A NEW PERSPECTIVE ON
MULTIMEDIA
COMMUNICATIONS

5G PRODUCTS

i2i IMS & TAS (VoLTE/VoNR)

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i2i Systems

innovation to integration

About i2i Systems

i2i Systems is an international information technology company that specializes in developing innovative ideas and solutions. With its highly experienced team in the Telecommunications industry it offers a diverse variety of products in Telco OSS/BSS domains, as well as 5G network solutions.

i2i Systems delivers Next Generation Converged Revenue Management solutions enabling CSPs to unlock new business models, mitigate competition, reduce costs, and quickly monetize new use cases. This is being achieved through systems that are fully convergent, cloud-native, API-first, interoperable, low-code / no- code and modular. The offerings are highly scalable and support subscriber bases ranging from tens of thousands to tens of millions, harmoniously. i2i Systems improves its experience and skills by adapting new technologies and investing in research and development to provide best quality, efficient and visionary products to its customers. In accordance with its disruptive vision, i2i Systems further invests in 5G core-network, offering an end-to-end integrated cloud-based BSS and Network solution for optimizing and converging Service Providers IT and Network landscape thus increasing efficiency and enabling new revenue streams.
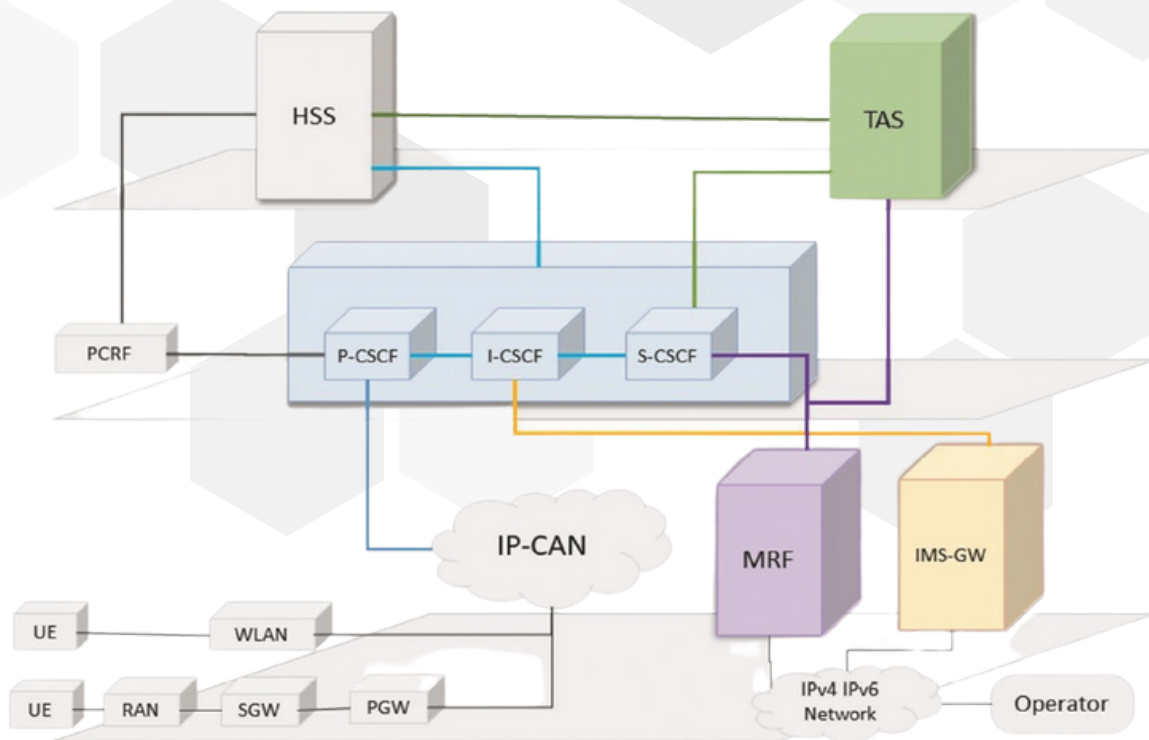
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i2i IMS & TAS (VoLTE/VoNR)

DELIVERING MULTIMEDIA COMMUNICATIONS SERVICES OVER IP NETWORKS

i2i Systems is expanding its current Core Network product portfolio with the development of IMS & TAS with the cutting edge technologies and frameworks. i2i IMS & TAS are developed to provide broad range of services particularly audio and video communication services over packet switched networks based on VoIP/VoLTE/VoNR technologies. i2i IMS & TAS is fully compliant with 3GPP standards and specifications.

