



## Flexible roaming steering for superior service availability and subscriber experience

In today's mobile telecoms world, flexible roaming steering logic is required to ensure operators can maximize roaming margins without compromising the subscriber experience. SmartRoam ensures operators that their roaming subscribers are continuously attached to the most preferred available network, without outages in network access. Standards based, it delivers a superior roaming service, maximizing airtime and profits.

### The Challenge

Outbound roaming involves selection of a visited network. Generally, there often exist several PLMNs (Public Land Mobile Networks) with adequate radio coverage and a valid roaming agreement. However, not all PLMNs are equally preferred. Criteria like subscribed mobile services, subscription type, subscriber category, handset capabilities, roaming area, time of year and roaming agreement obligations make certain networks more desirable and profitable than others.

Normally, operators select PLMN roaming preferences to ensure access to basic services like voice and GPRS. But not all subscribers use the same services, nor should they be steered to same network or access technology.

Operators must also manage all roamers effectively, based on their subscription and individual potential to consume roaming services abroad. Discounts in the roaming agreements (AA.14 IOT tariffs) are typically the most important reasons for allocating roaming traffic.

### The Solution

SmartRoam is a product enabling SIM-OTA provisioning of roaming preferences, based on real-time roaming events received. Its Telco-grade implementation meets the demanding needs of operators for service availability, operability and maintainability. SmartRoam runs on the SmartTrust DPT™, the world's leading OTA platform.

At the heart of SmartRoam is configurable business logic that automatically evaluates received roaming events, utilizes data from the SmartTrust repository and executes the most appropriate action. These actions range from roaming steering to friendly welcome messages or Advice of Charge information.

The advanced SmartRoam business logic allows handsets reading only a limited number of the entries from the roaming priority list to be managed. The roaming lists are updated dynamically putting the prioritized networks for the subscriber's present zone in the first positions.

The SmartRoam patented method uses the standard SIM Toolkit Refresh command to enable an instant effect after roaming list updates.

Even handsets not supporting the Rel99 periodic VPLMN reselection can be managed through the use of standard SIM OTA commands.

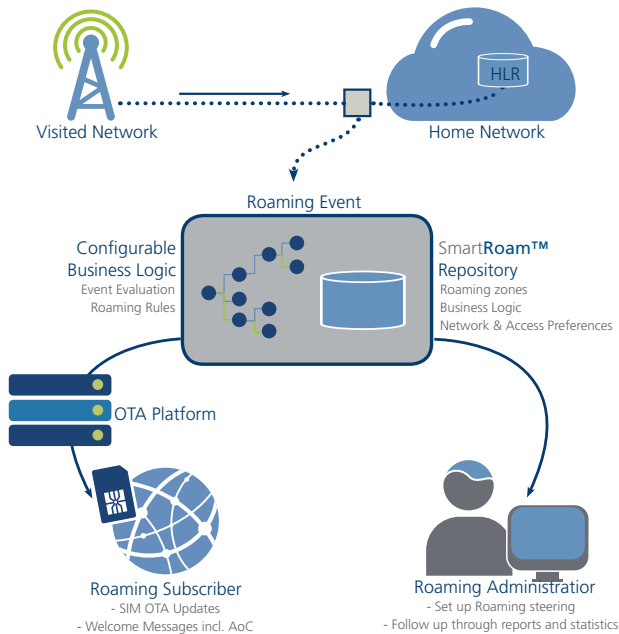
As recommended by the GSMA GRQ project, operators today increasingly rely upon SIM OTA and SmartRoam for effective and transparent roaming steering.

### Benefits

SmartRoam provides unequalled roaming steering flexibility. An intuitive easy to use graphical interface allows administrators to quickly implement changes to roaming rules based upon roaming zone, subscription, subscriber group, time, date, handset capability, preferred network and roaming history.

Entirely standards-based, fully utilizing roaming steering parameters stored on the (U)SIM card, as defined by ETSI/3GPP, SmartRoam enables the handset to select the best available PLMN and access technology. The standards based methodology allows the handset to make periodic reselections automatically to a higher priority PLMN as these become available.

Because SmartRoam works transparently; with an immediate network attach it provides a superior subscriber experience. It does not cause any disruption to the visited PLMN and it is unaffected by GLRs or active anti-steering. By managing only active roamers the Dynamic method employed by SmartRoam uses less OTA capacity reducing the load upon the international SS7 network elements.



## Features

### Real-time Network Event Reception

Roaming event detection is performed by existing SS7 probes, HLR or corresponding equipment in the operators home network.

### Configurable Business Logic for Roaming Steering

The roaming steering is orchestrated by SmartTrust Business Logic, configurable, event driven workflow. It provides a solid platform for developing and configuring of roaming steering logic, without the need for changes in the program code.

### Sophisticated, Extendable Reports

The standard reports have been developed together with SmartTrust customers, to meet common business needs of mobile operators to follow up roaming, roaming steering and messaging. New report types are easily created with the included Reporting Manager.

### Informative Messages Sent to Your Roamers

Traditional welcome & farewell messages; even for inbound roamers; and, in compliance with the EU regulatory requirements, dynamic information to roaming subscribers regarding, applicable roaming tariffs.

### Open to Integration to other OTA Platforms

SmartRoam can make use of existing OTA Platforms. Consult your SmartTrust representative for additional information.

### Standards Based

In addition to following ETSI/3GPP specifications, SmartRoam adheres to the GSMA principles and directives, including document IR.50 and GRQ recommendations.

## The Future

All travelers today pack their mobile phone when going abroad. The handsets used by roamers today are Rel99 compliant regarding periodic VPLMN reselection. As Roaming is a premium service, subscribers' expectations upon service availability and quality when travelling continue to increase. Data roaming is about to take off, but this will not just be limited to data over PLMN radio – WLAN hotspots abroad will likely be a viable alternative especially for private subscribers.

These facts imply that the Dynamic Roaming Steering method based upon ETSI/3GPP specifications and use of SIM card is the only feasible and economic choice, today, and even more so in the future.

SmartRoam provides the opportunity to implement a solution for the total wireless subscriber roaming management ensuring that the home operator is always part of the revenue stream.

## SmartRoam

A powerful tool, SmartRoam allows network operators to reduce IOT costs, minimize effects upon the home and visited networks while delivering roaming to subscribers based on what is best for the subscriber type.

The key components of the SmartRoam are:

### SmartRoam Server with Business Logic

The business logic engine orchestrating the dynamic roaming management including the event reception and other external system interfaces.

### SmartRoam Administrator

The user interface for daily usage of the SmartRoam based on web browser GUI technologies

### Reporting Manager

A powerful tool for report generation and statistics

### Patented Event-Driven Roaming Steering

The unique event-driven roaming steering methods, based on use of 3GPP/ETSI (U)SIM standards, are protected by patents.

SmartRoam is unaffected by anti-steering or GLRs in VPLMN.

## Related SmartTrust Products and Services

### SmartAct™

The SmartTrust SIM management platform - a total solution for reliable Over-the-Air management of the SIM life cycle over-the-air.

### SmartProvisioning™

The product for comprehensive device management for all your subscribers. SmartProvisioning manages the entire device life cycle from automatic detection, initial configuration, continuous settings provisioning and diagnostics to terminal retirement.

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