MAPS™ MC-MLPP(Multi Class Multi Link PPP)

MC-MLPP Conformance Testing

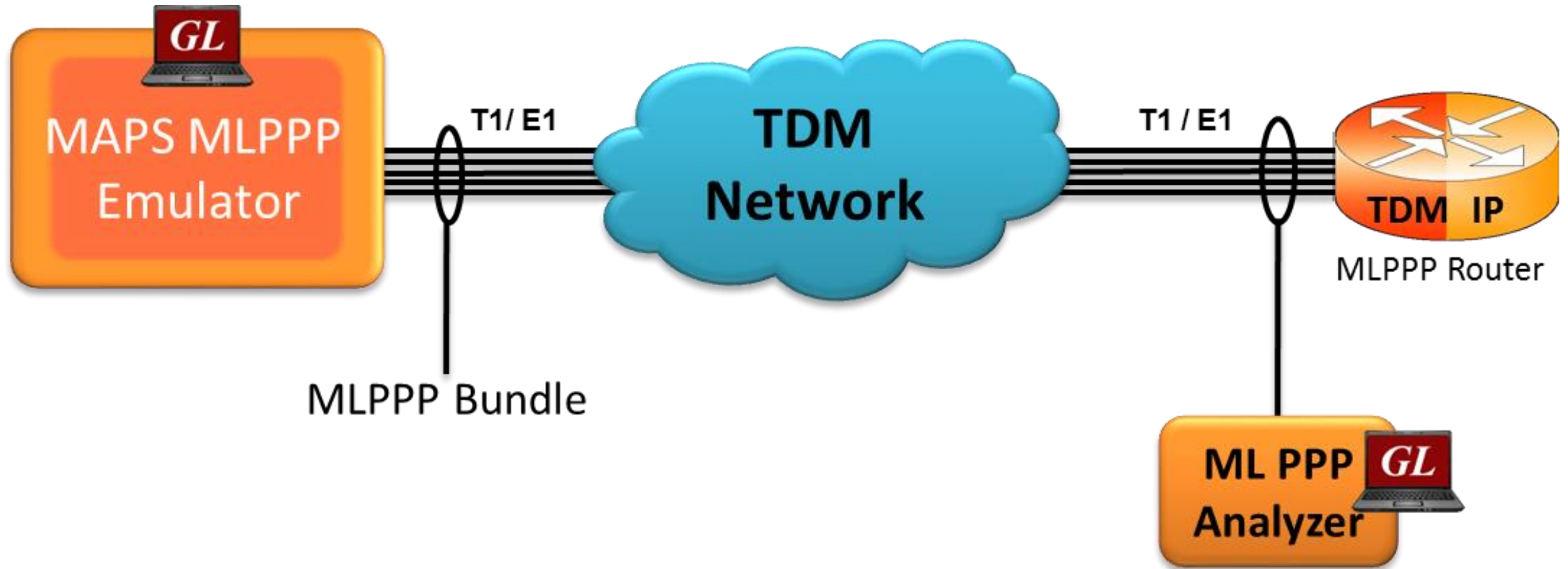**GL Communications Inc.**

MAPS™ MC-MLPP

MC-MLPP Emulation in the TDM Network
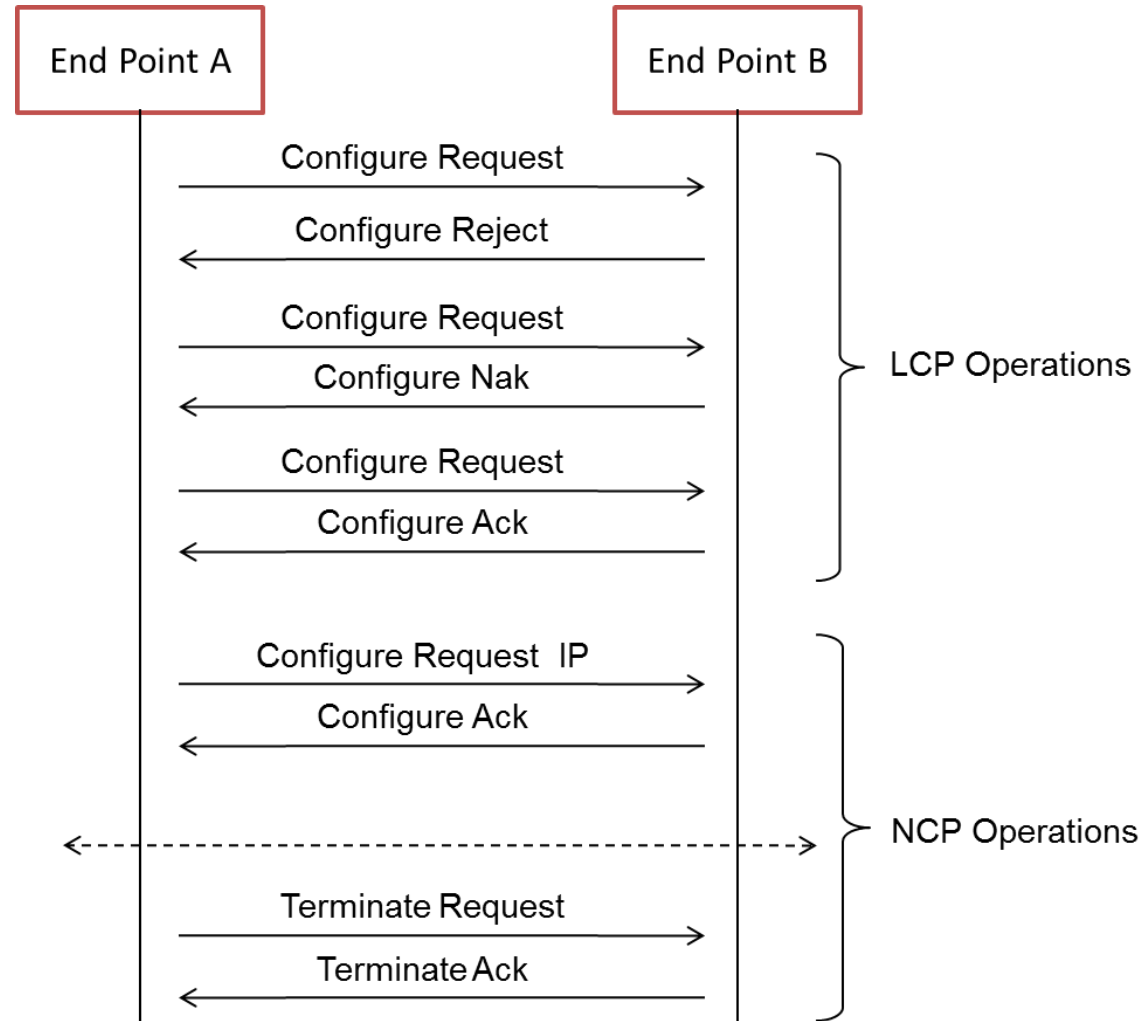
Main Features

- Performs MC-MLPPP as well as PPP simulation over TDM (T1/E1)
- Supports LCP with the following negotiation options
  - ➢ PPP options: MRU (Maximum Receive Unit), ACFC (Address and Control Field Compression), PFC (Protocol Field Compression), and Magic Number
  - ➢ MLPPP Options: MRRU (Maximum Received Reconstructed Unit), Short Sequence Number Format, Long sequence header format, Endpoint Discrimination, and Multi-class option
  - ➢ Multi-Class Options: Multilink Header Format
- Supports the following NCPs -
  - ➢ IPCP - RFC 1332 (PPP Internet Protocol Control Protocol) and RFC 1877 (PPP Internet Protocol Control Protocol Extensions) standard
  - ➢ PPPMuxCP – RFC 3153 (PPP Network Control Protocol for PPP Multiplexing) standard
- Supports IP compression negotiation option conforming to RFC 3544
- Supports full or fractional timeslots for PPP Link
- Ideal solution for automated testing using command line scripts
- Supports customization of call flows and message templates using Script editor and Message editor
- Ready to use Conformance scripts for quick testing
- Provides protocol trace with full message decoding, and graphical ladder diagrams of call flow with time stamp
- Provides call statistics with associated captured events and error events during call simulation

