

## AMENDMENT

This document (the "Amendment") is made and entered into as of the date of the last signature hereto by and between Ameritech Custom Business Services, a division of Ameritech Services, Inc., a Delaware corporation as agent and representative of the Ohio Bell Telephone Company, an Ohio corporation and Ameritech Information Systems, Inc., a Delaware Corporation (the "Contractor") and the State of Ohio, Department of Administrative Services (the "State").

Whereas, Contractor and the State entered into a Synchronous Optical Network (SONET) Infrastructure contract dated February 16, 1996 (the "Contract");

Whereas Contractor and the State now desire to amend the Contract to add Ameritech Advanced Data Services of Ohio, Inc. ("AADS") as a party to this Contract for the purpose of providing Asynchronous Transfer Mode ("ATM") switching service ("Service") to the State of Ohio.

Now, therefore, in consideration of the representations of the parties and the mutual promises and covenants herein contained, Contractor and the State agree as follows:

1. Contractor and State hereby amend this Contract to add AADS as a party to this Contract for the purpose of providing ATM switching service to the State. AADS consents to being added as a party to the Contract for the limited purpose stated herein. The State may order ATM switching services from AADS in accordance with the procedures and subject to the terms and conditions contained in this Amendment and the Contract.
2. **Schedule A**, "Letter of Agency," which sets forth backbone procurement and billing responsibilities, is attached hereto and incorporated herein by reference.
3. **Schedule B**, "Service Description," which sets forth the description of the ATM switching service to be provided, is attached hereto and incorporated herein by reference.
4. **Schedule C**, "Pricing," which sets forth monthly and one time charges and billing specifics for the ATM switching Service to be provided, is attached hereto and incorporated herein by reference.

5. It is expressly agreed that this Amendment is supplemental to the Contract and, except as specifically modified herein, all terms, conditions, and provisions of the Contract are hereby ratified and confirmed and shall remain in full force and effect.

6. The Contract, as from time to time amended, and this Amendment constitute the entire and exclusive agreement between the State and Ameritech concerning the Service, which supersedes all prior agreements, oral or written and all other communications between the State and Ameritech.

In witness hereof, the parties have caused the Amendment to be executed by their duly authorized officers.

STATE OF OHIO, DEPARTMENT OF  
ADMINISTRATIVE SERVICES

AMERITECH CUSTOM  
BUSINESS SERVICES, A DIVISION OF  
AMERITECH SERVICES, INC. A  
DELAWARE CORPORATION, AS  
AGENT AND REPRESENTATIVE OF  
THE OHIO BELL TELEPHONE  
COMPANY, AN OHIO CORPORATION,  
AND AMERITECH INFORMATION  
SYSTEMS, INC., A DELAWARE  
CORPORATION

BY: *Jonah A. Orsak*  
TITLE: *Director*  
DATE: *2/1/99*

BY: *David S. Niles*  
TITLE: *Vice President - Marketing*  
DATE: *1/05/99*

AMERITECH ADVANCED DATA  
SERVICES OF OHIO, INC.

BY: *[Signature]*  
TITLE: *President AADS*  
DATE: *1/5/99*

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COMPANY, AN OHIO CORPORATION,  
AND AMERITECH INFORMATION  
SYSTEMS, INC., A DELAWARE  
CORPORATION

BY: *Yvonne A. Orndorff*

BY: *David S. Niles*

TITLE: *Director*

TITLE: *Vice President - Marketing*

DATE: *2/1/99*

DATE: *1/05/99*

AMERITECH ADVANCED DATA  
SERVICES OF OHIO, INC.

BY: *[Signature]*

TITLE: *President AADS*

DATE: *1/5/99*

## SCHEDULE A

### LETTER OF AGENCY

The State of Ohio Department of Administrative Services (DAS) hereby appoints Ameritech as agent to order on DAS' behalf installation of, changing of, or maintenance of telecommunications services provided by Qwest Inc. to the State of Ohio, including removing, adding to, or rearranging such telecommunications services. The telecommunication services shall be limited to, DS1, DS3 or SONET circuits to interconnect AADS, GTE, Sprint and Cincinnati Bell Frame Relay and ATM Switches or Access Points for circuit aggregation.

Backbone and end-user connections must be approved by DAS using "Communications Service Request", form ADM-3807. DAS shall be provided cost and performance information about the operation of this backbone.

Qwest Inc. is hereby authorized to deal directly with Ameritech on all matters pertaining to telecommunication services provided by Qwest Inc. as referenced above. Qwest is hereby instructed to follow Ameritech's instructions with reference thereto.

