

Working Principle

- **Message Editor** - Used to edit / create Message Templates
- **Message Templates** - Backbone of MAPS™ application that contains various protocol fields with default values
- **Script Editor** -
 - Creates a script for scenario based testing (call flow) with DUT
 - Uses pre-defined message templates in the script
 - Access protocol fields as variables using import/export files
- **Profile Editor** – Creates or edit profiles containing values assigned to the variables replacing the original values.
- **Event Profile Editor** - allows you to create Event Profiles for user-defined events in a script. The values of the variables in the user-events can be changed during script execution.

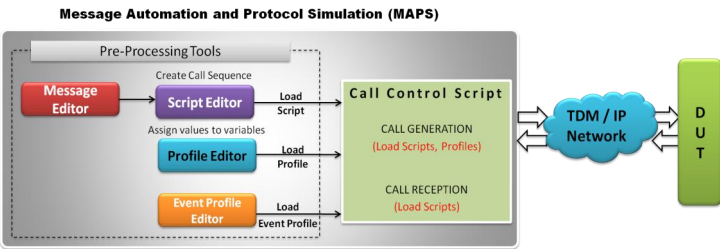


Figure: MAPS™ application Working Principle

Testbed Configuration

Test Bed Setup provides options to establish communication between MAPS™ and the DUT. It includes configuration parameters to be set for UDP configuration. Once the testbed is setup, messages can be transmitted and received over IP network to the DUT.

Default profile used to configure MAPS™ GPRS Gb with SGSN or BSC parameters.

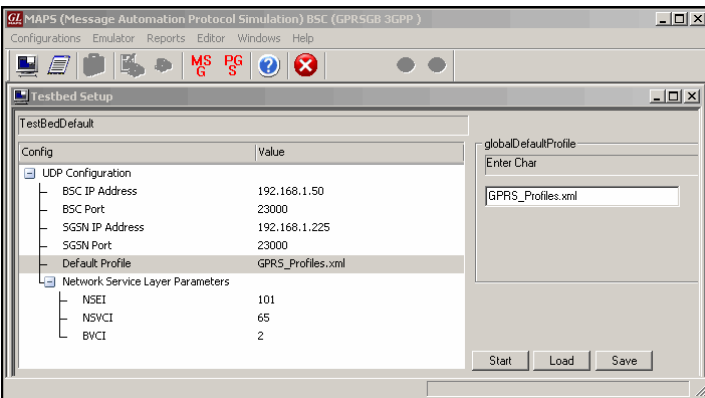


Figure: Testbed Setup

Pre-processing Tools

Message Editor - With message editor, users can build a template for each protocol message type. The value for each field may be changed in the message template prior to testing. The protocol fields comprises of mandatory fixed parameters, mandatory variable parameters, and optional variable parameters.

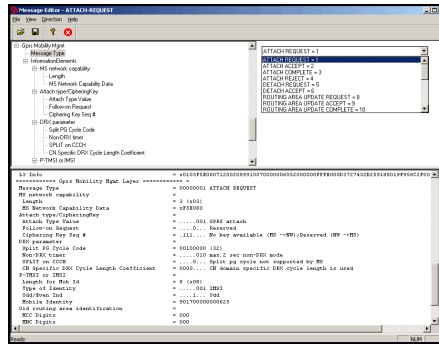


Figure: Message Editor

Script Editor - The script editor allows the user to create / edit scripts and access protocol fields as variables for the message template parameters. The script uses pre-defined message templates to perform send and receive actions.

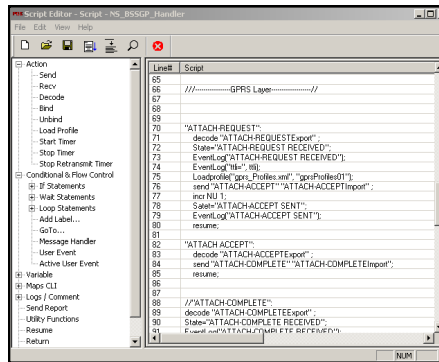


Figure: Script Editor

Profile Editor - This feature allows loading profile to edit the values of the variables using GUI, replacing the original value of the variables in the message template.

An XML file defines a set of multiple profiles with varying parameter values that allow users to configure call instances in call generation and to receive calls.

