



teleSys
SOFTWARE

MACH7-SMG

“Service Mediation for LTE / IMS with Legacy Networks”

Overview

With upsurge in demand for mobile data traffic and multi-fold growth forecast for next few years, service providers are migrating their network infrastructures to latest evolving all-IP based architecture for 4th Generation technologies like LTE, HSPA+ and WiMAX. To ensure significant benefit from these technologies for faster data rates and enhanced spectral efficiency for delivery of new broadband services, major challenges related to full interoperability to existing network elements and their investment protection need to be mitigated as well.

teleSys' Service Mediation Gateway, MACH7-SMG, enables smooth transition with seamless connectivity and inter-working of legacy network elements and services to 4G technologies to confirm promised cost reduction with network optimization.

MACH7-SMG, Interworking Solution

The telecommunication network core is transitioning to an all-IP based architecture comprising of a packet switched domain named Evolved Packet Code (EPC) and a circuit switched domain called IP Multimedia System (IMS). As these technologies are going through fast evolution stages, inter-working issues with legacy signaling networks elements are encountered both due to technology differences as well as for continuous enhancements to emerging standards. teleSys' MACH7-SMG, the mediation gateway for service convergence enables network operators to make incremental investments in emerging technologies while providing a bridge to existing value added services from already installed network elements.

This Gateway provides the capability of True Service Convergence between the telecom networks providing a state-of-the-art solution for this co-existence of disparate signaling protocols, achieving a fast time to market to meet changing customer demands.

Interworking solution enabled by MACH7-SMG platform includes:

➤ **INTERWORKING WITH SS7/SIGTRAN SIGNALING**

Signaling interworking with SS7/SIGTRAN Signaling allows:

a) **Mobility Convergence:**

- Using GSM / IS41 MAP, SIP and DIAMETER signaling provides seamless roaming to the subscribers between 2G/3G and 4G networks.

b) **Service Convergence:**

- Bridges IN services of wireline and wireless networks like Pre-Paid etc. with next generation LTE/IMS networks.

- Facilitates subscriber authentication for emerging services like SIM-based Authentication for WLAN services, by providing access to 2G/3G network elements.

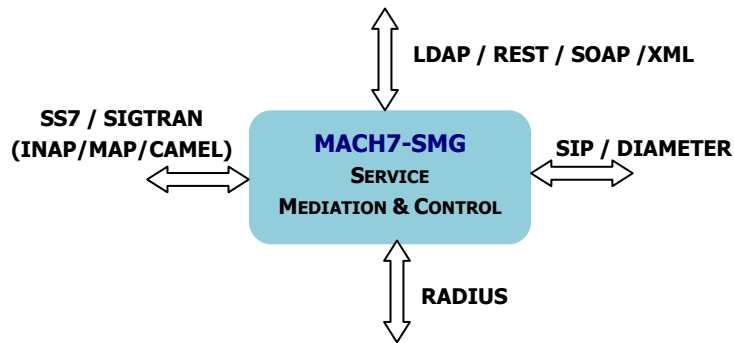
c) **Resource Convergence:**

- Extends usage of 2G/3G HLR with 4G LTE network elements, as well as IMS HSS can be used for 2G/3G networks as well. Similarly EIR nodes can continue providing equipment identification services in LTE / IMS networks as well.

➤ **INTERWORKING WITH RADIUS SIGNALING**

4G network compliant DIAMETER signaling, as a successor of RADIUS, for AAA (Authentication, Authorization and Accounting) services, need to integrate and continue providing services along with RADIUS based network equipments. MACH7-SMG enables deployment of 4G services like Credit Control, SIM-AKA Authentication etc. while inter-working with existing infrastructures providing services over RADIUS interface.

MACH7-SMG



➤ INTERWORKING WITH SERVICES LIKE LDAP

In addition to network signaling protocols, MACH7-SMG also enables interworking of DIAMETER or RADIUS signaling with other existing data access protocols like LDAP (Lightweight Directory Access Protocols) to access required information.

Interworking solution of MACH7-SMG provides significant benefits to both service providers and their subscribers by presenting a consistent and robust framework to deploy and support a rich set of advanced broadband multimedia services while ensuring Quality of Service (QoS). Subscribers enjoy the same user experience in both legacy and 4G networks, with the added benefit of high speed data access for video streaming or exchange of multimedia messaging.

Business Benefits

• INVESTMENT CONTROL

The MACH7-SMG reduces network investment allowing incremental investments in emerging technologies leveraging complete interworking with existing services. Platform offers a long list of interworking options to meet 4G deployment needs, at an exceptionally low price performance ratio.

• INVESTMENT PROTECTION

Provides protection to existing investments by enabling complete interoperability with existing Network Elements to complement the services of emerging networks.

• NETWORK INTEROPERABILITY

By supporting multiple standard based protocols and interfaces, the MACH7-SMG facilitates mediation to almost all existing signaling services with 4G network elements globally.

• NETWORK OPTIMIZATION

The MACH7-SMG has the capability to optimize valuable network resources using advanced features, catering to complex deployment requirements, like subscriber data access across networks, roaming service and others.

• NETWORK EVOLUTION

The MACH7-SMG allows simultaneous connectivity to different network technologies while mediating between existing and evolving services, and thus facilitates network migration from legacy to all IP-based 4G networks.

• SEAMLESS SERVICE MIGRATION, EXPANSION & UPGRADE

The MACH7-SMG enables service and data migration between networked application servers (AS), without any modifications to other CORE network elements.

MACH7-SMG

Platform Features

- **DISTRIBUTED PROCESSING**

MACH7-SMG solution incorporates an indigenous distributed high-available algorithm, allowing processing of traffic via all available signaling interfaces. It also load balances traffic across relevant protocol layers on multiple physical computing element in the system; software runs as "In-Service/Active" on these servers.

- **CARRIER GRADE RELIABILITY**

The platform ensures carrier-grade high-availability for telecom core network services, using redundant hardware and software components, guaranteeing no Single-Point-of-Failure.

- **PERFORMANCE & SCALABILITY**

teleSys' MACH7-SMG platform provides solutions for all performance needs. With carrier proven throughput, it supports performance requirements from low messages per second requirements to large network equipment with high transactions need.

The scalable architecture of MACH7-SMG enables users to minimize their initial deployment costs while supporting incremental growth as demand increases. With unprecedented throughput performance for each of its computing elements (CEs), the MACH7-SMG allows in-service upgrades of signaling capacity and throughput needs by adding new CE(s) and interfaces, for manageable and cost-effective growth.

- **EASY-TO-OPERATE OAM&P INTERFACES**

Offers a comprehensive Systems Management interface for operation and maintenance needs via: Web Browser-based GUI, CLI, and SNMP Interface to the network management system. Along with provisioning interfaces, it provides fault-management capability to monitor the status of every module, and interfaces to help in detection, isolation and solution to any error condition.

- **OPEN ARCHITECTURE**

Operating on carrier class operating systems, including Linux and Solaris, on wide-range of open computing systems from leading vendors, the MACH7-SMG incorporates industry-standard telecom protocols and relevant interfaces to allow ease in interoperability and operations to its users.

teleSys Software, Inc.

teleSys is the premier provider of advanced Telecommunications solutions for the next generation LTE Signaling Networks, providing open systems hardware and software.