Qwest is hereby authorized to release any and all information on types of services and equipment, billing information and the like. This authorization also permits Ameritech to pay Qwest directly for all telecommunications services ordered on behalf of the State.

DAS reserves the right to receive any and all Qwest information concerning state services directly from Qwest.

This authorization will remain in effect until otherwise notified in writing.

Date:



Sandra A. Drabik, Director  
Department of Administrative Services

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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#### General

ATM is a high-speed, connection-oriented data transmission technology that utilizes a fixed length cell. Data oriented traffic is transferred across the network on Permanent Virtual Connections (PVC's) which are end-to-end, bi-directional logical channels. The SOMACS 2000 ATM Service will also offer Switched Virtual Circuits (SVCs) in support of ATM-enabled (H.321/320) compressed Video systems. The ATM SVC Service will allow Customers to setup point-to-point video calls without third party scheduling or intervention. For multi-point videoconferences, Customers can also connect to the ATM enabled Video Bridge managed by the Department of Administrative Services (DAS).

ATM is a cell-based architecture where each cell has a fixed length of 53 bytes (48 bytes of data, 5 bytes of management information). Fixed length data streams can be processed more efficiently than variable length packets, allowing high bandwidth switching and multiplexing in both the local area and wide area environments.

ATM is capable of handling the requirements of bursty data sources and other types of traffic simultaneously. ATM equipment effectively interleaves cells from different sources and dynamically allocates circuit bandwidth on an as needed basis. ATM can transmit bursty data and delay sensitive traffic such as voice and video, on the same physical circuit, but with different Qualities of Service (QoS) on separate PVCs, within the same physical circuit

Permanent Virtual Circuits (PVCs) are logical channels that connect ports between ATM switches or between ATM switches and other network terminating equipment. PVCs are end-to-end, bi-directional channels that are established and disestablished via the service order process. Separate PVCs must be established to each location that the customer desires to transmit data. These PVC channels are virtual because they are established in software tables and do not tie up facilities when not in-use. Multiple PVCs can be defined over a single ATM UNI (User Network Interface), thereby providing a single access line the capability to transmit data, voice, and/or video to multiple destinations at the same time

The actual throughput or information rates of all SVCs or PVCs in use at the same time on the same port cannot exceed the port speed. Ameritech will work with the customer to determine the correct category of service for the PVCs in their network. The category of service defines the performance parameters for each connection. Each category of service is defined to meet specific networking requirements of different end-user applications

ATM service requires Customer Premises Equipment (CPE) to terminate the wide area ATM connection at the customer's service location. CPE can be a switch/multiplexer, concentrator, or router. This equipment must be purchased separately from the ATM service and must conform to Consultative Committee for International Telecommunication Union (ITU) and ATM Forum Standards. The CPE converts the customer data into ATM Cells suitable for transmission over the ATM Network.

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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Ameritech will initially support two (2) categories of service:

- (1) Constant Bit Rate (CBR), for delay or timing sensitive traffic such as voice or interactive video, provides a constant data rate, and consistent delay through the ATM network. CBR PVCs are given the highest priority throughout the ATM network, and are provisioned to provide the minimum Cell Delay Variation (CDV) or "jitter". CBR is ordered at the Peak Cell Rate (PCR), the highest rate of transmission the logical connection will allow. CBR is typically used to enable PBX tie-line or legacy video codec services over ATM.
- (2) Variable Bit Rate (VBR) can be provisioned as a real time or non-real time service. VBR-rt can be used for delay sensitive applications such as ATM-enabled H.320 compressed video. VBR-nrt is designed for bursty data applications, and provides a pre-assigned variable data rate. VBR service is ordered with two traffic parameters: PCR (peak cell rate) which defines the maximum rate of transmission, and SCR (sustainable cell rate) which provides an average through-put information rate expected on the connection.

Since multiple PVCs may be defined on one physical port, it is possible for the cumulative data information rates of multiple PVCs to exceed the physical bandwidth of that port. This is referred to as over subscription and when this occurs, there can be no guarantee that the information rate defined for that port and PVC will be available at any point in time.

Additional PVCs will not be added if sum of the port bandwidth utilized by existing and additional PVCs for Constant Bit Rate (CBR) and Sustained Cell Rate (SCA) services exceeds the bandwidth allotted for these services within the subscribed Level of Service for that port. (The Level of Service will have to change to support the required bandwidth).

#### Access Speeds

ATM UNI is available at DS1, DS3, and OC3c

#### Classes of Service

Constant Bit Rate (CBR), real time Variable Bit Rate (VBR-rt) and non-real time Variable Bit Rate (VBR-nrt) classes of service are available.

