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AT&T FTS2000 Dedicated Transmission Service

Welcome to AT&T FTS2000

DTS

Your ***"Private Drive"*** on the Data Superhighway!

***** Dedicated Transmission Service *****

FTS2000 DTS Product Line Information

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AT&T FTS2000 DEDICATED TRANSMISSION SERVICE

AT&T FTS2000 DTS - General Description

The AT&T FTS2000 Network Dedicated Transmission Service (DTS) provides dedicated point-to-point and multipoint private line service. Government agencies can choose from a variety of services designed for dedicated communications, such as the following:

a) Dedicated Analog

b) Dedicated Digital

c) Fractional T1

d) Dedicated T1

e) Dedicated T45

Proposed contract modifications such as T45 Special Routing, Internet Connectivity and T155 will combine with the completed Special Routing, Optional Interfaces, T1 Alternate Network Connectivity (ANC), Multipoint, NSAP, Moves/Changes and Expedites modifications to add even more flexibility and protection capabilities to the DTS family.

AT&T FTS2000 DTS - Service Architecture

DTS provides private circuit service to its subscribing customers within the FTS2000 Network. This service is solely dedicated to these customers; there is no contention for these lines; there are no busy signals.

DTS circuits traverse the FTS2000 Network via fiber-optic links within the FTS2000 Network and are designed to be compatible with all government telecommunications equipment. Through the use of the AT&T Bell Laboratories' FAST Automatic Restoration (FASTAR-II^{SM}) system, DTS circuits can be automatically rerouted in the event of a network disruption, such as a cable cut or natural disaster. Further, AT&T generally grants federal government circuits a higher restoral priority than other circuits. NOTE: Some DTS to Alaska may be carried via satellite.

Network control and diagnostic capabilities for DTS consist of three basic elements:

a) The FTS2000 Network Control Center (NCC) directs other AT&T and Local Access Provider (LAP) work centers as they provide support for FTS2000 Dedicated Transmission Service.

b) Automated support systems monitor the health of the network and provide information to support the AT&T work centers.

c) Network components contain built-in, automated, self-diagnostic, and fault-bypass capabilities.

AT&T FTS2000 DTS - Dedicated Analog Service

Dedicated Analog service provides voice and voice/data service at speeds up to and including 9.6 Kbps between FTS2000 SDPs. The basic service is provided in point-to-point and multipoint arrangements.

Dedicated voice-grade access lines are provided by the LAP for connecting customer locations (SDPs) to the FTS2000 service nodes. The access design uses the most economical means of transport from the SDPs to the service nodes. There are four types of access to the FTS2000 Network, depending on the number of circuits coming from the FTS2000 location:

a) Voice grade
b) Switched Digital Integrated Service (SDIS) T1
c) SDIS Primary Rate Interface (PRI)
d) Channelized T1

Voice-grade access is provided for locations with small demands, and SDIS-T1, SDIS PRI and Channelized T1 access is for locations requiring multiple circuits. If spare capacity exists, SDIS-T1 and SDIS PRI access can be used with other FTS2000 services, such as CVTS, PSS, and SVS. Channelized T1 can only carry other DTS circuit types, such as Fractional T1 and Dedicated Digital. (Note: Channelized T1 can also be utilized to provide PSS services.) FTS2000 Dedicated Analog service meets or exceeds all of the analog performance requirements specified by the GSA in their FTS2000 RFP. In addition to high-quality voice transmission, FTS2000 Dedicated Analog service provides voiceband data transmission at speeds of up to 9.6 Kbps with a bit error rate of 10-5 or better. Each dedicated analog service generally meets C-1 (basic) and D1-Type conditioning prior to service turn up. In addition, D6 conditioning parameters are supported when SDIS is ordered at both ends. This conditioning on the dedicated analog service will provide the parameters necessary for 19.2 Kbps throughput when a customer uses high-speed modems with adaptive equalization.

AT&T FTS2000 DTS - Dedicated Digital Service

Dedicated Digital service provides synchronous, full-duplex, end-to-end digital 9.6 Kbps and 56 Kbps transmission services between two or more FTS2000 locations. Through the use of our digital network and SDIS-PRI access, the transmission rate of 64 Kbps is also available on FTS2000.

