

## TeScale jSS7

TeleStax provides an open source SS7 software solution implementing MTP2, MTP3, ISUP, SCCP, TCAP, CAMEL, MAP protocols for a dedicated equipment and also SIGTRAN (M3UA) over IP.

TeScale jSS7 stack adheres to International Telecommunications Union (ITU) Specification.

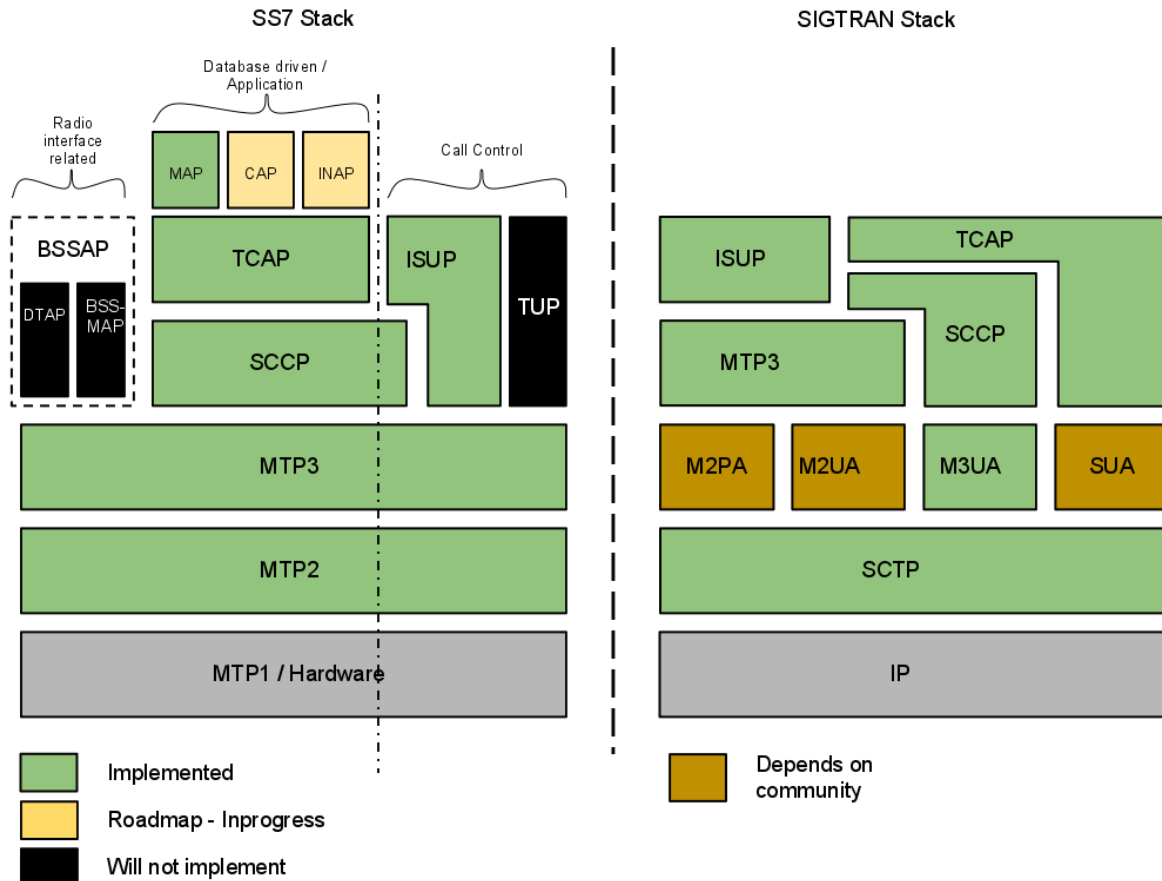
### Supported TDM hardware equipment:

- TeScale SS7 cards
- Intel family boards (Dialogic SS7 cards)
- Zaptel/Dahdi compatible TDM device (Digium, Sangoma)