The customer can specify class of service per Virtual Channel (VC). The customer can specify Peak Cell Rate for CBR service, and Sustained Cell Rate for VBR-rt and VBR-nrt services in the following increments:

##### Constant Bit Rate:

- Customers may specify PCR in increments of 64Kbps for a DS1 UNI and in increments of 1 Mbps for the DS3, OC3c.

##### Variable Bit Rate (real time and non-real time):

- Customers may specify SCR in increments of 64Kbps for a DS1 UNI and in increments of 1 Mbps for DS3, OC3c.

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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#### ATM Addressing

Permanent Virtual Circuit (PVC) Service: Customers will use PVC service for Data and INTERNET connectivity. Ameritech will work together with the customer to define logical connections based upon VPI, VCI and class of service. This service does not require customer's equipment to have a network assigned ATM Address.

Switched Virtual Circuit (SVC) Service: Switched Virtual Circuit Service is available for ATM-enable Compressed Video Services only. The Customer's Network terminating equipment (ATM switches or Access Devices) must support a standards compliant SVC interface protocol (UNI 3.1, IISP or PNNI). Ameritech will provide ATM Addresses for devices having a direct connection to the Ameritech Public-Switched ATM Network.

#### Service Coordination

For customers with ATM locations served by other Local Exchange Carriers (LECs); GTE, Sprint or Cincinnati Bell (CBT), needing PVC connections terminating in the Ameritech Service Area, Ameritech will coordinate the service provisioning between Ameritech and these carriers. For Switched Virtual Circuit Service in GTE, Sprint and CBT each carrier will provide ATM Addresses for CPE directly connected to the ATM Public-switched network. Ameritech will coordinate all network- to-network provisioning required to establish end to end service.

Where ATM service is not available from a local exchange carrier the ATM service will be provided from the nearest Ameritech ATM Switch.

#### Pricing Methodology

Ameritech ATM has a non-recurring and a monthly recurring charge based upon the following service components. A sample architecture appears in Figure 2.

##### ATM - DS1

- ATM UNI (Level 1, 2, and 3)
- PVC's (up to 10 per UNI)
- With or without bundled Network Terminating Equipment

##### ATM - DS3, OC3c

- ATM UNI (Level 1, 2, and 3)
- PVC's (up to 100 per UNI)
- With or without bundled Network Terminating Equipment

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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Level 1, 2 and 3 Service is defined as follows:

ATM Network Service for UNI Service must be subscribed according to the customer's chosen Level of Service as described following:

Level 1: Up to 25% of port bandwidth may be utilized for CBR Quality of Service (QoS) traffic. The remaining port bandwidth may be used for Variable Bit Rate QoS traffic.

Level 2: Up to 50% of port bandwidth may be utilized for Constant Bit Rate (CBR) Quality of Service traffic. The remaining port bandwidth may be used for Variable Bit Rate QoS traffic

Level 3: Up to 75% of port bandwidth may be utilized for Constant Bit Rate (CBR) Quality of Service traffic. The remaining port bandwidth may be used for Variable Bit Rate QoS traffic

