International roaming has transformed the mobile telephony landscape over the past few years. Business travelers are willing to pay a premium for the convenience of being accessible wherever they are, making roaming a lucrative business for operators. However, a new mobile operator faces significant obstacles and delays in exploiting this opportunity as the process of establishing bilateral roaming partnerships all over the world can take several months. This delays the inflow of revenues and also delays the rollout of roaming services for the high-end business traveler segment of the subscriber base. Even an existing mobile operator must again go through the time-consuming negotiation and testing phases when launching new services like GPRS, CAMEL or 3G roaming, even if it has few hundreds of GSM roaming agreements.

The Roaming Replicator is designed to prioritize and accelerate the process of launching roaming services for an operator. An operator (client) can leverage the strong roaming relationships and existing roaming infrastructure from EDCH and Etisalat, which serves as a sponsor operator (or roaming hub), to offer lucrative outbound roaming services to its subscribers and to serve the inbound roamers from the roaming partners of the hub.

EDCH offers complete multilateral roaming services, a faster and reliable way to implement and manage the large number of roaming service relationships.

A single agreement with EDCH enables you to cover the world, while it provides:

- Access to more than 600 GSM/SMS operators in 200 countries.
- Access to more than 300 GPRS operators in more than 150 countries.
- Access to more than 200 CAMEL operators in more than 100 countries.
- Access to more than 200 3G operators in more than 100 countries.
- Flexible pricing scheme.
- 24/7 customer technical support.

Roaming Replicator

EDCH offers a fully managed service model in conjunction with Etisalat who acts as the hub, by extending roaming relationships to new operators that join the hub. EDCH enables billing and clearing process (fully compliant to BARG BA.21 PRD), IREG testing, fraud control and other roaming departmental functionalities for the client operator.

The Roaming Replicator is a SS7/MAP node located in the ‘Partner Network’ with full SCCP capability.
The Roaming Replicator enables operators to reuse their existing roaming agreements when they acquire new network licenses in new regions. Intelligently handles all roaming scenarios both within the operator regions and beyond it. The benefits include:

- Retention of roamers within group/preferred networks leading to reduced revenue loss.
- Guarantee of familiar services of visited preferred/group networks leading to increased stickiness.
- Huge savings from day one for the new operator.

The Roaming Replicator overall strategy is to provide the Sponsored Network subscribers with special SIM cards enabling them to use a Sponsor Network IMSI when roaming. Initially an SS7-capable RR box will be installed in the Sponsor Network; it will force all roaming traffic of the Sponsored Network (except direct roaming) through the Roaming Replicator. The Roaming Replicator will change SCCP addresses of the Sponsored network elements to the Sponsor Network addresses. The Roaming Replicator also changes SCCP addresses of foreign networks to Sponsor Network addresses, along with selected MAP fields in the messages.

The Roaming Replicator does not change MSISDN and MSRN and as a result, voice traffic goes directly between Sponsored Network and the Foreign Network. The Roaming Replicator functions as a signaling relay and it will not respond to any message.

The Roaming Replicator supports all the possible scenarios for voice calls and short messaging, with optional support for GPRS roaming, CAMEL roaming and 3G roaming.

Useful statistics and reports are generated for operations staff and management on periodical basis. Roaming Replicator (RR) is fully compliant with GSMA IR.80 PRD for the Open Connectivity Roaming Hub Model.

**Implementation**

The implementation of the Roaming Replicator requires installing the Roaming Replicator box, then configure the Sponsor and the Sponsored network prior to production. Such Logistics include RR mappings and the foreign address mappings to be carried over in the Sponsor and the Sponsored network. The timelines are mutually agreed between the client and EDCH prior to the implementation start date.

**Client Support**

EDCH offers 24/7 client support managed by highly dedicated employees specialized in supporting the Roaming Replicator.

**Conclusion**

Roaming Replicator is an instant roaming solution that facilitates operators to launch or extend their roaming agreements across many operators worldwide. It is a complete end-to-end managed solution. New services can be quickly launched for roamers (e.g. GPRS, 3G), ensuring competitive advantage and reduced subscriber churn.

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