

**Qwest Corporation
Private Line Transport
Services Catalog**

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5. SERVICES

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5.1 GENERAL

Private Line Transport provides a transmission path between customer designated premises or customer designated premises and a Serving Wire Center. Company Centrex CO-like switches are considered to be customer designated premises for purposes of administering and providing Private Line Transport.

5.1.1 SERVICE TYPES

There are several types of services used to provide Private Line Transport. Each type has its own characteristics. All are subdivided by one or more of the following:

- Transmission specifications
- Bandwidth
- Speed (i.e., bit rate)

Customers can order a basic channel and select from a list of available transmission performance and channel interfaces, those that they desire to meet specific communications requirements.

For purposes of ordering channels, each has been identified as a type of Private Line Transport. However, such identification is not intended to limit a customer's use of the channel nor to imply that the channel is limited to a particular use.

Following is a brief description of each type of service:

- Low Speed Data

A channel for the transmission of low speed loop status signals of up to 150 baud.

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- Voice Grade

A channel for the transmission of analog signals within an approximate bandwidth of 300-3000 Hz.

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5.1 GENERAL

5.1.1 SERVICE TYPES (CONT'D)

- Audio

A channel for the transmission of audio signals. The nominal frequency bandwidths are from 200 to 3,500 Hz and from 50 to 15,000 Hz. Audio multipoint private line channels are specially provided for the closed circuit (nonbroadcast) transmission of voice and music in one direction only.

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- Foreign Exchange (FX)

Provides dial tone from a wire center in an exchange from which the customer is not normally served.

- Foreign Central Office (FCO)

Provides dial tone from a serving wire center to a remote wire center in the same exchange.

- Exchange Service Extension (ESE)

A channel which extends dial tone from a customer's serving wire center to a noncontinuous property station location.

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- Telephone Answering Service (TAS)

Channel from a patron's central office to the Answering Bureau.

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5.1 GENERAL

5.1.1 SERVICE TYPES (CONT'D)

- Digital Data

A channel for the digital transmission of synchronous serial data at rates of 2.4, 4.8, 9.6, 19.2, 56 and 64 kbps.

- DS1

A channel for point-to-point digital facilities for two-way transmission at a speed of 1.544 Mbps.

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5.1 GENERAL (CONT'D)

5.1.2 RATE CATEGORIES

There are four basic rate categories which apply to Private Line Transport:

- Network Access Channel
- Channel Performance
- Transport Mileage
- Optional Features and Functions

A. Network Access Channel

The Network Access Channel provides a two-wire or four-wire communications path between the POT and the normal serving wire center of that premises. One Network Access Channel charge applies per channel terminated at the POT. This charge will apply even if the customer-designated premises and the serving wire center are collocated in the same building. On certain services, the Network Access Channel may be derived from an existing service.

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B. Channel Performance

The Channel Performance provides the electronic equipment which is added to the Network Access Channel to provide the desired level of transmission performance. It modifies the circuit with the basic performance necessary for the circuit to function. If appropriate, it may also provide various signaling parameters to enhance the basic performance. Included as part of the Channel Performance is a Network Channel Interface (NCI) or POT arrangement which defines the technical characteristics at the interface between the customer and the Company. One Channel Performance charge will apply per Network Access Channel.

C. Transport Mileage

The Transport Mileage provides for the transmission facilities between the serving wire centers associated with two customer-designated premises. The Transport Mileage is portrayed in mileage bands. There are two rate elements that apply for each band, a flat rate per band and a rate per mile. Transport Mileage is measured in airline miles between serving wire centers, using the V and H Coordinates Method, as set forth in the National Exchange Carrier Association Tariff F.C.C. No. 4.

