

# Project Achievements



## Secure Interworking of Mobile & Wireless Networks

The main focus of the Seimonet project was to define an Authentication, Authorization, and Accounting (AAA) solution that spans different wireless access technologies, to implement a roaming intermediary for a mixed 3G/WLAN environment in order to support this AAA architecture as well as interoperability between 3G and WLAN, including session handover and service synergism.

The global architecture defined by Seimonet proposes a new opportunity for a pan-European network of networks, through which industry operators and public institution networks can share communication patterns.

### Main focus

Seimonet project proposed a new architecture for authentication across heterogeneous networks, intelligent preferred-network selection, global presence, context management, mobility management and handover of telephony and data sessions between WiFi/WiMAX and GSM.

The Roaming Intermediary & Interoperability (RII) platform, which has emerged from the Seimonet project, is the implementation of the global architecture, designed during the project, and supports various aspects related to interoperability

& roaming. The RII architecture is designed as an open network of RII platforms, where each RII entity can support some of the operators, or to address other RII platforms for connecting additional operators (DNS-like infrastructure).

The global AAA database of Seimonet which resides on the RII platform, is managing all AAA methods in a single framework, and enables the access through different authentication methods.

The global architecture of Seimonet is described in the following figure:

### Approach

The structure of the project consortium was ideal for a collaborative project. The consortium was a combination of the four major sectors: an industry leader (Alcatel), a large university (UEVE), an SME which is a world-wide leader in its area (Starhome), and a mobile operator which is technology driven (Transatel). Each partner brought in the necessary expertise to handle the various aspects of the project. The cooperation in the project was tight, due to many teleconferences and face-to-face meetings.

The work started with detailed sessions for the high-level design of the general architecture, then going down to the details. Only then, the implementation



## SeiMoNet

Project ID: CP2-023

Start Date: 1 April 2005

Closure date: 1 April 2007

### Partners:

Starhome, Israel

Alcatel-Lucent, France

University of Evry, France

Transatel, France

### Co-ordinator:

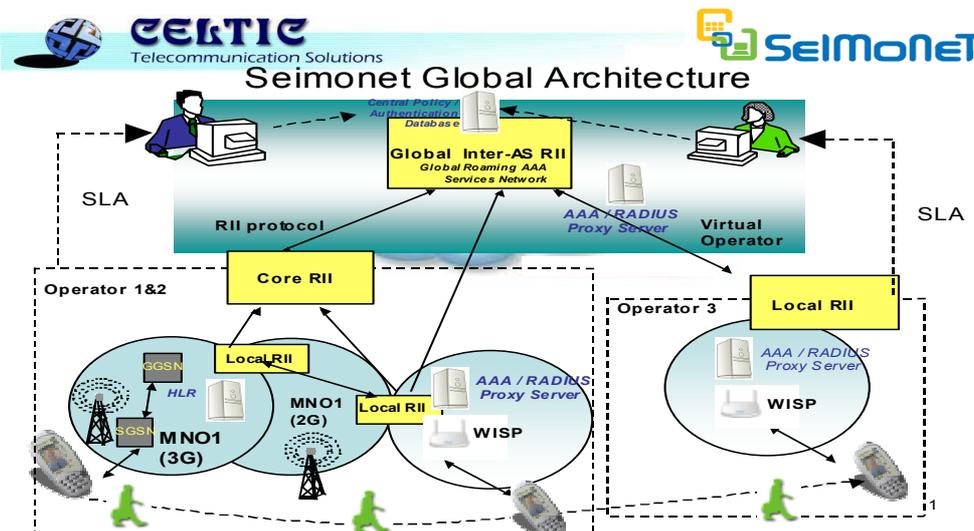
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### Project Website

[www.celtic-initiative.org/projects/seimonet](http://www.celtic-initiative.org/projects/seimonet)



phase has been started, and finally the integration and testing took place.

The project has delivered extensive demo presentations for WiFi/WiMAX/3G interoperability. The demos were a result of an integration effort between all members of the consortium.

## Achieved results

The project has reached a significant achievement in finalizing the overall design and defining innovative network architecture for the Roaming and Interworking Intermediary platform. The design is in line with the 3GPP LTE architecture and may be considered as a proposal for implementation of the standard.

The following figure describes the detailed extension of the 3GPP standard, using Seimonet architecture. The evolved package core is the standard 3GPP LTE core, while the RII (Roaming & Interoperability Intermediary) platform is the implementation proposed by Seimonet for the 3GPP intra-domain and inter-domain anchors.

The RII platform enables the service mobility and handover of mobile services, between different technologies and authentication methods.

The project has implemented a network-selection mechanism that is embedded with the access

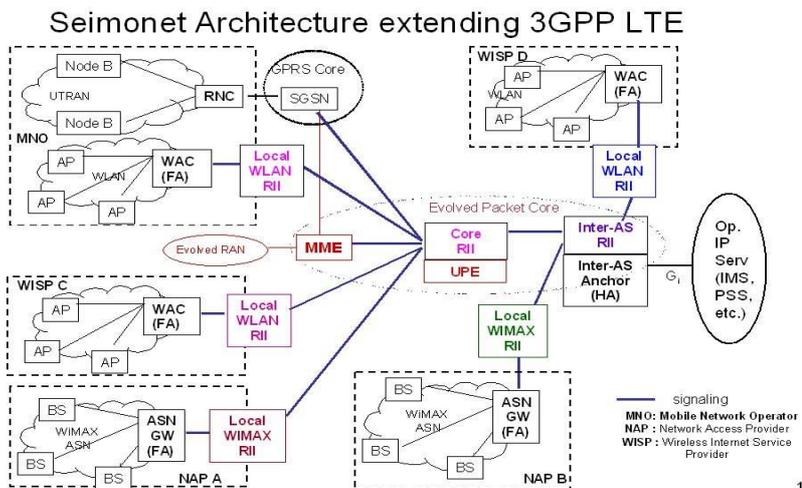
method and enables the selection between the appropriate WiFi and 3G networks, which is done in a way transparent to the end user.

The project also finalized the detailed definition of the sequence flow for all scenarios, where the sequences include all components of the consortium partners into one unique solution. The project has been finalized with an integration of the components, using the access to a live network that has been granted by one of the partners.

RII platforms and the potential distribution of RII platforms can support all combinations of different radio technologies.

The RII platform has been implemented to support WiFi, WiMAX and 3G. The mid-term-review demo included WiFi/WiMAX interoperability, while the FR final-review) demo included WiMAX/3G interoperability.

The project has delivered more than ten publications and has been presented in over five workshops and conferences.



The RII global architecture is designed to support convergence between any two networks, including public and private networks, and to support different AAA mechanism. The network of

## Impact

One major impact of the project is the proposed detailed implementation of the 3GPP LTE architecture, which may be contributed to 3GPP as an extension of the LTE.

The second potential impact of the Seimonet project is its innovative global architecture, especially in its European aspect. The RII (Roaming & Interoperability Intermediary) platforms is aiming to propose a new infrastructure for roaming and interoperability between networks, a framework which may combine different kinds of networks. That creates an opportunity for a pan-European network of networks, where industry operators and public institutions can share communication patterns via one large network. The following image expresses this idea.

## About Celtic

Celtic is a European research and development programme, designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

**Timeframe:** 8 years, from 2004 to 2011

**Clusterbudget:** in the range of 1 billion euro, shared between governments and private participants

**Participants:** small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

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