Basic access for Dedicated Digital service is provided either through a single digital interface at the SDP or as part of the SDIS or Channelized T1 access arrangement. The access design provides connections from each SDP to the DACS in the FTS2000 service node where individual data circuits are combined for transport between service nodes. Several optional enhanced interfaces are available, providing flexibility in features and economies.

Dedicated Digital service is designed to meet or exceed the requirements specified by the government for digital service:

a) Error-free-second rate of 99.84 percent
b) Round-trip delay less than 100 milliseconds
c) Availability of 99.7 percent or better
d) EIA-232 (9.6 Kbps) and V.35 (56 Kbps) interface at the SDP with single digital access lines
e) RJ48 interface with SDIS and Channelized T1 access

AT&T FTS2000 DTS - Fractional T1 Service

Fractional T1 provides 2-point connections between SDPs at 11 data rates ranging from 128 to 768 Kbps, in increments of 64 Kbps. Similar to the DDS, Fractional T1 circuits are connected to the FTS2000 node via access lines from the SDP and to the DACS equipment for transport between nodes.

Access to the FTS2000 node can be achieved using SDIS T1, SDIS PRI, or a Channelized T1 arrangement. Spare capacity on SDIS arrangements can be used in support of other FTS2000 services, such as PSS or SVS, while Channelized T1 arrangements can only carry other Fractional, Dedicated Digital, and/or Dedicated Analog circuits. (Note: Channelized T1 can also be utilized to provide PSS services, where the T1 contains only PSS services.

In the basic Fractional T1 configuration, the customer provides a T1 multiplexer, in which is supplied the necessary quantity of contiguous 64kbps channels. In some circumstances, a CLNE T1 Optional Interface may supply mux-like functionality that provides up to four Fractional T1 IBR channels.

Fractional meets or exceeds the requirements specified in the GSA RFP and associated AT&T technical publications as follows:

a) **Error-free second rate of 99.95 percent**
b) **Round-trip delay of 100 msec or less**
c) **Availability of 99.87 percent or better**
d) **RJ48 interface on all access types**

AT&T FTS2000 DTS - Dedicated T1 Service

Dedicated T1 service provides point-to-point (only) transmission at a rate of 1.5 million data bits per second. This would be enough capacity to transmit the contents of an entire high-density floppy disk in less than 8 seconds. Dedicated T1 is often used to transmit Computer Aided Design (CAD) drawings between locations, to connect Local Area Networks (LANs), and to tie mainframe computers together thus allowing them to share processing power. In addition, Dedicated T1s can be divided up to carry up to 24 simultaneous voice conversations or up to 24 Dedicated 56K circuits between the same two locations.

Access to Dedicated T1 service is provided through a dedicated digital DS1 circuit from the SDP to the nearest FTS2000 POP. The service always makes use of Extended Superframe Format (ESF) whenever it is available from the local access provider. Use of ESF allows FTS2000 technicians to maintain and test the line while it is in service, and often fix minor troubles before they become service-affecting. The performance of T1 service meets or exceeds the requirements stated by the government:

a) 99.7 percent availability
b) Error-free-second rate of 99.83 percent
c) Round trip delay less than 100 ms
d) RJ48 interface at the SDP

T1 interfaces at V.35, RS422/449, and EIA530 are available, in addition to the basic, standard RJ48 interface. Redundant backup units are also orderable.

AT&T FTS2000 DTS - Dedicated T45 Service

Dedicated T45 service provides point-to-point (only) transmission at a rate of 44.736 million data bits per second. The contents of an entire set of encyclopedias can be sent in less than 15 seconds using Dedicated T45 service. The service is most often used to connect high-speed super computers together in support of complex scientific research. With the customer providing the appropriate multiplexer, DTS T45 can also be used to carry 28 Dedicated T1 lines between two locations. If a customer has more than eight T1s between two sites, Dedicated T45 is usually a more economical transport.

Access to Dedicated T45 service is through a dedicated digital DS3 facility between the SDP and the FTS2000 POP. Only locations specified in the contract can order such access, and new locations are frequently added to the contract on request. T45 access is added to the FTS2000 Contract on a by-location as-needed per-case basis. If you need to know if your location can obtain T45 service, contact your AT&T Account Executive or call 1-800-253-3846. Service limited to CONUS.

