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**ACCESS SERVICE**

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**17. Advanced Data Applications****17.1 Frame Relay Service**

Citizens' Frame Relay Service (C-FRS) is a medium to high-speed connection-oriented packet-switched data service that allows for the interconnection of Local Area Networks (LANs), or other compatible customer equipment across a wide area for the purpose of interstate access. C-FRS allows for the transfer of variable length frames (packets). Frames are relayed by virtual connections, i.e., frames travel a fixed path through the network although bandwidth is not dedicated to each virtual connection.

This service uses Permanent Virtual Connections (PVCs). A PVC is a logical channel from one Frame Relay port to another Frame Relay port. PVCs are end-to-end, bi-directional symmetric channels that are installed and disconnected via the service order process.

(T)

The Frame Relay standard specifies an address field called the Data Link Connection Identifier (DLCI). The DLCI specifies a connection (e.g., customer premises to LEC switch or LEC switch to inter-exchange carrier network). A PVC is comprised of two or more DLCI's.

This service is comprised of a User Network Interface (UNI) which, allows C-FRS compatible customer premises equipment (CPE) to originate or terminate intra- and inter-exchange services. All UNI access facilities must be in conformance with American National Standards Institute (ANSI) standards T1.606-1990, T1.606 Addendum 1-1991, T1.606a-1992, T1.617, Annex D-1992.

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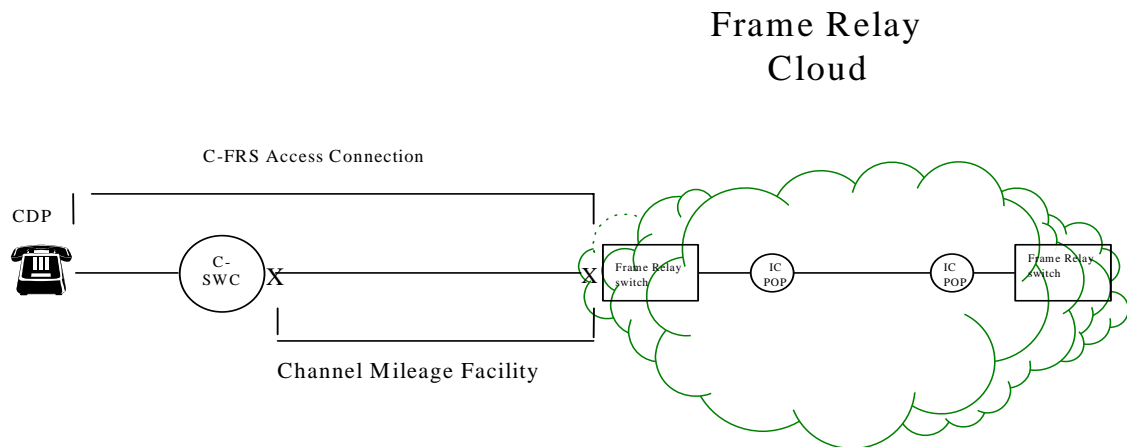
### 17. Advanced Data Applications (Cont'd)

#### 17.1 Frame Relay Service (Cont'd)

C-FRS provides high-speed throughput over digital facilities at speeds of 56 kbps, 64 kbps, 1.536 Mbps or 44.736 Mbps. Physical access to Citizens Communications Frame Relay network is provided via a UNI Access Connection: 56 kbps DDS, 64 kbps DDS, DS1, or DS-3 rated channel termination from Section 20 of Citizen's Frame Relay tariff. C-FRS is generally available and is ordered through the access service order process. The Access Order Service Date Interval for C-FRS is negotiated.

(C)  
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(C)

The following diagram depicts a generic view of components of access service for C-FRS Service and the manner in which components are combined.