Supported Protocol Standards
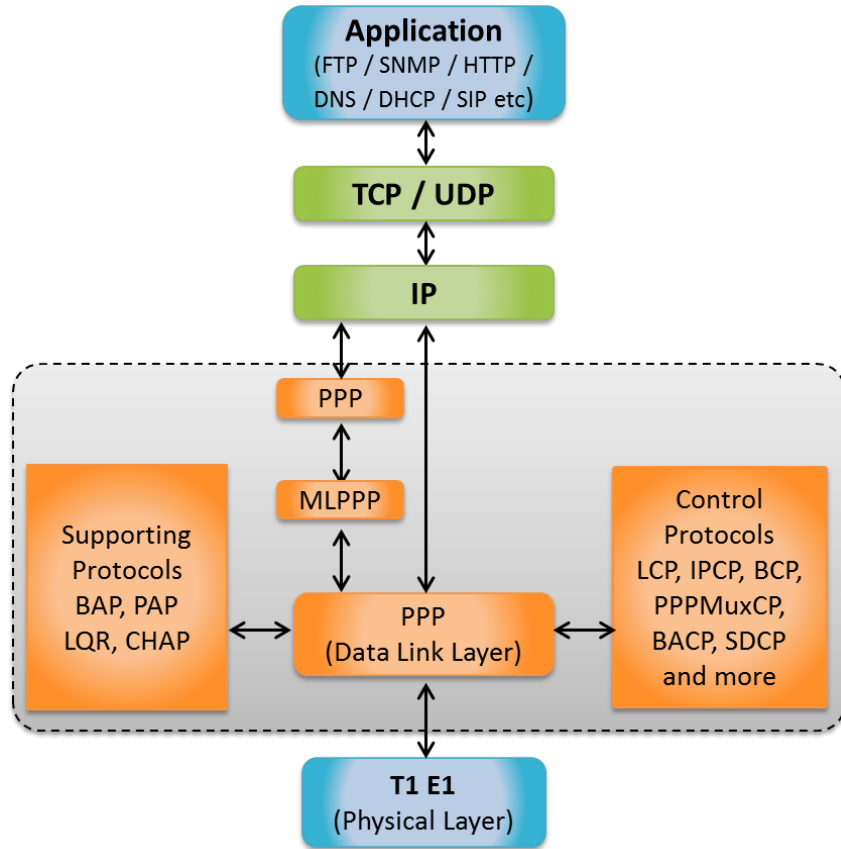
Supported Protocols	Standard / Specification Used
Point-to-Point Protocol	RFC1661
Multi-Link PPP	RFC1990
Multi-Class Extension to Multi-Link PPP	RFC2686
IPCP	RFC1332
IPCP Extensions	RFC1877
PPPMuxCP	RFC3153

