

SERVICE DESCRIPTION FOR EQUANT ATM SERVICE

1. **Equant ATM Service.** Asynchronous Transfer Mode (ATM) is high bandwidth, low-delay, connection-oriented, cell-switching switching and multiplexing method of transport for voice, video, data and images. ATM can be easily integrated with other technologies and has management features that allow Equant to provide SLAs relating to the quality of service, in addition to SLAs for service availability.

ATM uses short, fixed-length packets called cells for transport. Information is divided among these cells, transmitted and then re-assembled at their final destination. ATM is not based on a specific type of transport medium, it has been designed to be compatible with currently deployed physical networks as well as new ones that may evolve in the future.

2. **Data Transfer Priority Assignments and Definitions.** Equant's ATM Service employs standards on data cell size and priority assignments, enabling effective multimedia data transmission on a common technical platform within a single managed environment handling all traffic types. The table below shows the ATM priority assignments supported by Equant and the typical applications, which use these service categories.

Priority Assignments	Definition	Typical Use of data transfer priority
CBR	Constant bit rate	Voice, video and clear channel
VBR-RT	Real time Service	Packet video and voice, "LAN Interconnect"
VBR-NRT (Type1 and Type 3)	Non real time data Service	LAN to LAN data transactions
UBR	Unspecified bit rate	User regulated traffic (E-mail, file transfers, remote term)

2.1. **Constant Bit Rate (CBR).** The Constant Bit Rate ("CBR") service is ordered using the Peak Cell Rate ("PCR") parameter. Traffic is guaranteed transport up to the Peak Cell Rate. Constant Bit Rate is typically used to support timing sensitive applications.

The Peak Cell Rate will never be greater than the lowest speed of each end-access Tail Circuit. The Service provides a standard Peak Cell Rate range of 8, 16, 32, 64, 128, 256, 512, 1024, 1536, 2048 Kbps. Thereafter, the Peak Cell Rate increases in 1024 Kbps increments, up to 20 Mbps, with 2 Mbps increments between 20 Mbps and 40 Mbps and 4 Mbps increments above 40 Mbps. The maximum Peak Cell Rate is Location-dependent.

2.2. **Real-time and Non-real-time Variable Bit Rate ("rt-VBR" and "nrt-VBR").** Real-time VBR service offers the same attributes as nrt-VBR, but with higher priority. rt-VBR is specifically suitable for high priority "bursty" traffic with sensitivity for delay and delay variation such as video traffic. nrt-VBR is especially useful for bursty data applications (e.g., e-mail, Lotus Notes database access, Web servers, etc.), which require occasional fast data transfer.

The Variable Bit Rate ("VBR") Service Categories provide average bandwidth, called the Sustained Cell Rate, and traffic bursts above the average rate up to a pre-defined Peak Cell Rate.

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The Maximum Burst Size is calculated as a burst "credit" and is a set number of cells that determines how much burst traffic is guaranteed transport across the Network. The Peak Cell Rate, which defines how high a burst will be, is determined by multiplying the Burst Ratio ("BR") and the Sustained Cell Rate.

For Variable Bit Rate – non real time (Type 1) ("VBR-nrt") And Variable Bit Rate – real time ("VBR-rt), cells sent above the Sustained Cell Rate will be discarded at ingress only when the Maximum Burst Size credit has been exceeded. The Maximum Burst Size credit can be regained when traffic flows are below the Sustained Cell Rate.

For VBT-nrt (Type 3), cells sent above the Sustained Cell Rate and the Maximum Burst Size credit will be transmitted as discard eligible, that is, the Network will

attempt to transmit but may discard if necessary.

2.3. **Maximum Burst Size (nrt-VBR Type 1&3, rt-NRT).** A Maximum Burst Size credit up to 11000 Cells is included as part of Equant's standard service, which is based upon 1000 cells MBS per 2Mbps Sustained Cell Rate ordered. Equant may provide lower maximum burst sizes at reduced prices

The maximum Peak Cell Rate for nrt-VBR, Type 1, which Equant offers on the Sustained Cell Rate range, is dependent upon the Sustained Cell Rate, up to a maximum ratio of 256:1.

The maximum Peak Cell Rate, for nrt-VBR, Type 3, which Equant offers on the Sustained Cell Rate range, is 200%. Peak Cell Rate must not exceed 200% of Sustained Cell Rate.

2.4. **Terms and Conditions for nrt-VBR Type 3 Bursting Only.** The VBR – NRT Type 3 burst feature will be made available to the customers ATM PVC under the following terms and conditions:

Upon acceptance by Equant and subject to the mutually agreed Peak Cell Rate traffic utilization levels, Peak Cell Rate may be configured subject to the limitations of either:

- (i) 60MB per month of the aggregate usage (for both ingress and egress traffic) per 8kbps of Sustained Cell Rate ordered; or
- (ii) 360MB of total Peak Cell Rate traffic per month per 8 kbps of Sustained Cell Rate ordered.

In the event that the Peak Cell Rate usage exceeds the limitations stated in above for (i) 2 consecutive months; or (ii) 3 out of any 6 consecutive months, Equant reserves the right, at its sole discretion, to take either or both of the following steps:

- (i) Upgrade the Sustained Cell Rate to a level such that the Peak Cell Rate usage is within the limitations stated above; and
- (ii) Downgrade (to a level as determined by Equant) or terminate Peak Cell Rate over the PVC.

Equant reserves the right to charge for the above upgrade or reconfiguration of Peak Cell Rate level.

3. Virtual Paths and Virtual Channel.

The data link (PVC) between two points can be sold either as Virtual Channel Connection (VCC) or Virtual Path Connection (VPC) or both. A Virtual Path (VP) is a bundle of Virtual Channel Connections (VCC) grouped together.

4. **Frame Relay to ATM Service and Network Inter-working.** Frame Relay to ATM Service Inter-working function facilitates protocol conversion between ATM and Frame Relay, allowing communication between the equipment that supports each protocol across a Wide Area Network.

Frame Relay to ATM Network Inter-working is available via managed Passport CPE Service, which enables a major hub site to be upgraded to ATM while maintaining communication to remote sites with end-to-end Frame Relay Service.

5. **ATM Acceptance Testing.** Equant will perform the following tests to determine the functionality of the ATM Service at a Location:

Equant will conduct physical level testing using an International digital circuit standard of G.821 BER over a 24-hour period. These results will not exceed 1E-07 for a period of one minute or 1 bit error within 100000 bits sent Resulting in an availability of 99.99% E-T-E.

Equant will perform testing with Customer to confirm that a route DTE supporting ATM attached via a Tail Circuit to a Node is able to establish link-level communications via a pre-designated local Virtual Circuit address with the Node local to the Site.

Equant will perform testing with Customer to confirm that application data can be successfully transferred up to the registered SCR level between -sited router DTEs supporting ATM, via Virtual Circuit routers and pre-designated local Virtual Circuit addresses.

Customer may perform their own specified testing for up to 7 days prior to accepting the service as operational.

In addition, Equant will perform the following Tail Circuit Acceptance test: A 15 minute Bit Error Rate Test to ensure that no more than one error in 10⁶ data bits occur on the Tail Circuit.

END OF ATM SERVICE DESCRIPTION