(D)  
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(D)

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**ACCESS SERVICE**

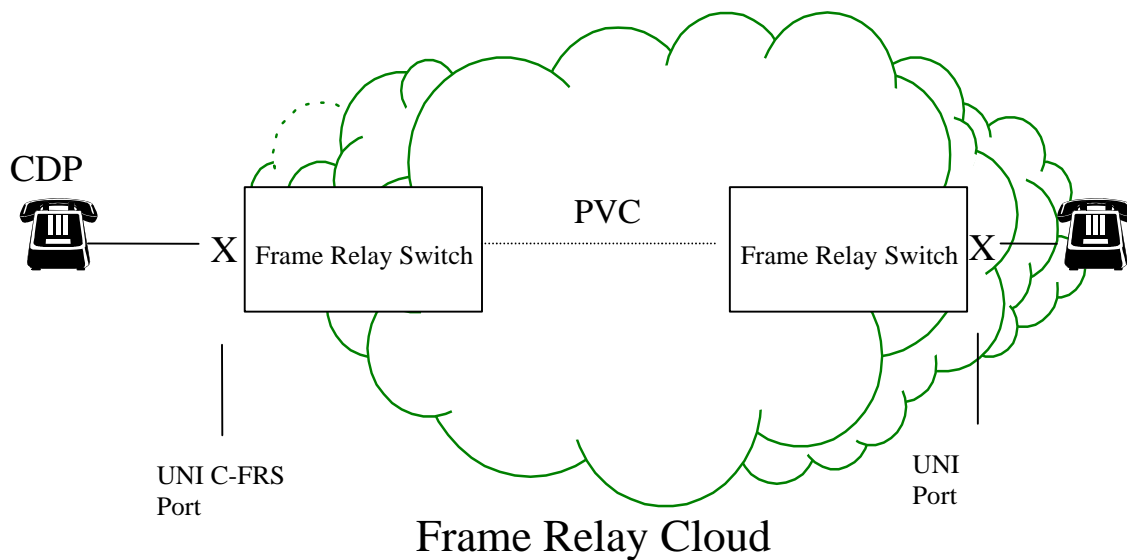
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**17. Advanced Data Applications (Cont'd)**

(N)

**17.1 Frame Relay Service (Cont'd)**

The following diagram depicts a generic view of the components of C-FRS Service and the manner in which the components are combined to provide a complete C-FRS connection.



(N)

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

(N)

17.1 Frame Relay Service (Cont'd)

(A) User Network Interface (UNI) Connections

The User Network Interface (UNI), is a standard interface used to connect the end user to the C-FRS Network. It receives the data frame from the customer's Local Area Network or other CPE devices and verifies that the DLCI is valid before relaying the frame to the destination end point.

- (1) The UNI Access Connection consists of a 56 kbps, 64 kbps, 1.536 Mbps or 44.736 Mbps digital facility from the customer premises to the C-FRS network and the appropriate port interface connection. Additional UNI Access Connections may be ordered for disaster recovery of one or multiple UNI Access Connections and are referred to as Back-up UNIs.

(C)  
(M)

(B) Optional UNI Features

(1) Additional PVCs per UNI

This feature provides the assignment of additional Data Link Connection Identifiers (DLCIs). When any two DLCIs are mapped together, a PVC is created.

(D)  
(D)

Each PVC must be a minimum of 25% of the port speed.

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Citizens Telecommunications Company  
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17. Advanced Data Applications (Cont'd)17.1 Frame Relay Service (Cont'd)(C) Network to Network Interface (NNI) Port

Network to Network Interface (NNI), specifies how an C-FRS switch sends and receives data from a Frame Relay interexchange carrier's or other customer's network. NNI's are available as 1.536 Mbps/DS1 or 44.736 Mbps/DS-3 digital transmission facility.

(C)  
(M)(D) Committed Information Rate

Committed Information Rate (CIR) is a feature that provides the customer with a mechanism for prioritizing data on a per PVC basis across a given UNI. A Committed Information Rate allows a sustained throughput at a chosen rate without having any frames designated "discard eligible" under normal operating conditions. Various CIR rates are available; however, 0 (zero) CIR is not available.