MC-MLPP Call Flow Scenario

Testbed Configuration

Profile Configuration

Incoming Call Handler Configuration

MC-MLPP Call Generation

MC-MLPP Call Reception

MC-MLPP Call Event Log

Global Configuration
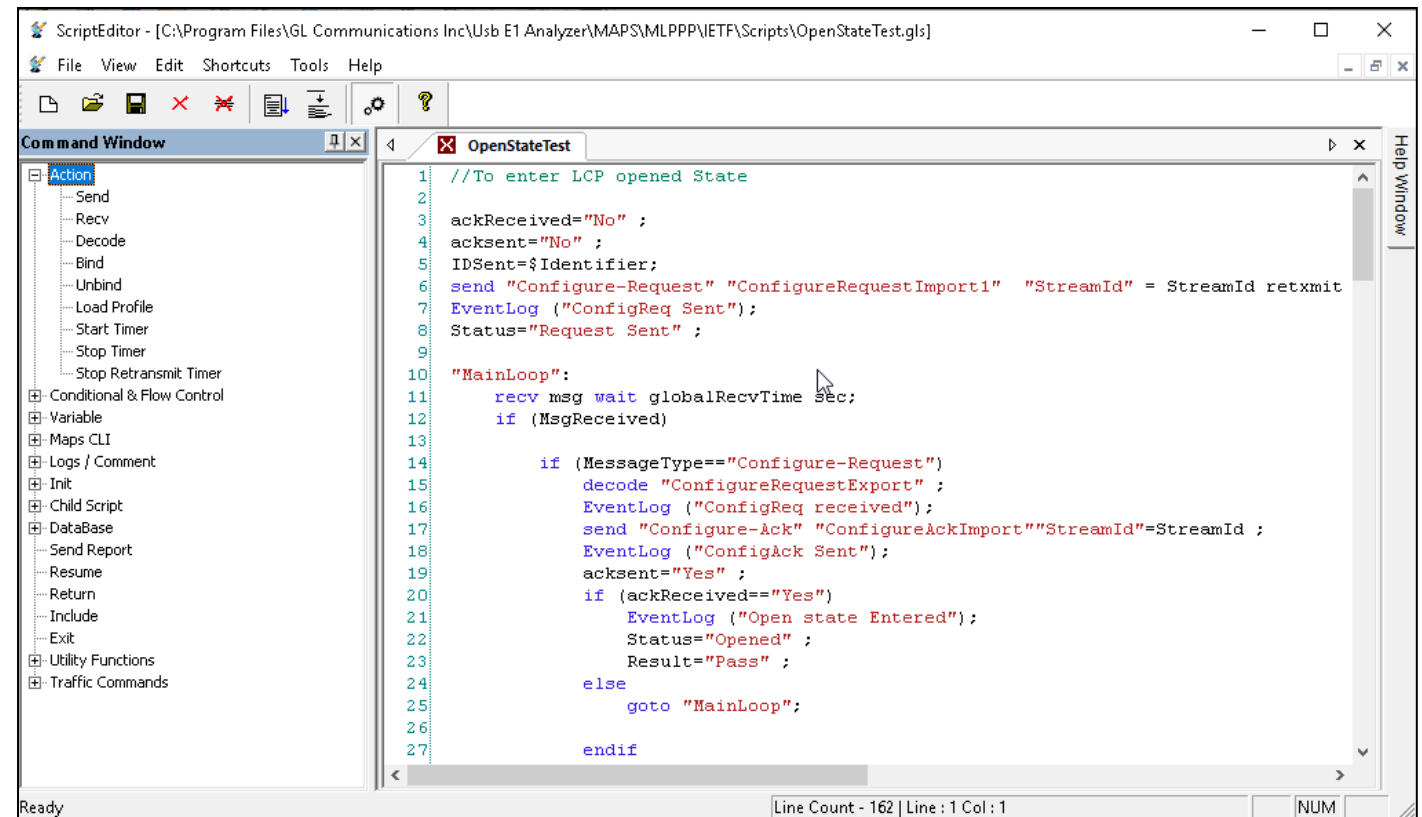
MC-MLPP Call Ratio Statistics