T45 service meets or exceeds the following performance standards stated by the GSA and associated AT&T technical publications:

a) **99.83 percent availability**
b) **Error-free-second rate of 99.47 percent**
c) **Round trip delay less than 120 ms**
d) **75 ohm jacks and plugs for interface at the SDP.**

AT&T FTS2000 DTS - Multipoint Services

At first, DTS only connected two locations. DTS Multipoint now allows users of Dedicated Analog and Dedicated Digital services to put three or more locations on the same DTS circuit.

AT&T FTS2000 DTS - Provisioning Expedites

An expedite is a process used to request a shorter than standard interval to provision a circuit. Expedites may be accepted for new starts or change orders, and may be requested at any time during the service order process. The due date for each circuit will be negotiated between AT&T and the user agency.

AT&T FTS2000 DTS - Publicly Available Price Caps (PAPCAPs)

PAPCAPs ensure that DTS rates are always 2 percent lower than the best tariffed rates that the General Services Administration can find. If commercial rates for dedicated services are reduced, FTS2000 rates will fall proportionally.

AT&T FTS2000 DTS - Network Services Assurance Plan (NSAP)

NSAP is the DTS Network Services Assurance Plan. DDS & T1 Services may be eligible for coverage under this plan, designed to provide and maintain especially high levels of performance. While basic DTS offers greater performance with 99.7 percent availability, NSAP DTS pushes the limit still higher to 99.95 percent availability. For their critical dedicated services, NSAP customers are those seeking the highest possible levels of performance, reduced response time, faster restoral, immediate work center support, plus customer surveillance and control. Basic features of NSAP are:

a) Enhanced Maintenance Response --- a trouble hotline and dedicated maintenance personnel.
b) **Flagging and Tagging** electronic and physical methods to highlight critical circuits.
c) **CCARR -** Customer-Controlled Automatic Restore and Reconfiguration.
d) **Special Coverage** an agency-dedicated service technician on an hourly or monthly basis.

AT&T FTS2000 DTS - T1 Special Routing

Special Routing allows DS1 (T1) customers to protect themselves against telephone office, access, and network facility failures through diversity, avoidance, and automatic switch restoral:

a) DS1 Diversity allows two lines or groups of lines to be provided in a way that the lines never share a common route or phone office equipment.
b) **DS1 Avoidance** allows an agency to route their DTS circuits around or away from customer specified geographical regions or phone company offices.
c) **DS1 Automatic switched restoral** instantly redirects service to a redundant backup path in the event of a failure

along the primary path.

d) While all Special Routing features are offered on the access and network transport portions of a DTS circuit, DTS will only provide them where available from both the local access provider and the AT&T Network.

e) Diversity between two SDIS T1 access lines is **not available,** though some degree of separation my be obtained by utilizing the Avoidance feature. Special Routing features are not available at the DS0 level.

f) Special Routing access is added to the FTS2000 Contract on a by-location **as-needed per-case basis.** Call you Account Team Representative to get your locations added to the Contract.

AT&T FTS2000 DTS - DS1 (T1) Optional Interfaces

T1 Optional Interfaces give government agencies more choices for circuit terminations at their SDP.

a) V.35, RS422/449, and EIA530 are available, in addition to the basic, standard RJ48 interface. These interfaces offer easier connections to customers' LANs, encryption devices, and other customer premises equipment.

b) The T1 Optional Interface is available in either a single-port unit, or a unit capable of up to 4 ports. The four-port unit is capable of dividing the T1 into up to four fractional T1 circuits, which can sometimes be an advantage over multiplexer procurement. The four ports may be a mix of the four available T1 interface types.

c) The T1 Optional Interface may be ordered with the "drop/insert" feature that enables the allocation of data between the high-speed data port and the T1 DTE port, permitting the CSU to carry data, plus PBX-type voice traffic across a single T1 facility.

d) The T1 Optional Interface may be provided with a HIP [Housing Integration Point], which is a multiple-unit mount appropriate when several devices are at a single location. In addition, a Redundant Power Supply feature is available only to HIP users.

e) The T1 Optional Interface is available accompanied by a Redundant backup unit, which may be unwired, or optionally wired in a ready-standby state.