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5.1 GENERAL

5.1.2 RATE CATEGORIES (CONT'D)

D. Optional Features and Functions

The Optional Features and Functions rate category provides for optional features and functions which may be added to Private Line Transport to improve its quality or utility to meet specific communications requirements. These are not necessarily identifiable with specific equipment, but rather represent the end result in terms of performance characteristics which may be obtained. These characteristics may be obtained by using various combinations of equipment. Although the equipment necessary to perform a specified function may be installed at various locations along the path of the service, they will be charged for as a single rate element.

Examples of Optional Features and Functions that are available include, but are not limited to, the following:

- Hubbing Functions
- Bridging
- Multiplexing
- Conditioning
- Secondary Channel

A hub is a Company designated serving wire center at which bridging functions are performed. The bridging functions performed are to connect three or more customer designated premises in a multipoint arrangement. National Exchange Carrier Association Tariff F.C.C. No. 4 identifies serving wire centers, hub locations and the type of bridging.

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Standard offerings are available within each category of service. If a Standard offering does not meet a particular customer requirement, the customer may request and the Company may develop a Custom offering. The Channel Performance and/or Optional Features and Functions for customer services will be developed and rated on an individual case basis.

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5.1 GENERAL (CONT'D)

5.1.3 SERVICE CONFIGURATIONS

The two types of service configurations over which Private Line Transport can be provided are:

- Two-point
- Multipoint

A. Two-Point Service

A two-point service connects two customer-designated premises through Company wire centers or a customer designated premises and a wire center. (T)

Applicable rate categories are:

- Network Access Channel
- Transport Mileage (when applicable)
- Channel Performance
- Optional Features and Functions (when applicable)

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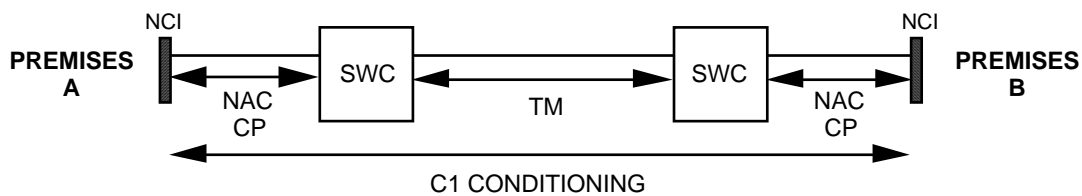
5. SERVICES

5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS

A. Two-Point Service (Cont'd)

The following diagram depicts a two-point service connecting two customer designated premises with serving wire centers (SWC) located 15 miles apart. This service is provided with C1 - Type Conditioning. The location of the Network Channel Interface (NCI) is noted on the diagram.



Applicable rate categories for this example are:

- Network Access Channels (NAC) (2)
- Transport Mileage (TM) (Mileage band over 8 to 25 miles)
- Channel Performance (CP) (2)
- Optional Features and Functions (C1 Conditioning) (2)

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5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS (CONT'D)

B. Multipoint Service

Multipoint service connects three or more customer-designated premises through a Company wire center. When more than four bridging locations are provided in tandem, the quality of the service may be degraded. Only certain types of Private Line Transport are provided as multipoint service. These are so designated in the Service Descriptions set forth in 5.2, following.

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When ordering, the customer may specify the desired bridging location(s) selected from the National Exchange Carrier Association Tariff F.C.C. No. 4. The Company, when requested to do so, will assist the customer in selecting the bridge location(s).

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Applicable rate categories are:

- Network Access Channel
- Transport Mileage (when applicable)
- Channel Performance
- Optional Features and Functions (when applicable)

