

Cirpack IMS for Mobile Private Networks

Cirpack IMS use cases

Cirpack IMS is the perfect voice solution for :

4G and 5G private mobile network

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 is deployed by MVNO and MNO for traditional telephony service. Cirpack IMS solution can provide exactly the same telephony service under both private and public coverage.

Competitive advantages

- complete and modular SIP solution from one vendor integrating: SBC, IMS core and MultiMedia Telephony application server
- 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 integrated monitoring tools



Cirpack IMS for private network telephony

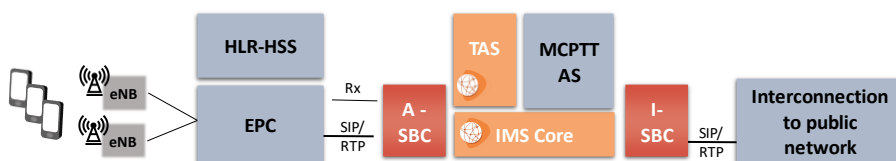
Based on a versatile implementation of industry standards from 3GPP, GSMA and ETSI, Cirpack IMS solution applies to private mobile networks, as well as to public fixed networks and public mobile networks. With the Cirpack IMS solution, mobile networks can benefit from a lightweight, carrier grade, easy to use, and reliable IMS infrastructure. Cirpack IMS provides a full telephony solution, including the foundation of the 3GPP Mission Critical Push to Talk (MCPTT) architecture.

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, SIP-I, SIP-T, SIP-R
- 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

Core network features

- SIP call handling
 - ✓ SIP forking
 - ✓ Routing on Tel-URI and SIP-URI, enum interface
 - ✓ User and User Service profile management
 - ✓ MVNO configuration through SIP forced routing, LBO and S8HR roaming architectures
- 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
- Selfcare application allowing end-users to configure their services
- Real time fault and performance management, real time trace tool
- KPI generation and alarms
- SNMP traps
- 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.

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