### Key features of TeScale jSS7:

- The first and only robust, pure Java, Open Source SS7 stack
- Flexible API to develop SS7 applications quickly and efficiently. Available as a standalone library and JSLEE RA.
- Supported by a vibrant open source community.
- Consistent API irrespective of the lower layer details - legacy SS7 links or SIGTRAN. For example applications using TeScale SCCP stack (and/or upper layers) can easily be migrated from TDM equipments to Mobicents M3UA without changing single line of code (only configuration changes).
- Easy run-time configuration using a Command Line Interface (CLI)
- Support for all major Operating Systems which can fire JVM and support JDK 7 SCTP
- Easily scalable with configurable load-balancing architecture.

The following figure shows the TeScale jSS7 stack and the development roadmap.



## SS7 Protocol

The following table shows the implementation standards compliance matrix:

Stack	Compliance
<b>ISUP</b>	ITU-T Q.761 to Q.764 and Q.767
<b>SCCP</b>	ITU-T Q.711 to Q.716 – Only Connectionless procedure (Class 0 & 1)
<b>TCAP</b>	ITU-T Q.771 to Q.775
<b>MAP</b>	GSM 09.02 GSM 29.002 GSM 03.40

## SIGTRAN

**Stream Control Transmission Protocol (SCTP)** : The TelScale SCTP layer is based on the Java SCTP API. Note that the Java SCTP API is available in JDK 7 and above.

**MTP3 User Adaption Layer (M3UA)** : TelScale M3UA is based on RFC 4666 and support ASP, SGW mode or IPSP mode. Both Single Exchange and Double Exchange of messages are supported.

## Technical Specification

TelScale jSS7 is not restricted by any license or Transaction Per Second model. The only restricting factor is memory + CPU capacity of the host servers

- TelScale SCTP supports as many associations as supported by the underlying Operating System
- TelScale M3UA can be configured to have as many ASP's / IPSP's as needed by the system
- TelScale SCCP can be configured to have virtually unlimited Global Title Translation rules or also supports wild characters for partial matching of Global Title digits

## TelScale SS7 Card Specifications

TeleStax is now providing its own certified SS7 hardware cards compatible with TelScale jSS7 stack. The card is a stand-alone computer running linux, with 2 G.703 E1/T1 interfaces and up to 2 100Mbit Ethernet interfaces. It is also capable of monitoring 2 duplex E1 or T1 G.703 interfaces.

### Hardware

<b>Host OS requirements</b>	Any OS with tcp/ip networking
<b>Bus interface</b>	Ether 32-bit PCI or just +5 DC
<b>G.703 E1/T1 interfaces (active mode)</b>	2
<b>G.703 E1/T1 interfaces (active mode)</b>	2 (ea 4 receivers onboard)
<b>E1/T1 reference clock source</b>	From RX line
<b>Size</b>	101x122 mm

### Software

	<b>Already supported/tested</b>	<b>Supported Soon</b>
<b>Number of ss7 links</b>		
<b>- low-speed links</b>	More than 20 links	Up to 62 links (all available timeslots)
<b>- high-speed (2 Mbit)</b>	1	2
<b>Tracing</b>	Wireshark-compatible files (pcap)	Pseudo-interface for Wireshark
<b>SS7/SIGTRAN stack</b>	M3UA/MTP (*)	M3UA/MTP, M2UA/MP
<b>SIGTRAN underlayer</b>	TCP or SCTP	TCP or SCTP with multi-home support
<b>MEDIA</b>	RTP G.711 soon	RTP G.711, echo, DTMF

<b>MEDIA CONTROL</b>	MGCP	MGCP, MEGACO
<b>SIP</b>	-	SIP/ISUP, SIP/ISDN PRI

(\*) now several instances of M3UA/MTP SS7 stcks can run in parallel inside a single card; each instance is configured to use own SS7 links;