MAPSTM Remote Controller
(PKS111 and PKS113)
Multi-node Multi-interface Simulation
Network Architecture

Client PC

MAPS™ Client

Remote Server Site

API Serialization over TCP/IP socket

Multiple Servers

Multiple Servers

Multiple Servers

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Features

• A single Remote Client GUI to remotely control/monitor all the network interfaces and elements simulated by MAPS™ Servers; one or more MAPS™ applications can be installed in a single Sever.

• Allows integrated testing of different networks - Wireless, IP, TDM, and Analog (CAS, FXO, SIP, IMS, UMTS, ... )

• Suitable for testing any core network, access network, and inter-operability functions

• Remote MAPS™ provides access to all the functions of MAPS™ such as Testbed, Call generation, Call reception, Statistics and Results.

• Client-server communication is facilitated through a Listener over TCP/IP.

• Each Listener equates an independent instance of MAPS™ application at the server side. Each listener is associated with an Admin user

• Unlimited number of Remote client users can be defined at the server

• “Admin” has privileges to start /stop Testbed setup access, configuration files.

• MAPS™ Remote Client to control one or more MAPS™ Server (PKS111) or at the MAPS™ Server systems (MAPS™ Server with Multi-user capability – (PKS113)

• Simultaneous traffic generation/reception at 100% on all servers
# Software and License Requirements

<table>
<thead>
<tr>
<th>PKS 111</th>
<th>PKS 113</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client System</strong></td>
<td><strong>Software Required:</strong> MAPS™ Remote Client software</td>
</tr>
<tr>
<td><strong>License Required:</strong> MAPS™ Remote Client license (PKS111)</td>
<td><strong>License Required:</strong> -nil-</td>
</tr>
<tr>
<td><strong>Configuration Required:</strong></td>
<td><strong>Configuration Required:</strong></td>
</tr>
<tr>
<td>• Start Node Configuration</td>
<td>• Start Node Configuration</td>
</tr>
<tr>
<td>• Admin User – Starts/Stops Test Bed</td>
<td>• Admin User – Starts/Stops Test Bed</td>
</tr>
<tr>
<td>• Other Users – Register Subscriber Profiles, Perform Call Simulation</td>
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</tr>
<tr>
<td><strong>Server System</strong></td>
<td><strong>Software Required:</strong> MAPS™ Emulator Core software MAPS™ Remote Server software</td>
</tr>
<tr>
<td><strong>License Required:</strong> MAPS™ Emulator Core license</td>
<td><strong>License Required:</strong> MAPS™ Emulator Core license MAPS™ Multi User Server License (PKS113)</td>
</tr>
<tr>
<td><strong>Configuration Required:</strong></td>
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</tr>
<tr>
<td>• User Configuration</td>
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<tr>
<td>• Listener Configuration</td>
<td>• Listener Configuration</td>
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<tr>
<td>• Protocol Configuration</td>
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</tbody>
</table>
Client–Server Communication via Listener

Client PC

1. Connect
2. Lists all licensed MAPS™ for protocols
3. Selects protocol options to start MAPS™ server
4. Provides IP and port address of MAPS™ server
5. Client connects directly to Server & Starts Protocol Emulation

Remote PC

4. Starts MAPS™ Server

MAPS™ Client

MAPS™ Server

Listener

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Remote MAPS™ Call Flow

Listener added in Client
IP: 192.168.1.64
Port: 20005

Listener Started
IP: 192.168.1.64
Port: 20005

Connect
Send Server Parameters
Start Server

Start Server
Request Port Number
Send Port Number

Signaling Gateway
Started

Send Port Number
Connect to Server
Start Test Bed

Test Bed Started

Start Call Generation

Call Generation Started

Stop Server

Stop Server

Signaling Gateway
Stopped

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Multiple Users

Multiples users can be created on each MAPS™ Server. One Admin user must be created to manage the test bed setup.

- **ADMIN**
  - Creates Testbed Setup Profiles
  - Starts Testbed Setup for all users

- **User1**
  - Example,
    - View Testbed Setup1
    - Configuration Profiles #1

- **User2**
  - Example,
    - Testbed Setup1
    - Configuration Profiles #2

- **User3**
  - Example,
    - Testbed Setup1
    - Configuration Profiles #3

- **User4**
  - Example,
    - Testbed Setup1
    - Configuration Profiles #4
Testbed Setup Configurations

For Admin

For Users
Remote MAPS™ for IMS Network
Remote MAPS™ Server Configuration

<table>
<thead>
<tr>
<th>Server Name</th>
<th>Server IP</th>
<th>Server Port</th>
<th>Protocol Standard</th>
<th>Protocol Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>UE1</td>
<td>192.168.1.14</td>
<td>1000</td>
<td>SIP</td>
<td>IETF</td>
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<tr>
<td>XSCEF-att</td>
<td>192.168.1.14</td>
<td>1000</td>
<td>Node: XSCEF</td>
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<tr>
<td>HSS-att</td>
<td>192.168.1.14</td>
<td>1000</td>
<td>Node: HSS</td>
<td>Transport: SCTP</td>
</tr>
<tr>
<td>UE2</td>
<td>192.168.1.147</td>
<td>2000</td>
<td>SIP</td>
<td>IETF</td>
</tr>
<tr>
<td>XSCEF-verizon</td>
<td>192.168.1.14</td>
<td>1000</td>
<td>Node: XSCEF</td>
<td></td>
</tr>
<tr>
<td>HSS-verizon</td>
<td>192.168.1.147</td>
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End-to-end Call from Non-Roaming User to Non-Roaming User Across the Network
End-to-End Registration & Call Control Procedures

Call Reception at Verizon Network

Call Reception at ATT Network

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Remote MAPS™ for TDM Network
Remote MAPS™ to show how multiple users share the channel resources on a single T1 E1 Server to simulate calls.
THANK YOU