AT&T FTS2000 DTS - DS0 Optional Interfaces

DS0 Optional Interfaces give government agencies more choices for digital 9.6 Kbps and 56 Kbps circuit terminations at their SDP. DS0 Optional Interface includes theses features:

a) Rate adaptation steps line speeds down to speeds slower than the originally ordered speed. 9.6 Kbps lines can be made to operate at 7.2, 4.8, 2.4 or 1.2 Kbps. 56 Kbps can be made to operate at 48, 38.4, 19.2, 16.8, 14.4, 12, 9.6, 4.8 or 2.4 Kbps.

b) Protocol sharing permits up to five RS-232 interfaces to be combined onto a single 56 Kbps circuit. This allows customers with applications running different protocols to share the same DTS line.

c) Dial-Backup permits digital 9.6 and 56 Kbps circuits to be configured for dial-backup coverage. If service on the DTS line should be interrupted, data traffic will automatically be routed to a customer-provided switched-voice line. As soon as the circuit is restored, data transmission switches back to the DTS line. In all cases, Dial-backup is supported only up to 9.6 Kbps, though higher backup rates may be achievable under optimal conditions.

d) SNA LPDA-2 compatibility is available as an orderable option.

e) The DS0 Optional Interface may be provided with a HIP [Housing Integration Point], which is a multiple-unit mount appropriate when several devices are at a single location.

AT&T FTS2000 DTS - T1 ANC (Alternate Network Connectivity)

ANC provides agencies the ability to request alternate-routed facilities totally diverse from any terrestrial routes to accommodate the requirements of a higher level of service reliability. This feature offering meets the identified Dedicated Transmission Service needs of the agencies by using satellite network transport. This is accomplished by using earth stations equipped with fully redundant satellite modems and high-power amplifiers. C-Band or Ku-Band satellite transponders may be used in a full-time dedicated configuration. T1 ANC configurations are added to the FTS2000 Contract on a by-location as-needed per-case basis. Call you Account Team Representative to get your locations added

to the Contract.

POSSIBLE PRODUCTS BEING CONSIDERED FOR FUTURE ADDITION:

The modifications listed in this section are not yet in the FTS2000 contract. The technical parameters, availability, and pricing of the following service improvements can change any time before the official modification is signed.

Possible future: AT&T FTS2000 DTS - T45 Special Routing

T45 Special Routing will allow T45 customers to protect themselves against telephone office, access, and network facility failures through diversity, avoidance, and automatic switch restoral:

a) T45 Diversity allows two lines or groups of lines to never share a common route or office.

b) T45 Avoidance allows an agency to route their DTS circuits around or away from customer specified geographical regions or phone company offices.

c) T45 is provided where available from both the local access provider and CONUS AT&T Network.

d) T45 Special Routing access is added to the FTS2000 Contract on a by-location as-needed per-case basis. Call you Account Team Representative.

Possible future: AT&T FTS2000 DTS T155

The initial T155 service enhancement will support end-to-end 155.52Mbps. Access will be negotiated on an individual case basis with the Local Access Provider (LAP). The LAP will typically terminate access at the AT&T T155 POP closest to the customer. T155 access is added to the FTS2000 Contract on a by-location as-needed per-case basis. Call you Account Team Representative to get your locations added to the Contract.

Possible future: AT&T FTS2000 DTS Internet Connectivity Option

DTS may provide access to the Internet network at speeds including 56/64Kbps, Fractional T1, T1, and T45. The planned offering aims to provide a packaged combination of DTS circuits and Internet Gateway-provider services. Benefits include pre-awarded provisioning with a single service order, a single combined FTS2000 bill, and network-managed access to the Internet. Service limited to CONUS and Puerto Rico.

Possible future: AT&T FTS2000 DTS Radio Access Connectivity

Radio Access Connectivity (RAC) is a new radio access arrangement that can handle all FTS2000 services up to and including DTS Unchannelized T45. For user-customers, RAC makes available an additional alternative access methodology. RAC may be a viable alternative for those customer's seeking creative, additional pathways for their primary and/or special routing access.

AT&T FTS2000 DTS - General Service Availability

- Dedicated Analog, Digital, Fractional T1, Dedicated T1 and Fractional T1 access are generally available, depending on access availability, in all 50 states.
  - Also, the availability of both Fractional T1 and 64 Kbps clear channel capability are dependent upon availability of T1 B8ZS access from the LEC.
  - Dedicated T45 service may be available only at those CONUS locations specified in the FTS2000 contract, and new locations are added upon customer request.

