SS7

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1. INTRODUCTION

1.1 This Appendix sets forth terms and conditions for which SBC MISSOURI provides MCIm access to its SS7 Signaling. The Parties acknowledge that MCIm does not have an embedded base of either unbundled Local Circuit Switching or UNE-P End Users served through this Agreement and that, because there is no such embedded base served by this Agreement, no terms for switch query access to SS7 are included in this Agreement. Nothing herein shall limit SBC MISSOURI's obligation to provide interconnection, in accordance with the requirements of this Agreement and Applicable Law, between its signaling network and MCIm's signaling network or that of a third-party provider of MCIm's choosing.

2. SIGNALING LINK TRANSPORT

2.1 Definition: Signaling Link Transport is a set of two or four dedicated 56 Kbps transmission paths between MCIm-designated Signaling Points of Interconnection (SPOI) that provides appropriate physical diversity and a cross connect at a SBC MISSOURI STP site.

2.2 Technical Requirements - Signaling Link Transport

2.2.1 Signaling Link Transport consists of full duplex mode 56 Kbps transmission paths.

2.2.2 Of the various options available, Signaling Link Transport must perform in the following two ways:

2.2.2.1 As an "A-link" which is a connection between a Switch or SCP and a home Signaling Transfer Point Switch (STPs) pair; and

2.2.2.2 As a "D-link" which is a connection between two STPs pairs in different company networks (e.g., between two STPs pairs for two Competitive Local Exchange Carriers (CLECs)).

2.2.3 Signaling Link Transport must consist of two or more signaling link layers as follows:

2.2.3.1 An A-link layer must consist of two links.

2.2.3.2 A D-link layer must consist of four links.

2.2.4 A signaling link layer must satisfy a performance objective such that:

2.2.4.1 There must be no more than two minutes down time per year for an A-link layer; and

2.2.4.2 There must be negligible (less than two seconds) down time per year for a D-link layer.

2.2.5 A signaling link layer must satisfy inter-office and intra-office diversity of facilities and equipment, such that:

2.2.5.1 No single failure of facilities or equipment causes the failure of both links in an A-link layer (i.e., the links should be provided on a minimum of two separate physical paths end-to-end); and

2.2.5.2 No two concurrent failures of facilities or equipment cause the failure of all four links in a D-link layer (i.e., the links should be provided on a minimum of three separate physical paths end-to-end).

2.3 Interface Requirements - Signaling Link Transport

2.3.1 There will be a DS1 (1.544 Mbps) interface at the MCIm-designated SPOIs. Each 56 Kbps transmission path will appear as a DS0 channel within the DS1 interface.

3. SIGNALING TRANSFER POINTS (STPS)

3.1 Definition. Signaling Transfer Points (STPs) provide functionality that enable the exchange of SS7 messages among and between switching elements, database elements and signaling transfer points.

3.2 Technical Requirements - Signaling Transfer Points

3.2.1 STPs must provide access to all other Network Elements connected to the SBC MISSOURI SS7 network. These include:

3.2.1.1 SBC MISSOURI Local Switching or Tandem Switching;

3.2.1.2 SBC MISSOURI Service Control Points/DataBases;

3.2.1.3 Third-party local or Tandem Switching Systems; and

3.2.1.4 Third-party-provided STPs.

3.2.2 The connectivity provided by STPs must fully support the functions of all other Network Elements connected to SBC MISSOURI's SS7 network. This explicitly includes the use of SBC MISSOURI's SS7 network to convey messages which neither originate nor terminate at a signaling end point directly connected to the SBC MISSOURI SS7 network (i.e., transit messages). When the SBC MISSOURI SS7 network is used to convey transit messages, there must be no alteration of the Integrated Services Digital Network User Part (ISDNUP) or Transaction Capabilities Application Part (TCAP) user data that constitutes the content of the message.

3.2.3 If a SBC MISSOURI tandem Switch routes calling traffic, based on dialed or translated digits, on SS7 trunks between an MCIm local Switch and third party local Switch, SBC MISSOURI's SS7 network must convey the TCAP messages that are necessary to provide Call Management features (Automatic Callback, Automatic Recall, and Screening List Editing) between the MCIm local STPs and the STPs that provide connectivity with the third party local Switch, even if the third party local Switch is not directly connected to SBC MISSOURI's STPs.

3.2.4 STPs must provide all functions of the Message Transfer Port (“MTP”). This includes:

3.2.4.1 Signaling Data Link functions;

3.2.4.2 Signaling Link functions; and

3.2.4.3 Signaling Network Management functions.

3.2.5 STPs must provide all functions of the SCCP necessary for Class 0 (basic connectionless) service. In particular, this includes Global Title Translation (GTT) and SCCP Management procedures.

3.2.6 In cases where the destination signaling point is a SBC MISSOURI local or tandem switching system or database, or is an MCIm or third party local or tandem switching system directly connected to SBC MISSOURI's SS7 network, SBC MISSOURI STPs must perform final GTT of messages to the destination and SCCP Subsystem Management of the destination. In all other cases, STPs must perform intermediate GTT of messages to a gateway pair of STPs in an SS7 network connected with the SBC MISSOURI SS7 network, and must not perform SCCP Subsystem Management of the destination.

3.2.7 STPs must also provide the capability to route SCCP messages based on ISNI and intermediate network selection messages when these capabilities become available on SBC MISSOURI STPs.

