

BROADBAND NETWORK SERVICES AGREEMENT ADDENDUM

This Addendum is being entered into this ____ day of _____, 2000, pursuant to Section 5.16, Negotiated Procurement - Multiple Contracts, of the Broadband Network Services Agreement between Virginia Tech and Sprint dated June 12, 1996. The items outlined in this Addendum reflect additions and changes to the existing services contained in the Broadband Network Services Agreement. In the event of a conflict, this Addendum supercedes the original Agreement and all previous addenda. Unless modified hereunder, the terms and conditions contained in the Broadband Network Services Agreement shall remain in full force and effect.

1 Page 1, Section 2, "Price"

Add the following paragraph.

The prices for the Services as set forth in Appendix B, as modified by section 4 of this Addendum shall be applicable to each Ordering Party which is a commercial business. Original Ordering Parties defined in section 5.15 of the Agreement shall pay the prices identified in Appendix B, Table B-1 and shall not be subject to the prices set forth in section 4 of this addendum.

2 Page14, Section 5.17, Orders

Add the following paragraph to Section 5.17.

Any and all commercial businesses licensed to do business in the Commonwealth of Virginia shall be considered an authorized Ordering Party and shall be eligible to order services under this Addendum. Contractor (itself and/or through its subcontractors) shall provide the Services described in this Addendum (including any incidental software Contractor deems it necessary to provide in connection therewith) ("Services") to any Ordering Party which is a commercial business. Ordering Parties may order services through Virginia Tech so long as the purchase order requests services covered by this Addendum.

3 Page 24, 8.2, Network Capacity Management:

Pursuant to Addendum 5, Section 5, "Page 24, 8.2, Network Capacity Management", sub-section a) "Scaling Methodology", the following method shall be applied to scale network components including Contractor's electronic components (switches, routers, and other equipment), links between Contractor's network nodes, Access Carrier Extensions, SprintLink gateway services, and any subcontracted components. This methodology will be subject to review by Virginia Tech and Contractor on a quarterly basis to ensure continued performance.

3.1.1 Definitions

A link shall be defined as the aggregate of physical connections between a pair of nodes. This may be a single physical link, but, as in the case of certain Access Carrier Extension (ACE) connections, may be multiple physical links. Whenever the distinction is not obvious, the terms physical link and aggregate link will distinguish, and the term "link" shall generally imply "aggregate link."

There are two classes of service for traffic: guaranteed and best effort. The guaranteed class of service includes both Constant Bit Rate (CBR) and Variable Bit Rate (VBR); best effort includes Unspecified Bit Rate (UBR). The proposed scaling methodology uses bounds on both the reserved bandwidth of guaranteed Virtual Circuits (VCs) and total link utilization.

A link is considered saturated when its total traffic is at a rate in excess of 70% of its nominal capacity or when the total guaranteed reservation for VCs assigned to it is in excess of 50% of this capacity. The guaranteed reservation will be the sum of the guaranteed reservation for all Permanent Virtual Circuits (PVCs) and Switched Virtual Circuits (SVCs). In order to evaluate link utilization, traffic counters will be gathered at five-minute intervals. Any missing data from these counters will be assumed to indicate a state of saturation. The five-minute samples of these traffic counters will be summarized on a daily basis, with the proportion of samples indicating saturation noted. A day will be defined as between 12:00AM and 11:59PM for a particular calendar day. Because pertinent results will be based on the proportion of these samples indicating saturation, any effect of Daylight Savings Time will be ignored.

3.1.2 Scaling Up

A link will be considered out of conformance on a particular day if more than one-third (33%) of the five-minute traffic samples indicate a state of saturation. If more than ten (10) such days of any thirty (30) day period exists, the link shall be deemed insufficient for the traffic requirements and must have its capacity increased. This capacity increase shall be completed within sixty (60) calendar days.

3.1.3 Scaling Down

As well as providing a methodology for increasing network capacity, a methodology for reducing network capacity is proposed. If a period of ninety (90) days has no more than twenty (20) days wherein one-twentieth (5%) of the five minute samples indicate saturation, the provider may choose to reduce link capacity, provided such reduction would not make the link insufficient based on the previous methodology.

3.1.4 Data Collection

The data required for this methodology are the periodic link utilization and reservations from the relevant backbone and local exchange switches along with corresponding time-stamps for each of the five-minute samples. The format and collection methodology for these data shall conform to mutually agreeable specifications. In particular, the data may be gathered by the carrier and sent in a mutually agreeable timeframe via electronic mail as tab-delimited text or gathered by Virginia Tech directly via Simple Network Management Protocol (SNMP).

3.1.5 Periodic Evaluation

This methodology will be evaluated at quarterly intervals to ensure that the methodology is effectively addressing network resource requirements. The fundamental premise of network scaling remains that applications must work; this methodology is an attempt to quantify a necessary condition for scaling.

4 Page 27, Appendix B: Pricing

Add the following to Appendix B, p.27.

Prices for Commercial Businesses

Ordering Parties who are commercial businesses, other than private educational sites and other sites described in Section 5.17 of the Agreement, shall pay the rates and charges set forth below for the Services.