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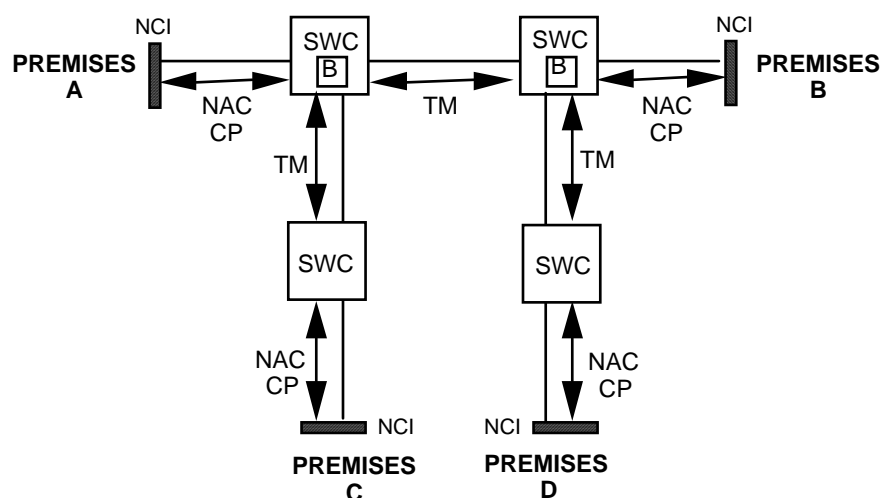
5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS

B. Multipoint Service (Cont'd)

Multipoint Analog Service

The following diagram depicts a service connecting four customer designated premises, each served by a different SWC. The location of the Network Channel Interface (NCI) is noted on the diagram.



- Network Access Channel (NAC) (4)
- Transport Mileage (TM) (3 sections, each from the appropriate mileage band)
- Channel Performance (CP) (4)
- Optional Features and Functions - bridging (B) (6 applicable, one per port)

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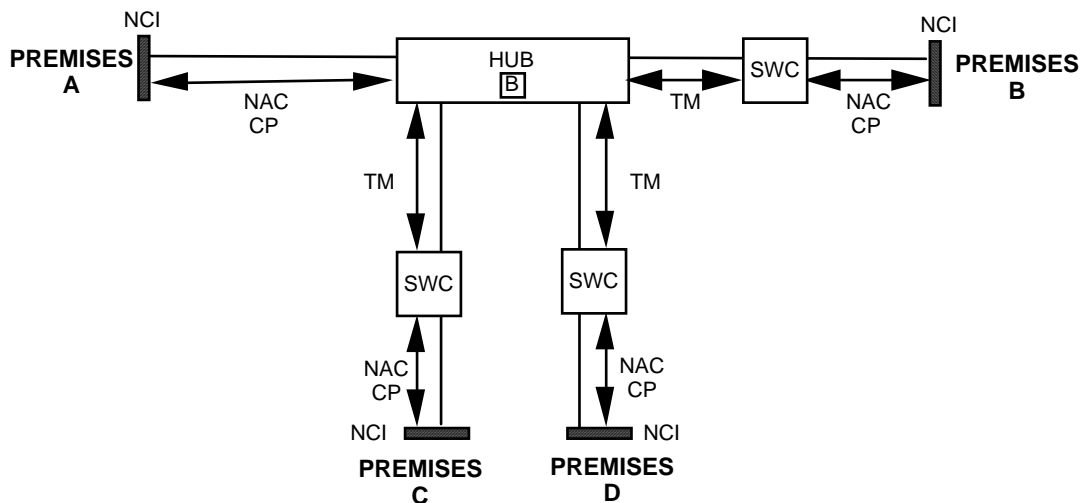
5.1 GENERAL

5.1.3 SERVICE CONFIGURATIONS

B. Multipoint Service (Cont'd)

Multipoint Digital Data Service

The following diagram depicts a Digital Data service connecting four customer designated-premises, each served by a different SWC. The location of the Network Channel Interface (NCI) is noted on the diagram.



