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22. Advanced Communications Networks22.1 TCP/IP Data Aggregation Service(A) Service Description

TCP/IP Data Aggregation Service is available in two Modem-Based Dial Up Network Access (MBDUNA) service options. The basic offering is identified as Option 1 following. The high density offering is identified as Option 2 following.

(1) MBDUNA Service Option 1

MBDUNA Service Option 1 is only available under Frontier Telephone Companies' Tariffs FCC Nos. 6 and 7.

MBDUNA modem based data aggregation provides analog and ISDN dial-up channels which enable the customer to collect, concentrate, and transport traffic from end users to customer designated locations.

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

MBDUNA does utilize TCP/IP protocols based on IETF (Internet Engineering Task Force) standards. IETF is the engineering arm of the IAB (Internet Architecture Board). 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

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(A) Service Description (Cont'd)(2) MBDUNA Service Option 2

In addition to the description of service under MBDUNA Service Option 1, MBDUNA Service Option 2 utilizes high density modem aggregation equipment that accepts a higher data rate of incoming traffic and delivers a higher data rate output than is available under Option 1. The equipment has the capacity for 2,688 modems per chassis, as compared with the equipment used for Option 1, which can accommodate up to 480 modems per chassis. The greater number of modems results in the capability to accept a larger number of incoming calls than is offered under Option 1. The equipment used in this option is designed for this higher traffic volume and requires a minimum input data rate from the central office switch of 45 Mbps, as contrasted with Option 1, where the equipment can accept incoming data up to a maximum rate of 1.544 Mbps. In order to accommodate the greater number of incoming calls and provide the 45 Mbps input, the equipment may use multiplexing functionality to aggregate the traffic from the switch to the modem aggregation equipment.

MBDUNA Service Option 2 is available only under a three-year minimum subscription period, and only with a minimum of 151,001 channels from the combined Frontier Telephone Companies under Tariffs FCC Number 4, 5, and 6.

The modem aggregation equipment is for the exclusive use of the customer, and will be provisioned in accordance with a mutually agreed implementation plan. This option is provisioned with a minimum requirement for 144 channels at each Telephone Company central office.

The service will be delivered to the customer at data rates of 45 Mbps.

The service provides the customer with monitoring and management capabilities, and gives the customer exclusive operational control over the functionality of the equipment. The customer's operation software and system must be capable of handling the higher data rates available under this option. Specifications for the current system requirements are available from the Telephone Company.

MBDUNA service provided under Option 1 is available where facilities and conditions permit. MBDUNA service provided under Option 2 is available from selected wire centers as identified in NATIONAL EXCHANGE CARRIER ASSOCIATION, INC. TARIFF F.C.C. No. 4. Some of these wire centers are suitably equipped to provide the service while others subtend a suitably equipped wire center. Included in the MBDUNA Service Option 2 rates set forth in (E) following is the necessary transport from a subtending wire center to a suitably equipped wire center for this Option 2.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(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 MBDUNA service are available from Section 7 preceding, and SONET from Sections 7 and 8 preceding.

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

Equipment to provide MBDUNA will be selected at the discretion of the Telephone Company. Customer requests regarding the configuration and design of the equipment will be considered by the Telephone Company and employed in equipment selection when possible.

For MBDUNA Service Option 2, the Telephone Company will provide the customer with 120 hours notice in advance of scheduled maintenance at the Telephone Company's central office that could adversely impact the service.

For MBDUNA Service Option 2, the service includes upgrades to hardware and software at no charge to the customer when the Telephone Company's suppliers make such upgrades available to the Telephone Company without charge, and the Telephone Company reasonably determines it can implement the upgrades at nominal cost.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(C) Obligations of the Customer

The customer is responsible for obtaining an appropriate IP address.