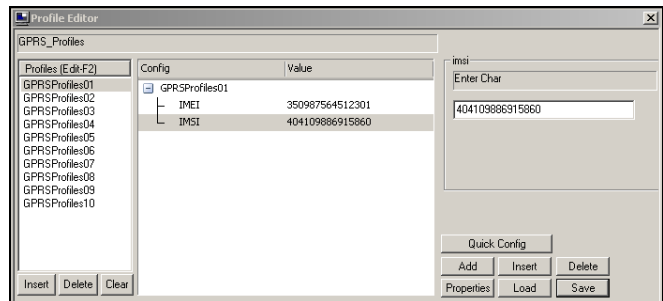


Figure: Profile Editor



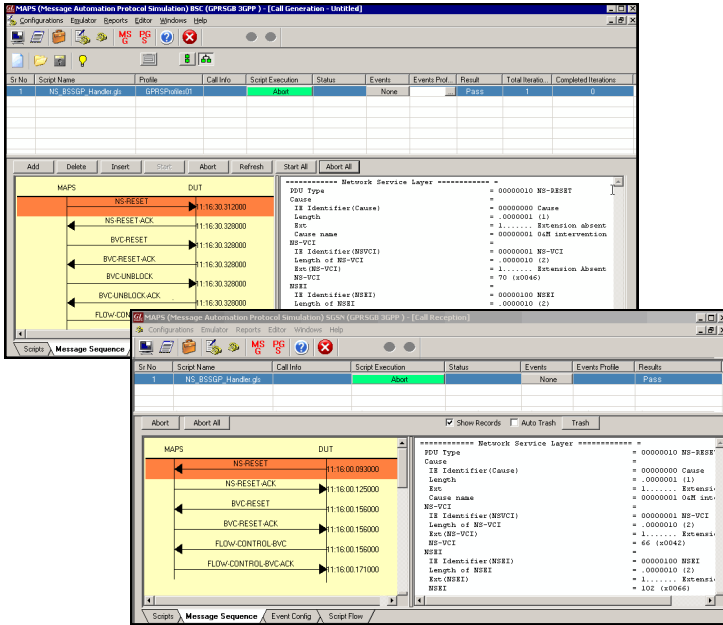
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Call Generation and Call Reception

In call generation, MAPS™ is configured for the out going messages, while in call receive mode, it is configured to respond to incoming messages. Tests can be configured to run once, multiple iterations and continuously. Also, allows users to create multiple entries using quick configuration feature.

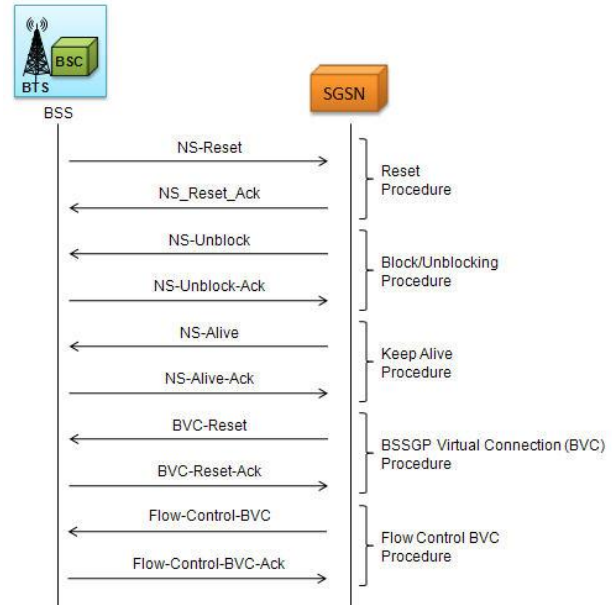
The editor allows to run the added scripts sequentially (order in which the scripts are added in the window) or randomly (any script from the list of added script as per the call flow requirements).

The test scripts may be started manually or they can be automatically triggered by incoming messages.



MAPS™ GPRS Gb Procedures (contd.) Network Service Control Procedure

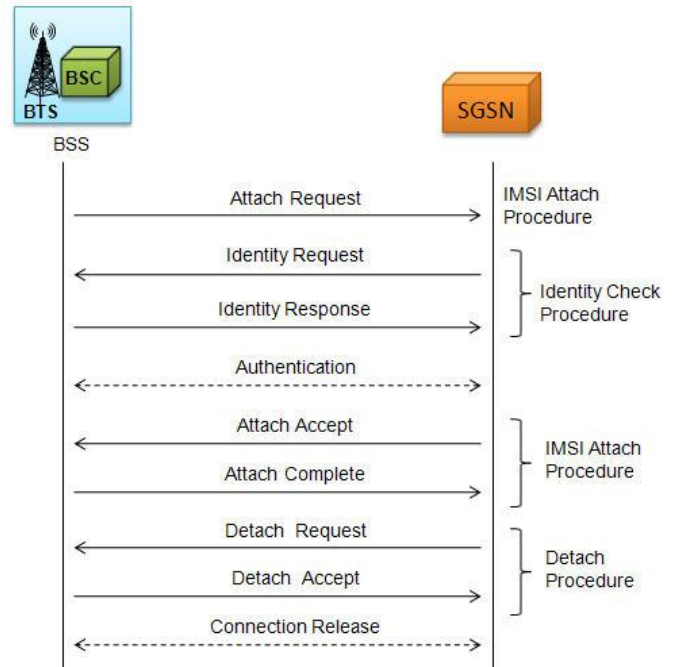
MAPS™ GPRS Gb configured as BSS uses this Network Service Control test procedure to check end-to-end communication with its peer entity (SGSN) on NS-VC.