- Network Access Channel (NAC) (4)
- Transport Mileage (TM) (3 sections, each from the appropriate mileage band)
- Channel Performance (CP) (4)
- Optional Features and Functions - bridging (B) (4 applicable, one per port)

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5.1 GENERAL (CONT'D)

5.1.4 FACILITY HUBS

A customer has the option of ordering digital facilities (e.g., DS1) to a facility hub for channelizing to individual services requiring lower capacity facilities (e.g., Voice Grade, Audio, etc.) where facilities are available. (T)

Different locations may be designed as hubs for different facility capacities, e.g., multiplexing from digital to digital may occur at one location while multiplexing from digital to analog may occur at a different location. When ordering, the customer will specify the desired multiplexing hub(s) selected from the National Exchange Carrier Association Tariff F.C.C. No. 4. This catalog identifies the type(s) of multiplexing functions which are available and the serving wire centers at which they are available. (T)

Some of the types of multiplexing available include the following:

- From higher to lower bit rate
- From digital to voice frequency channels

End-to-end services may be provided on channels of these facilities to a hub. The transmission performance for the end-to-end service provided between the customer designated premises will be that of the lower capacity or bit rate. For example, when a 1.544 Mbps facility is multiplexed to voice frequency channels, the transmission performance of the channelized services will be voice grade, not DS1. (T)

The Company will commence billing the monthly rate for the facility to the hub on the service due date specified by the customer on the service order. Individual services utilizing these facilities may be installed coincident with the installation of the facility to the hub, or may be ordered and/or installed at a later date, at the option of the customer. The customer will be billed for the appropriate Network Access Channel, Channel Performance, Transport Mileage (when applicable), and the multiplexer at the time the facility is installed. Individual service rates (by service type) will apply for a Network Access Channel, Channel Performance and additional Transport Mileage (as required) for each channelized service. These will be billed to the customer as each individual service is installed. (T)

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5.1 GENERAL

5.1.4 FACILITY HUBS (CONT'D)

Cascading multiplexing occurs when a digital channel is de-multiplexed to provide channels with a lesser capacity and 1 of the lesser capacity channels is further de-multiplexed. For example, a DS1 facility is de-multiplexed to 23 DSO facilities and then one of the DSO facilities is further de-multiplexed to subrate (e.g., 10 4.8 kbps).

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When cascading multiplexing is performed whether in the same or a different hub, a charge for the additional multiplexing unit also applies. When cascading multiplexing is performed at different hubbing locations, Transport Mileage charges also apply between the hubs.

5.1.5 SHARED USE

Shared Use occurs when Private Line Transport Service and Switched Access Service are provided over the same DS1 facilities through a common interface. The facility will be ordered, provided and rated as Private Line Transport Service. The nonrecurring charge that applies when the Shared Use Facility is installed will be the nonrecurring charge associated with the appropriate Private Line Transport DS1 Channel. Rating as Private Line Transport will continue until such time as the customer chooses to use a portion of the available capacity for providing Switched Access Service. As each individual channel is activated for Switched Access Service, the Private Line Transport rates will be reduced accordingly (e.g., 1/24th for a DS1 service, etc.). The customer must place an order for each individual Switched Access or Private Line Transport Service utilizing the Shared Use Facilities and specify the channel assignment for each such service.

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Switched Access Service rates and charges will apply for each channel of the Shared Use Facility that is used to provide Switched Access Service. Where Private Line Transport Service is provided utilizing a channel of the Shared Use Facility to the hub, DS1 rates and charges will apply for the facility to the hub and individual service rates and charges will apply from the hub to the customer designated premises. The rates and charges that will apply to the portion from the hub to the customer designated premises will be dependent on the specific type of Private Line Transport Service that is provided (e.g., Voice Grade, etc.).

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5.2 SERVICE DESCRIPTIONS

5.2.1 LOW-SPEED DATA SERVICE

A. Basic Circuit Description

These unconditioned channels are capable of transmitting low speed varying signals at rates up to 30 baud or binary signals at rates of 0-150 baud. Low-Speed Data Channels are furnished and rated from a POT to a POT or bridging location to a POT. These channels are furnished on a two-point or multipoint basis.

Information pertaining to the technical specifications and compatible channel interfaces is set forth in the Technical Publications listed under the Reference to Technical Publications, preceding.

