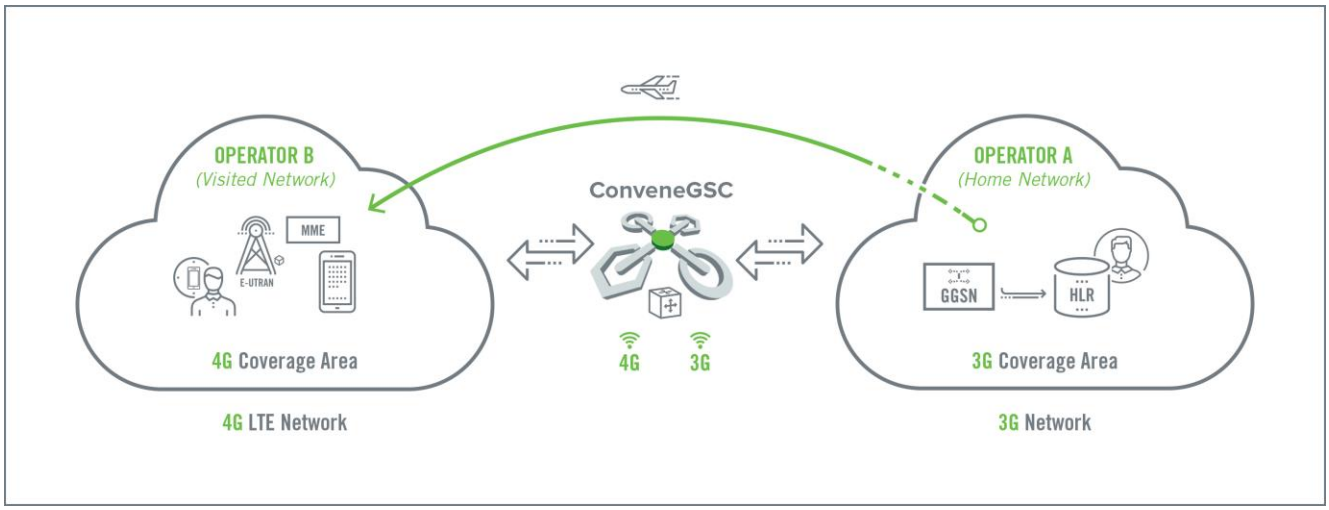
**Bridging Services and Technology from 3G to 4G Cellular Networks**
**Convene Networks™**

**Convene Networks** simplifies network interoperability and protocol revisions in and between mobile networks for network operators, MVNOs and equipment manufacturers across a multiplicity of network topologies.

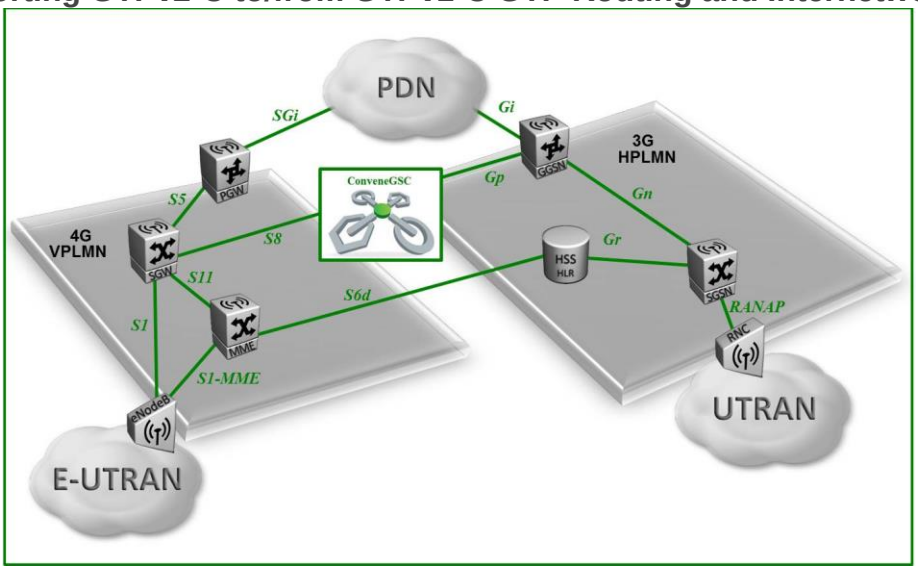
As network architectures evolve from 3G to 4G, updated and new standards and protocols result in interoperability issues, protocol mismatch, and signaling challenges in and between networks and their constituent elements.

