



Lawful Interception of LTE, VoLTE, RCS

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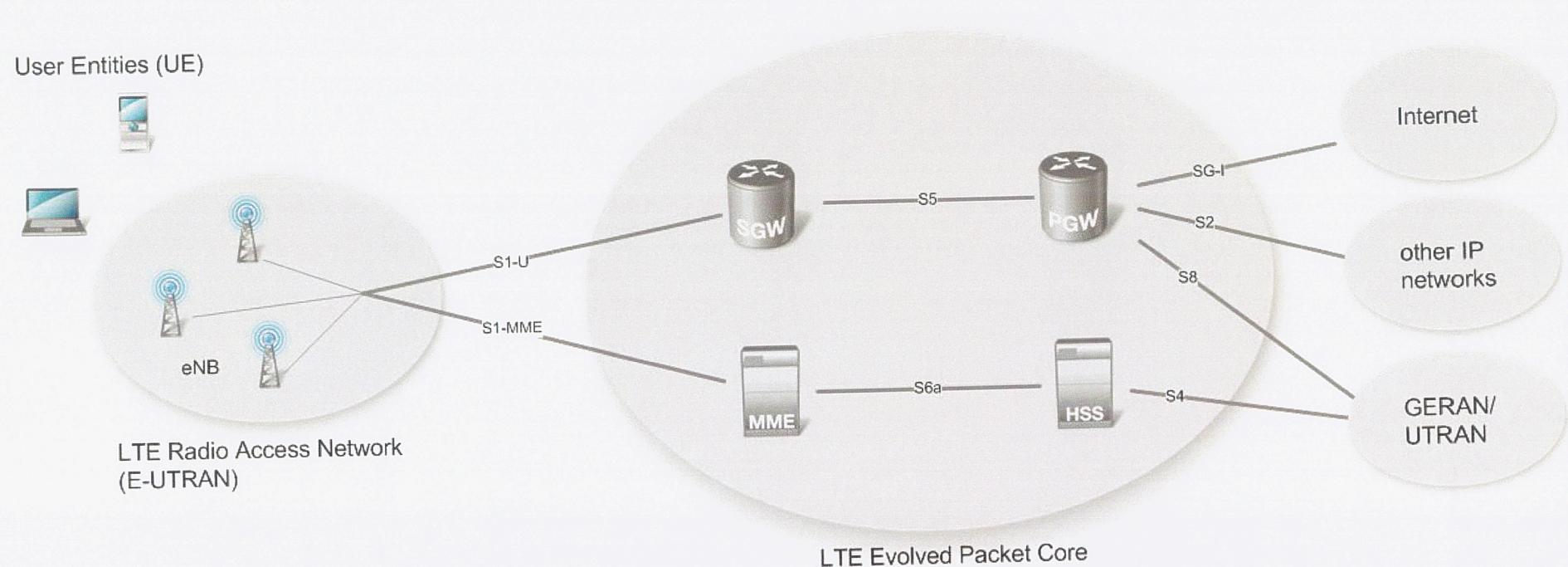
Competence in Lawful Interception

- Utimaco has been providing LI solutions since 1994
- Worldwide operations: around 250 installations in over 80 countries
- Lawful interception and Data Retention Systems scalable from 10 thousands to millions of subscribers
- Strong partnerships with leading telecom infrastructure vendors
- Compliant to international LI standards of ETSI, 3GPP, ANSI/ATIS, CableLabs and active member of ETSI TC LI
- Conform to numerous national telecommunication laws