B. End-Link or Mid-Link Application

This application is intended for customers requiring Private Line Transport as part of an overall circuit, extending beyond the LATA. Several Channel Performances are available to facilitate compatibility and a mechanized Design Layout Report (DLR) is available to the customer to assist in their overall design. The network channel interface between the Company facility and the remainder of the overall circuit is referred to as the Mid User-POT (Point of Termination). The network channel interface that is at the terminating end of the overall circuit is referred to as the End User-POT. Following are the service categories that normally apply to the End-link or Mid-link application.

1. Service Categories

- LS1 - A circuit suitable for signal transfer rates up to 30 baud. This service is provided over metallic or other appropriate facilities. This service is provided on a two-point basis only. The transmission interfaces are provided on a two-wire basis only. When used as a control type channel, a CPE key may also be required.

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5.2 SERVICE DESCRIPTIONS

5.2.1 LOW-SPEED DATA SERVICE

B.1. (Cont'd)

- MT3 - A circuit suitable for the transmission of 60 Hz control signals and dc current. This service is provided over metallic facilities. This service is provided on a two-point or multipoint basis. The transmission interfaces are provided on a two-wire only basis. Available on an intra office basis only where facilities and operations permit.

(D)

C. End-To-End Application

This application is intended for customers requiring an overall Private Line Transport, furnished by the Company within the LATA. No DLR will be provided since the performance and maintenance will be the responsibility of the Company. The network channel interface at the terminating end of the overall circuit is referred to as the End User-POT. Following are the service categories that normally apply to the End-to-End application:

1. Service Categories

- LS31 - Provides for data transfer at speeds within the range of 0 to 150 baud. The channel is further defined by speed into the following functions:

0-30 baud channels provide:

- Two-point service used for key control circuits or remote status monitoring, furnished on a two-wire only basis. When used as a control type channel, a CPE key may also be required.

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5.2 SERVICE DESCRIPTIONS

5.2.1 LOW-SPEED DATA SERVICE

C.1. (Cont'd)

- DC Channel (metallic channel) current or voltage interfaces on a two-wire basis. Available at the Company's option, on an intra office basis only where facilities and operations permit. This two-point or multipoint service is intended for applications where dc continuity is required.

- 0-75 baud channels are available on a two-point or multipoint basis and are intended for telegraph grade applications.

- 0-150 baud channels provide EIA RS 232 interfaces. The service is available on a two-point or multipoint basis and is intended for telegraph grade applications.

D. End-Link or Mid-Link and End-To-End Application

- Low-Speed Data-Custom

A Custom Low-Speed Data channel may be provided upon request when parameters and/or features are not provided by the standard Low-Speed Data channels.

E. Regulations

It is expressly declared that metallic facilities are in continually decreasing supply and the Company is not obligated to continue to provide such facilities. Due to facility rearrangements, continued use of metallic facilities may be denied to existing customers with no obligation on the Company's part to pay customer equipment rearrangement costs. The Company will give the customer 90 days notification of this type of facility rearrangements. Metallic facilities are provided only where existing facilities and operating conditions permit.

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5.2 SERVICE DESCRIPTIONS

5.2.1 LOW-SPEED DATA SERVICE

E. Regulations (Cont'd)

All Network Access Channels must have the same Channel Performance. Any deviation from the established parameters on a given circuit will be handled on an individual case basis. All transmission measurements will be measured from the primary station.

F. Optional Features and Functions

1. Central Office Bridging Capability

a. Telegraph Bridging allows the connection of three or more customer-designated premises. (D)
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b. Direct Bridging connects three or more customer-designated premises on the DC Channel. (T)

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5.2 SERVICE DESCRIPTIONS

5.2.1 LOW-SPEED DATA SERVICE (CONT'D)

G. Service Information

	SERVICE	CLASS OF SERVICE	NETWORK CHANNEL CODE	
1.	End-Link or Mid-Link			
	LS1	XZY19	NT	(D)
	MT3	XZY39	NV	(D)
	Custom	XZYC9	MQ,NQ	(D)
2.	End-to-End			
	LS-31 Control Status	PYKAN	UY	(D)
	LS-31 DC Channel	PYKGN	UY	
	LS-31 Telegraph	PYKJN	UY	
	0-75 Baud			
	LS-31 Telegraph	PYKKN	UY	
	0-150 Baud			
	Custom	PYKCN	UN	