Call Graph
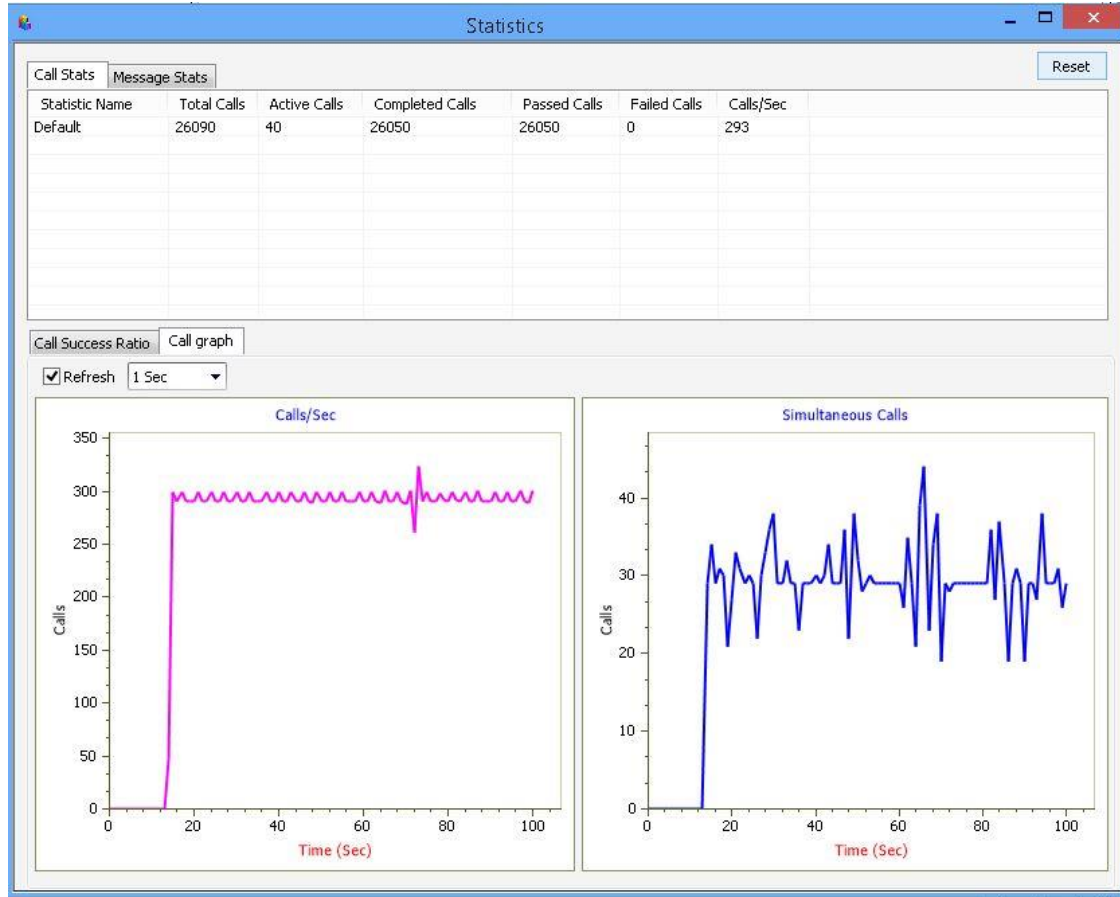
Call Stats
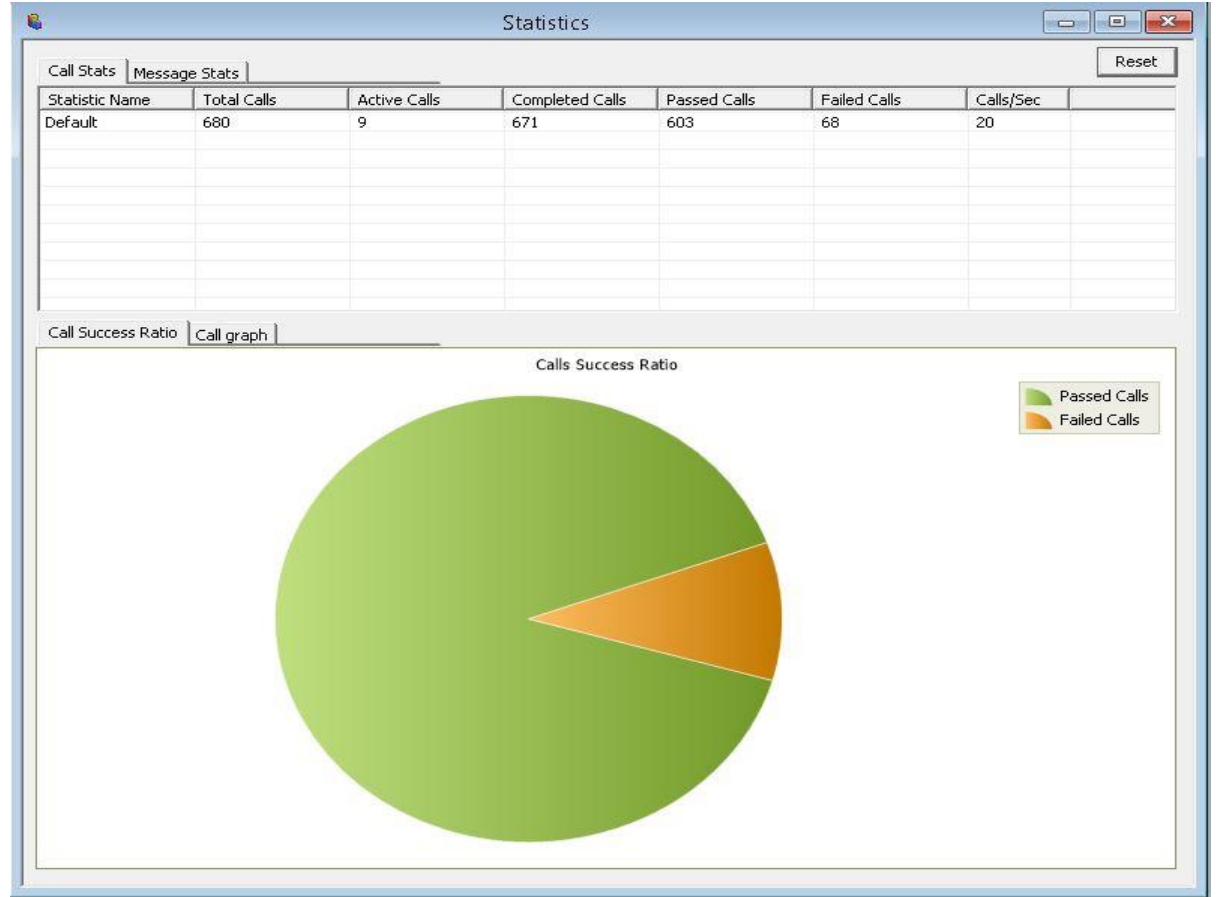
Customizations - Call Flow (Scripts)

