

iMDEG

Intelligent Mobile Data Exchange Gateway





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providing explicit offering of capabilities starting with specialized solutions,
customized software applications, professional and project management services
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PERTSOL IMDEG

Introduction

PertSol's iMDEG is a next generation Packet Data Gateway that provides packet data services for 2G, 3G, 4G and other radio technologies, which is built from the ground up and is optimized for Virtualized Environments. It is an IP based core network infrastructure that enables IP-based communications and services over wireless. PertSol iMDEG can perform multiple network functions in a combination of multiple elements, depending upon the access technology, like:

- ✓ **Packet Data Network Gateway (PDN-GW)**
- ✓ **Policy and Charging Rules Function (PCRF)**
- ✓ **Mobility Management Entity (MME)**
- ✓ **Gateway GPRS Support Node (GGSN)**
- ✓ **Mobility Management Entity (MME)**

PertSol's iMDEG EPC is inter operable solution for most of the radio vendor that provide great compatibility based on open standard architecture framework and integration. iMDEG can be deployed on-premises and/or on private cloud depending on the business requirements: TSP, Private LTE, and core network evolution from EPC to 5G.

The deployment flexibility simplifies operator's network design by consolidating multiple network functions thus resulting in better operational efficiency. Moreover, PertSol iMDEG supports Network Function Virtualization (NFV) and cloud-based architectures to further improve cost and operational efficiencies.

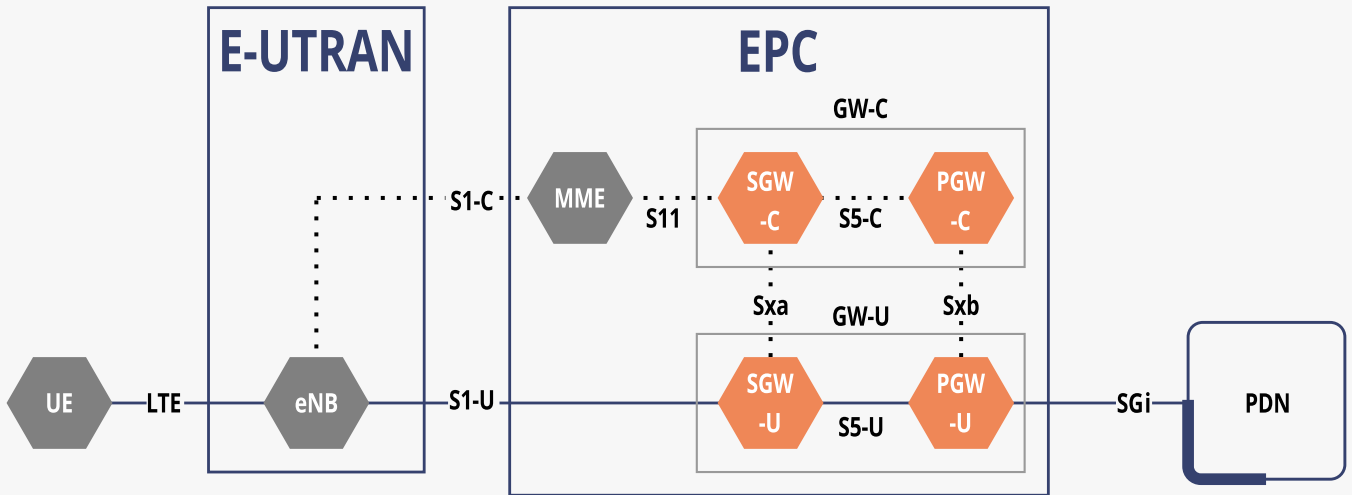


Fig: CUPS Architecture

NETWORK FUNCTIONALITIES

Introduction

GGSN/P-GW-Functionalities

- ✓ **Support For Enhanced**
 - Data & Content charging & filtering
 - Network based traffic optimization,
 - IP application detection and optimization,

MME-Functionalities

- ✓ **Mobility management functions**
 - State model
 - Detach/Attach/Handover
 - TAU

Stateful firewall & NAT translation

Lawful Intercept

Acts as an interface, contains routing information & a router to external networks

Tunnel packets through the IP based internal backbone

✓ **Collects charging data**

Packet filter for incoming traffic

Packet inspection

Gateway with online charging system

Gateway with policy control server

✓ **Session Management**

PDP context activation

PDP context modification

Network Initiated PDP context deactivation

Tracking area management & Update

Access Restriction function

Multi-PDN connection

Paging and service request

ODB function

Purge UE

✓ **Session Management**

EPS bearer modification

EPS bearer activation/deactivation

UE AMBR management

✓ **Selection Function**

PDN GW

Serving GW

MME selection function

SGSN selection function

✓ **Network management function**

✓ **Packet filter for incoming traffic**

PCRF-Functionalities

✓ **Subscriber Profile Policy**

✓ **Network Policy**

✓ **Location Policy**

✓ **Volume and Quota Policy**

✓ **Time Policy**

✓ **Device & Content Policy**

S-GW-Functionalities

✓ **S-GW Serving Gateway routes & forward the user data packets.**

✓ **Responsible for inter-eNB handovers in the U-plane & provides mobility between LTE & other types of networks, such as between 2G/3G & P-GW.**

✓ **Mobility Management**

Data & Content charging & filtering

- ✓ The DL data from the UEs in idle state is terminated at the SGW, and arrival of DL data triggers paging for the UE.
- ✓ SGW keeps context information such as parameters of the IP bearer and routing information and stores the UE contexts when paging happens.
- ✓ Responsible for replicating user traffic for lawful interception
- ✓ Collecting charging data
- ✓ Controls subscribers in its service area (SLR), Overload Control
- ✓ Session Management
PDP context activation/modification/cancellation

- Location Update for CS
- Attach / Detach
- P-TMSI allocation / reallocation
- Authentication

Interface Support

- ✓ Rx, Gi, Gx, Gxc, Gy, Gn, Gb, Gd, Gp, Gr, Gs, Gf,
- ✓ S1-U, S11, S5/S8, S4, S12
- ✓ Sgi, S5, S2a, S2b, Sxb
- ✓ S1-MME, S6a, S13, S11, S10, S3, SGS

KEY FEATURES

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