

CIRPACK VoLTE

Competitive advantages

- Complete and modular solution from one unique editor, gathering an SBC, an IMS core and IMS application servers developed on the same platform.
- Available as software running in virtualized environment or in the Cirpack Cloud.
- Scalable from 500 to millions of subscribers
- Fully compliant with telecom regulatory services: lawful interception, emergency calls, regulated interconnection, number portability.

Use cases

Public VoLTE/ViLTE/VoWifi

Cirpack IMS supports VoLTE (Voice over LTE), ViLTE (Video over LTE) and VoWifi (Voice over Wifi) defined respectively in GSMA IR.92, IR.94 and IR.51. It also provides IMS centralization needed for IMS based call control of users under 2G/3G coverage.

MVNO

The Cirpack IMS solution provides the telephony service infrastructure for MVNO/MVNE. For VoLTE end users, MVNO solutions can be deployed in compliance with either S8HR or LBO.

Private LTE/4G Mission Critical

Thanks to its density and reliability, the Cirpack IMS is suitable for private LTE deployments implementing IR.92 telephony, and provides the underlying IMS core for Mission Critical Push to Talk applications.

Fixed network services

Cirpack IMS can also provide a fixed telephony service, allowing using the same infrastructure to operate fixed mobile services.

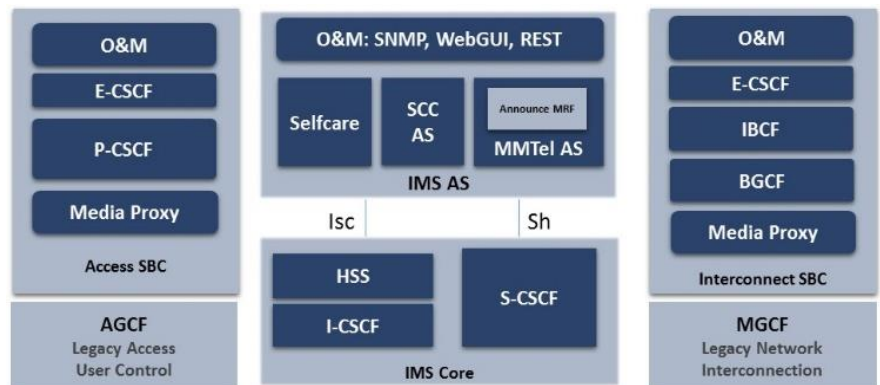
The Cirpack IMS is a highly scalable core network solution that enables standard compliant deployments of Voice over LTE.

Based on a versatile implementation of industry standards, the Cirpack IMS applies to mobile networks, MVNO and 4G/5G private networks. With the Cirpack IMS solution, mobile networks can benefit from a lightweight, carrier grade, easy to use and reliable telephony infrastructure, allowing modern services such as HD voice, VoWifi, video and rich messaging.

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

- the Cirpack SBC, composed of P-CSCF, ATCF, ATGW, E-CSCF, BGCF and IBCF functions, as defined by 3GPP standardization
- the Cirpack IMS core, composed of I-CSCF, S-CSCF, and the optional UPSF (user Profile Server Function) replacing HLR/HSS for fixed users,
- the Cirpack Application Servers for Multimedia telephony supplementary services, service centralization and voice call continuity
- Provisioning and administration web server.

This homogeneous solution provides the whole SIP chain, starting from end user authentication, authorization and registration, continuing with profile and service management, call control, modern multimedia telephony services, and finishing with call routing and interconnection.



Cirpack IMS architecture

Cirpack IMS is compliant with 3GPP standards IR.92, IR.51, IR.64 to provide telephony over LTE and Wifi networks, as well as over circuit switched mobile networks controlled by the IMS service logic. It also handles efficiently 4G to 2G/3G or Wifi handovers and provide a solution to evolve smoothly towards Voice over 5G.

Fully software based, the Cirpack IMS solution is deployed as a virtualized application and can scale easily according to operators growth: the same solution can be deployed for 500 end user in case of private LTE deployment, and can also reach several millions of subscribers in public networks.

Key features

Access, interconnection and Security features

- SIP, SIP-I, SIP-T support
- IMS registration control
- 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 or mobile localization (IETF PIDF-LO support from RFC 5139).
- Priority subscriber regulation
- Number portability routing
- QoS management/interconnection to PCRF, Rx interface
- Support of non-SIP terminals: MGCP AGCF and 2G/3G MVNO

Core network features

- SIP call handling
 - ✓ SIP forking
 - ✓ Routing on Tel-URI and SIP-URI, enum interface
 - ✓ User and User Service profile management
- IMS architecture
 - ✓ Service Orchestration based on Initial Filter Criteria
 - ✓ 3rd party registration for advanced AS scenario
 - ✓ ATCF/ATGW and SCCAS for 4G/3G/VoWifi handovers
 - ✓ IMS Centralization Service
 - ✓ Support for Rich Communications environment
- Multimedia telephony services (MMTel)
 - ✓ Embedded MMTel database or Sh interface to HSS repository data storage of MMTel subscriptions
 - ✓ Call forwardings
 - ✓ Call restrictions and call barrings
 - ✓ embedded MRF for announces and conference calls
 - ✓ Hunting group
 - ✓ Malicious call identification
 - ✓ Subscriber suspending
- PBX trunking, including SIP connect2.0 support

System Operation and management

- Offline charging (CDR and Rf) and online charging (Ro)
- Web based GUI for solution configuration and monitoring
- REST API for provisioning and user registration control
- Real time fault and performance management, real time trace tool and KPI generation
- SNMP traps

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 lines are based on highly innovative technological solutions:

- 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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