**Convene Networks** has developed a commercially available GTP Session controller (**ConveneGSC**) designed to facilitate different signaling standards, new protocol versions, and new functions simplifying upgrade processes as operators transition release versions and technologies.




Operators need to contend with the management of traffic for the GPRS Tunneling Protocol (GTP) both the control plane (GTP-C) and the user plane (GTP-U) and versions of GTP between multiple packet core networks. See the GTP types and versions reference diagram at the end of the document.

**Supporting GTPv2-C to/from GTPv1-C GTP Routing and Internetworking**

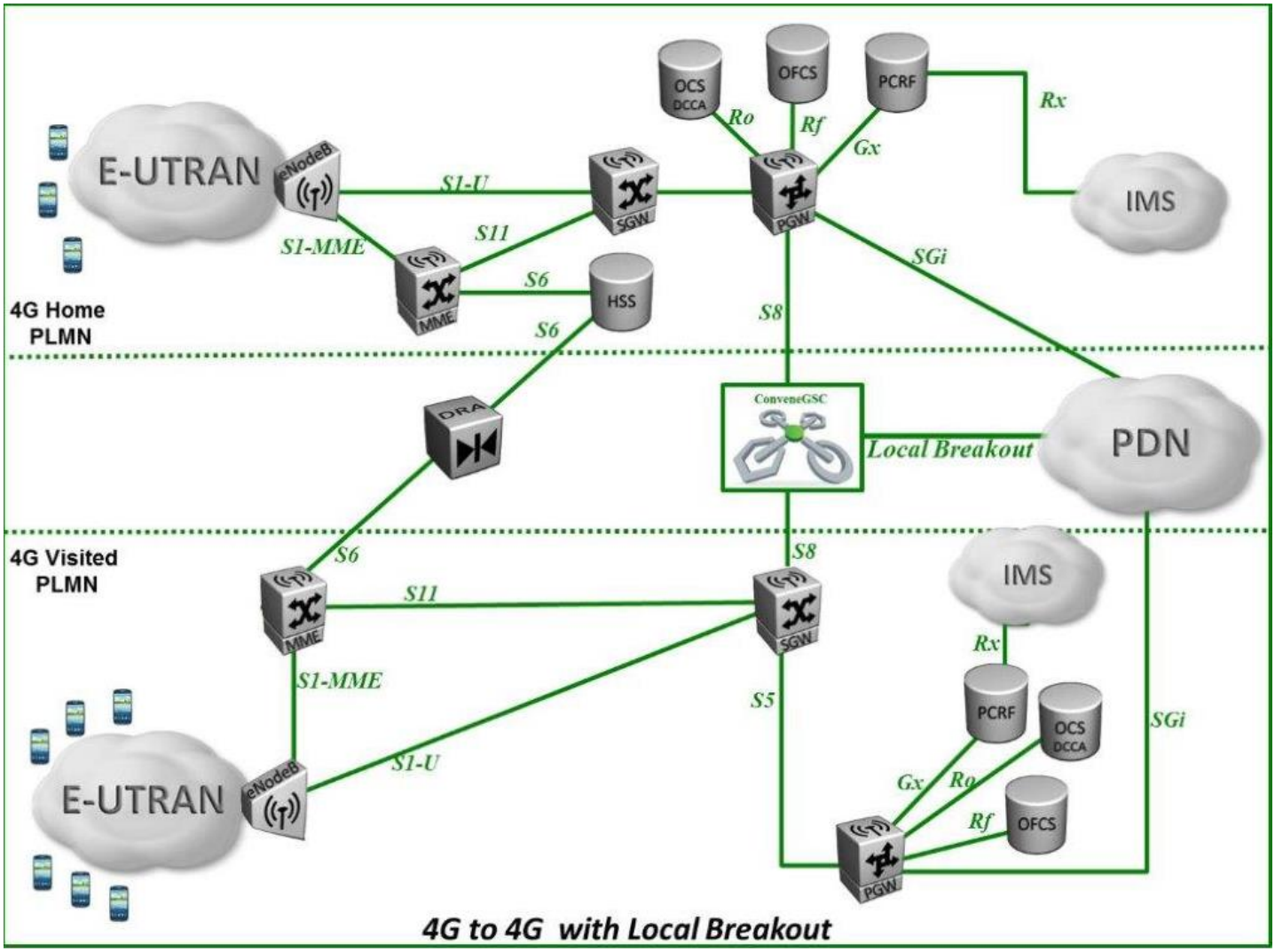


**Convene Networks** has released an internetworking function which acts as a gateway enabling 3G network elements to connect and communicate with 4G LTE network elements. The **ConveneGSC** internetworking feature prevents operators from requiring wholesale upgrade or replacement of their legacy infrastructure and systems. This enables an easier transition to LTE, and capital and technical investment can be managed in phases.

**ConveneGSC** addresses the need for a network agent/GTP proxy and session controller that can connect many packet core networks, provide flexible features and configuration, and scale to hundreds of thousands of transactions per second. **ConveneGSC** also assists with network function virtualization (NFV) and software defined networking (SDN). It is a Virtual Machine (VM)-ready software product designed such that it leverages multi-core COTS hardware.