3.2.8 STPs must provide all functions of the OMAP commonly provided by STPs, including the following:

3.2.8.1 MTP Routing Verification Test (MRVT); and,

3.2.8.2 SCCP Routing Verification Test (SRVT).

3.2.9 In cases where the destination signaling point is a SBC MISSOURI local or tandem switching system or DB, or is an MCIm or third party local or tandem switching system directly connected to the SBC MISSOURI SS7 network, STPs must perform MRVT and SRVT to the destination signaling point. In all other cases, STPs must perform MRVT and SRVT to a gateway pair of STPs in an SS7 network connected with the SBC MISSOURI SS7 network. This requirement will be superseded by the specifications for Internetwork MRVT and SRVT if and when these become approved ANSI standards and available capabilities of SBC MISSOURI STPs.

3.3 Interface Requirements - Signaling Transport Points

3.3.1 SBC MISSOURI shall provide the following STPs options to connect MCIm or MCIm-designated local switching systems or STPs to the SBC MISSOURI SS7 network:

3.3.1.1 An A-link interface from MCIm local switching systems; and,

3.3.2 Each type of interface must be provided by one or more sets (layers) of signaling links, as follows:

3.3.2.1 An A-link layer shall consist of two links.

3.3.3 The Signaling point of Interconnection (SPOI) for each link must be located at a cross-connect element, such as a DSX-1, in the Central Office (CO) where the SBC MISSOURI STPs is located. There must be a DSI or higher rate transport interface at each of the SPOIs. Each signaling link shall appear as a DS0 channel within the DS1 or higher rate interface. SBC MISSOURI shall offer higher rate DS1 signaling for interconnecting MCIm local switching systems or STPs with SBC MISSOURI STPs as soon as these become approved ANSI standards and available capabilities of SBC MISSOURI STPs.

3.3.4 SBC MISSOURI shall provide MTP and SCCP protocol interfaces.

3.4 Message Screening

3.4.1 SBC MISSOURI shall set message screening parameters so as to accept messages from MCIm local or tandem switching systems destined to any signaling point in the SBC MISSOURI SS7 network with which the MCIm switching system has a legitimate signaling relation.

3.4.2 SBC MISSOURI shall set message screening parameters so as to accept messages from MCIm local or tandem switching systems destined to any signaling point or network interconnected to the SBC MISSOURI SS7 network with which the MCIm switching system has a legitimate signaling relation.

3.4.3 SBC MISSOURI shall set message screening parameters so as to accept messages destined to an MCIm local or tandem switching system from any signaling point or network interconnected to the SBC MISSOURI SS7 network with which the MCIm switching system has a legitimate signaling relation.

3.4.4 SBC MISSOURI shall set message screening parameters so as to accept and send messages destined to an MCIm SCP from any signaling point or network interconnected to the SBC MISSOURI SS7 network with which the MCIm SCP has a legitimate signaling relation.

4. SERVICE CONTROL POINTS/DATABASES

4.1 A Service Control Point (SCP) is a specific type of database Network Element functionality deployed in a Signaling System 7 (SS7) based on Intelligent Network ("IN") that executes service application logic in response to SS7 queries sent to it by a switching system also connected to the SS7 network. SCPs also provide operational interfaces to allow for provisioning, administration and maintenance of Customer data and service application data. (e.g., an 800 database stores Customer record data that provide information necessary to route 800 calls).

4.2 Technical Requirements - SCPs/Databases

4.2.1 Requirements for SCPs/databases within this section address storage of information, access to information (e.g., signaling protocols and response times), and administration of information (e.g., provisioning, administration, and maintenance).

4.2.2 SBC MISSOURI shall provide physical interconnection to SCPs through the SS7 network and protocols, as required herein or otherwise set forth in Appendix 1, with TCAP as the application layer protocol.

4.2.3 SBC MISSOURI shall provide physical interconnection to databases via industry standard interfaces and protocols (e.g., SS7 and X.25).

4.2.4 The reliability of interconnection options must be consistent with requirements for diversity and survivability as required herein or otherwise set forth in Appendix 1.

4.2.5 Database functionality must be unavailable not more that 30 minutes per year.

4.2.6 SBC MISSOURI shall provide database provisioning consistent with the provisioning requirements of this Agreement (e.g., data required, edits, acknowledgments, data format and transmission medium and notification of order completion).

4.2.7 The operational interface provided by SBC MISSOURI must complete database transactions (i.e., add, modify, delete) for MCIm Customer records stored in SBC MISSOURI databases within 24 hours, or sooner where SBC MISSOURI provisions its own Customer records within a shorter interval.

4.2.8 SBC MISSOURI shall provide database maintenance consistent with the maintenance requirements as specified in this Agreement (e.g., notification of SBC MISSOURI Network Affecting Events, testing, dispatch schedule and measurement and exception reports).

4.2.9 SBC MISSOURI shall provide billing and recording information to track database usage consistent with connectivity billing and recording requirements as specified in this Agreement (e.g., recorded message format and content, timeliness of feed, data format and transmission medium).

4.2.10 SBC MISSOURI shall provide SCPs/databases in accordance with the physical security requirements specified in this Agreement.

4.2.11 SBC MISSOURI shall provide SCPs/databases in accordance with the logical security requirements specified in this Agreement.

5. PRICES

5.1 SBC MISSOURI shall provide MCIm with access to signaling as unbundled Network Element at the rates set forth in Appendix Pricing of this Agreement.