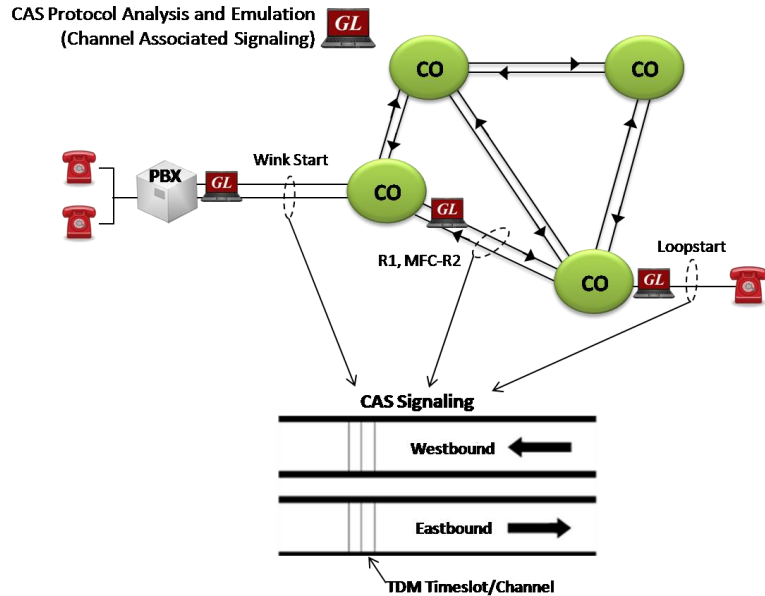


Channel Associated Signaling (CAS) Simulator



Analysis according to Q.921, TR54016, T1.403, T1.408, I.431, G.963, G.704

Non-intrusive Analysis using GL's T1 Analyzers

Real-time and Off-line Analysis

Summary, Detail, and Hex-Dump Views

Playback of Recorded Traces

View and Save the Received Bytes into a File

FDL can be Analyzed Using VB Client

Overview

Channel Associated Signaling (CAS) is a method of signaling in telephone networks where each channel or timeslot carrying speech also carries with it the signaling and addressing to set up and tear down that same channel. CAS signaling types include Loopstart, Groundstart, Feature Group D (FGD), Winkstart, MFC-R2 and others.

GL's [Channel Associated Signaling \(CAS\) Simulator](#) is a client-side application that works along with GL's T1/E1 Analyzer Cards and Windows Client/Server software. It is an optional application that simulates any user defined CAS protocol by providing signaling bit transitions and forward/backward frequency digits and tones.

CAS emulation is also available with GL's **Message Automation and Protocol Simulation (MAPS™)**. MAPS™ is a multi-protocol, multi-technology platform used for the emulation of a variety of communication protocols over IP, TDM, and Wireless networks. [MAPS™ CAS](#) can automate the testing procedure allowing the users to establish calls, and send/receive TDM traffic such as DTMF/MF digits, Tones, Fax, and Voice.

In addition, GL supports various E1 MFCR2 analysis and simulation solutions. For more information please visit <http://www.gl.com/mfc-r2-analysis-simulation.html>.

Supported Protocols

- E1 MFC-R2 (All variants, full /semi compelled)
- E1 European Digital CAS (EUC), Digital E & M, International Wink Start
- E1 AP2 (Australian P2 protocol)
- T1 Winkstart (R1 wink)
- T1 Loopstart , Groundstart, Immediate Start , Feature Group D
- Any User-Defined CAS Protocol

Main Features

- Accesses the T1 (or E1) analyzer remotely
- Supports called number and calling number identification
- Customized signaling for each channel through scripts
- Ready-to-use scripts for quick testing.

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Call Generation/Reception with Signaling Status

GL's CAS Simulator processes the receipt of Dialed Number Identification Service (DNIS) and Automatic Number Identification (ANI) information, which is used to support addressing, routing and other functions. The screenshots to the right display the manual call generation, and call control features available in GL's CAS Simulator.