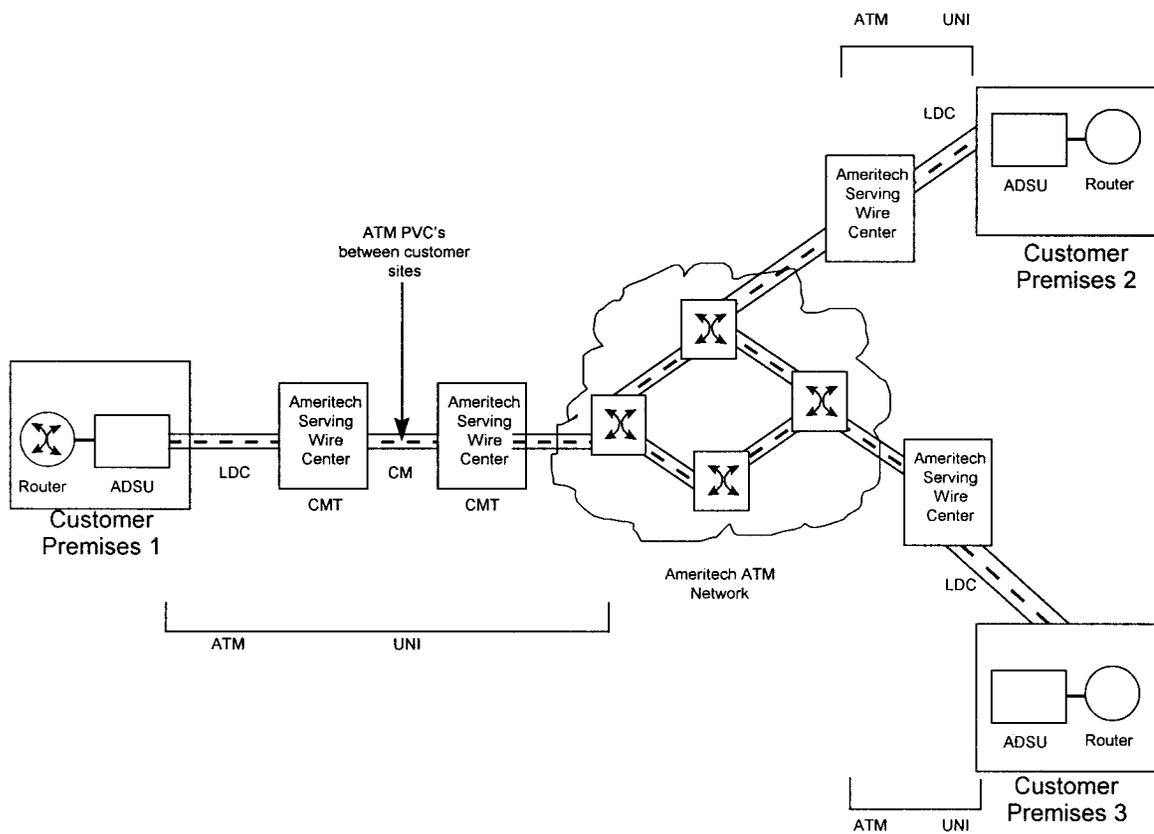
Note: Up to 100% of the Port bandwidth may be used for VBR QoS Traffic if no CBR Traffic is required.

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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Figure 2: Sample Architecture



Note: CPE example: ATM Digital Service Unit (ADSU)

#### Installation Services

Ameritech provides the following installation services:

- Project Management
- Provisioning of service
- Optional Installation and configuration of premises based ATM network terminating equipment
- Testing of connectivity from the Ameritech installed network terminating equipment to the ATM network switch.

## SCHEDULE B

### SOMACS 2000 - ATM Service Description

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#### Ongoing Maintenance

Ameritech provides the following on-going maintenance:

- 7 X 24 monitoring of the Ameritech ATM network (does NOT include customer premises equipment).
- 7 X 24 help desk
- Diagnostics and troubleshooting of ATM network

#### Interface Specifications and Technical References

- Ameritech adheres to all relevant ATM Forum, Bellcore, ANSI and ITU-T standards and interfaces.
- Ameritech reserves the right to update the specifications and technical references for Ameritech ATM as necessary to reflect technological advancements or changes in the prevailing procedures generally in use in the industry for ATM service.

SCHEDULE C

SOMACS ATM SERVICE – PRICING

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**Table A**

T1 ATM UNI Service w/o Network Terminating Equipment	Monthly Recurring	Non-recurring
Level 1 (Up to 25% CBR) *	\$550.00	\$1,189.75
Level 2 (Up to 50% CBR) *	\$575.00	\$1,189.75
Level 3 (Up to 75% CBR) *	\$600.00	\$1,189.75
Second PVC (Data, Video) - Flat Rate	\$25.00	\$50.00
Subsequent PVCs (Up to 10)	\$5.00	\$50.00
Monthly Network Performance Reports at Port Level (1)	\$20.00	\$300.00
AADS Service Coordination Fee per UNI (2)	\$25.00	\$-

**Table B**

DS3 ATM UNI Service w/o Network Terminating Equipment	Monthly Recurring	Non-recurring
Level 1 (Up to 25% CBR) *	ICB	ICB
Level 2 (Up to 50% CBR) *	ICB	ICB
Level 3 (Up to 75% CBR) *	ICB	ICB
Second PVC (Data, Video) - Flat Rate	\$25.00	\$50.00
Subsequent PVCs (Up to 100)	\$5.00	\$50.00
Monthly Network Performance Reports at Port Level (1)	\$60.00	\$300.00
AADS Service Coordination Fee per UNI (2)	\$100.00	\$-

**Table C**

OC3 ATM UNI Service w/o Network Terminating Equipment	Monthly Recurring	Non-recurring
Level 1 (75% VBR, 25% CBR) *	ICB	ICB
Level 2 (50% VBR, 50% CBR) *	ICB	ICB
Level 3 (25% VBR, 75% CBR) *	ICB	ICB
Second PVC (Data, Video) - Flat Rate	\$25.00	\$50.00
Subsequent PVCs (Up to 100)	\$5.00	\$50.00
Monthly Network Performance Reports at Port Level (1)	\$60.00	\$300.00
AADS Service Coordination Fee per UNI (2)	\$100.00	\$-

\* Includes Switched Virtual Circuit Service for Compressed Video and One (1) PVC for Data.