- The customer's equipment must be compatible with the Telephone Company's equipment.
- 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.
- The customer's equipment must be in compliance with FCC rules and regulations.
- The customer must maintain software configuration, software management, and authentication control.
- The customer must notify the Telephone Company when customer acceptance testing has been completed.
- For MBDUNA Service Option 2, the customer will provide the Telephone Company with at least 10 business days prior written notice before deploying any new planned software upgrades on the MBDUNA equipment that would implement any new major features or functionalities. Notwithstanding the foregoing, the customer shall be entitled to make emergency software upgrades and code revisions, without prior notice to the Telephone Company, in the event the customer or its end users experience problems in the network that materially and adversely affect the ability of the MBDUNA channels to meet performance requirements.
- For MBDUNA Service Option 2, the customer must notify the Telephone Company of any firm order cancellations to ordered channels before the Telephone Company begins service installation activities. Firm order cancellations received after installation work has started will incur charges for time and materials. Such cancelled channels shall not be subject to the 36 month commitment period for the channel.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations

MBDUNA Service Option 1

(1) Minimum Period

- (a) The minimum service period for MBDUNA Service Option 1 is four years for initial enrollment with two options for extension during the total time of subscription. A five year rate plan is also available.
- (b) For all TCP/IP data aggregation services, the billing will commence on the date customer acceptance has been completed or the 60th calendar day following the date of the Telephone Company's notification to the customer of site completion, whichever is sooner.

(2) Rate Application

- (a) MBDUNA Service Option 1 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 Frontier Telephone Companies. Rates are based on a tiered structure. 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 tiers will be: 4,000-7,999, 8,000-11,999, 12,000-15,999, 16,000-23,999; 24,000-31,999; 32,000-39,999; and, 40,000 channels or more on a nationwide basis.

In the 5 year rate plan for modem based TCP/IP dial-up channels, the tiers will be: 8,000-11,999, 12,000-23,999, 24,000-39,999, and 40,000 or more on a nationwide basis.

In the 6 year rate plan for modem based TCP/IP dial-up channels, the tiers will be: 40,000-59,999, 60,000-79,999, 80,000-99,999, 100,000-119,999, 120,000-139,999, 140,000-159,999, 160,000-179,999, 180,000-199,999, and 200,000 or more channels on a nationwide basis.

In the 7 year rate plan for modem based TCP/IP dial-up channels, the tiers will be: 200,000-99,999 and 300,000 or more channels on a nationwide basis. When the aggregated number of billed channels reaches 300,000 or more, there are three tiers for billing each of the first 300,000 channels and a separate rate for each additional channel exceeding 300,000. The tiers are 300,000-349,999, 350,000-399,999 and 400,000 or more total aggregated billed channels.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 1 (Cont'd)

(2) Rate Application (Cont'd)

- (b) The total number of analog and ISDN MBDUNA Service Option 1 channels will determine the rate to be applied to all dial-up channels at each central office. For example, if the total number of dial-up channels is 9,250, all dial-up channels will be rated at the rate for the 8,000-11,999 tier. 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, 22.1(D)(1)(b) is applicable.

(3) Term of Commitment

The modem based data aggregation service is initially offered as a four year or five year commitment period.

(4) Commitment Levels

An implementation period not to exceed six months for the 4 year rate plan and twelve months for the 5 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,

- (a) Under the 4 year rate plan for modem based data aggregation (MBDUNA), if the total number of dial-up channels during implementation is less than 4,000, the rate for 4,000-7,999 will apply. Following the six months implementation period the minimum monthly nationwide commitment is 4,000 combined analog and ISDN dial-up channels. The commitment level will apply to TCP/IP total dial-up channels.
- (b) Under the 5 year rate plan for modem based data aggregation (MBDUNA), if the total number of dial-up channels during implementation is less than 8,000, the 8,000-11,999 rate will apply. Following the twelve month implementation period, the minimum monthly nationwide commitment is 8,000 combined analog and ISDN dial-up channels. The commitment level will apply to TCP/IP total dial-up channels.

(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 22.1(D)(8).

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 1 (Cont'd)

(6) Service Enrollment

- (a) When the customer elects to enroll in MBDUNA Service Option 1, the customer must specify in writing a 4 year or 5 year rate plan selection and the enrollment date (which will be the anniversary date). The specified enrollment date must be within 90 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 22.1(D)(4)(a) or 22.1(D)(4)(b) as appropriate.

At enrollment, the minimum modem based services per central office is 24 analog channels or 23 ISDN channels. The maximum number of central offices deployed to meet the 4,000 minimum analog and/or ISDN channel commitment is 60 separate central offices. 8,000 analog and/or ISDN channels will have a maximum of 120 central offices, 16,000 analog and/or ISDN channels will have a maximum of 240 central offices and 24,000 or more analog and/or ISDN channels will have a maximum of 320 central offices. The 320 central office maximum is maintained for all channel quantities above 24,000.

