voLTEinabox
voWiFiInabox

Simple Plug & Play **VoLTE and VoWiFi** solution for any carrier

The rise of VoLTE and VoWiFi

VoLTE and VoWifi have been long promised by the Telecom industry and vendors, but it's only recently that their need has become more urgent than ever. Now that some 3G networks are seeing their sunset, the number of VoLTE capable devices has grown significantly and consumers have become familiar with data-only plans, VoLTE is developing rapidly as the only real option of keeping voice services available for customers as we go to 4G or 5G only networks.

While in 2017 less than 10% of all global mobile network subscribers were VoLTE-based, it is forecasted that due to the increasing decommissioning of 3G networks more than 80% of all phone calls will be VoLTE-based by 2025. According to Allied Market Research, Voice over Long Term Evolution (VoLTE) market is expected to garner $34.8 billion by 2022, registering CAGR of 50.1% during the forecast period 2016 - 2022.

However, implementing a VoLTE/VoWIFi solution is not a simple task as both MNOs and MVNOs have to put together all elements needed as they are provided by separated vendors. This results in long and complicated projects and delayed go-to-market. Besides, the need for fallback to 3G generates complexities in the operational models.

To solve these shortfalls, Summa Networks developed an integrated, fully virtualized, and cost-effective VoLTE / VoWiFi solution: voLTEinabox and voWiFiInabox.

voLTEinabox & voWiFiInabox: VoLTE and VoWiFi in a box

They are a software-only solution that include an IMS core and a full SDM (Subscribers, Policy and Identity management) which features SWx, SWm, S6a, S6b, STa, SWa and other protocols needed to allow trusted and untrusted access to a carrier network.

They ensure a smooth transition to VoLTE and VoWiFi, as they take care of the complexity of integrating the main elements of each solution, and reduces the implementation time. This ensures a faster go-to-market and a smooth transition from circuit switched voice services to IP only voice including the 4G-3G hand-over and cross-domain capabilities that are integral part of the solution.

These solutions sit in the core of a carrier network and, as a general scenario, integrates with:

- **MME / PGW / SGW:** to receive the requests for calls from the devices in the network.
- **OCS:** for charging purposes.
- **OSS/BSS:** an API for Subscribers provisioning and management is available.
- Optionally, and depending on customer network architecture it might integrate as well with an SBC or other elements.

Unique benefits:

Flexible deployment model: our solutions can be deployed in bare metal, as a fully virtualized solution and as lightweight containers (Docker Swarm, Kubernetes) to run on any public or private cloud (e.g. Oracle, Amazon, RedHat, etc.) as well as on any server environment. This enables the carrier to unbundle software and hardware / Cloud infrastructure.

Client-focused: our agile product development and deployment process enables us to incorporate new client requests quickly - ca. 80% less time compared to legacy suppliers - and co-develop new solutions.

Quality: Our software components are carrier-grade to guarantee the highest possible uptime.

Standard-based and flexible: our solutions are 100% standard-compliant based on 3GPP, SIP, and has been integrated with the hardware and software of all legacy suppliers. This provides the highest possible flexibility to integrate both with legacy architecture and innovative (open-source) applications.

Cost-effective and flexible commercial model: we offer the most competitive commercial VoLTE-solution in the industry.

Scalable: We can scale up our clusters from a few thousand to millions of subscribers.

Technical details

Our solutions are based on the following components:

Multi-generational HSS/HLR: fully-featured converged HSS and HLR on top of a unified subscriber database.

- LTE HSS, IMS HSS, HLR and UDM/UDR in a single software suite, allowing seamless interworking between 3G, 4G, 4.5G and 5G.
- 3GPP release 16.
- Subscriber Location Function (SLF).
- Authentication Center (AuC).
- Equipment Identity Register (EIR).
- AAA server for diameter protocols.
- Complete offering for GSM, UMTS, LTE, IMS, Wi-Fi and M2M networks.
- Support for multi-SIM, multi-IMSI, multi-MSISDN, multi HPLMN/country, multi-profile and virtual routing instances.

IMS core and application servers: fully-fledged IMS core (P-CSCF, I-CSCF, S-CSCF, E-CSCF) plus all relevant application servers.

- **IP-SM-GW** - provides SMS services for VoLTE and legacy devices; allows interworking towards other networks based on SMPP.
- **MMTel/ TAS** - provides rich supplementary services, e.g. call-forwarding and call barring; acts as a conference-factory for VoLTE handsets.
- **MRF** - provides network announcements and conferencing; implemented according to RFC4240; set up as combined MRF-controller (MRFC) and -processor (MRFP).
- **SR-VCC** - enables seamless early or mid-call handover from 4G/5G to 2G/3G; acts as a media-anchor for voice calls.
- **LI** - provides X1 to X3 interfaces towards the mediation function.
- **PCRF light:** Light PCRF for VoLTE, VoWiFi funcionality. Advanced PCRF: Rules Engine, Quota management. PCF for 5G.
- **ePDG light*:** the ePDG allows untrusted access to the IMS as required for Voice-over-WiFi (VoWiFi); standalone solution independent of the EPC.