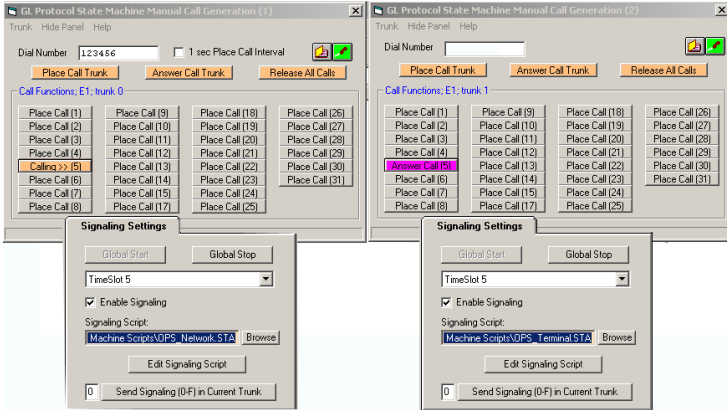


Figure: Call Generation/Reception with Signaling Status

Flash Hook

The application also provides a way for the users to send a Flash Hook signal manually. Users can vary Flash Hook On Signal (0-F), Flash Hook Off Signal (0-F) and Flash Hook Interval (ms) for a given timeslot.

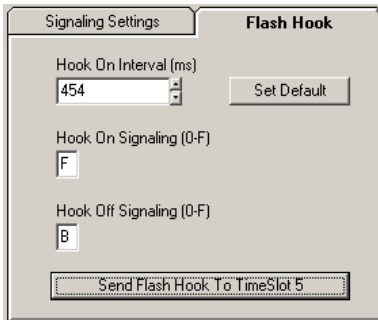


Figure: Flash Hook

Capture Events

GL's CAS Simulator **Status Events** screen chronologically lists the entire CAS State Machine signaling bit transitions, digit detections, and tone detections generated by each timeslot of trunks. These transitions can be directed to a text (.txt) file in real-time or after they have appeared in the events list.

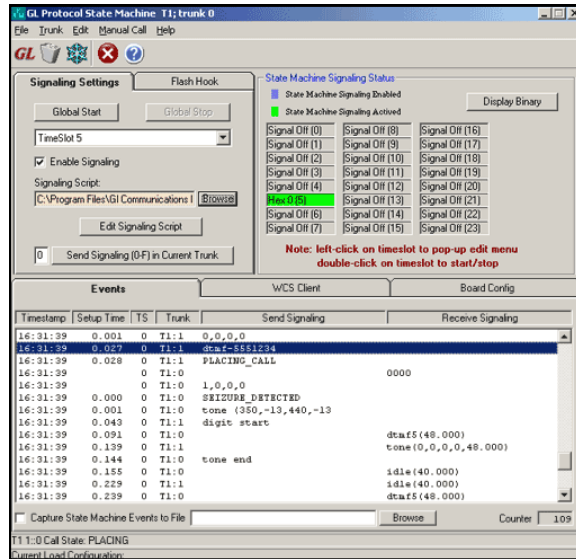


Figure: Capture Events

Script Editor

The GL CAS Simulator script is based on a self-describable language that can define the behavior of CAS Call Control procedure. Functions such as Place Call, Answer Call, Incoming Call, and Disconnect call are all defined within the script. Additionally more advanced script may also be defined in the script editor. Definitions for Signaling Bit Transitions and forward/backward digits/tones are user definable within each script.

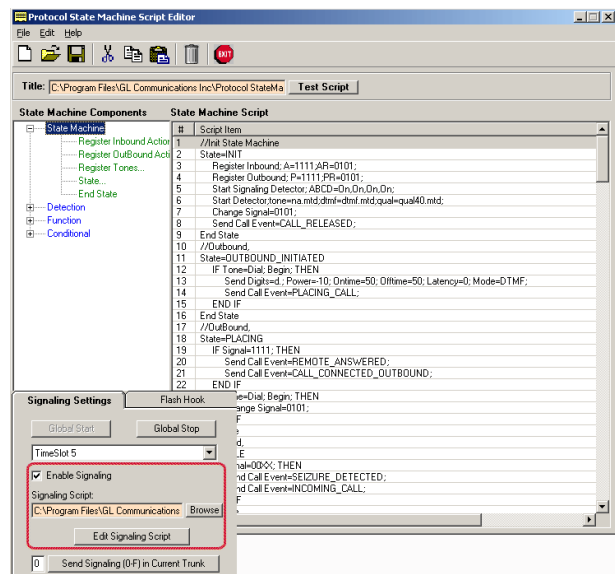


Figure: Script Editor



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MAPS™ CAS Emulator

MAPS™ CAS Emulator automates the testing procedure allowing the users to establish calls, and send/receive TDM traffic such as DTMF/MF digits, Tones, Fax, and Voice .

