

Using Panlab via Teagle by Starhome and FT-PSC project

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I. STARHOME IN GENERAL

Starhome® is a global leader in providing innovative, market-driven roaming solutions. Since its establishment in 1999, the company has grown and matured into an industry-recognized authority on roaming solutions. Leveraging its accumulated roaming knowledge to zero in on market needs, Starhome provides operators with innovative and lucrative management tools, making it the driving force behind roaming profitability.

Starhome's product portfolio serves each major aspect of roaming: Retail products stimulate and increase roaming traffic and usability. For Wholesale requirements we offer powerful solutions to enable you to meet your business targets and IOT discount agreements. Our Network Operations offering includes solutions to optimize network efficiency, improve quality of service, and reduce cost of ownership.

As a long-time leader in the roaming industry, Starhome has achieved a global customer database of over 200 operators in 130+ countries, including major tier 1 and tier 2 mobile network operators. Currently, over 50% of all international daily roaming traffic is being delivered by operators to their subscribers utilizing Starhome technology. With over 20 patent-protected solutions in our portfolio and a 95% customer renewal rate, Starhome's innovation in motion approach together with cost-effective, revenue-generating solutions has made us the roaming partner of choice for mobile operators.

II. THE FT-PSC PROJECT AND STARHOME ROLE

The FT-PSC CELTIC project is building federated European test bed for testing of public safety communication and information systems. The test bed will allow European telecom manufactures and software providers to carry out tests and evaluation of their products, results of R&D projects in international environment with participation of public safety users. The Federated test bed will make possible to test large scale heterogeneous communication systems including the heterogeneous networks simultaneously based on several standards such as GPRS, UMTS, WLAN, WiMAX and PMR. Starhome concentrates on the cellular aspects of the project, and in mobile roaming in specific, as there is a strong need for

national roaming in case of emergency. In the ITU workshop on Emergency Telecommunication for Disaster for example, held in Sri Lanka, March 2006, it has been summarized: "National roaming in the state of disaster is a valid concept however it is business-sensitive for telecom operators".

Competitive operators do not have roaming relations in general. However in an emergency, if one of the networks crashes or does not have coverage in specific area, the other networks should provide a backup. Roaming is the mechanism that enables such a backup. Establishing direct roaming relations is problematic between competitive entities. Therefore, a roaming broker can be used as an enabler.

III. THE IMS ROAMING BROKER AS A PRODUCT

The concept of roaming broker has been proven in the GSM world by the existence of several GSM roaming brokers. The need for a roaming broker is caused mainly by the fact that new operators don't have the time and resources to sign roaming agreements with 150-200 operators, in order to provide a sufficient coverage for their subscribers. In the 4th (LTE) generation all-IP world, the roaming situation will be much more complex. The networks will start to deploy 4G (LTE) as small islands, while most of the network remains 3G or even 2G. Non-3GPP networks (such as WiMAX) will join the play. This project deals with the IMS layer, which can be added on top of existing 2G/3G roaming brokers.

IV. THE ROAMING BROKER TECHNOLOGY

In general a roaming broker enables roaming between two networks that do not have direct roaming relationships, by using an identity of a 3rd mobile network which does have roaming relations with both the visited and the home networks. The roaming broker is hosted at a sponsor network, which provides its roaming agreements. The broker emulates an IMS I-CSCF towards the roaming network and a P-CSCF towards the home network, so it enables the communication with both ends. The following figure describes the high-level architecture:

IMS Roaming Broker

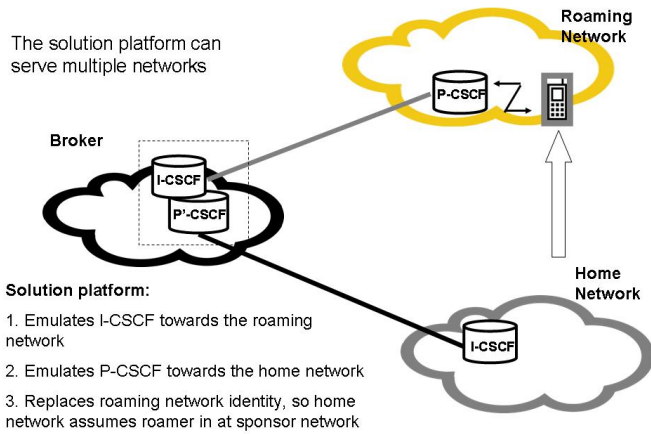


Figure 1. The IMS Roaming Broker

V. HOW PANLAB AND TEAGLE IN SPECIFIC CAN HELP

The roaming broker should be tested in various roaming scenarios. Since it bridges between different IMS networks, the compatibility with different IMS vendors is most important. The FT-PSC project will provide few IMS test beds for conducting roaming tests. However it is highly recommended to increase the number of IMS test beds via external resources. Panlab exactly provides an access to a number of IMS labs maintained by different vendors. The Teagle tool facilitates the access to those labs by providing a single interface. Starhome has already started to investigate this tool and certainly would like to use it in the near future (2011).

- [1] FT-PSC project website: <http://www.psc-europe.eu>
- [2] Starhome website: <http://www.starhome.com>
- [3] Website of Panlab and PII European projects, supported by the European Commission in its both framework programmes FP6 (2001-2006) and FP7 (2007-2013): <http://www.panlab.net>
- [4] TEAGLE portal website: <http://www.fire-teagle.org>