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5.2 SERVICE DESCRIPTIONS (CONT'D)

5.2.2 VOICE GRADE SERVICE

A. Basic Description

Voice Grade circuits are provided with a bandwidth of 300-3000 Hz designed to meet certain specifications based on Company standards of measurement for voice transmission, data transmission, remote metering, telephoto and miscellaneous signaling purposes. Such identification is not intended to limit a customer's use of the circuits nor to imply that the circuit is limited to a particular use. These circuits are not suitable for the transmission of direct current pulses. The number of stations that may be connected and the distance over which transmission is possible may be limited by operating and transmission factors. Circuits are furnished as either two-wire or four-wire on a two-point or multipoint basis.

Information pertaining to the technical specifications and compatible channel interfaces is set forth in the Technical Publications listed under the Reference to Technical Publications, preceding.

B. End-Link or Mid-Link Application

This application is intended for customers requiring Private Line Transport as part of an overall circuit, extending beyond the LATA. Several Channel Performances are available to facilitate compatibility and a mechanized Design Layout Report (DLR) is available to the customer to assist in their overall design. The network channel interface between the Company facility and the remainder of the overall circuit is referred to as the Mid User-POT (Point of Termination). The network channel interface that is at the terminating end of the overall circuit is referred to as the End User-POT. Following are the service categories that normally apply to the End-link or Mid-link application.

1. Service Categories

- VG2 - Suitable for use as a voice two-point or multipoint private line and switched special service circuit. The transmission interfaces are either two-wire or four-wire.

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5.2 SERVICE DESCRIPTIONS

5.2.2 VOICE GRADE SERVICE

B.1. (Cont'd)

- VG6 - Suitable for voice grade analog data circuits (Applications may be limited). This service is provided on a two-point or multi-point basis. The transmission interfaces are provided on a four-wire basis only. (D)
- VG7 - Suitable for two-point use for a switched or nonswitched data circuit. The transmission interfaces may be either two-wire or four-wire. (D)
- VG12 - Suitable for specialized voice grade private line audio tone protective relaying circuit. High Voltage Power protection is required for provision of VG12 service. This service is provided on a two-point or multi-point basis. The transmission interfaces are provided as either two-wire or four-wire. (D)

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5.2 SERVICE DESCRIPTIONS

5.2.2 VOICE GRADE SERVICE (CONT'D)

C. End-To-End Application

This application is intended for customers requiring an overall Private Line Transport, furnished by the Company within the LATA. No DLR will be provided since the performance and maintenance will be the responsibility of the Company. The network channel interface at the terminating end of the overall circuit is referred to as the End User - POT. Following are the service categories that normally apply to the End-to-End application:

1. Service Categories

- VG32 - is suitable for use as a two-point or multipoint line-type circuit. The basic channel is modified with Channel Performance providing no signaling, loop-start, automatic or code-select signaling. Data capability may be added to specific combinations of loop-start signaling circuits. The loop-start signaling option provides the additional capabilities of extending the signaling ranges and of offering repeated ringing for PBX station ports.
- VG33 - is suitable for use as a two-point trunk-type circuit. The basic channel is modified with Channel Performance providing no signaling, E&M or ground-start signaling. Data capability may be added to specific combinations of E&M or ground-start signaling circuits.
- VG36 - is suitable for use as a two-point or multipoint voice grade (analog) circuit. All channels are provided with basic data transmission parameters modified by the appropriate Channel Performance. Additional conditioning parameters may be added to the basic Channel Performance. These conditioning parameters allow the section of attenuation distortion/envelope delay and intermodulation distortion as needed.

(C)