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17. Advanced Data Applications (Cont'd)

(N)

17.1 Frame Relay Service (Cont'd)(E) Maintenance Window

Network maintenance and network upgrades for C-FRS are performed during the hours of 11:00 p.m. and 8:00 a.m. At times, during the hours of maintenance activity, it will be necessary to place a customer's service in an inactive (out of service) condition. The amount of time that this scheduled out of service condition will exist is called a "maintenance window". The Company will provide the customer notice prior to the maintenance window. Maintenance window activity could be scheduled for consecutive days.

(F) Rate Regulations(1) Administrative Charge

An administrative charge will be applied whenever a change is made to a customer's Frame Relay configuration (including changes to existing group addressing), at the customer's request. Such changes are defined as those rearrangements necessary to add, delete, or rearrange the customer's configuration, including changes to a customer's selected carrier. Although multiple changes may be caused by such actions, only one administrative charge will apply.

(N)

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(2) Termination Charges: Month-to-Month

Each NNI provided on a month-to-month basis is subject to a minimum Service period of three months. If service is disconnected prior to the Expiration of the minimum service period, termination liability charges are applicable for the remaining portion of the minimum period, whether service is used or not. The termination liability charge will be reduced by one-third for each month of the minimum service period.

(3) Nonrecurring Charges

A nonrecurring charge applies for each installation of certain C-FRS rate elements. This charge also applies whenever the facility associated with the rate element is moved, changed or rearranged.

(4) Expedite Charges

Expedite charges are to be assessed in accordance with the rules described in Section 5.3.2(C) of this tariff.

(S) (Y)

(S)

(X) Issued on not less than one day's notice under the authority of Special Permission No. 99-151 granted by the FCC.

(Y) Reissued material without change scheduled to become effective on August 17, 1999. Originally scheduled under Transmittal #63.

\* This page was incorrectly numbered as 740.12 when originally filed.

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP – FR)

(N)

(a) General

- (i) The terms and conditions specified herein are applicable to Frame Relay Service and are in addition to other regulations as specified in this tariff.
- (ii) The Frame Relay UNI Port, NNI Port and PVC monthly recurring charges are the only rate elements subject to discounts under a Term Payment Plan (TPP - FR). Frame Relay Access Connection, Channel Mileage Facility, Service charges and any non-recurring charges are not eligible for TPP - FR discounts.
- (iii) One, two and three year TPP - FR rates will be equal to or less than the standard month-to-month rates. Decreases to the month-to-month rates will flow through to the one, two and three year TPP rates.

(N)



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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(N)

(5) Term Payment Plan – Frame Relay (TPP – FR) (cont)

(a) General (cont)

- (iv) Payment periods of one year, two years, and three years are available to all customers, at the applicable rates set forth in Section 20.1, regardless of when they subscribe to a TPP – FR arrangement. All Frame Relay rate elements must be ordered under the same payment period; e.g. mixing payment periods for the rate elements under the same Frame Relay service is not permitted.
- (v) The customer must designate on the ASR Order Form the payment period for the TPP - FR.
  - (vi) Inside moves in which the UNI location is changed, but remains within the customer premises, will not incur termination liability charges.
  - (vii) On outside moves, in which the UNI location is changed to a different customer premises location within the same central office exchange area, the Company will allow the customer to retain the same TPP - FR payment period. Any other move will be treated as a disconnect of the service and termination liability charges as specified in Paragraph 17.1(F)(5)(f) will apply.

(N)

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP - FR) (cont)

(b) Changes in Length of TPP - FR Period.

Prior to the completion of the selected TPP - FR payment period, the customer may elect to convert to a new TPP - FR period of the same or different length, subject to the following conditions:

- (i) No credit will be given toward the new payment period for payments made under the original TPP – FR arrangement.
- (ii) No additional Nonrecurring charges will be applied for changing the existing service period.
- (iii) If the new TPP – FR period is shorter in length than the time remaining under the existing TPP - FR, the change to the new TPP period constitutes a discontinuance of the existing TPP – FR service and termination liability charges apply, as set forth in paragraph 17.1(F)(5)(f).

