

IMS core for Private LTE



Cirpack IMS use cases

Cirpack IMS is the perfect voice solution for :

4G private network

A 4G private network is enriched by Cirpack IMS to support VoLTE (Voice over LTE), ViLTE (Video over LTE) defined respectively in GSMA IR.92 and IR.94.

Full IMS MCPTT service

Mission Critical Push to Talk (MCPTT) standards require an IMS core to provide end user authentication, access control and service access. Cirpack IMS implements these functions, enriched with operational features required also in public network deployments, such as subscription management and service monitoring.

Hybrid case: integration of private with public mobile networks

The Cirpack IMS core network also supports MVNO configuration. As it implements MVNO service with either SIP forced routing, LBO or S8HR roaming, a Cirpack IMS solution can provide exactly the same telephony service under both private and public coverage, with only one provisioning.

Competitive advantages

- complete and modular SIP solution from one vendor integrating all components: SBC, IMS core and MMTel application server with its selfcare application
- available in virtualized environment with low footprint
- support telecom regulatory services : emergency calls, regulated interconnection in all SIP variants, number portability and advanced routing
- easy to use admin and provisioning web application, APIs and monitoring tools

Cirpack IMS for MCPTT foundation and complete private telephony solution

Based on a versatile implementation of industry standards, Cirpack IMS solution applies to Private LTE deployments, as well as to public fixed networks and public mobile networks including Mobile Virtual Networks.

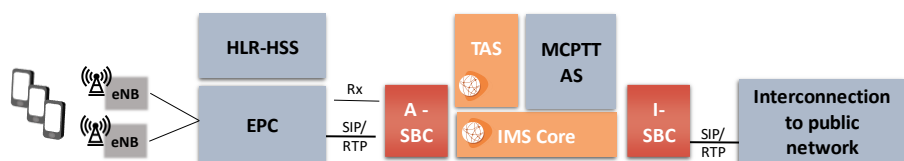
With the Cirpack IMS solution, mobile networks can benefit from a lightweight, carrier grade, easy to use, and reliable IMS infrastructure. It provides a full telephony solution, including the foundation of the 3GPP Mission Critical Push to Talk (MCPTT) architecture according to the latest industry standards.

Cirpack IMS core Architecture

Cirpack IMS is a complete virtualized SIP solution, based on:

- the Cirpack virtual SBC, composed of P-CSCF, E-CSCF, BGCF and IBCF functions, as defined by IMS standardization
- the Cirpack vIMS core, composed of I-CSCF and S-CSCF, providing rendezvous and service control functions,
- and the Cirpack Telephony Application Server providing a 3GPP multimedia telephony (MMTel) implementation, coupled with monitoring, provisioning and selfcare web applications.

This integrated SIP solution includes end user authentication, profile and service management, call control, modern multimedia telephony services such as VoLTE and ViLTE services, call routing, network interconnection, and IMS access to the MCPTT application servers.



Key features

Access, interconnection and Security features

- SIP, interconnection SIP-I, SIP-T
- IMS registration control and REGISTER frequency manipulation
- Topology hiding with dynamic pinholing
- SIP DDoS protection : common traffic limitation, and individual user traffic limitation
- Deep SIP packet inspection and SIP policy enforcement
- IP white list per user
- Phone number/SIP address normalization/manipulation
- SIP header manipulation
- Encryption : TLS and sRTP
- Emergency calls with fixed/preconfigured localization (IETF PIDF-LO support from RFC 5139).
- Emergency calls with mobile localization
- Number portability routing
- QoS management/interconnection to PCRF, Rx interface to EPC
- SIPRec
- Support of non-SIP terminals : V5.2, MGCP with AGCF

Core network features

- SIP call handling
 - ✓ SIP forking
 - ✓ Routing on Tel-URI and SIP-URI, enum interface
 - ✓ User and User Service profile management
 - ✓ MVNO with SIP forced routing, LBO and S8HR
- IMS architecture
 - ✓ Service Orchestration based on Initial Filter Criteria
 - ✓ 3rd party registration for advanced AS scenario
 - ✓ SMS over SIP support
 - ✓ Subscriber suspending
 - ✓ SCC AS and ATCF/ATGW for 4G to 3G and VoWifi handovers
- Multimedia telephony services (MMTel) with embedded MRF
 - ✓ Hunting group
 - ✓ Call forwardings
 - ✓ Restriction (call barrings)
 - ✓ Malicious call identification
 - ✓ 3PTY call
- PBX trunking, including SIP connect2.0 support

System Operation and management

- Offline charging (CDR and Rf) and Online charging (Ro/Camel)
- Web based GUI for whole solution configuration and monitoring
- REST API for provisioning
- REST based user registration/user agent supervision
- Real time fault and performance management, real time trace tool
- KPI generation and alarms
- SNMP traps
- Selfcare application allowing end-users to configure their services
- Platform call tracing and metrology application server



About Cirpack

Cirpack is a leading software company that provides scalable and multi-service IP Core Network solutions for the new generation of service providers.

The Cirpack product line is based upon highly innovative and state of the art components:

- Softswitches and gateways for NGN deployments,
- SBC for network or service operators SIP security, and
- IMS for fixed and mobile network multimedia communications.

Renowned for robustness, scalability and reliability of its solutions, Cirpack is the ideal partner, offering agility and responsiveness to support its customers in their growth strategies.

Cirpack offices

Southern Europe, MEA (France)

26 rue d'Oradour-sur-Glane – 75015 Paris
+33 (1) 83 75 38 00

Northern Europe (Germany)

Karl-Wiechert-Allee 76A – D-30625 Hannover
+49 (0)511 2703 2752

America (Mexico)

Guadalajara 54, Col. Roma
CP 06700, Del. Cuauhtemoc – México D.F.
+52 (55) 5047 7609

Asia (Vietnam)

TMA Tower, Quang Trung, Software City
District 12 – Ho Chi Minh City
+84 (0)1 26 52 39