One of the many challenges for a telecom operator is to operate their network at lowest cost while keeping it accessible for new revenue sources and the IMS (IP Multimedia Subsystem) helps to overcome this challenge. IMS is a standards-based architectural framework for delivering multimedia communications services such as voice, video and text messaging over IP networks. IMS benefits organizations by providing lower costs, faster time to market, support of multi-vendors, standardized third-party interfaces, new, innovative multimedia services and others.
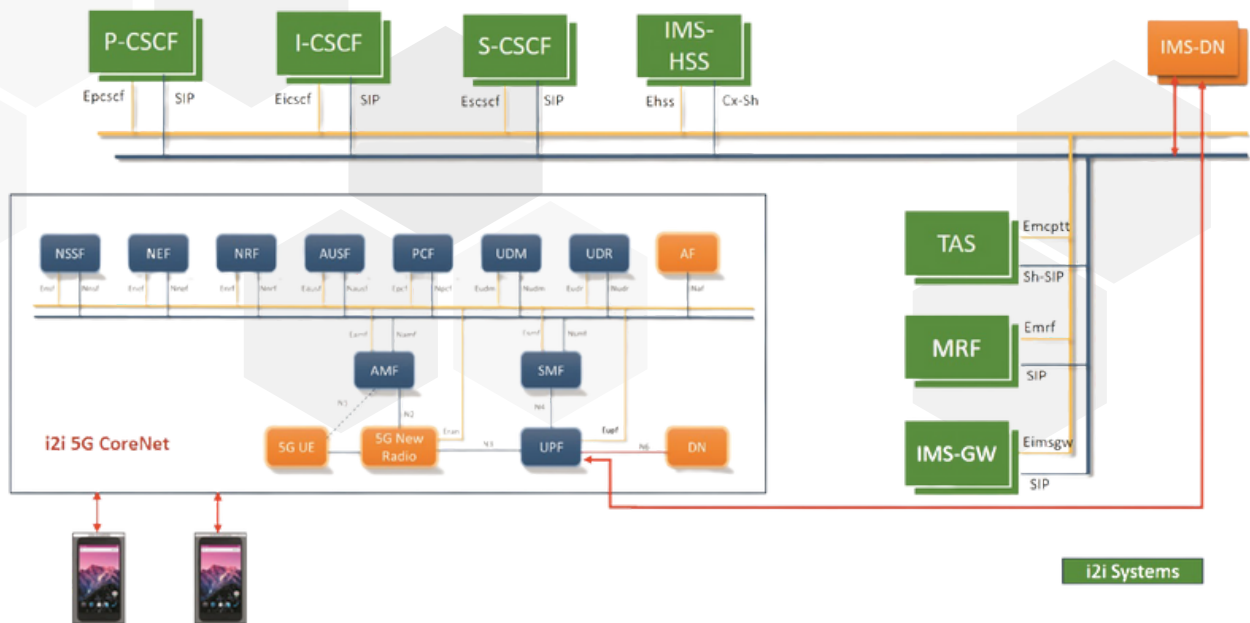
Design Principles

