

Project Information



Next Generation Home

The GENIO project aims to define the home network of the future, developing an advanced self-management of the home network, facing the problem of heterogeneity of the devices and their interactions, and looking to maximize automation and to respond intelligently to events and alarms. The project intends also to resolve other challenges like access to the content from everywhere and personalization of the services.

Main focus

The definition of a platform enabling the next generation home network requires coping with the growth in the number of connected users, devices, services and user-generated contents, turning the home into an increasingly complex environment.

The project will take into consideration existing standards in the area of home networks and will extend the work of the project Encompas2, which defined and developed a platform prototype to ease and automate the integrated management of the home network. It will be necessary to solve the problem of the huge operating

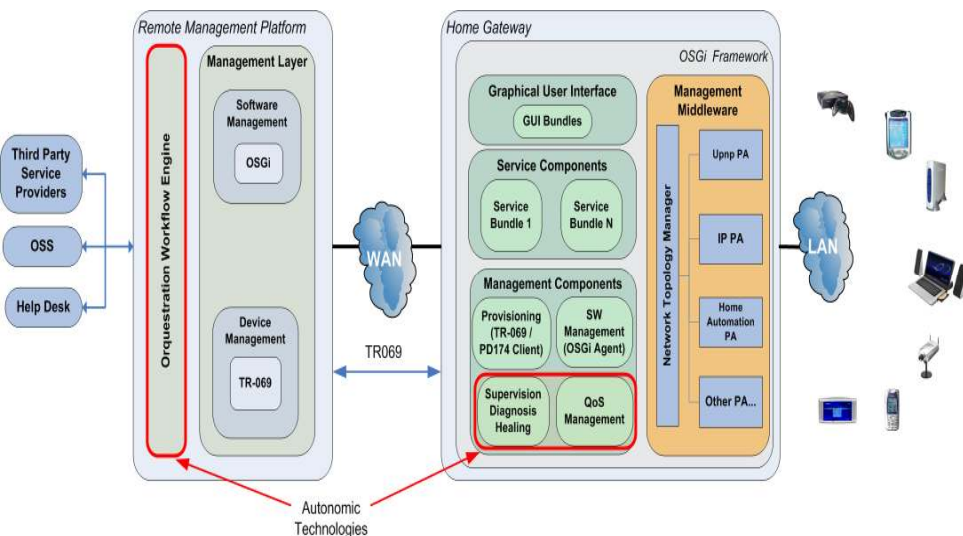
expenses (OPEX) that come from unknown connected devices and from interactions with each other that may affect the Quality of Service (QoS) of other services.

The innovative solution shall enable ubiquitous access to content. That is why the solution will try to overcome one of UPnP limitations (its restriction to LAN environments), to be able to access home contents from almost everywhere, giving it a WAN dimension.

The Project will propose an unified authentication mechanism, based on the usage of a SIM card. This solution will also give mobility, providing functionalities such as "My home moves with me". The issues affecting the customization of content and services, in order to maximize the experience for the user, will be addressed.

Approach

The project has to consider several aspects to fulfil its objectives. One aspect is to specify a Home Network Architecture to deal with users requirements mainly addressing the capacity of the network to satisfy all the services requirements. This home network will have to allow the con-



GENIO

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Partners:

AALTO University, Finland

ARANTIA 2010 S.L., Spain

EtherTrust, France

InAccess Networks, Greece

Instituto Tecnológico de Aragón, Spain

iSOCO, Spain

GIGLE Semiconductor S.L., Spain

LIP6 (Université Pierre & Marie Curie Paris), France

Mohinet, Finland

Osumus Recommendations, Finland

Screenpeak, Finland

Fundación European Software Institute, Spain

Telefónica I+D, Spain

There Corporation, Finland

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Vestel Electronics, Turkey

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www.celtic-initiative.org/projects/genio

nection of a heterogeneous set of devices. Work will be done in protocols to achieve a seamless connection, simplification in the implementation of networks (zero-configuration networking) and remote management of devices as well as software management, configuration, diagnostics and performance monitoring of those devices.

Another aspect of the project is dealing with self-managing and self-controlling systems. Now the user defines policies and rules that serve as inputs for the processes of self-management and self-controlling instead of controlling the system directly. The project aims at providing an autonomic platform capable of handling control and management aspects of autonomic networking seamlessly. But there is a limitation of device management systems: the lack of a unified and portable user interface. GENIO needs to offer a system that allows the user to use all the devices of a same class in a unified way.

The authentication mechanisms, access to content, and personalization of the systems, are other issues to work out. The project will look for a solution to guarantee authentication in efficient bandwidth utilization, allowing it from a local or a remote location. The user, once he is in the system, has the necessity of accessing to different contents in any device and in any location. Moreover, the personalization of the services, de-

vices, and platforms should be done once, so GENIO will work in a standard solution to allow interoperable profiles across different devices, services and platforms.

Main results

The major results are coupled with the following project's objectives:

- ◆ A (multi) standards-based management platform for a cost-efficient provisioning and lifecycle management of the Next Generation Services from Any Provider to Any Consumer Electronic Device within the home network;
- ◆ A standards-based solution that will enable the unified representation and Easy & Secure access to Any type of multimedia content from Anywhere and for Any device;
- ◆ The proposition of a standards-based user authentication and profiling solution for the provisioning of services in a personalized and mobile way.

These results will be demonstrated through the project by setting up two different demonstrators that will allow the end-to-end validation of the platform. The results will also be provided to several standardization committees as a suggestion to extend the existing standards with these new contributions.

There will be some dissemination activities directed to industrial partners, stakeholders and Special Interest Groups, research commu-

nity, European industry and the wider public that will profit from the project. These activities will involve international conferences, journals, workshops, etc.

Some partners, like Telefónica I+D and Vestel, will elaborate an exploitation strategy of GENIO's results for exploitation results.

Impact

As the number of services provided for the end users at home through the broadband connection and the number of connected devices in the home network are increasing, there is a strong need to provide management solutions in the home network, which allow users to be unaware of technology. The implementation of self-configuring, self-monitoring, self-diagnosing, self-healing concepts will allow that the end users only have to "plug&play" to enjoy their services, and mitigate the risk of not achieving a massive services adoption in the home environment because it is very complex to use them.

The management solutions should allow operators and service providers to reduce the OPEX of the services delivered to the users. This will lead to user satisfaction, and in turn to better loyalty.

GENIO will also propose solutions to satisfy users' demand of easy-to-interact-with services, and ubiquitous access to content. These solutions will be the foundations of new services for the operators which would generate new revenues, and help traditional Telcos enter into new markets.

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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