AT&T FTS2000 DTS - User Benefits

a) Cost effectiveness - The more voice or data volume a user has, the more cost effective this type of service becomes. Heavy users would generally pay more for services that charge on a usage basis (that is, switched data/voice or packet) than for DTS, which can be used 24 hours a day, seven days per week for a fixed charge.

b) **Cost predictability -** Customers are billed at a fixed monthly rate, regardless of line usage. Therefore, cost is known and can be budgeted.

c) **Cost protection** - Publicly Available Price Caps (PAPCAPs) compare the prices of DTS service to the equivalent offerings available to commercial customers. If commercial rates fall, DTS rates follow proportionately.

d) **Flexibility -** Dedicated, private-line services accommodate a wide range of applications and transmission speeds. For many years, dedicated services have supported nearly every customer communication need in the marketplace. Transmission speeds vary from low (an ordinary telephone conversation) to very high (44.736 Mbps) speeds.

e) **Performance** - Dedicated facilities guarantee that network congestion will not impact DTS as it does switched services. Dedicated services are provided end-to-end, reducing possible performance problems due to non-compatibility of multiple-vendor transmission systems.

f) **Reliability -** Centralized control, maintenance, and performance testing provide direct accountability to the customer. Reconfiguration capability in the network provides responsive service restoration. In the event of service interruptions, customer's dedicated circuits can be rerouted over the AT&T Backbone Network to meet the customer's original communication need. Automated systems, such as FASTAR℠, achieve the results quickly, minimizing down-time.

FTS2000 DTS Value-Added Statements - *a truly enhanced Private Line!*

a) Already Competed & Awarded; No Competition. Just Order!
b) Installations meets or beat commercial intervals
c) End-to-End 24-hr Maintenance
d) FASTARSM II Restoration
e) CSUs and DSUs costs included in most price scenarios
f) Triple Operation Center Surveillance
g) Outside Normal Business Day Work on request
h) Ongoing Service Improvements for technical refreshment
i) Performance Excellence only from AT&T
j) PAPCAP Price Controls guarantee fair price changes
k) Legendary Bell Labs Support & Development
l) Project Management and Support
m) Free needs analysis and agency network design
n) Highly-regarded annual Users' Forum
o) NSEP and TSP availability
p) DTS Product Management Team for unique agency needs

When choosing between DTS, SDS, PSS or EPSS services, the primary factors to consider are the volume and characteristics of the data being sent. Generally speaking, the higher the traffic volume and the more the transmission is continuous (that is, non-bursty), the more economical DTS becomes.

AT&T FTS2000 DTS - Additional Dedicated *Analog* Service Benefits

a) Ubiquitous service - voice and voiceband analog data at speeds of 4.8 Kbps and 9.6 Kbps between all FTS2000 locations, C1, D1, and D6 (SDIS only) conditioning parameters allow high-speed modems with adaptive equalization to achieve 19.2 Kbps throughput.
b) High quality - the services are routed over fiber-optic digital facilities, assuring state-of-the-art high performance by using digital transmission techniques that regenerate information signals.
c) Flexibility of configuration - analog services are available in both point-to-point and multipoint arrangements. There are four common point-to-point configurations:
d) Single-line set to single-line set; or, Single-line set to PBX
e) PBX to PBX; or, Modem to modem.
f) Analog multipoint is available in three service arrangements:
g) Broadcast multipoint - a single location sends voice or data to multiple sites
h) Conference multipoint - voice only, allowing all locations to talk to all others
i) Broadcast Polling multipoint - a single site transmits to, and receives data from, many sites.
j) Flexibility in access - can be tailored to specific customer needs, allowing for the most economical arrangement to the customer:
k) Voice-grade access for small demand locations
l) SDIS T1, SDIS-PRI, and Channelized T1 access for high-demand locations and locations with shared demand from other FTS2000 services. The SDIS access can be shared by all other FTS2000 services while Channelized T1 access only accommodates other DTS circuits.

AT&T FTS2000 DTS - Additional Service Benefits

The following are benefits for Dedicated Digital, Fractional T1, and T45 services:

a) **High quality -** digital end-to-end service for high-quality performance that exceeds GSA requirements. As a result of using a digital, fiber-optic network, transmission signals are less noisy than in those using analog transmission techniques, which amplify signals and noise levels. Additionally, network-provided clocking assures proper data synchronization and high performance on 9.6 Kbps, 56/64 Kbps, and Fractional T1 circuits.
b) **Cost effectiveness** - traditional analog services need "conditioning," usually at additional cost, in order to accommodate high-speed data. The DTS circuit types need no conditioning and are designed for both lower and higher data communications speeds.
c) **Increased throughput** - the DTS end-to-end, dedicated digital services offer speeds between 9.6 Kbps and 44.736 Mbps. These high-speed services allow data to be transmitted in less time than with slower analog services.
d) **Reliability -** facility management systems are used to provide remote capability to test systems allowing, in most cases, for in-service, non-intrdsive testing. The use of a network management reconfiguration system allows responsive service restoration in the event of outages. For T1 service, the use of the extended superframe format in the data stream allows a network problem to be detected before the problem affects customers. This is achieved through continuous, automated, checking of network transmissions.
e) **Flexibility -** AT&T provides the interfaces to connect to all terminal equipment specified by GSA. Flexibility in choice of access types assures the most economical access cost. SDIS access can be shared with other digital services, thereby producing savings over multiple access for individual services. Additionally, for locations with small demands, individual access instead of SDIS access may be provided. With Dedicated Digital Service, a user may choose a point-to-point environment or a multipoint arrangement similar to Analog Broadcast Polling Multipoint.

AT&T FTS2000 DTS - SAMPLE USES & APPLICATIONS

This section provides examples of the following FTS2000 DTS applications:

a) Dedicated Analog Service
b) Dedicated Digital Service
c) Dedicated Analog and Digital Multipoint Service
d) Fractional T1 Service
e) Dedicated T1 Service
f) Dedicated T45 Service

Additional applications that can use DTS are similar to those of AT&T's non-FTS2000 private line services. However, before selecting DTS, one may consider other FTS2000 data services, such as SDS, PSS or EPSS. The characteristics of the data to be transmitted need to be examined before the appropriate combination of FTS2000 data services can be determined

AT&T FTS2000 DTS APPLICATION, DEDICATED ANALOG SERVICE

User Need - A common requirement involves the need for voice communications between customer locations. Many users have the following set of needs relative to voice communications:

a)Need to have voice communications established with another location (or a given set of locations), for long periods of time each day.

b)Need to achieve communications in a cost-effective manner (compared to switched voice services).

The user need generally requires the service to terminate in a telephone handset or PBX.

Solution - Dedicated Analog service is designed to solve this customer need by providing dedicated voice service between any combination of AT&T FTS2000 locations. The service can serve point-to-point applications that involve large voice traffic volumes between locations. The service can terminate in either handsets or PBXs for voice service.

Benefits - Dedicated Analog service offers the following benefits for this voice application:

a)The service can provide a dedicated voice connection, available 24 hours/day, between any two government locations. This is, in effect, a "hot line" type of service that has specific customers constantly connected using dedicated facilities.

b)The service is cost-effective for users who need service for long periods of time each day.

c)The service has high-performance, delivering clear, noise-free voice service by using fiber-optic network transmission facilities. Additionally, the service is highly reliable through the use of centralized maintenance and testing functions.

AT&T FTS2000 DTS APPLICATION DEDICATED DIGITAL SERVICE

User Need - Frequently, agencies need to operate on-line computer systems on a continuous 24-hour or near-continuous basis. In many of these situations, information from remote locations has to be entered into a main computer around the clock. The user needs to transmit the information to the main computer in a cost-effective method. Additionally, these types of applications require high reliability and performance at moderate transmission speeds.

Solution - Dedicated digital service is more economical and efficient than typical dial-up switched services (that is, switched data, packet) for near-continuous data input applications since the service is available 24 hours a day and is priced on a fixed monthly basis. Economic comparisons between dial-up and dedicated facilities can be made. Additionally, where data transmission applications require high performance (few errors) and reliability, Dedicated Digital service is specifically designed to meet the need. The service is digital, end-to-end; thus, no analog conversion is required.

Benefits - Customer benefits in using Dedicated Digital service for this application include:

a)Digital, end-to-end service provides high quality that exceeds government requirements. Digital transmission regenerates the signals instead of amplifying them (as in the case of analog transmission). Regeneration of digital signals ensures an exact duplication of the signal that was sent.

b)The service is available 24 hours a day to satisfy a continuous need to transmit information. The availability is also enhanced by the AT&T network control features, such as FAS TAPS/M, which can provide alternate routing of circuits in the cases of network failures.

c)The service is cost effective, because the customer can use it 24 hours a day for a fixed rate per month. Also, no circuit conditioning or costly modems are needed.