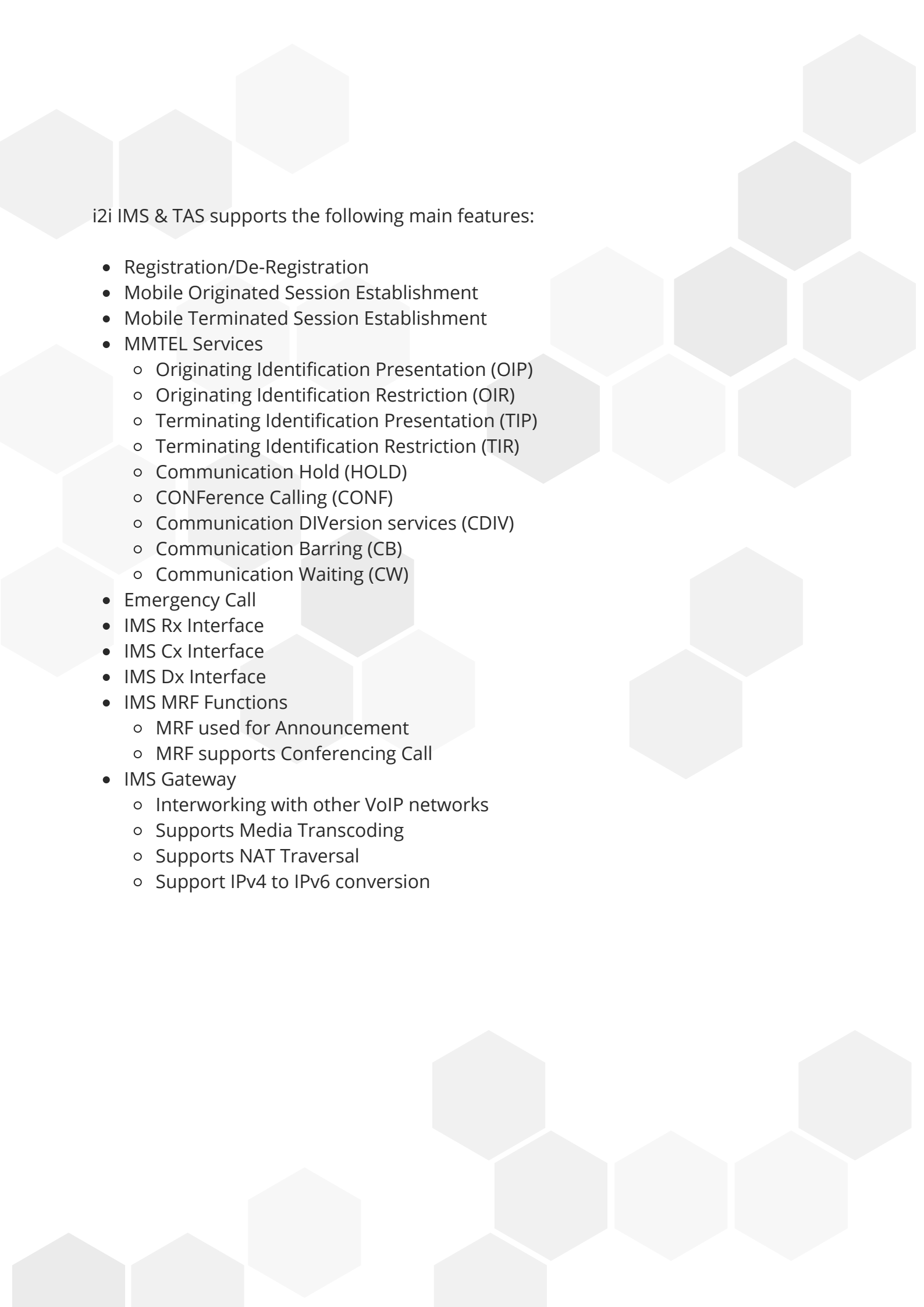i2i IMS & TAS technical architecture adheres to the following design requirements:

- IP connectivity
- Access Independence (IMS Services can be provided over any IP connectivity networks)
- Ensures Quality of Service from IP Multimedia Services
- IP Policy Control for Ensuring Correct Usage of Media Resources
- Secure Communication
- Support of Roaming
- Interworking with other Networks
- Service Control
- Service Development
- Cloud-native & Heterogeneous Deployment
- Seamless Scaling via MANO
- Supports creating virtual machine based VNF and CNF

i2i IMS & TAS Features

i2i IMS & TAS is composed of the following network functions and integrated with i2i 5G Core Network:

- P-CSCF (Proxy-Call Session Control Function)
- I-CSCF (Interrogating-Call Session Control Function)
- S-CSCF (Serving- Call Session Control Function)
- TAS (Telephony Application Server)
- MRF (Media Resource Function)
- IMS-GW (IMS-Gateway)