Note (1): Optional

Note (2): Applicable for service coordinated by Ameritech into other LEC Service Areas. Service includes: Single point of contact for; ordering, network design/engineering, project management, consolidated billing and trouble reporting.

SCHEDULE C

SOMACS ATM SERVICE - PRICING

**Table D**

ATM NNI Service w/o Network Terminating Equipment	Monthly Recurring	Non-recurring
T1 ATM NNI Port	\$300.00	\$350.00
DS3 ATM NNI Port	\$1,252.00	\$600.00
OC3c ATM NNI Port	\$1,852.00	\$1,150.00

**Table E**

ATM Agency Backbone Allocation	Monthly Recurring	Non-recurring
T1 ATM Level 1	\$5.00	\$-
T1 ATM Level 2	\$12.50	\$-
T1 ATM Level 3	\$25.00	\$-
ATM Level 1(10Mbps Minimum) per DS3	\$300.00	\$-
ATM Level 2(10Mbps Minimum) per DS3	\$350.00	\$-
ATM Level 3(10Mbps Minimum) per DS3	\$400.00	\$-
ATM Level 1(10Mbps Minimum) per OC3	\$300.00	\$-
ATM Level 2(10Mbps Minimum) per OC3	\$350.00	\$-
ATM Level 3(10Mbps Minimum) per OC3	\$400.00	\$-
Incremental per 1 Mbps of Bandwidth DS3/OC3 Level 1	\$30.00	\$-
Incremental per 1 Mbps of Bandwidth DS3/OC3 Level 2	\$35.00	\$-
Incremental per 1 Mbps of Bandwidth DS3/OC3 Level 3	\$40.00	\$-

The State of Ohio Department of Administrative Services (DAS) has issued a "Letter of Agency" directing Ameritech to procure Inter-LATA backbone circuits from Qwest Inc. These circuits are for connecting ATM Switches or Aggregation Points in the State of Ohio, for the purpose of delivering ATM services to State Agencies, K12 Schools, Higher Education Institutions and Public Libraries. As the Agent for the State of Ohio, Ameritech will provide a consolidated bill to each Agency, or Customer. The consolidated bill will identify separately, by line item, the appropriate Ameritech ATM UNI monthly and non-recurring service price from Tables A, B or C, the Ameritech Backbone Allocation price as shown in the Table E. and the Qwest Backbone Allocation price as negotiated between the State and Qwest Inc.

SCHEDULE C

SOMACS ATM SERVICE - PRICING

**Table F**

SOMACS Optimized ATM Service	Monthly Recurring	Non-recurring
T1 ATM UNI (Port Only)	\$300.00	\$350.00
DS3 ATM UNI (Port Only)	\$450.00	\$600.00
OC3c ATM UNI (Port Only)	\$650.00	\$850.00
		\$-
Subsequent PVCs	\$-	\$10.00

**Table G**

SOMACS Optimized FR Service	Monthly Recurring	Non-recurring
Channelized T1 FR UNI (Port Only)	\$335.00	\$350.00
Fractional T1 FR UNI (Port Only)	\$275.00	\$250.00
FR Low Speed Protection (5 Port Minimum)	\$5.00	\$-
		\$-
Subsequent PVCs	\$-	\$10.00

The above port charges are applicable if SOMACS circuits are ordered to the Ameritech ATM/FR Switches located at the State Office Tower at 50 W. Broad Street or the State of Ohio Computer Center (SOCC) located 1320 Arthur E. Adams Dr.. The customer is responsible for any building cable or wiring required between the switch port and the Customer Owned Equipment (COE) location.

SCHEDULE C  
SOMACS ATM SERVICE - PRICING

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Pricing Continued:

- A. The non-recurring charge assessed for each ATM UNI circuit is based on the access speed and will not vary based on the Level (1,2 or 3) of service selected.
- B. SOMACS 2000 ATM rates are offered only on circuits installed to State Agencies, K12 Schools, Higher Education Institutions and Libraries.
- C. Customer is responsible for the Building Entrance Facility to accommodate new cable installation.
- D. Service Delivery Interval for ATM Service is 45 days barring facility delays.
- E. Billing commences when the circuit is installed and ATM service is available.
- F. Extending the network interface will be charged at prevailing Time and Material Rates.