AT&T FTS2000 DTS APPLICATION DEDICATED ANALOG AND DIGITAL MULTIPOINT FEATURE

User Need - A common agency requirement involves the need for data communications between a single large computer center and many smaller ones. Agencies often require full-time connections between sites so that workers at small offices can access and modify data bases on a central computer. Each location needs access for the full business day, thus making dial-up access too expensive. Individually, remote sites do not send enough data to effectively fill their own point-to-point line, but combined they would produce a steady data stream between 4.8 Kbps and 56 Kbps.

Solution - Multipoint service meets this customer need by providing 24-hour per day connections to all sites with a single circuit. The agency can choose between Dedicated Analog Multipoint at 4.8 Kbps or 9.6 Kbps, or Dedicated Digital Multipoint at 9.6 Kbps or 56 Kbps, depending on the amount of data transmitted.

Benefits - The multipoint feature of Dedicated Analog and Dedicated Digital Service offers the following benefits for this application:

a) The 24-hour a day connection to the host location allows users to instantly access the remote computer.
b) The feature is cost effective, allowing agencies to combine traffic and buy a single circuit for many locations.
c) Digital service is available, providing the agency with high-quality, low error rate data transmission.

AT&T FTS2000 DTS APPLICATION FRACTIONAL T1 SERVICE

User Need - A user with Dedicated 56K service might find that the application requires slightly faster data throughput, but not enough to justify the purchase of a Dedicated T1 facility. In addition, the customer has existing SDIS T1 access at both ends of the Dedicated Digital circuit.

Solution - Fractional T1 affords easy and economical migration to higher data transmission speeds. In many cases, users can double their transmission rates without doubling the circuit price. In addition, if the customer has spare capacity on existing SDIS access, the customer incurs no service initiation charge (SIC) for the installation of the fractional circuit.

Benefits - Fractional T1 service offers the following benefits for this application:

a) The service provides high quality, end-to-end, digital transmission.

b)Customer can choose between 11 transmission speeds, providing the right price and performance for the agency's application.

c)If additional capacity on an SDIS arrangement exists, there is no SIC for installing the new fractional circuits.

AT&T FTS2000 DTS APPLICATION DEDICATED T1 SERVICE

User Need - Many agencies have a need for high-speed transfer of data between large locations. Typically, this occurs in major computer facilities which transfer large quantities of data at speeds up to 1.544 Mbps. .The transfer process may be needed for long time periods each day, as in the case of near-contirluous operations involved in financial or scientific applications.

Solution - Dedicated T1 service meets this need by providing high-speed digital data transmission at 1.544 Mbps. The service is available 24 hours a day and is priced on a fixed monthly basis. Therefore, it may be more economical to the heavy user who needs the service for long time periods (comparisons can be made to the AT&T Accunet® Reserved 1.5 switched service offering).

Benefits - The primary benefits of using Dedicated T1 service for this application include:

a)The service delivers high-quality performance on an end-to-end basis and is designed for data applications by using digital facilities. The high-speed (1.544 Mbps) allows increased throughput of the data, which saves time and increases productivity.

b)The service is cost effective for high-volume users who require availability for long periods of time each month. The rates are not usage-based; therefore, the user has availability 24 hours a day for a fixed monthly rate.

c)The service has high reliability due to the use of extended superframe format in the data stream, which allows AT&T service personnel to observe and correct problems before they affect customers.

d)The service has standardized interfaces to allow connection to any government terminal equipment.

AT&T FTS2000 DTS APPLICATION - DEDICATED T45 SERVICE

User Need - Some agencies have a need for the transmission of billions of bits of information a day between locations with supercomputers. Scientific applications, such as space and energy research, often deal with the enormous amount of data that is typically transferred between such computers.

Solution - Dedicated T45 service meets this need by providing an unchannelized line capable of sending data at 44.736 Mbps. The price is on a fixed monthly basis, and the service is available 24 hours per day. The service is provided for those locations listed on the FTS2000 contract.

Benefits - The primary benefits of T45 are:

a)44.736 Mbps is the fastest data transmission speed commonly available from any carrier. A data file that would take a day to transmit with T1.5 service takes less than one hour with T45 service.

b)T45 service can send almost 4 trillion bits of information per day. That equates to sending the contents of a set of encyclopedias every 15 seconds.

c)The use of the C-bit Parity format permits connections to multiple types of terminal equipment.

d)The agency pays a fixed monthly cost for 24 hour a day service.