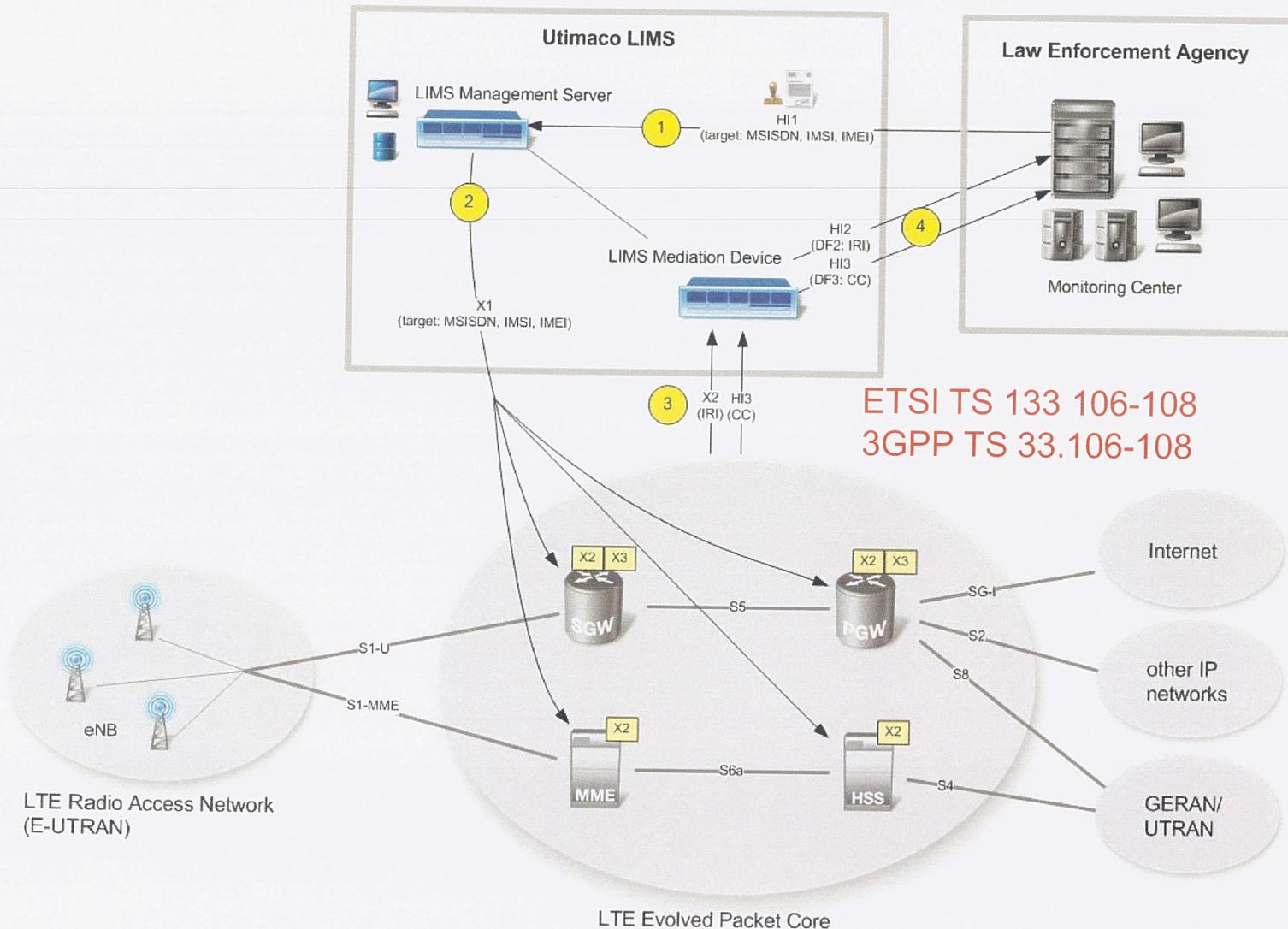
LTE, LTE Advanced

- 4th generation mobile wireless
- 3GPP standard (Rel. 8 – Rel. 11)
 - E-UTRAN : evolved radio access
 - SAE: system architecture evolution
 - EPC: evolved packet core
- SAE / EPC is the evolution of the GPRS Core Network
 - all IP network
 - simplified architecture
 - support for higher throughput and lower latency radio access networks (RANs)
 - support for multiple, heterogeneous RANs, including legacy systems as GPRS, but also non-3GPP systems (e.g. WiMAX, WLAN)
 - mobility between heterogeneous RANs

