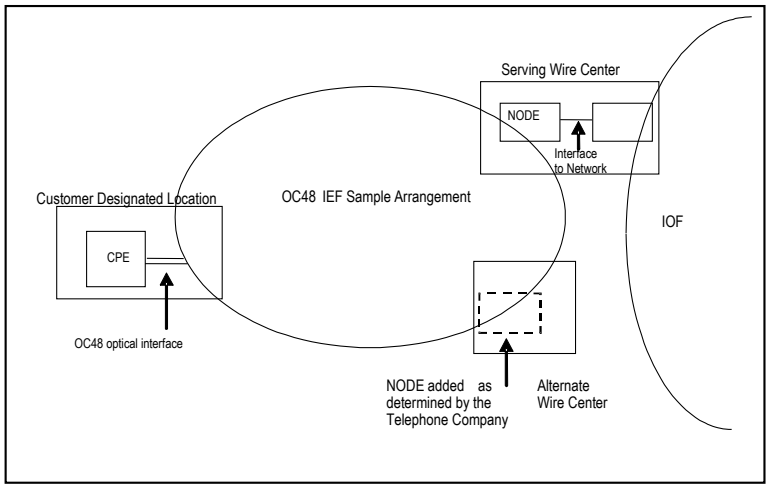
INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd)

3. A network diagram of an IEF with DS3 electrical interface and OC3 and OC12 optical interfaces is illustrated below: (N)



4. A network diagram of the IEF with an OC48 optical interface is illustrated below:



5. Technical Specifications

Technical specifications for IEF are set forth in Technical Reference GR-253-CORE, Issue 4. (N)

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd) (N)

6. Terms and Conditions

Deployment and Availability

IEF is provided where SONET facilities and bandwidth are available to provide the requested IEF Interface. The Company will work cooperatively with the Customer in determining the availability of such facilities and if service can be provided.

IEF is available based on negotiated intervals, as described in Part 0, Section 5.

Terms and conditions for moves are described in Part 0, Section 10. Terms and conditions for rearrangements of DS3s are described in Part 0, Section 7 and in Part E.

7. Service Limitations

If the CDL is located in the same building as the SWC, the diversity between the SWC and the CDL may be limited by the physical paths available to connect the SWC and the CDL, and there may not be fiber diversity routed through an alternate wire center.

8. Connection to Other Services

Connection of DS3 Services to IEF Terminations is provided by the Company. Interoffice mileage, when applicable, will apply at the rates set forth in Part E, for the appropriate DS3 service being transported over the interoffice facilities

Asynchronous multiplexing of DS1s into a DS3 occurs outside the IEF and all terms and rates as set forth in Part E are applicable for such multiplexing.

IEF may also be connected to the following Company provided services, where such connections are technically and operationally feasible, as determined by the Company.

- ethernet private line service
- point-to-point SONET service
- dedicated SONET ring
- advanced data services

9. Optional Features and Functions

Survivability from the IEF SWC to other network service locations can be obtained through the purchase of Alternate Serving Wire Center, ASWC in Part E.

An optional feature known as grooming may be purchased. Grooming allows multiple DS1 circuits to be "groomed" (aggregated) at a wire center in order to be connected to a common IEF Termination. This option requires that the IEF Termination contain VT 1.5 (DS1) mapping.

DS1s multiplexed into DS3 occurs outside the SONET network, and requires DS3 to DS1 multiplexing at the wire center. (N)

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd)

10. Space and Power

The Customer will be billed additional charges for any charges levied on the Company for space and power required to place equipment on the Company's side of the network interface.

11. Intentionally Left Blank (D)

(D)

12. Rate Structure

a. IEF Terminations

Monthly recurring charges (**MRCs**) apply for IEF Terminations. The MRCs are differentiated by the term plan and IEF Interface selected by the Customer. Nonrecurring charges apply for installations of IEF Terminations.

Additionally, the MRCs for IEF Terminations apply on a tapered schedule basis. The rate to be billed for each IEF Termination is based on the total number of IEF Terminations that are in-service as of each billing date, on a per CDL basis, and per Billing Account Number (**BAN**) basis. To determine the total number of IEF Terminations, the Company will count all IEF Terminations and Company provided SONET entrance facilities provided in connection with a Company provided point-to-point SONET service or ethernet private line service that terminate at such CDL that are in service and billed under the same BAN.

For example, a Customer purchases five (5) IEFs that are in-service at three (3) different CDLs, with the 5 IEFs being billed under two (2) different BANs.

The first CDL has two (2) IEFs, one with fifteen (15) in-service STS1 IEF Terminations and the other with 5 in-service STS1 IEF Terminations for a total of twenty (20) STS1 IEF Terminations. Both IEFs are under the same BAN. The rate to be billed for each IEF Termination in the 2 IEFs at the first CDL is the rate shown for 20 STS1 IEF Terminations.