As the scale of the network traffic increases, load balancing is required. **ConveneGSC** provides multiple options allowing prioritization of routes and balancing of the load across the packet core networks.

The network diagram below illustrats how **ConveneGSC** GTP session controller is designed to simplify the technology and challenges of communications between 3G to 4G and different operator networks.



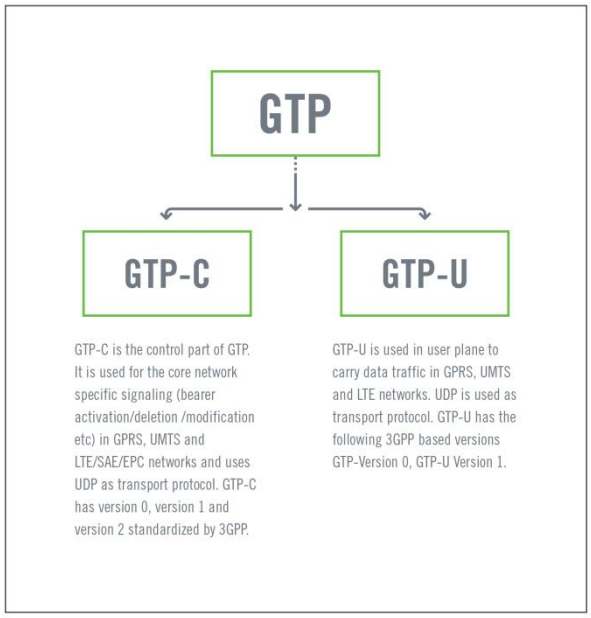
**ConveneGSC** provides a point-of-intercept for operators that addresses critical interoperability, routing, load balancing, and scaling challenges in today's mobile packet core networks.

- GTP Protocol Interoperability
- Interworking between 3G, 4G with Local Breakout
- Simplifying Home to Visited Networks
- Provide a layer of security
- IPv4 conversion to IPv6
- Local Breakout
- Topology Hiding
- Load Balancing
- Virtualization

Subscribers are becoming more dependent on their mobile applications providing seamless mobility services regardless of location or network, making interworking a critical element to maintain high quality of service and user experience.

**ConveneGSC** is a highly flexible software solution deployed on commercially available computing environments, facilitating a seamless, secure and high performance session controller.

Reference Diagram: **GPRS Tunneling Protocol (GTP)**




CONVENE™ NETWORKS

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