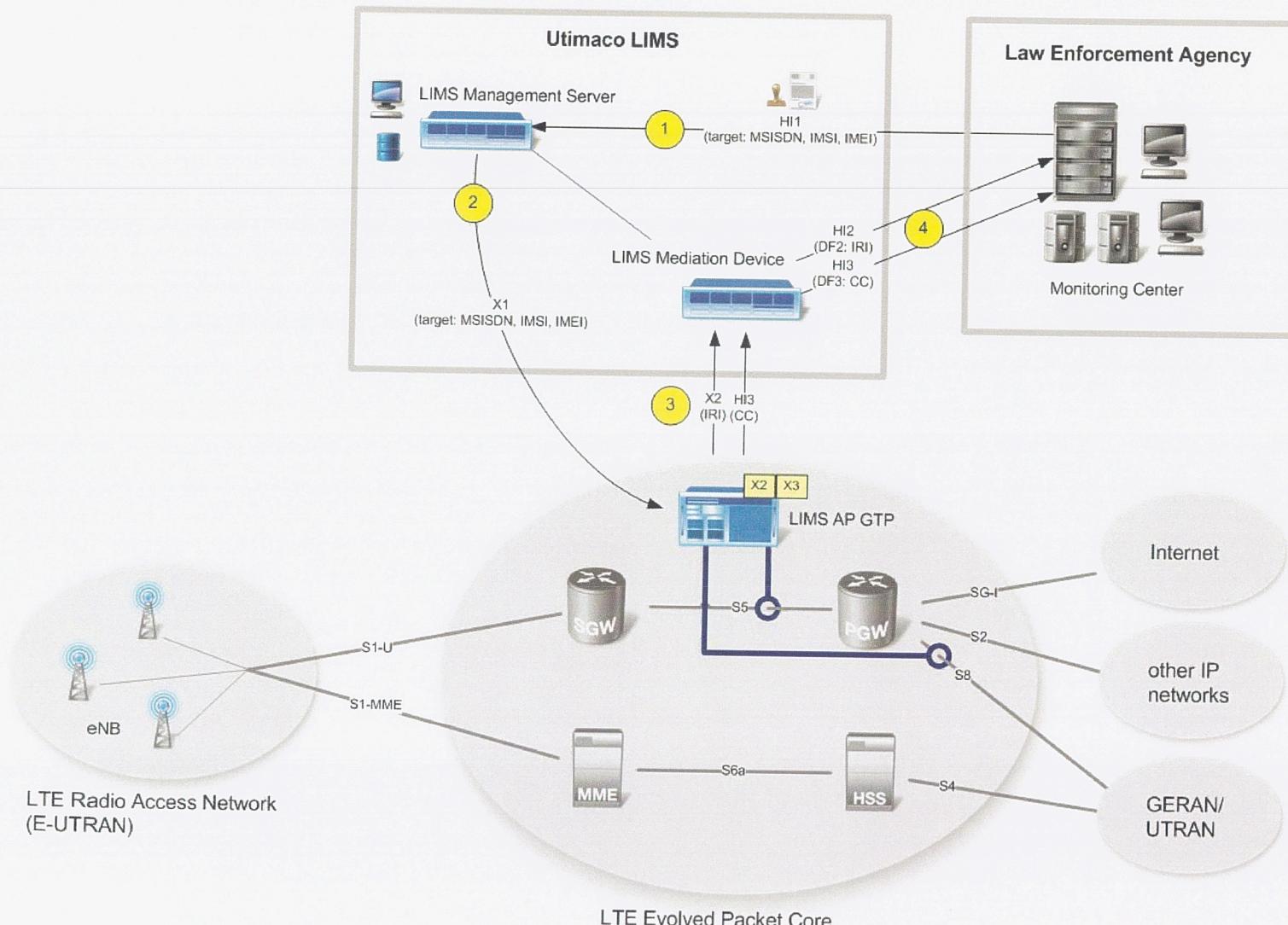
LTE Network Layout



Lawful interception of LTE



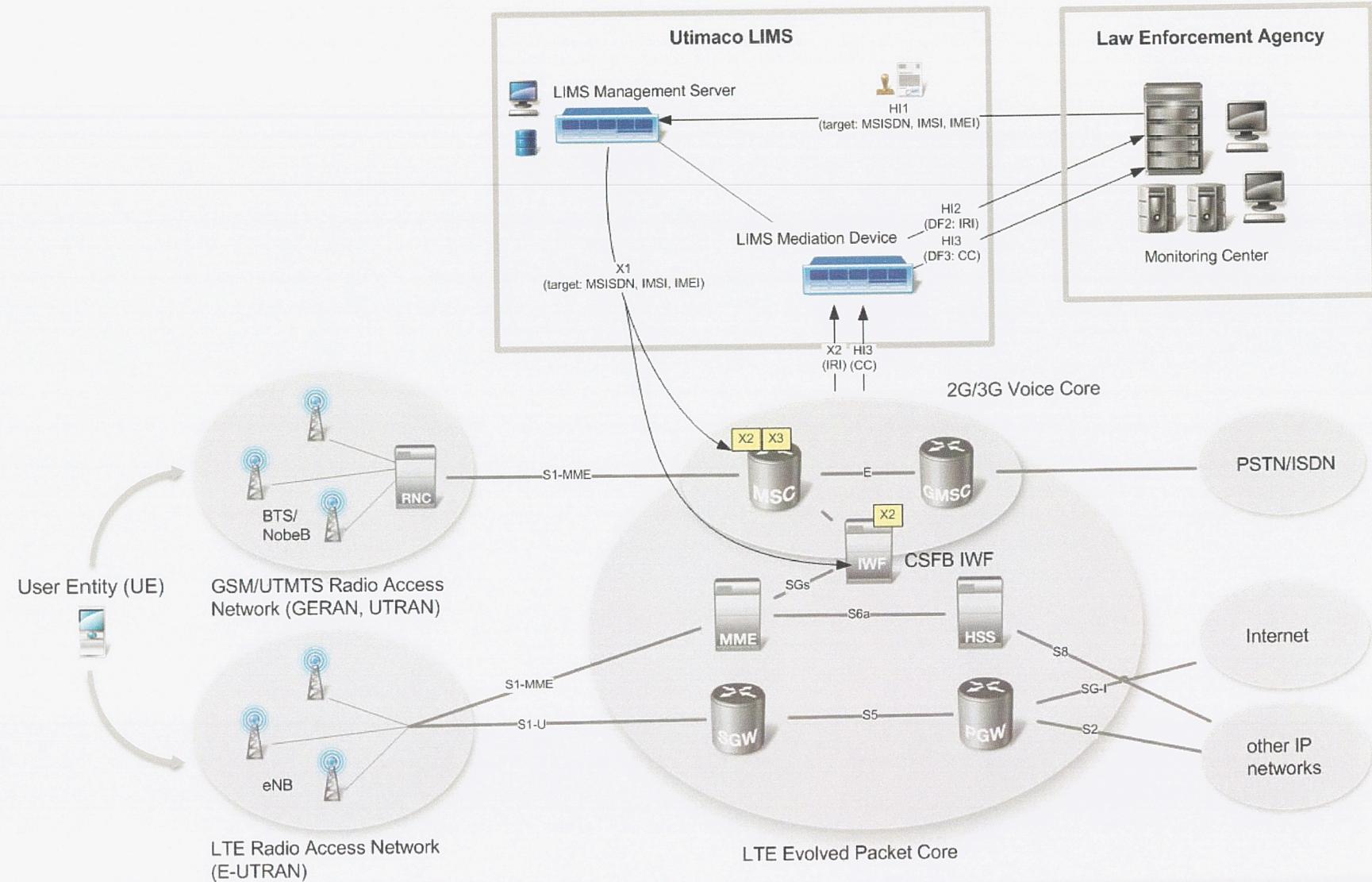
Lawful interception of LTE