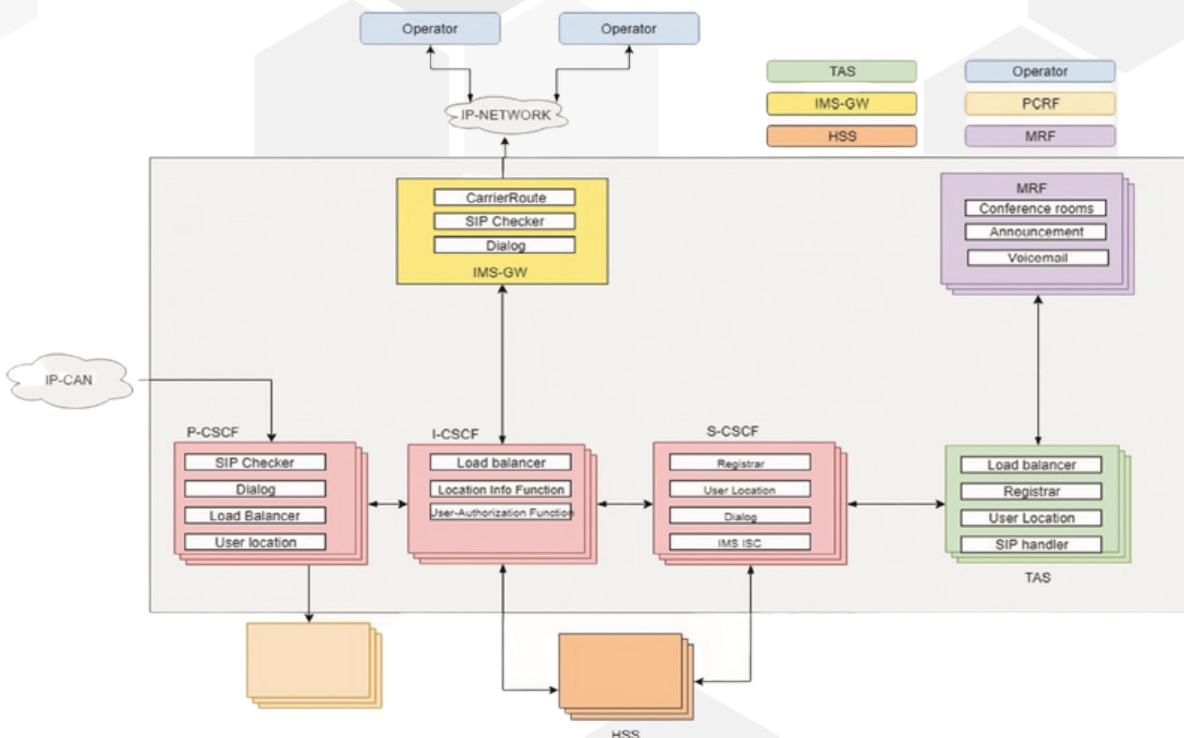i2i IMS & TAS supports the following main features:

- Registration/De-Registration
- Mobile Originated Session Establishment
- Mobile Terminated Session Establishment
- MMTEL Services
  - Originating Identification Presentation (OIP)
  - Originating Identification Restriction (OIR)
  - Terminating Identification Presentation (TIP)
  - Terminating Identification Restriction (TIR)
  - Communication Hold (HOLD)
  - CONFerence Calling (CONF)
  - Communication DIVersion services (CDIV)
  - Communication Barring (CB)
  - Communication Waiting (CW)
- Emergency Call
- IMS Rx Interface
- IMS Cx Interface
- IMS Dx Interface
- IMS MRF Functions
  - MRF used for Announcement
  - MRF supports Conferencing Call
- IMS Gateway
  - Interworking with other VoIP networks
  - Supports Media Transcoding
  - Supports NAT Traversal
  - Support IPv4 to IPv6 conversion

Technology & Performance

i2i IMS & TAS Mobile-VoIP core network solution is deployed on VNFs which provide a distributed, redundant and scalable architecture on Linux-based Operating Systems by enabling addition or removal of NF instances within an NF set developed on DNS-based and HSS-based dispatching. The NF set consists of individual and functionally self-sufficient NF instances that may be distributed to different locations. For providing scalability, new instances of NFs can be added easily to or removed from the NF set. Consequently, NFs behave as static entities independently and work as one single dynamic entity as a whole.

In order to achieve 3GPP performance objectives, shared-memory and caching mechanism along with asynchronous and non-blocking messaging are being used between the components within an NF and between the NFs.
i2i IMS & TAS supports performance metrics, logs, alarms, and statistics by issuing periodic or on demand counters which can then be used by the EMS (Element Management System) for KPI measurements and reporting purposes.

⬤ Head Quarter Office

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