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 with the first six months following enrollment. 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. Penalties for a missed commitment level are set forth under 22.1(D)(8) and 22.1(D)(11).

(8) Penalties for Failing to Obtain the First Six Month/4 Year or First Twelve Month/5 Year Commitment Level

- (a) At the first quarterly review, when the number of MBDUNA channels is less than the acceptable commitment range, the following penalty charges will apply, based on the difference between the commitment level less 2% for analog and ISDN dial up channels. Dial-up channel quantity shortfalls of in service units below the minimum commitment level will incur a liability charge of 50% of the 4,000-7,999 channel rate per month, per unit below the commitment level until the enrollment commitment is obtained.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 1 (Cont'd)

(9) Service Availability

During the 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 or receive a credit of 40% of the monthly bill for that central office.

(10) Renewal Options

(a) MBDUNA Renewal Option 1 - No Growth in Months 37 to 48 of 4 Year Plan or 49 to 60 of 5 Year Plan

At the expiration of the term, the customer may select an additional four year or five 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 four year term or five year term, the customer must provide written notification to the Telephone Company that the service will be terminated.

(b) MBDUNA Renewal Option 2 - Convert to 5 Year Rate Plan/Growth in Months 37 to 48

During the first 36 months of the 4 year rate plan, the customer may enroll in the 5 year rate plan if the customer has reached the 4,000 port tier. Months already completed will be credited toward meeting the 5 year enrollment term commitment. The 5 year renewal option has a requirement of reaching the 12,000 port tier within three months following the renewal letter date. Growth is restricted to the first 48 months of the 5 year rate plan. No growth is permitted in months 49-60. An allowance of a 2% decrease in units (quantified at each quarterly review) will be permitted. If the decline in units exceeds 2%, 50% of the monthly rate will be assessed through month 60 for the number of deficient units (exceeding the 2% decline threshold).

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 1 (Cont'd)

(10) Renewal Options (Cont'd)

(c) MBDUNA Renewal Option 3 - Convert to 6 Year Rate Plan

During the first 36 months of the 48 month or 48 months of the 60 month commitment, the customer may enroll in the 6 year commitment period rate plan, if the customer has reached the 40,000 port tier. Months already completed from the original enrollment will be credited to meeting the 6 year enrollment commitment. The customer must request this option in writing and provide a copy of the initial enrollment letter or designate the months accumulated under the initial enrollment. The 6 year plan has no growth restrictions in any of the 72 months of the plan.

(d) MBDUNA Renewal Option 4 - Convert to 7 Year Rate Plan

During the first 72 months of the 6 year plan, the customer may enroll in the 7 year plan if the customer has reached the 200,000 port tier. Months already completed from prior plan enrollments will be credited to meeting the 7 year enrollment commitment. The customer must request this option in writing and provide a copy of the initial enrollment letter or designate the months accumulated under the initial enrollment. The 7 year plan has no growth restrictions in any of the 84 months of the plan.

(11) Termination With Liability

Once the initial TCP/IP channel level or dedicated unit commitment is met, a reduction of nationwide quantities from the installed base (determined at each quarterly review) will incur a termination liability of 50% of the remaining monthly payments to the end of the subscribed period.

TCP/IP dial-up, and dedicated access services which are discontinued are not held in reserve for customer use at the time of disconnection.

(12) Termination Without Liability

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

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 2

(1) Enrollment Period and Termination of Service

- (a) MBDUNA Service Option 2 requires a 36 month commitment period for each channel, commencing on the activation of the channel. The customer must provide the Telephone Company with written notification of subscription to MBDUNA Service Option 2.
- (b) After completion of the initial 36 month commitment period, channels will remain in service on a month-to-month basis, subject to termination by customer on 60 day written notice and termination by the Telephone Company on 180 day written notice.

(2) Rate Application

- (a) MBDUNA Service Option 2 is provided at the annual rates per channel shown in (E) following for the minimum 36 month enrollment period, and thereafter on a month-to-month basis at 1/12 of the annual rate.
- (b) The customer can request the Telephone Company move (disconnect and reconnect) channels from one Telephone Company MBDUNA location to another, up to a maximum of 5% per calendar year quarter of the total channels in service within each calendar quarter, at the per-channel non-recurring charges set out below. Moved channels will be placed back in service within ninety (90) calendar days, or such other reactivation time period as may be mutually agreed-upon at the time of disconnect. Disconnect and reconnect move orders will be processed concurrently. Billing for the channels will continue during the move process. The service interval for moving channels is provided on a negotiated basis. Move charges are shown in (E) following.