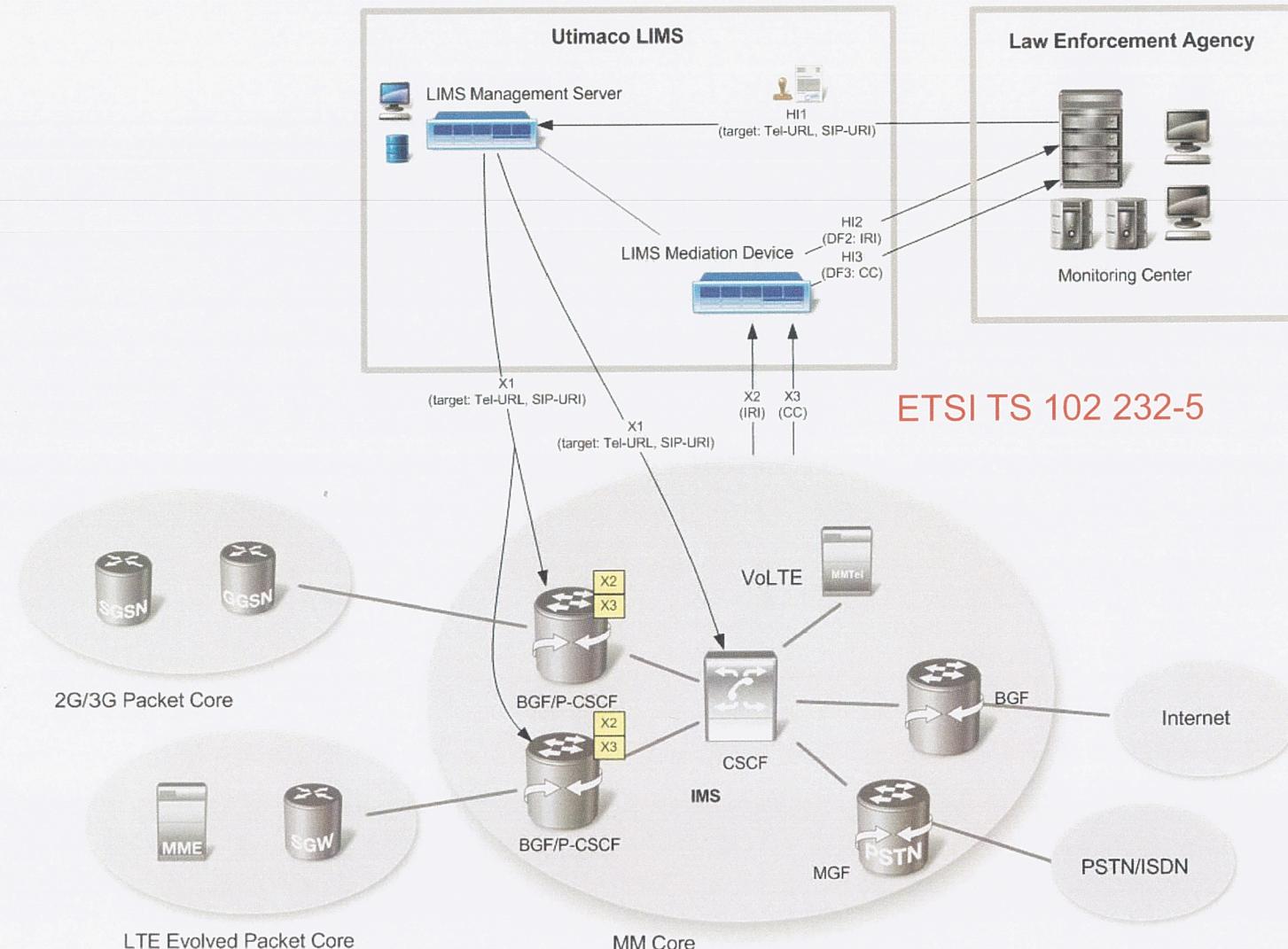
Voice over LTE

- Two deployment options for mobile network operators:
 - CSFB (Circuit-Switched Fallback)
 - LTE for data only
 - Voice-calls and SMS fall back to the circuit-switched domain (2G/3G)
 - VoLTE (Voice over LTE)
 - Based on IP Multimedia Subsystem (IMS)
 - Uses VoIP (SIP + RTP)

