



AgrandTech IMS Product Description

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1 Product description

1. 1 Product structure

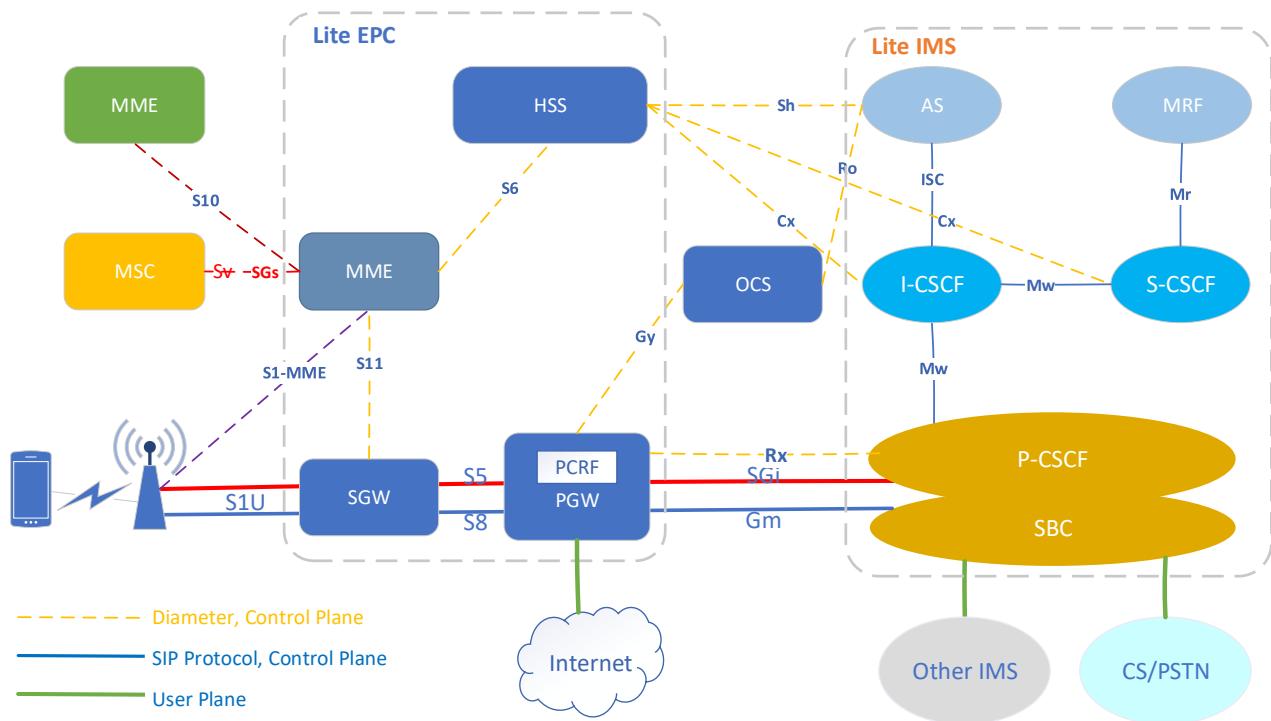


Figure 1 LTE/VoLTE IMS Network Structure

1. 2 Interfaces

- Rx interface between PCRF and P-CSCF for QoS control.
- ENUM interface between S-CSCF and ENUM-DNS server for Tel URI to SIP URI conversion.
- Sh interface between AS and HSS - used for IMS user profile management
- ISC interface between AS and CSCFs - standard IMS interfaces
- Gm interface between SBC/P-CSCF and UE (via EPC/PGW)
- Cx/Dx interface between CSCF and HSS
- SNMP interface towards Network Management System
- Ro interface between CSCFs and IN/OCS - used for pre-paid service charging

1. 3 Capacity

- 300K online subscribers
- 84,000 concurrent calls
- Up to 2M Busy Hour Call Attempts (BHCA)

1. 4 Scalability and reliability

- 99.999% availability
- Easily scale by adding more servers
- Geographic distributed VoIP platforms
- Straightforward failover and redundancy

1. 5 Operation & Management

- Configuration Management
- Performance Management
- Fault Management
- Web based management for single IMS.

2 Features specification

2.1 Features list

- Voice call with VoLTE or VoIP tech
- Video call with VoLTE or VoIP tech
- Interaction Call between LTE and PSTN or 2/3G CS through E1/T1 connections
- Interaction between IMS networks
- Instant Messaging
- Billing event generation for Prepaid or Postpaid for charging
- Support IPSec ESP for signaling transport
- Support AKAv1/AKAv2/Http Digest/SIP Digest authentication
- Supplementary service:
 - Calling line Identification Presentation
 - Calling Line Identification Restriction
 - Call Forwarding Unconditional
 - Call Forwarding on Mobile Subscriber Busy
 - Call Forwarding on No Reply
 - Call Forwarding on Mobile Subscriber Not Reachable
 - Call Wait
 - Call Hold
 - Operator Determined Barring
- 3rd party call
- Fax T.38 service
- Work with RCS to support Presence information
- Interaction with SMC&SMGW to support SMS service

2.2 S-CSCF functions

- To handle registration requests by acting as a registrar as defined in [RFC3261].
- To authenticate users by means of the IMS Authentication and Key Agreement (AKA) schema.

- To download user information and service profile from the HSS during registration or when handling a request to an unregistered user.
- To route mobile-terminating traffic to the P-CSCF and to route mobile originated traffic to the I-CSCF, the Breakout Gateway Control Function (BGCF) or the application server (AS).
- S-CSCF Enhanced iFC Handling
- To interact with RCS
- Sending of SIP OPTIONS for remote peer availability
- To translate an E.164 number to a SIP universal resource identifier (URI) using a domain name system (DNS) translation mechanism
- To send accounting-related information to the CCF for offline charging purposes and to the Online Charging System

2. 3 I-CSCF functions

- To allow detection of an INVITE request addressed to a special address, triggering the Cx LIR query to use the IMPU from the P-Asserted-Identity header.
- To modify the Request-URI type, e.g. from TEL URI or SIP URI to SIP URI with user=phone.
- First Point of Entry(From P-CSCF in home network or From P-CSCF in visited network)
- S-CSCF Assignment by selection based on assignment in HSS

2. 4 P-CSCF/SBC functions

- 3GPP R10 compliant Proxy-CSCF (P-CSCF) function
- Support for Gm, Mw, Rx, Rf/Ro interfaces
- Voice Quality Enhancements (VQE)
- Security support, IPsec for SIP, etc.
- Interworking between IMS and PSTN/CS
- Provides encoding format conversion and echo suppression, etc.
- Map SIP signaling to BICC or ISUP
- Convert ISUP / BICC signaling to SIP signaling