(N)

(N)

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP - FR) (con't)

(c) Renewal Options

- (i) At the expiration of a TPP – FR period, the Telephone Company will automatically renew the service at the same TPP – FR period unless the customer notifies the Company and chooses to convert to a different TPP – FR period, convert to month-to-month rates or discontinue service.
- (ii) Conversion to a different TPP – FR payment period will require the customer to submit a Change Order/ASR. Conversion of existing TPP - FR service to a different TPP – FR period will not incur application of nonrecurring or ordering charges.
- (3) Conversion from a TPP –FR plan to month-to-month rates will be treated as a disconnection of service and establishment of new service. However, if no other changes are ordered, no NRC will be applied.

(N)

(N)

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP - FR) (con't)

(N)

(d) Notification of Discontinuance of the TPP – FR or service.

- (i) An order/ASR for discontinuance of a TPP – FR arrangement must be received by the Citizens Telecommunications Company at least thirty (30) days prior to actual disconnect of service.
- (ii) Monthly charges will apply for a period of thirty (30) days from the date the Company receives disconnect notification or until the requested disconnect date, whichever period is longer.

(e) Upgrade to Higher Speed Service.

Customers may elect to upgrade service(s) to a higher speed during a TPP – FR period, subject to the following conditions:

- (i) Both the existing and the new services are provided solely by the Company.
- (ii) The order to discontinue a service at an existing speed or capacity and the order for the upgraded service are received by the Company at the same time.

(N)

17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

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ACCESS SERVICE

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(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP – FR) (con't)

(N)

(e) Upgrade to Higher Speed Service (con't).

- (iii) The new service will be provided at the same customer location as the discontinued service.
- (iv) The TPP for the upgraded service(s) meets or exceeds the remaining length of the existing TPP.
- (v) The total monthly rate of the new agreement is equal to or greater than the total monthly rate of the existing agreement period.
- (vi) The monthly rates for the upgraded services and/or service elements will be those in effect at the time of the service upgrade. The upgraded service will be subject to all appropriate nonrecurring charges.
- (vii) Termination liability charges will not apply as long as the upgraded service remains connected at the same point of termination(s) or meets the requirements for Inside or Outside moves.

(N)

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP - FR) (con't)

(f) Termination Liability.

- (i) When a TPP – FR arrangement is discontinued prior to the end of the period, termination liability charges, as set forth below, will apply based on the remainder of the TPP – FR period in effect at the time of disconnect.
- (ii) One Year TPP - FR: the termination liability will be 50% of any remaining portion of the first year's recurring charges for the in-service quantity.
- (iii) Two Year TPP - FR: the termination liability will be 50% of any remaining portion of the first year's recurring charges. In addition, for any remaining portion of the second year, the customer will be liable for 10% of the total monthly recurring charges in that time period for the in-service quantity.
- (iv) Three Year TPP – FR: the termination liability will be 50% of any remaining portion of the first year's recurring charges. In addition, for any remaining portion of the second and third years, the customer will be liable for 10% of the total monthly recurring charges in that time period for the in-service quantity.

(N)

(N)

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17. Advanced Data Applications (Cont'd)

17.1 Frame Relay Service (Cont'd)

(F) Rate Regulations (Cont'd)

(5) Term Payment Plan – Frame Relay (TPP - FR) (con't)

(g) Termination Without Liability.

During a TPP – FR period, should the currently effective rate for a customer's service increase, the customer may, at his/her option, terminate the TPP – FR arrangement without penalty or liability.

(N)

(N)

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ACCESS SERVICE

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS)\*(A) Service Description

Dial Internet Aggregation Access Service (DIAAS) provides analog and ISDN dial-up channels which enable the customer to collect, concentrate and transport traffic from end users to customer designated locations.

IP (Internet Protocol) addressing and authentication is the responsibility of the customer. DIAAS does not include the end user access service.