Lawful interception of CSFB



Lawful interception of VoLTE



RCS

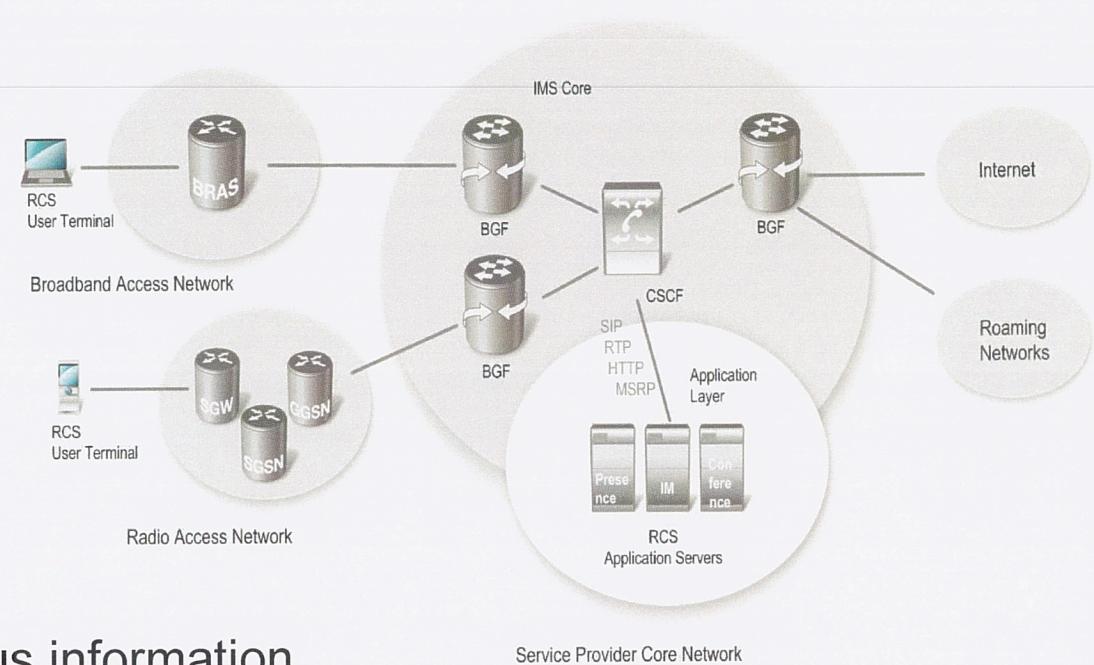
- RCS is an initiative of the GSM Association
- Aka
- RCS offers a suite of applications and services
 - Enhanced phonebook
 - Enhanced messaging
 - Enriched calls
- enables features such as
 - Sharing of pictures or videos during a call
 - File transfer
 - Instant text messages between two or more users
 - Automatic discovery of user's location



