

MME 4G Release 12

Part of the Halys EPC suite of products, the Halys MME is 3GPP Rel12 compliant and is highly interoperable with other standard compliant equipments.

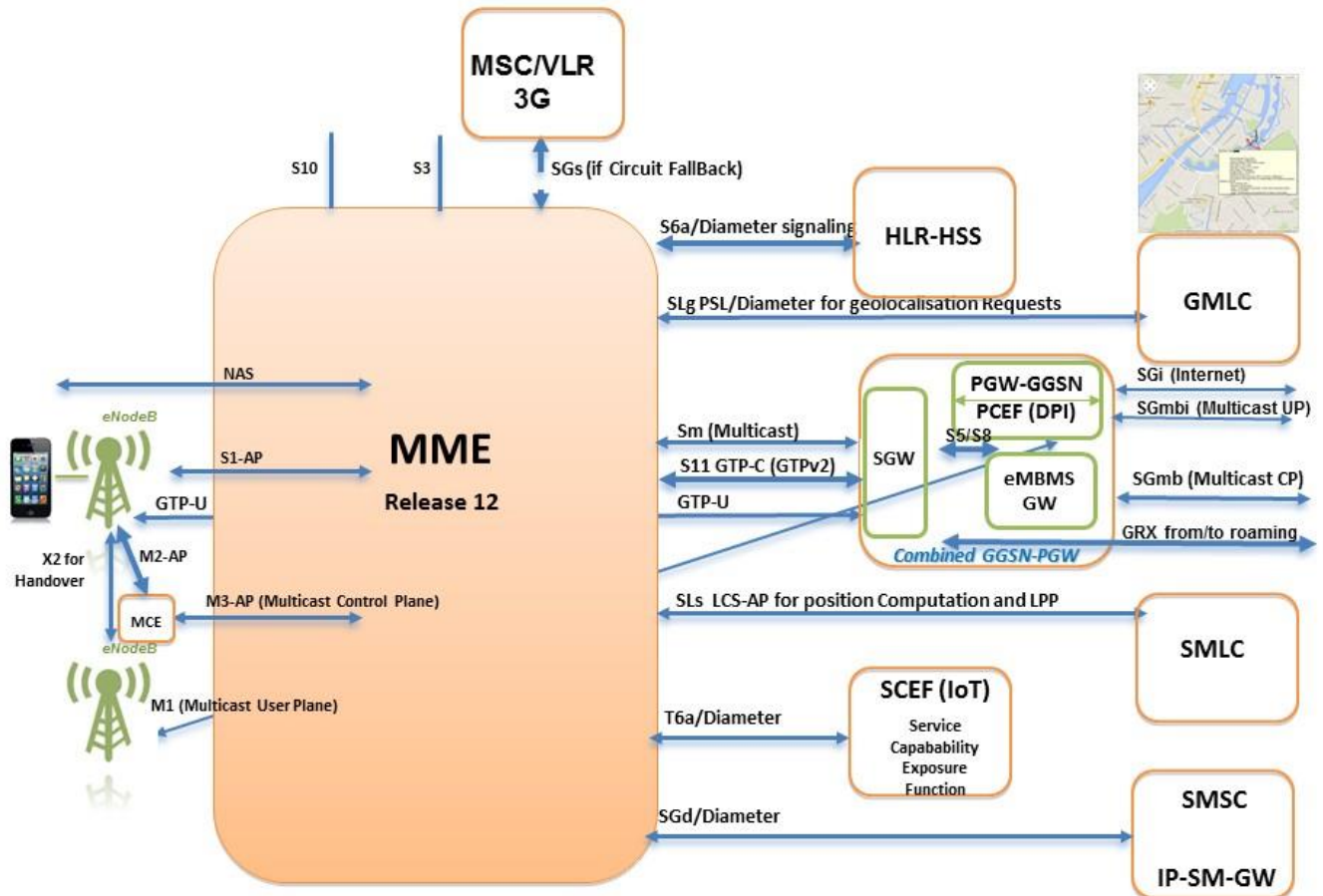


Fig 1 – MME 4G Release 12

1- Functionalities

The Halys MME is managing the subscribers and their 4G data sessions:

- Subscribers Access Security procedures – with the end-user authentication and the management of ciphering and integrity protection algorithms
- User Equipment to Network sessions management – with the setup of Packet Data Protocol context and the management of the Quality of Service. The handling of QoS is comprehensive and fully tested with several PCRF. It implements with the eNodeB the QoS set by the PGW from HSS or PCRF (QCi, Preemptivity). It allows the deployment of Preemptive Priority (Halys patented method) for the management of the sharing of the available bandwidth in the Radio Cells
- Idle terminal location management – with the tracking of the UEs to allow the contact in case of incoming sessions.

The Halys MME permits « Voice and SMS » services using legacy Circuit FallBack as well as LTE IP based with IMS. The Halys MME includes the proven stack from the Fraunhofer Institute that has been further industrialized and associated with the Halys root system. It is a highly available platform providing an active-active redundancy and load sharing enabling also smooth scalability. The MME can be deployed on general purpose Intel physical servers or in virtual environments.

The below detailed Attach procedure Call flow shows where the MME is concerned with the interface with the radio part e-UTRAN, the SGW, and the HLR-HSS. As well as an associated MSC/VLR 3G if Circuit FallBack is used to provide the voice/SMS services. IMS can be used instead.