  * From partner

voLTEinabox
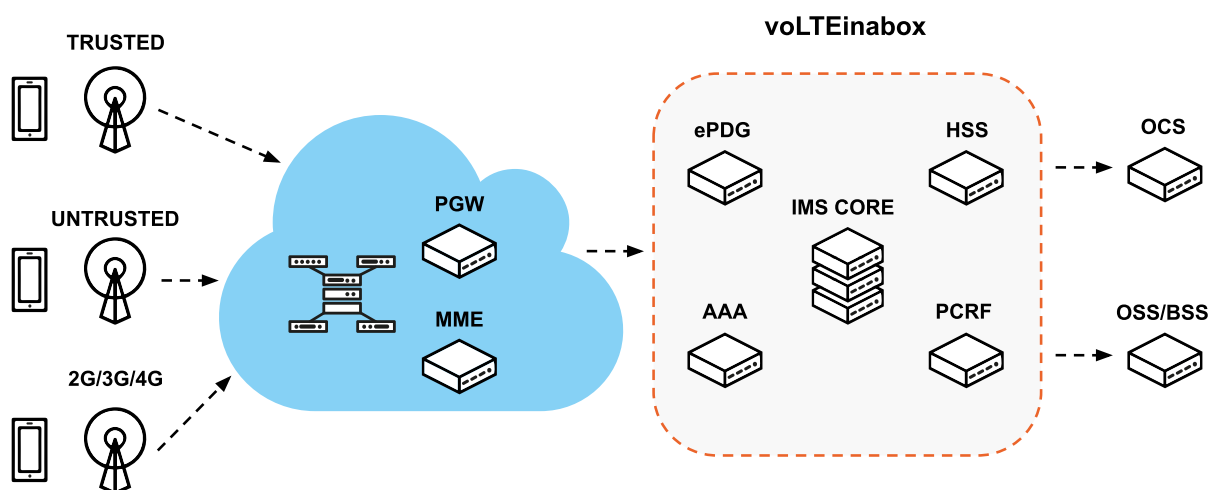
Sustainability statement

Summa Networks is committed to sustainability from the ground up, it is an energy-efficient company by design.

Telecom industry represents 3% of energy consumption and carbon footprint.
Within that, while the Radio Access Network (RAN) significantly contributes to global energy usage, accounting for approximately 73% of energy consumption in telecom networks, Mobile Core, where Summa Networks operates with its software, represents only 0.06% of the energy consumption within the telecom sector.

Nevertheless, when it comes to our energy-efficient software production, we can highlight how we design and develop our solutions in ways that optimise hardware and energy resource usage. This involves implementing efficient algorithms, optimising code, and responsibly utilising system resources, all of which reduce the burden on hardware equipment and minimise energy consumption during the execution of our applications. We could also emphasise that our software development philosophy includes a continuous commitment to improving and innovating in energy efficiency.

Moreover, we have a clear compromise with the sustainability principles:

- We focus on producing software that minimises resource consumption, including CPU, memory, and disk usage, ensuring efficient operations while reducing environmental impact.

- Our commitment to sustainability extends to our operational practices. With no physical office, we prioritise remote work, enabling our employees to work from home using personal PCs. This not only reduces our carbon footprint but also promotes a healthier work-life balance. By embracing remote work, we minimise commuting emissions, alleviating traffic congestion and air pollution in our communities.

- We use cloud services for our processes, taking advantage of their green policies on our behalf.

Furthermore, Summa Networks partners with responsible suppliers who share our commitment to ethical and environmental standards. Our internal servers are located in data centres with green certification, and all our code resides in secure cloud systems where we rely on green initiatives by Hyperscalers. This ensures that our operations align with sustainable practices and contribute to a more sustainable future for all.

In summary, Summa Networks is dedicated to sustainability in every aspect of our operations. From our minimal energy consumption as a software producer to our remote work policies and responsible supplier selection, sustainability is woven into the fabric of our company. We believe that by prioritising sustainability, we can make a meaningful contribution to a greener, more sustainable future.

About Summa Networks

Summa Networks is the market specialist in Subscribers, Policy, Identity and Connectivity Management. Our mission is to help carriers of all sizes and types to navigate their long and complex transition to 5G with a unique suite of Control Plane products that cover 2G, 3G, 4G, 5G NSA and 5G SA in a single system. Summa Networks facilitates a swift transition to 5G while ensuring the business-as-usual helping carriers to control their TCO with a future-proof technological evolution as a main principle. Interworking is key for the years to come and Summa Networks is a well recognized player in converged control plane technology.

Our trusted SDM solution, including an HLR, HSS for LTE, HSS for IMS, EIR, ENUM, AAA, PCRF and 5G NSA and as well UDR, UDM, AUSF, PCF provided in a single piece of software, has a numerous set of features like Multi-IMSI (for 4G-5G), Lawful interception (HSM) and the ability to be deployed in any kind of environment: bare metal, VMs, Kubernetes or a hybrid environment.

Our solution is suitable for MNOs, MVNOs, MVNE/As as well as segments like IoT, Private Networks and Satellite Communications.

With us, your network is ready to evolve into 5G.

voWiFiInabox
vowifiinabox.com

voLTEinabox
volteinabox.com