Table B-2 and the accompanying notes are added for Commercial Ordering Parties. Table B-3 and accompanying notes sets forth the prices for additional Dedicated IP Ports under Option 2 below.

This pricing below is for Authorized Users purchasing Products or Services under this Letter Agreement. Authorized Users can only purchase one of the following Options:

Option 1: Prices for Non-ISP Authorized Users.

Option 2: Prices for Internet Service Provider (“ISP”) Authorized Users to resell Internet Access. Sprint will dedicate one (1) DS3 Dedicated IP Port for use by ISPs. All ISPs will be mapped to the Dedicated IP Port for ISPs. ISPs may not utilize the common gateway for Broadband Agreement Ordering Parties. Sprint does not commit to any service level guarantees for the DS3 Dedicated IP Port for ISPs. If ISPs require better service levels, additional Dedicated IP Ports can be purchased, as outlined in Table B-3 below.

Option 3: Prices for both Non-ISP and ISP Authorized Users. This Option will not allow any access to the SprintLink Gateway.

Table B-2 Monthly ATM Port Pricing Structure

| Port Capacity | <u>Option 1</u> With SprintLink (may NOT be resold) | <u>Option 2</u> With SprintLink (may be resold) | <u>Option 3</u> Without SprintLink |
|---------------|---|---|--|
| 56Kbps | \$35 | N/A | N/A |
| DS1 | \$745 | \$842 | \$563 |
| DS3 | \$1760 | \$2,091 | \$1,332 |
| OC3 | \$5123 | N/A | \$4,354 |

Table B-2 Notes:

- Ordering Parties electing to connect “without SprintLink” will not have access to the SprintLink gateway nor to any related services including IP address assignment or DNS.
- The term “resold” in table B-2 above refers only to access to the SprintLink Internet gateway service. Sprint may establish a physically separate SprintLink gateway to support connections that are to be resold. Such a separate gateway, if established, will be exempt from scaling requirements identified in the “Network Capacity Management” provisions of the Broadband Agreement, but will scale according to SprintLink engineering practices to provide good performance. In this context, “good performance” refers to performance that is consistent with or superior to the then-prevailing industry standards of quality for similar products or services that are resold; provided further, that

Sprint’s performance shall not create, continue or exacerbate a material adverse impact on the Products or Services provided to Ordering Parties. All other network components, including backbone links, switches, and routers, are subject to scaling requirements with respect to connections which may be resold.

- Any Ordering Party who utilizes the SprintLink gateway from any site must order all connections at the “With SprintLink” rate (Options 1 or 2).

Table B-3 Dedicated IP Port Pricing Structure

| <u>Port Speed</u> | <u>Installation Charge</u> | <u>2 Year Contract Monthly Recurring Charge</u> | <u>3 Year Contract Monthly Recurring Charge</u> |
|---------------------------|----------------------------|---|---|
| 56/64 kbps | \$ 550 | \$ 416 | \$ 393 |
| 112/128 kbps | \$ 650 | \$ 653 | \$ 617 |
| 224/256 kbps | \$ 700 | \$ 757 | \$ 686 |
| 336/384 kbps | \$ 750 | \$ 851 | \$ 772 |
| 448/512 kbps | \$ 1,000 | \$ 899 | \$ 815 |
| 560/640 kbps | \$ 1,000 | \$ 993 | \$ 901 |
| 672/768 kbps | \$ 1,000 | \$ 1,046 | \$ 944 |
| T1 (1344/1536 kbps) | \$ 1,000 | \$ 1,122 | \$ 1,010 |
| 3 Mbps – IMUX | \$ 5,000 | \$ 2,345 | \$ 2,046 |
| 6 Mbps – FDS3 (Not IMUX) | \$ 5,000 | \$ 4,818 | \$ 4,203 |
| 9 Mbps – FDS3 (Not IMUX) | \$ 5,000 | \$ 5,405 | \$ 4,797 |
| 12 Mbps – FDS3 (Not IMUX) | \$ 5,000 | \$ 6,489 | \$ 6,129 |
| 15 Mbps | \$ 5,000 | \$ 8,112 | \$ 7,661 |
| 18 Mbps | \$ 5,000 | \$ 9,734 | \$ 9,193 |
| 22 Mbps | \$ 5,000 | \$ 11,897 | \$ 11,236 |
| 25 Mbps | \$ 5,000 | \$ 13,325 | \$ 12,585 |
| 28 Mbps | \$ 5,000 | \$ 14,753 | \$ 13,933 |
| 31 Mbps | \$ 5,000 | \$ 16,180 | \$ 15,281 |
| 34 Mbps | \$ 5,000 | \$ 17,608 | \$ 16,630 |
| 45 Mbps | \$ 5,000 | \$ 23,305 | \$ 22,010 |

Table B-3 Notes:

- Pricing is for standard Dedicated IP Ports with Sprint’s standard product SLAs.
- Pricing does not include customer premises equipment, access, or applicable PICC/USF or taxes.