(3) Commitment Levels and Shortfall Charge

- (a) The customer's minimum commitment under this option is to place in service 151,001 channels (in the aggregate across all Telephone Company operating territories) by the end of a ramp-up period of 270 days after the customer's first order for channels, and to maintain that minimum number of channels in-service through the third anniversary of the acceptance date of the customer's initial channel.
- (b) If the Telephone Company ceases to offer high density MBDUNA service in a location through transfer of ownership of a Telephone Company central office to a non-Telephone Company entity, the minimum commitment shall be reduced by the number of the channels that had been provided at that central office.
- (c) The minimum commitment shall also be reduced by the number of channels terminated by the customer due to missed FOC/CFA dates as described in (4) following.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 2 (Cont'd)

(3) Commitment Levels and Shortfall Charge (Cont'd)

- (d) Channels that are in the process of being moved shall continue to be counted toward the minimum commitment.
- (e) The minimum commitment ends after the third anniversary referenced in (a) preceding.
- (f) At the end of the 270-day ramp-up period specified in (a) preceding and on the first and second anniversary of this date, the Telephone Company will notify customer of the current channel inventory and any shortfall below the minimum commitment specified in (a) preceding. The Telephone Company will then charge the customer for any shortfall in subscribed MBDUNA channels for the applicable period. The shortfall charge is the annual rate multiplied by the number of channels below the minimum commitment.

(4) Delivery Commitment by the Telephone Company

If the Telephone Company cannot complete an installation within 15 calendar days after the applicable FOC/CFA date specified in the firm order, then at any time prior to the availability of the channel, the customer may terminate the applicable order, upon written notice to the Telephone Company, without any associated cancellation charge or other liability. In such case, the minimum commitment will be reduced by the quantity of channels in the missed order, without any associated increase in the per channel price. The reduction will not apply in the event the Telephone Company and the customer mutually agree to adjust the FOC/CFA dates or to shift the scheduled installation of channels from one location to another.

(5) Service Availability

The Telephone Company's objective for service availability for this high density service option is 99.9% of the monthly hours of operation for each Telephone Company central office that provides the service. Should service availability actually be less than 99.9% of the total monthly hours for the average channels at a central office (e.g., 30 days multiplied by 24 hours multiplied by .999 = 719 hours per average channel), the customer will receive a credit of 40% of the monthly charge (1/12 of the annual rate) for the affected average channels in the central office.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(D) Rate Regulations (Cont'd)

MBDUNA Service Option 2 (Cont'd)

(6) Force Majeure

The Telephone Company and the customer shall be excused from performance under this high density service option to the extent that performance is delayed or prevented by any event, condition or circumstance that is beyond the control of the party affected and that, despite all efforts of the such party to prevent it or mitigate its effects, such event, condition or circumstance prevents the performance by such party of its obligations. Force Majeure Events include, but are not limited to: (i) explosion and fire; (ii) flood, earthquake, unusually severe storm, or other natural calamity or act of God; (iii) strike or other labor dispute; (iv) war, insurrection or riot and (v) acts of or failure to act by any governmental authority. Force Majeure Events do not include acts of customer's customers or end users, including actions that reduce the quantity of MBDUNA channels purchased by those customers or end users, or the length of the term of subscription to such channels.

(7) Early Termination of Service

In the event that MBDUNA service under Option 2 is terminated in its entirety prior to satisfying the 36 month enrollment period as described in (1) preceding, the customer is responsible for satisfying the outstanding charges for the minimum commitment through the balance of the enrollment period.

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22. Advanced Communications Networks (Cont'd)22.1 TCP/IP Data Aggregation Service (Cont'd)(E) Rates and Charges

MBDUNA Service Option 1

MBDUNA Service Option 1 is only available in select Telephone Company tariffs as set forth in (A)(1) preceding.

MBDUNA Service Option 2

(1) MBDUNA Channels, annually per channel

All StatesAnnual Rate

All billed channels, each

\$280.00

(2) Moves, per channel moved

All StatesNonrecurring
Charge

First 60% of quarterly move allowance

\$25.00

Remaining 40% of quarterly move allowance

45.00