IMSI Attach/Detach Procedure

MAPS™ GPRS Gb configured as BSC allows a GPRS attach request to be made to the SGSN.

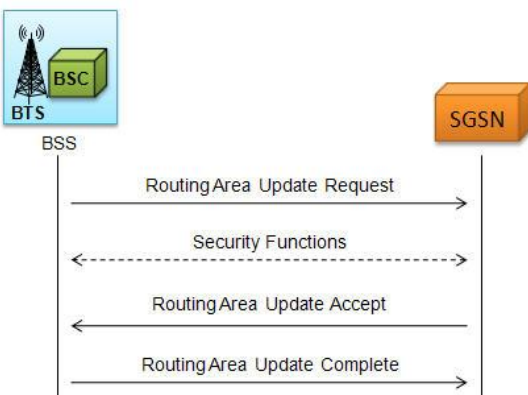
The SGSN sends Identity Request (Identity Type) to the MS. The MS responds with Identity Response (Mobile Identity).



MAPS™ GPRS Gb Procedures

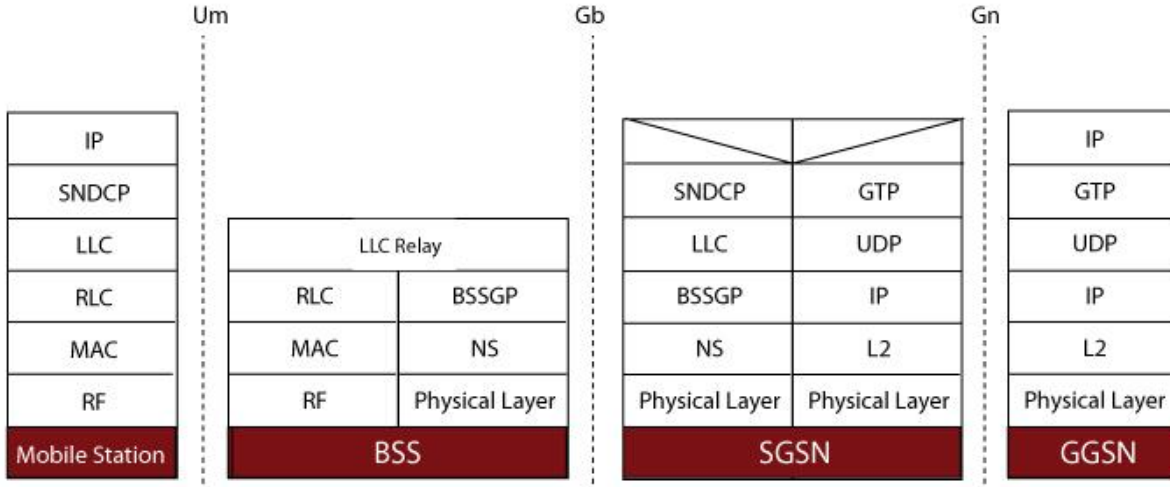
Routing Area Update Procedure

MAPS™ GPRS Gb configured as BSC sends a routing area update request when a GPRS-attached MS detects that it has entered a new RA, or when the periodic RA update timer has expired, or when the MS has to indicate new access capabilities to the network or, when a suspended MS is not resumed by the BSS



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Supported Protocols and Specifications



Supported Protocols	Standard / Specification Used
BSSGP	3GPP TS 08.18 V8.10.0 (2002-05)
LLC	3GPP TS 04.64 V8.7.0 (2001-12)
NS (Network Service)	GSM 8.16 (ETSI TS 101 299 V8.0.0)
GMM	3GPP 24.008
SMG (GPRS Session Mgmt)	3GPP TS 24.008 V5.16.0 (2006-06) (Release 5)
SNDCP	3GPP TS 04.64 V8.7.0 (2001-12)

Buyer's Guide

[PKS131](#) - MAPS™ Gb Emulator over IP

[ETH100](#) - Mobile Traffic - PacketCheck™

[ETH101](#) - MobileTrafficCore - GTP

[ETH102](#) - MobileTrafficCore - Gateway

[ETH103](#) - MobileTrafficCore - Gb

[PKV100](#) - PacketScan™ - All IP Protocol Analyzer

For complete list of MAPS™ products, refer to <http://www.gl.com/maps.html> webpage.

Related Software

[XX692](#) – MAPS™ GSM A Interface Emulator

[XX648](#) – MAPS™ ISDN Interface Emulator

[XX693](#) – MAPS™ GSM A bis Interface Emulator

[PKS130](#) - MAPS™ SIGTRAN (SS7 over IP)

[PKS140](#) - MAPS™ LTE S1 Interface

[PKS142](#) - MAPS™ LTE eGTP (S3, S4, S5, S8, S10, S11 & S16) Interfaces

[PKS164](#) - MAPS™ UMTS – IuPS Interface Emulation

[PKS160](#) - MAPS™ UMTS – IuCS and Iuh Interface Emulation

[PKS166](#) - MAPS™ UMTS - GnGp Interface Emulation



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