HLR Router

Allows operators to flexibly allocate numbers across multiple HLRs in the network.

Overview

Mobile communications networks continue to experience growth fueled by new subscribers and the demand for pre-paid and data services. At the same time, mergers and acquisitions, roaming partnerships and mobile number pooling/portability are complicating network routing. Combined, these factors are impacting the mobile operator's ability to cost-effectively manage valuable network resources.

Particularly affected is the efficient utilization of home location registers (HLRs). Traditional range-based routing often results in gaps in the subscriber number ranges which lead to under-utilized HLR capacity. For example, mobile number portability requires the operator to support new individual numbers that are not within the existing number blocks and also causes the loss of numbers from within their blocks. Often, operators have to purchase additional HLRs, even though the capacity of the existing databases has not been exhausted.

As another example, mergers and acquisitions may result in the operator having more HLRs than are required; however, consolidating subscribers using fewer HLRs creates significant number management problems.
Product Description

Tekelec provides a turnkey HLR management solution, based on its industry-proven EAGLE 5 platform. The EAGLE 5 HLR router is a virtual HLR application that allows operators to flexibly allocate numbers across multiple HLRs in the network.

The HLR router allows each HLR to be filled to 100 percent of its capacity and alleviates the need to maintain subscriber number routing tables in every mobile switching center (MSC) in the network.

The HLR router optimizes the use of subscriber numbers and number ranges by providing mapping between a subscriber number (MSISDN/IMSI) and an HLR. This allows the flexibility to easily move subscribers from one HLR to another, and each HLR to be filled to maximum capacity. With the HLR router, subscriber number ranges may be split over different HLRs and individual subscriber numbers can be assigned to any HLR in the network.

The ability to map individual (full-length) subscriber numbers to HLR's enables operators to

address a number of factors affecting HLR utilization, including:
Complexities caused by the need to map two different types of numbers for the same subscriber to the correct HLRs:
international mobile subscriber identity/mobile subscriber integrated services digital network (MSISDN/IMSI) in GSM networks
mobile identifier number/mobile directory number (MIN/MDN) in IS-41 networks
Subscriber identity module (SIM)-card management problems caused by the allocation of large blocks of numbers to HLRs prior to the actual use of those numbers
Mobile number portability and number pooling
Network consolidation driven by mergers and acquisitions
Migration of subscribers to new HLRs due to transition to a new network technology, such as from TDMA to GSM
Operation of two types of networks, for instance, CDMA and GSM

The application is built on redundant databases stored in dynamic random access memory (DRAM) and includes an interface for operator provisioning. The high capacity and performance characteristics make Tekelec's EAGLE 5 HLR Router the solution of choice for mobile operators of GSM, TDMA or CDMA networks.

Benefits

- **Maximized HLR capacity.** HLR Router provides the ability to split subscriber ranges across multiple HLRs, enabling each database to be fully utilized at 100 percent capacity.

- **Managed growth.** The process of adding new subscribers and managing pre-paid services and corporate clients is simplified by the HLR Router, which allows individual numbers to be moved between HLRs as required.
- **Simplified HLR consolidation**. The HLR Router solves number management problems posed by the need to consolidate HLRs following mergers and acquisitions.

- **HLR routing for number portability.** Tekelec's HLR Router eliminates the occurrence of gaps in dialed number ranges caused by mobile number portability