- Scripts are written in our proprietary *.gls scripting language. They represent generic state machines intended provide protocol/signaling logic for a call and establish bearer traffic

- Each instance of a script corresponds to a single transaction/call, i.e., if you place 500 calls in parallel you will have 500 script instances running at once. If you place 500 calls in series the same script will execute and terminate 500 times

- It is possible to create your own scripts, but almost never necessary! We attempt to provide all necessary scripts out of the box

Customizations - Protocol Messages

- When the script sends a message it does so by loading a hdl file template from disk

- These message templates provide the actual structure of the message, the script simply populates it with values contained in its variables

- These messages are customizable by the user, header fields can be altered and removed. Binary-based messages are edited in our provided message editor

Customizations - User Events

Customizations - Statistics and Reports

MOS, R-Factor

Packet Loss

Packets Discarded

Duplicate Packets

Out-Of-Sequence

Packets

Jitter Statistics

Call Stats provide a running tabular log of system level stats, tracked stats include: Total Calls, Active Calls, Completed Calls, Passed Calls, Failed Calls, Instantaneous Calls/Sec

MAPS MLPPP Conformance Suite

MAPS™ MLPPP conformance scripts are suitable for conformance tests and functional tests, where test objects can be accurately, reliably and comfortably validated for compliance with IETF standard.

Supported Conformance Tests are:

- PPP Conformance Test Scripts
  - Link Establishment Phase
  - Link Maintenance Phase
  - Link Terminating Phase
  - Generalized Test
  - NCP Negotiation Phase
  - MLPPP Conformance Test Scripts
  - Link Establishment Phase
  - Link Maintenance Phase
  - Link Terminating Phase
  - MLPPP Generalized Test
  - MLPPP Bundle Test Scripts

  - PPP Links for MLPPP Bundle
  - MLPPP Short Sequence Test
  - MLPPP Initialize Sequence Number Test
  - MLPPP Control Field Test
  - NCP over MLPPP/PPP
  - Bundle Echo Test
- Multi-Class MLPPP Test Scripts
- PPP MUX CP Test Scripts

Thank you