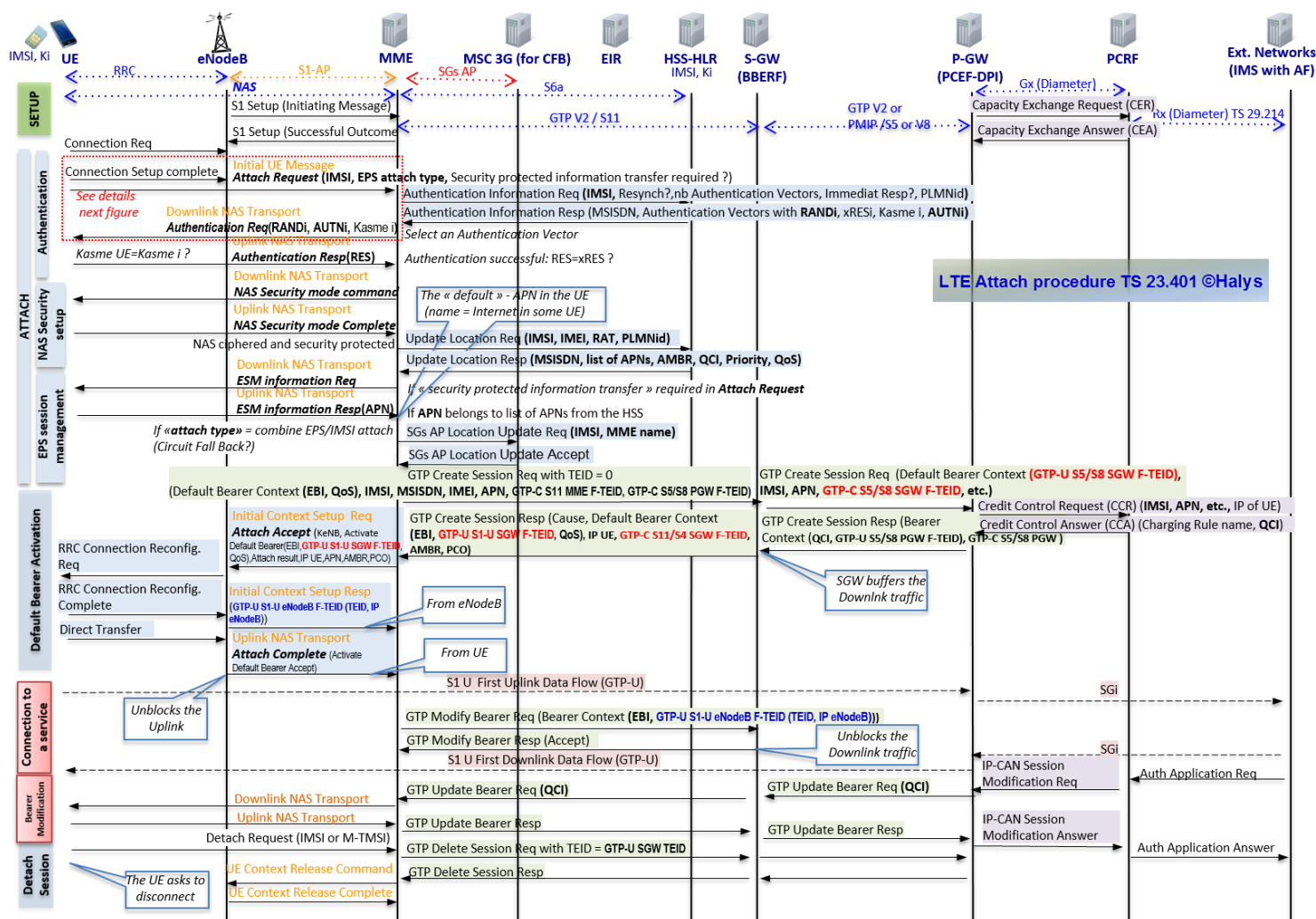


Fig 2 – Attach procedure Call flow

2- Handover and CFB, SMS, LCS and Multicast

Circuit Fall Back is supported by the SGs interface. Handover on other MME or SGSN provided by the S10 or S3 interface. The MME supports location based Diameter and SMS 4G with the SGd interface. It provides the full Multicast support with the Sm/GTPv2 interface.

3- Standards compliance for interoperability

The Halys product is 3GPP Rel12 standard based and compliant in particular with the following standards:

- MME diameter interfaces - 3gpp TS 29.272
- MME diameter based protocols to support SMS - 3gpp TS 29.338
- Location Services MME and E-SMLC SLs interface - 3gpp TS 29.171
- Location Services GMLC and MME SLg interface – 3gpp TS 29.172
- GTPv2 with 3gpp TS 29.274 for GTP-C and with TS 29.281 for GTP-U
- MME VLR SGs interface – 3gpp TS 29.118
- NAS - 3gpp TS 24.301
- LTE QCI – 3gpp TS 23.207
- inter-system mobility between LTE and 2G/3G - 3gpp TS 24.008

Technical Data:

Linux OS on Intel Servers or Virtual Machines

Licensing: Pay-as-you-grow capacity license based on the throughput