Supports testing of various protocols such as T1 Wink Start (R1 wink), T1 Loop Start and T1 Ground Start, T1 Feature Group D, T1 Immediate Start, E1 MFC-R2 (All variants, full /semi compelled), E1 European Digital CAS (EUC), E1 Digital E & M, E1 International Wink Start, and Any User-Defined CAS Protocol.

E1 MFC-R2 Signaling defined by the ITU Recommendations Q.421 -Q.442, uses a multi-frequency compelled signaling protocol to exchange address information. Sends MFC-R2 forward and backward tones per CCITT specifications. Currently, MAPS™ CAS includes ready profiles for India, China, and Mexico. Different country specific implementations will be supported in future.

Visit <http://www.gl.com/maps-cas-emulator.html> web pages for details

Data/Time	Call Trace Id	Script Id	Captured Events
2012-1-4 18:03:39.000656	1	ProtScriptId_108398936-2065	Detected Signal=1, 1, 1
2012-1-4 18:03:39.000656	1	ProtScriptId_108398936-2065	Seizure Detected
2012-1-4 18:03:39.000890	1	ProtScriptId_108398936-2065	Seizure Acknowledged
2012-1-4 18:03:42.000843	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:03:42.000843	1	ProtScriptId_107586936-2064	Placing Call: 5
2012-1-4 18:03:47.000843	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:03:47.000843	1	ProtScriptId_107586936-2064	Seizure Acknowledged
2012-1-4 18:03:47.000843	1	ProtScriptId_107586936-2064	Dialing
2012-1-4 18:03:49.000906	1	ProtScriptId_108398936-2065	Digits not Detected
2012-1-4 18:03:49.000906	1	ProtScriptId_108398936-2065	Call Released
2012-1-4 18:03:49.000906	1	ProtScriptId_108398936-2065	Detected Signal=1, 1, 1
2012-1-4 18:03:52.000859	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:03:57.000890	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:04:02.000906	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:04:04.000000	1	ProtScriptId_132867936-2066	Detected Signal=1, 1, 1
2012-1-4 18:04:04.000000	1	ProtScriptId_132867936-2066	Seizure Detected
2012-1-4 18:04:04.000218	1	ProtScriptId_132867936-2066	Seizure Acknowledged
2012-1-4 18:04:04.000343	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:04:09.000343	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:04:14.000250	1	ProtScriptId_132867936-2066	Digits not Detected
2012-1-4 18:04:14.000250	1	ProtScriptId_132867936-2066	Call Released
2012-1-4 18:04:14.000359	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0
2012-1-4 18:04:19.000390	1	ProtScriptId_107586936-2064	Detected Signal=0, 0, 0

Figure: Call Generation/Reception and Event Log

Buyer's Guide

[XX625](#) – w/Channel Associated Signaling Simulator

Related Software

[XX651](#) - MAPS™ CAS Protocol Emulator

[XX022](#) - DTMF/MF/MFR2 Detector and Generator Software

[XX020](#) - Record/Playback File Software

XX030 - MFC-R2 Call Capture and Analysis Software

[XX610](#) – w/ Transmit and Receive File Capability

[XX620](#) – w/ DTMF/MF/MFC-R2 + answer/place call Capability

[XX630](#) – w/ DSP Capability

Related Hardware

[UTE001](#) – Portable USB based Dual T1 or E1 Laptop Analyzer

[HTE001](#) – Universal HD T1 or E1 PCI Cards

[PTE001](#) – tProbe™ Dual T1 E1 Laptop Analyzer

[FTE001, ETE001](#) – Quad and Octal T1 E1 Analyzer Boards



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