TCAP Solution for Converged Networks

The Spectra2 TCAP Monitoring and TCAP Generation solutions deliver a high-performance platform for TCAP diagnostics in a converged network environment. The Spectra2 TCAP capabilities include multi-user support for up to four users, an easy-to-use Windows-based GUI, and multi-protocol load generation of PSTN signaling to ensure performance in a converged environment. The Spectra2 platform also boosts TCAP load generation with the ability to deliver up to 384 Low-Speed Links (64Kb Timeslots) or 32 High-Speed Links. Users can easily Monitor and Generate TCAP scripts over legacy and next-generation networks with one Diagnostic solution.
TCAP Solution for Converged Networks

Application Brief

Spectra2 TCAP Solution

TCAP support is at the heart of the Spectra2 solution for the PSTN and converged networks. Even as carriers and network equipment manufacturers adopt new network models such as IMS, or IP Multimedia Subsystems, they must continue to support TCAP-based legacy applications. The Spectra2 platform can analyze TCAP, SIP and ISUP protocols at the core of IMS and converged networks. Spectra2 includes test cases, protocols, and analysis tools in one integrated solution. Users can Monitor and Generate TCAP from a single test script on one test box, saving time, money, and development costs.

Spectra2 supports ANSI, ETSI, and ITU protocol stacks, offering multi-protocol analysis for real-time visibility into converged networks.

TCAP: Monitor

With TCAP Monitoring support, users can monitor SCCP/TCAP nodes, interfaces, and traffic. Users can also view PDU contents, validate basic protocol functionality, and track communication between PSTN network elements. The Spectra2 Monitor application also collects TCAP PDU basic statistics.

Spectra2 Generator features includes:

- Spectra2’s simple and clear “ping-pong” editor. Write and edit test cases with minimal effort.
- A graphic-based network configuration tool that lets users drag and drop network elements into place, connect the elements through link sets, and configure the network accordingly.
- Scheduler, an integrated application that lets users automate conformance generation.
- A new feature in the Spectra2 Database application builds PDUs starting at the SCCP layer. The user does not have to build the lower level information in the PDU, saving valuable operator and testing time.

Figure 1. Spectra2’s Network Configurator provides a graphic representation of Level 3 network elements. Drag and drop network elements into place, connect the elements through link sets, and configure accordingly using a simple pop-up window interface.
The Spectra2 TCAP Performance Advantage

The Spectra2 load generation capability lets users harness up to 384 Low-Speed Links (64Kb Timeslots) or 32 High-Speed Links from a single system. Other features include:

- Auto-Length PDU calculation, which gives Spectra2 TCAP Generation the ability to automatically calculate a PDU length based on selection of parameters and information elements.

- Support for Multiple Call Legs allows information elements to be passed between different call legs to support wire-less call flows. This allows the Spectra2 platform to better simulate elements such as an HLR or any call scenario that requires multiple transactions in the same script.

- GET and PUT functionality lets information be passed between incoming trigger messages and transmit messages and across call legs.

**Figure 2.** Spectra2’s Generator displays TCAP message information in a simple pop-up window such as put data, timeout and trigger conditions, get data, and PDU field/parameter values.
TCAP Solution for Converged Networks
Application Brief

Protocol Support

TCAP
ITU-Q.771, June 1997
ITU-Q.772, June 1997
ITU-Q.773, June 1997
ITU-Q.774, June 1997
ITU-Q.775, June 1997
ANSI T1.114-2000, June 2000

SCCP
ITU Q.711, March 2001
ITU Q.712, July 1996
ITU Q.713, July 1996
ITU Q.714, May 2001
ITU Q.715, July 1996
ITU Q.716, March 1993
ANSI T1.112, January 2000

ETSI INCS2
EN 301 140-1 V1.3.4 (1999-06)

AIN 0.2
T1.660-6/4/1998, GR-1299-CORE

CAMEL
3GPP TS 29.078 version 5.9.0 (2004-09)
3GPP TS 29.078 version 4.8.0 (2003-03)

IS-41E
ANSI/TIA-41.000-E-2004, April 2004
ANSI/TIA-41.500-E-2004, April 2004
ANSI/TIA-41.510-E-2004, April 2004
ANSI/TIA-41.511-E-2004, April 2004
ANSI/TIA-41.520-E-2004, April 2004
ANSI/TIA-41.540-E-2004, April 2004
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ANSI/TIA-41.551-E-2004, April 2004
ANSI/TIA-41.590-E-2004, April 2004
ANSI/TIA-41.700-E-2004, April 2004
ANSI/TIA-41.790-E-2004, April 2004

UMTS MAP
UMTS MAP 3GPP TS 29.002 v6.7.0 Rls 6, September 2004

GSM MAP
ETSI TS 100 974 v7.1.0 / GSM 09.02 v7.1.0 Rel 98, August 1999

MEID
TIA-928, August 2004
TIA-928-1, October 2004
3GPP.S.R0048-A v.3.0, September 2004

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TCAP Solution for Converged Networks

Available Packages for Spectra2

- VoIP Analyzer
- PSTN Analyzer
- ISUP Testing
- SIP Testing & Generation
- SIP-T Testing
- SIP/TLS Testing
- H.323 Testing & Generation
- MGCP Testing & Generation
- Megaco Testing & Generation
- Binary Megaco Testing
- Multi-Gateway Support for Megaco and MGCP
- Media Testing
- Voice Quality Testing
- Passive Voice Quality Testing
- RFC 2833 Testing
- Application Programming Interface (API)
- Historical Statistics
- ISUP Testing
- Japan ISUP Testing
- BICC Testing
- TCAP Generator

IS-41D
TIA/EIA/IS-J-STD-036 Rev.0, 2000
TIA/EIA/IS-735, 1998
TIA/EIA/IS-751, 1998
TIA/EIA/IS-756, 1998
TIA/EIA/IS-764, 1998
TIA/EIA/IS-737, 1998

IS-771
TIA/EIA/IS-771, 1999

GSM3 (GSM MAP)
ETSI TS 100 974 v7.1.0 / GSM 09.02 v7.1.0 Rel 98, August 1999

PCS3 (GSM3 over ANSI)
ETSI TS 100 974 v7.1.0 / GSM 09.02 v7.1.0 Rel 98, August 1999

IS-634A
TIA/EIA/IS-634, 1998

Portable Chassis Specifications
- 9.5 kg (21 lb)
- 41 W x 25 D x 27 H cm
- 16.1 W x 9.8 D x 10.6 H in
- Flat Panel 35.8 cm (14.1 in) XGA TFT
- 110-220 VAC

Rackmount Chassis Specifications
- 22.7 kg (50.5 lb)
- 43.26 W x 46 D x 26.5 H cm
- 17 W x 18 D x 10.5 H in
- Optional Monitor
- 110-220 VAC
- -48 VDC Available
For Further Information
Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tektronix.com