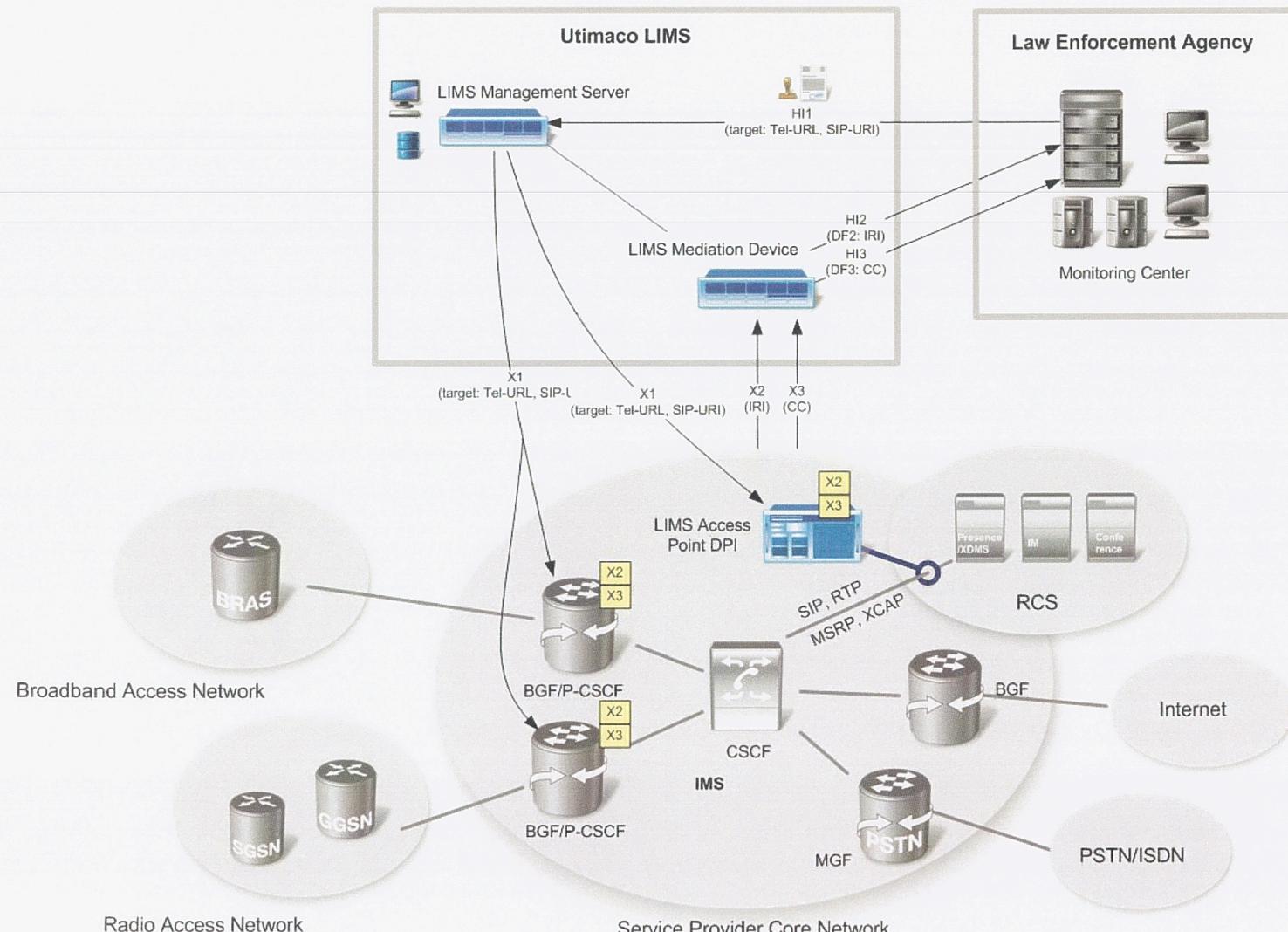
Rich Communication Suite

- RCS services are provided by various application servers using an IMS:

- Instant Messaging Server
 - Message handling
- Presence Server
 - Keeps track of the user's status information
- Conference Server
 - Sharing videos and pictures



Lawful interception of RCS



Summary and Recommendations

- Lawful interception of LTE and VoLTE is well standardized and commonly supported by the network nodes
- LI for RCS is not standardized yet, but can mostly be covered by existing standards and tools
- Implementation of LI in the networks can be complex and requires
 - Proper analysis of the detailed requirements
 - Tight integration with network elements of various vendors
 - Optional use of LI probes
 - High-capacity, high-performance mediation devices
 - Optional integration with other LI systems (e.g. 2G/3G, fixed-broadband)



Thank you for your attention!

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