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd)
12. Rate Structure (Cont'd)

a. IEF Terminations (Cont'd)

The second CDL has two (2) IEFs, one with twenty (20) in-service STS1 IEF Terminations and the other with twenty-two (22) in-service STS1 IEF Terminations, for a total of forty-two (42) STS1 IEF Terminations. The IEFs at the second CDL are under separate BANs. The rate to be billed for each IEF Termination in the first IEF is the rate shown for 20 STS1 IEF Terminations. The rate to be billed for each IEF Termination in the second IEF is the rate shown for 22 STS1 IEF Terminations, as set forth in (F) following.

The third CDL has one (1) IEF with nine (9) in-service STS1 IEF Terminations on the same BAN. The rate to be billed for each IEF Termination on the IEF is the rate shown for 9 STS1 IEF Terminations.

b. IEF Interfaces

MRCs for electrical IEF Interfaces shall apply. When a Customer orders an IEF with a STS1 termination and an electrical interface, both the MRC for electrical IEF interface and the MRC for STS1 Termination shall apply. The MRCs are differentiated by the term plan selected by the Customer. Nonrecurring charges apply for installations of electrical IEF Interfaces.

Interface charges do not apply when IEF is provided with an optical interface.

13. Application of Rates and Charges

a. Term Plans

IEF in Region 1 and Region 11 is available for term plans of three (3) year and five (5)# year commitment periods. IEF in Region 14 and Region 16 was available for term plans of three (3)# year and five (5)# year commitment periods. For the avoidance of any doubt, all rates and charges (both during a term plan and for month-to-month service) are subject to changes that Verizon may implement from time to time in accordance with Part 0, Section 1 of this Product Guide. (N) | | (N)

b. Connection to Other Services

When a Customer connects an IEF Termination to a DS3 service, the IEF Termination and Interface will be provided under a three (3) year commitment period. (C) (C)

(D) | | | (D)

c. Expiration of Commitment Period

Upon expiration of the term plan, the Company will continue to provide IEF on a month-to-month basis, subject to changes that Verizon may implement from time to time in accordance with Part 0, Section 1 of this Product Guide. (C) | (C)

Availability limited. Refer to Page 17 for more information.

INTELLILIGHT SERVICES

D. INTELLILIGHT® ENTRANCE FACILITIES (Cont'd)

13. Application of Rates and Charges (Cont'd)

d. Termination Liability

A Customer must fulfill the term plan for each IEF Termination and Interface, or be subject to termination liability for each IEF Termination and Interface that was not in service for the entire commitment period. If a Customer disconnects Service during the commitment period, termination liability will be calculated at one hundred percent (100%) of the MRCs for the unexpired portion of the commitment period.

(D)
(D)

INTELLILIGHT SERVICES

E. INTELLILIGHT® BROADBAND TRANSPORT (N)

1. IBT - IntelliLight® Broadband Transport (for purposes of this Section 1.E, "IBT" or the "Service") is a high speed, synchronous, optical fiber-based, full duplex data transmission service. IBT is available as a point-to-point non-channelized service (Basic IBT) and a multiplexed service (Muxed IBT), both of which may be collectively referred to as IBT where applicable. IBT is provisioned over Verizon's shared SONET network and provides the Customer with SONET-based broadband access transport in capacities/transmission speeds of OC3 through OC192.

2. This Section 1.E applies in cases where a Customer does not have an effective Separate Agreement for IBT with Verizon or where a Customer's Separate Agreement references the FCC Tariffs under which Verizon offered IBT prior to detariffing IBT, in which case this BDS Product Guide shall apply.

3. The more detailed description of IBT is contained in Verizon's IBT Product Guide, as modified by notice from Verizon from time to time, (the "**IBT Product Guide**") which is hereby incorporated herein by reference and has been provided separately to the Customer or will be provided to the Customer upon request. All other rates, charges, terms and conditions, including without limitation Verizon's right to change rates, are governed by this BDS Product Guide. To the extent there is a conflict between the terms and conditions in this BDS Product Guide and the terms and conditions in the IBT Product Guide, the terms and conditions in this BDS Product Guide shall control; provided, however, that the fact that one document addresses a matter not addressed by another document shall not be deemed a conflict.

4. Grandfathering and Restricted Availability. IBT service availability is only where facilities exist. Effective May 16, 2025 orders for new IBT are no longer permitted. The Company will continue to provide IBT pursuant to this Section 1.E on any existing IBT that was in service as of May 16, 2025 or any order for IBT placed with the Company prior to May 16, 2025 (collectively, Existing IBT), subject to the following conditions:

   a. The Company will continue to provide Existing IBT until (i) the Customer discontinues service; or (ii) the Company terminates service.

   b. Renewal of Existing IBT service is not permitted.

   c. For any Existing IBT for which a Commitment Period expires or has expired, the Company will provide the Service on a month-to-month basis at month-to-month rates and, without limiting the foregoing, the Company in its sole discretion may take such action as may be required to convert the Existing IBT to month-to-month service (e.g., change in USOCs, etc.).

   d. Moves and changes (of any type, including without limitation conversion to a comparable service) of Existing IBT service are not permitted.

   e. Notwithstanding any other provision of this Product Guide, Verizon in its sole discretion may disconnect any or all Existing IBT arrangements upon at least fifteen (15) calendar days' written notice to the Customer. (N)