DIAAS will utilize TCP/IP protocols based on Internet Engineering Task Force (IETF) standards. IETF is the engineering arm of the Internet Architecture Board (IAB). IETF defines protocol standards for Internet services. This tariff supports the following standards:

IP	Internet Protocol
TCP	Transmission Control Protocol
SLIP	Serial Line IP
CSLIP	Compressed Serial Line IP
PPP	Point to Point Protocol
HSSI	High Speed Serial Interface

DIAAS is available where facilities and conditions permit.

(B) Obligations of the Telephone Company

The Telephone Company has the service responsibility up to and including the network interface. Special Access Lines and Special Transport beyond the DIAAS service are available from Section 7 of this tariff.

The Telephone Company will notify the customer of the completion and readiness of the requested DIAAS site.

\* DIAAS is a grandfathered service available to UUNet only.

(N)

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(C) Obligations of the Customer

- (1) The customer is responsible for obtaining an appropriate IP address.
- (2) The customer's equipment must be compatible with the Telephone Company's equipment.
- (3) The customer shall furnish information as may be required by the Telephone Company to design and maintain the service and to assure that the service arrangement is in compliance with the regulations contained herein.
- (4) The customer's equipment must be in compliance with FCC rules and regulations.
- (5) The customer must maintain software configuration, software management, and authentication control.
- (6) The customer must order service in increments of DS1 (24 channels) or DS3 (28 DS1s or 672 channels). Purchase of individual channels is not permitted, except by mutual agreement between the Telephone Company and the customer.

(N)

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ACCESS SERVICE

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(D) Rate Regulations

(1) Minimum Period

The minimum service period is four years for initial enrollment with two options for extension during the total time of subscription. Billing will commence on the date customer acceptance has been completed or on the 60<sup>th</sup> calendar day following the date of the Telephone Company's notification to the customer of site completion, whichever is sooner.

(2) Rate Application

(a) Rates will be applied on a monthly basis per combined analog or ISDN dial-up channels based upon the total number of billed channels nationwide. The term nationwide is defined as the aggregate of billed channels for all Citizens telephone companies. A dial up channel is defined as an individual circuit from the central office circuit switch to the modem pool.

In the 4 year rate plan for modem based dial up TCP/IP, the minimum will be: 1,000 channels or more on a nationwide basis.

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ACCESS SERVICE

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(D) Rate Regulations (Cont'd)

(2) Rate Application (Cont'd)

(b) The total number of analog and ISDN DIAAS channels will determine the rate for all dial-up channels at each central office. In those cases where customer orders are awaiting site completion beyond 30 days after ASRs have been verified by the Telephone Company to be provisionable, the rate tier will be determined based upon the total channels billed. Once site completion occurs, 17.2 (D)(1) is applicable.

(c) Shared use (ratcheting) is not permitted.

(N)

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ACCESS SERVICE

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(D) Rate Regulations (Cont'd)

(3) Term of Commitment

The service is initially offered as a minimum four year commitment period.

(4) Commitment Levels

An implementation period not to exceed six months for the 4 year rate plan will be negotiated between the Telephone Company and the customer. During implementation, the applicable rate will be determined by the total number of modem channels or dedicated ports in service. However, under the 4 year rate plan for DIAAS, if the total number of dial-up channels during implementation drops below 1,000, the rate for 100-999 channels will apply. The commitment level will apply to TCP/IP total dial-up channels.

(N)

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)(D) Rate Regulations (Cont'd)

## (5) Changes to Commitment Level

Once activated, the total nationwide quantity of analog and ISDN channels must remain in service for the remainder of the commitment period. An allowance of a 2% decrease to the combined in service quantities of analog and ISDN channels (quantified at each quarterly review) will be permitted. Penalties for not meeting the commitment level are set forth under 17.2 (D)(8)

## (6) Service Enrollment

When the customer elects to enroll in DIAAS, he/she must specify in writing, the enrollment date (which will be the anniversary date). The specified enrollment date must be within 120 days from receipt of the written enrollment request. The customer must also specify the central offices to be included. By the enrollment date, ASRs must be issued to provide the appropriate amount of TCP/IP Channels to fall within the commitment range specified in 17.2 (D)(4). Subsequent to enrollment growth, ASR orders require a 24 channel analog or 23 ISDN minimum.

