

 SummaNetworks

# IMS CORE

## IP Multimedia Subsystem

Pioneering Smart Connectivity  
for a Connected World

## IMS (IP Multimedia Subsystem): A Crucial Element in Modern Telecommunications

The IMS core is essential for providing a standardized, scalable, and interoperable platform for delivering multimedia services over IP networks. It revolutionizes communication by enabling voice, video, and messaging services over IP, ensuring interoperability, convergence of services, and efficient session control. IMS contributes to the evolution of telecommunications networks, accommodating growing demand, ensuring quality, and enhancing security through authentication and encryption. Its role is pivotal in transitioning networks towards efficient, all-IP infrastructures for multimedia service delivery.

## Summa Networks' Full IMS Core: Revolutionizing Telecommunications

Summa Networks provides a Full IMS Core to offer a diverse range of multimedia services, ensuring an enhanced user experience and positioning for future industry advancements. Our advanced cloud-native IMS core facilitates seamless global connectivity through cutting-edge voice, video, and messaging tools on cellular networks and Wi-Fi.

## What are the key components?

### 1. Call Session Control Function (CSCF):

Proxy CSCF (P-CSCF): Initiates sessions and forwards requests to the appropriate next-hop CSCF.

### 2. Interrogating CSCF (I-CSCF):

Routes session initiation requests based on user location to the Serving CSCF (S-CSCF).

### 3. Serving CSCF (S-CSCF):

Manages call sessions, including control and service execution based on user profiles.

### 4. Home Subscriber Server (HSS):

Centralized database storing subscriber information for authentication and authorization within the IMS network.

### 5. Policy and Charging Rules Function (PCRF):

Manages QoS, charging, and resource allocation policies to ensure appropriate service levels for multimedia services.

### 6. ENUM/DNS:

Embedded within the IMS Core, it provides essential information for S-CSCF and I-CSCF by supplying SIP URIs corresponding to assigned E.164 numbers. It resolves IP addresses for subsequent hop addresses, delivering query services.

## Key Features:

### Standardized Architecture:

Enables seamless service delivery across diverse networks and devices.

### Security:

Essential features safeguard communication sessions and user data.

### Quality of Service (QoS):

Prioritizes multimedia traffic for superior user experience.

### Session Control:

Streamlines call setup and multimedia sessions for an optimal user experience.

### Scalability:

Suited for networks of all sizes, from small to large-scale telecommunications.

### Interconnection:

Facilitates seamless multimedia exchange between service providers and networks.

### Service and Network Independence:

Works seamlessly across fixed, mobile, and IP-based networks.

### Rich Communication Services (RCS):

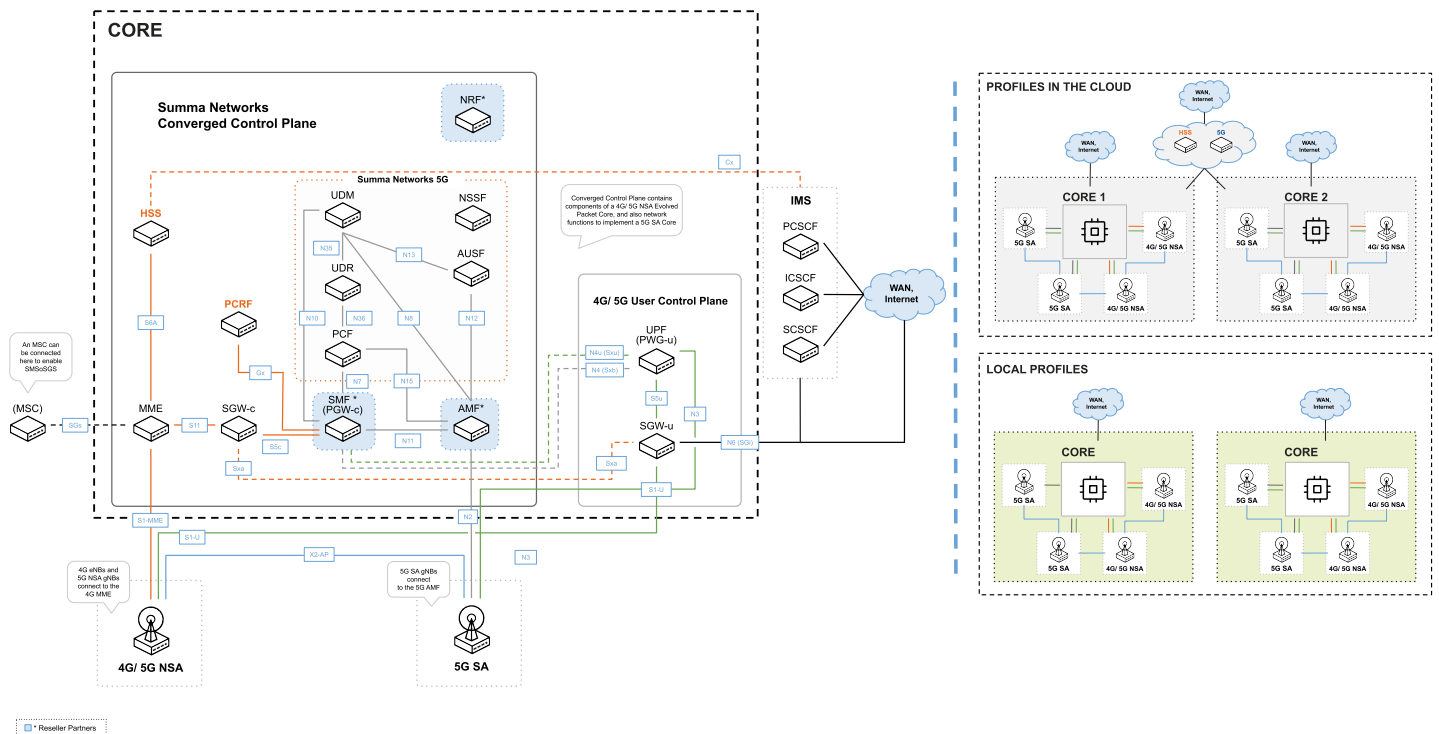
Supports enhanced messaging services like group chats and file sharing.

### Evolution to 4G and 5G:

Crucial for transitioning to advanced networks, enabling services like VoLTE and multimedia communication.

These components collaborate to enable multimedia service delivery, ensuring session control, user authentication, efficient resource management, and interoperability. Deployment and configuration may vary based on network architecture and requirements.

Summa Networks' Full IMS Core revolutionizes telecommunications, offering a diverse range of multimedia services for an enhanced user experience and future industry advancements. The cloud-native IMS core facilitates global connectivity through voice, video, and messaging tools on cellular networks.



## Uses cases:

### 1. VoLTE (Voice over LTE):

Provides high-quality voice calls over LTE networks.

### 2. ViLTE (Video over LTE):

Enables high-quality video calls over LTE networks.

### 3. Rich Communication Services (RCS):

Offers advanced messaging services with features like group chat and file sharing.

### 4. Fixed-Mobile Convergence (FMC):

Integrates fixed-line and mobile services for a unified communication experience.

### 5. Unified Communications (UC):

Integrates voice, video, messaging, and conferencing into a unified platform.

### 6. VoWiFi (Voice over Wi-Fi):

Allows voice calls over Wi-Fi networks, enhancing coverage.

### 7. Multi-Device Support:

Enables seamless access to communication services across various devices.

### 8. Emergency Services:

Enhances emergency communication with multimedia capabilities.



## 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.



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