



ACEMIND

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Advanced Convergent and Easily Manageable Innovative Network Design

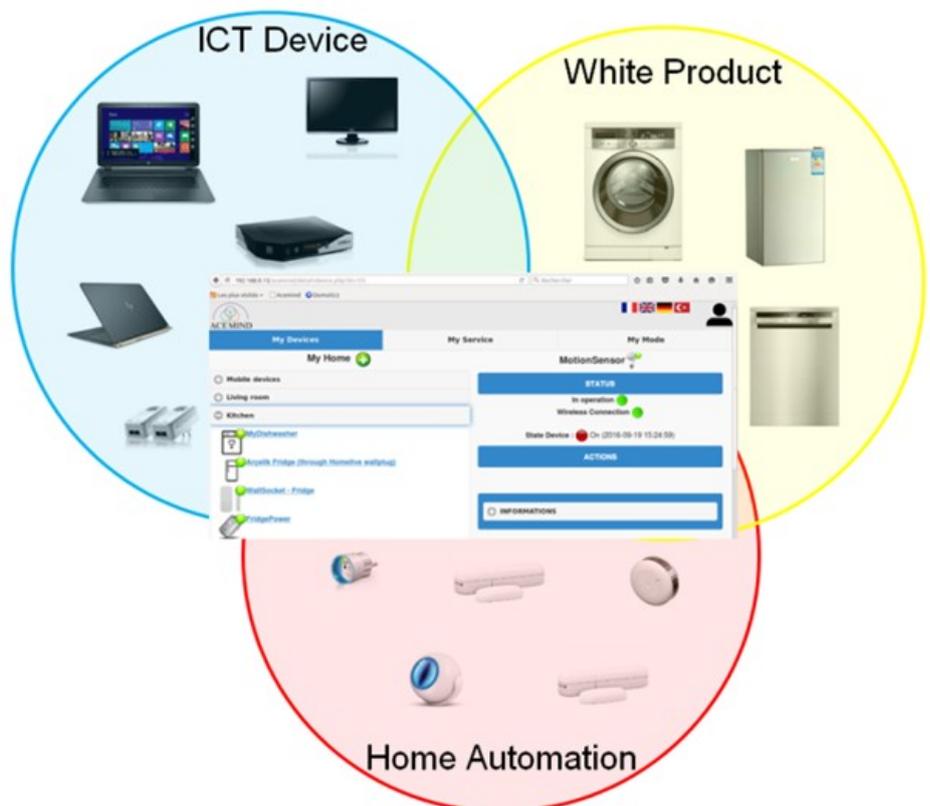
ACEMIND project intends to provide a set of simple solutions for enhancing the management of home network, including Information and Communication Technology (ICT) device, home appliance and home automation sensor. With ACEMIND dashboard, it is possible to manage large range of services such as energy management, hybrid network or senior care. Another target is to propose new wireless product without radio waves, Light Fidelity (LiFi).

Main focus

The ACEMIND service offer is divided into different parts:

◆ The pedestal:

- ◆ An integrated home box proposes home automation functionalities but also ICT and white product management, internet access, etc.
- ◆ A unique application (Dashboard) enabling to manage the house and be informed in case of urgent matter (Security, Senior Care, etc.).
- ◆ A novel architecture solution able to manage technologies (Ethernet, Wi-Fi, PLC...) with new services such as automatic switching or anomaly detection (Hybrid network).



Several devices from several areas and one dashboard

◆ Different packages, that users can subscribe independently according to their needs:

- ◆ The « Starter Pack Security » to secure my home,
- ◆ The « Starter Pack Senior Care » to soft survey elderly people,
- ◆ The « Pack Green » to reduce my home energy consumption.

◆ An alternative wireless communication solution by using optical waves (LiFi).

Approach

The scope of the project was very ambitious; several domains have been covered (ICT device, white product and home automation management with only one dashboard) and offered under service proposal. The coordinators of the project have attached a great importance to the coherence of activities in the project. The idea is to have a research driven by the customer expectations. The first step was to study and analyze the user requirements during project time life with several tools more than 3000 answers. The output gives the inputs to specify the Proof of Concept (PoC), then the last activity was integration and demonstration. The user's expectation approach defined during the project has been integrated and proposed through software and hardware

prototypes.

Achieved results

The main achievements are one unique interface, 5 prototypes, 1 patent (WO2015145048) and several papers/exhibitions:

◆ Dashboard: ACEMIND dashboard shows a complete view of customer's devices at home, like ICT device, white product and home automation sensor. The dashboard comprises as well an



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interface to services, e.g Security, Senior Care or Green Home.

◆ Hybrid: The challenges to optimize IEEE 1905.1 standard for hybrid network (Ethernet, WiFi, PLC...) with innovative capabilities, such as automatic switching or home network anomaly detection.

◆ Green: Our challenge focuses on home optimized consumption. The demonstrator presents a solution to flatten the energy consumption peak as a first step of service with simplicity and transparency for customers. It

consists of electrical system architecture management and a control algorithm in order to efficiently manage some home high electrical consumers (washing machine, dishwasher, dryer...).

◆ LiFi: The proposed optical wireless communication demonstrator is composed by two devices. One connected to the home box and the second is plugged to a laptop via USB port. This demonstrator proposes a bilateral communication.

Impact

An important condition for the success of this project is to move from standards and project demonstrators to real products.. It is an ambition of ACEMIND manufacturers and operator to introduce innovation to the market such as Hybrid Plug from Devolo which provide latest 1905.1 features and LiFiNet product from Oledcomm, the first industrial full duplex optical wireless communication system.



Devolo and Oledcomm products

About Celtic-Plus

Celtic-Plus is an industry-driven European research initiative to define, perform and finance through public and private funding common research projects in the area of telecommunications, new media, future Internet, and applications & services focusing on a new „Smart Connected World“ paradigm. Celtic-Plus is a EUREKA ICT cluster and belongs to the inter-governmental EUREKA network. Celtic-Plus is open to any type of company covering the Celtic-Plus research areas, large industry as well as small companies

or universities and research organisations. Even companies outside the EUREKA countries may get some possibilities to join a Celtic-Plus project under certain conditions.

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