

# Project Achievements



## Enabling Community Communications – Platforms and Applications phase 2



### EnComPas2

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### Introduction

The proliferation of devices in the digital home context poses a number of challenges that makes it necessary to convert the current centralized management model of customer networks into a distributed one. EnComPAS2 tackles the main challenges in the management of home and extended home network devices and services, making easier for operators, service providers and end-users the deployment of new services in the home and their management.

### Main focus

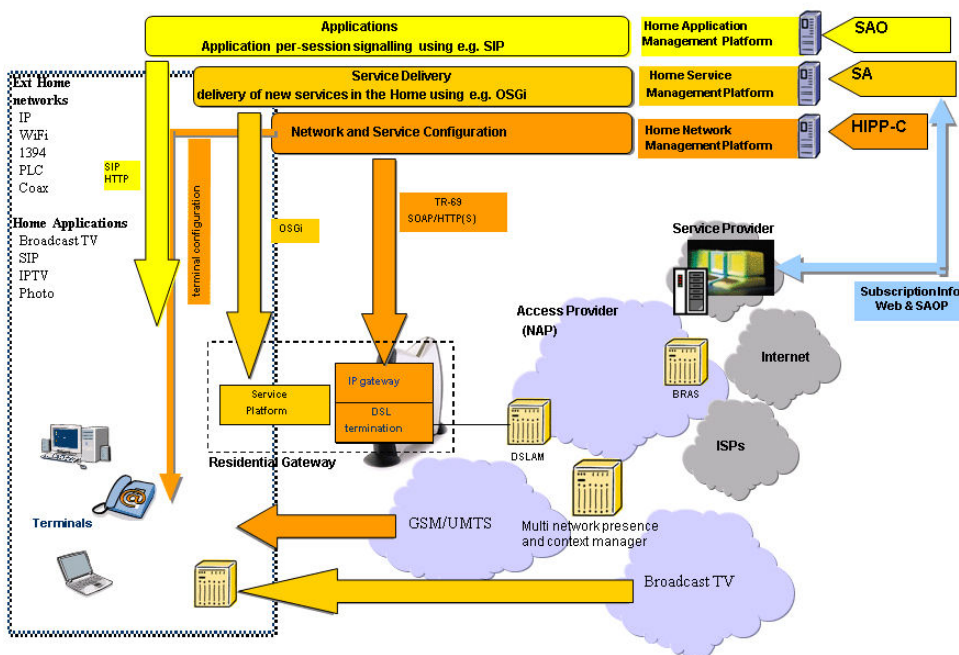
The main focus of the EnComPAS2 project is the management of home and extended home networked devices and services. An integrated and remote management platform has been developed in order to provide easy deployment facilities and management functionalities to both

operators and end-users. The end-to-end architecture of EnComPAS2 platform can be seen in the figure below.

Another important objective of the project was the implementation of home and extended home prototype services, including context awareness facilities that allow the platform to gather context conditions using them to provide customized behavior based on them.

The invisibility of the technology has been also taken into account in the project. One of the partners of the project work in the real estate business and has provided building guidelines where the technology was hidden and users were not really aware of actually using technology quite extensively.

Finally, the project had undertaken field trials with users in a real house to evaluate their acceptance of the functionalities provided by the platform and the prototype services developed.



## Approach

A major issue in the Management Platform was the encapsulation of all the complexities and technologies, aiming to protocol independence, providing the upper OSS with simpler "service level" interfaces. Another important aspect was fixed-mobile convergence, which required also an integrated approach for orchestrated configuration of fixed and mobile devices. These challenges were tackled by means of an integration layer called Service Management Layer.

New paradigms were also included, such as deploying distributed intelligence in the Residential Gateway that relieves the centralized systems from some of the management tasks.

EnComPAs2 also provides context-awareness facilities, combining the next generation network core technology (implemented via IMS) with the extended home network (implemented via Residential Gateway). The core network keeps the presence of the user and manages the context of the service. For example, a voice call targeting the user can be routed to the mobile device, the fixed-line at home, the PC or the car, depending on the presence.

## Achieved results

The following list enumerates the main achieved results of the project:

- ◆ End-to-end architecture definition, including Home Network Management Platform, Home Service Management Platform and Home Application Management Platform.
  - ◆ A prototype of the Home Network Management Platform was implemented, allowing a remote and integrated management of home devices (including fixed and mobile) and services.
  - ◆ A set of scenarios based on the extended home network have been defined and implemented in order to demonstrate the capabilities of the EnComPAs2 platform. The *provisioning of custom services* scenario enables the offering and easy deployment of customized services at the user's premises. The *multimedia* scenarios exploit the multimedia content at home.
  - ◆ A multi-network presence and context manager has been implemented, with is integrated with the Management Platform. The context manager receives the presence of the user and manages the context of the service, providing customized behaviour of *voice services* based on this presence.
  - ◆ Constructive techniques have been designed, in order to enable invisibility of technology at home. These techniques have been implemented in the demonstrator were the field trials with users have been undertaken.
- This is a key aspect to enable user acceptance.
- ◆ A field trial undertaken in a real house with real users from different segments (education, technical level, etc.) showed a medium-high acceptance of the functionalities and prototype services provided by the EnComPAs2 platform. A field trial with 50 households in a daily life situation showed how end-users experience watching TV with a new add-on service on top of the service platform.
  - ◆ The EnComPAs2 platform has made use of the main standards in the home area: TR-069, OMA-DM, OSGi, UPnP/DLNA, HGI, etc. The project has also made some contributions to HGI.
  - ◆ Several publications were made, mainly papers in international events.

## Impact

EnComPAs2 is a first step towards an integrated management platform that allows end-users, operators and service providers to make an easy and effective management of the services and connected devices at home.

This is extremely important for end-users massive adoption of new devices and services. If services and devices are not easy to deploy and manage, end-users (especially the non-technical ones) will encounter a huge barrier to adopt them.

It is also a crucial aspect for telecommunication operators and service providers, as it will help to lower OPEX and will allow them to provide better customer care services to their customers.

Finally, the introduction of the Residential Gateway in the home network allows for the future development of new services that will run in it, and the use of new paradigms (e.g. ontologies) to deploy intelligence that helps to make a more efficient management of the home network.

## 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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