## (7) Quarterly Review

Each customer's service commitment will be reviewed quarterly beginning at the first enrollment anniversary. The customer will be notified in writing as to the status of the commitment requirements. This notification will inform the customer of any shortfall in the channel quantity level.

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(D) Rate Regulations (Cont'd)

(7) Quarterly Review (Cont'd)

At anytime the quantity of channels drops below 1,000, or the commitment level less 2%, whichever is greater, the rate for all channels will change to the 100-999 channel rate until the quantity increases to above 1,000 or the commitment level less 2%, whichever is greater.

(8) Penalties for Failing to Obtain the First Six Month Commitment Level

At the second quarterly review, if the number of DIAAS channels is less than the acceptable commitment range, the following penalty charges will apply, based on the difference between the commitment level less 2% and the actual number of channels. Channel quantity shortfalls of in-service units below the minimum commitment level will incur a liability charge of 50% of the 100-999 channel rate per month, until the enrollment commitment is obtained.

(9) Service Availability

During the four year subscription period commencing at the enrollment date, the Telephone Company objective level of service availability will be 95% of the monthly hours of operation for each central office. Should the service availability actually be less than 95% of monthly hours for the average channel of a central office (e.g., 30 days x 24 hrs. x .95 = 684 hrs.), the customer may terminate subscription for that central office without any termination liability.

(N)

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17. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service  
(DIAAS) (Cont'd)

(D) Rate Regulations (Cont'd)

(10) Renewal Options

At the expiration of the term, the customer may select an additional four year commitment, or convert to a month to month basis. If the customer fails to make a selection, the Telephone Company will notify the customer and continue with an additional month of billing. If the customer does not select a new term agreement within 30 days from the expiration date, billing will automatically continue on a month to month basis.\*

To cancel the agreement after the initial 4 year term, the customer must provide written notification to the Telephone Company that this service will be terminated.

(11) Termination With Liability

Once the Initial channel level commitment is met, a reduction of nationwide channel quantities from the installed base (determined at each quarterly review) will incur a termination liability of 50% of the remaining monthly payment to the end of the subscribed period.

Modem services which are discontinued are not held in reserve for customer use at the time of disconnection.

\* Rates for a four year commitment and for month to month can be found in Section 20.4.13.1.

(N)

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1. ADVANCED COMMUNICATIONS NETWORKS (Cont'd)

(N)

17.2 Dial Internet Aggregation Access Service (DIAAS) (Cont'd)

(D) Rate Regulations (Cont'd)

(12) Termination Without Liability

During the customer's subscription period, should the monthly rate for a customer's DIAAS service increase due to Telephone Company action, the customer may at his/her option, terminate the subscription without penalty or liability.

(N)



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17. Advanced Data Applications (Cont'd)

(D) (X) (Y)

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(D)

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(Y) Delete ATM material originally filed under Transmittal #63.

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3 High Ridge Park  
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17. Advanced Data Applications (Cont'd)

(D) (X) (Y)

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17. Advanced Data Applications (Cont'd)

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17. Advanced Data Applications (Cont'd)

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17. Advanced Data Applications

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service

(M)

(M)

(M) Material moved to page 748.5

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page748.6

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.7

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.8



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17. Advanced Data Applications (Cont'd)

17.3 Digital Subscriber Line (DSL) Service (Cont'd)

17.3.6 Rate Regulations

(M)

(M)

(M) Material moved to page 748.1.

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.9

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.10

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.11

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.3 Asymmetrical Digital Subscriber Line (ADSL) Service (Cont'd)

(M)

(M)

(M) Material moved to Page 748.12

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.4 Digital Subscriber Line (DSL) Interface Access Service

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(M) Material moved to Page 748.14

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ACCESS SERVICE

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17. Advanced Data Applications (Cont'd)

17.4 Digital Subscriber Line (DSL) Interface Access Service (Cont'd)

(M)

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(M) Material moved to Page 748.15

**ACCESS SERVICE**

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17. Reserved for future use.