



**CELTIC-PLUS/EUREKA**  
**Smart Connected World**

**Project-ID: C2012/1-1**  
**ACEMIND**



**Deliverable D3.2**

Secure Pack Home - Draft

*Part: General presentation*

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**Abstract**

To complete ...

**Keyword list**

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## Executive Summary

This document aims at drawing up a first overview of users and operator requirements regarding the scope of ACEMIND at the beginning of the project. It is divided into two parts in order to depict respectively the expectations from a user point of view on the one hand and from an existing service point of view on the other hand.

Regarding users' requirements, a methodology based on a user centric approach has been used; 55 face-to-face individual interviews occurred in 33 different European countries (France, Germany and Turkey): this represents more than 100 hours of deepening with people to identify the users' brakes and expectations regarding the scope of ACEMIND project. This approach enables to:

- Validate the interest that users' show regarding the functional scope of ACEMIND: when people think about their "home in the future", they are looking for smart home, which conciliates ergonomics and high tech, the whole being integrated into a single application
- Refine the functional definition of the services constituting this smart home: at the beginning of the ACEMIND project, 3 main service categories have been defined (Lifestyle, Health and Smart Energy) and were thorough during the interviews. These 3 services were a basis in order to have inputs for the participants so that they can comment and enrich them.

Regarding the existing service proposed by the supplier or operator, requirements is based on an analysis of features and current user interface.

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## Document History

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Franck	COCHET	0.1	Creation part: Secure Pack
Jean-Philippe	JAVAUDIN	0.2	Corrections + conclusion part.
Olivier	Bouchet	1.0	Final



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# 1 Introduction

In the Eureka/Celtic+ framework, the European research project ACEMIND (Advanced Convergent and Easily Manageable Innovative Networks Design), launched in October 2013 for a 3 years period, aims to simplify the installation and use of intelligent home equipment, regardless of supported technologies. ACEMIND consortium brings together several European industrial players in this market (Orange - FR, OledComm - FR, Devolo - DE, Invea -Tech - CZ, Arcelik - TR) as well as universities and institutes recognized in this area (IHP Microelectronics - DE, University of Athens - GR).

ACEMIND project concept: over single management interface, the user controls his "smart" home. The heterogeneous technologies used are transparent to the user: for him, fridge consumption, light switching, data exchange, etc. are centralized information and available from a single application.

ACEMIND goals are to offer:

- A single, standardized network infrastructure enabling the customer to have a choice in the purchase of equipment and benefit from lower costs.
- Multimedia and smart home products and services on a single network.
- A simple solution for monitoring and management of home network, locally for the user or remotely for the after-sale support service.

To reach these goals, the perimeter of ACEMIND includes an analysis of the point of view of end-users (both users (referring to customers) and operator) in order to identify European end-user's expectations and fears regarding the concepts and the services included in the scope of ACEMIND.

Regarding the users themselves, this analysis is based on a user centric methodology which is divided into 3 steps:

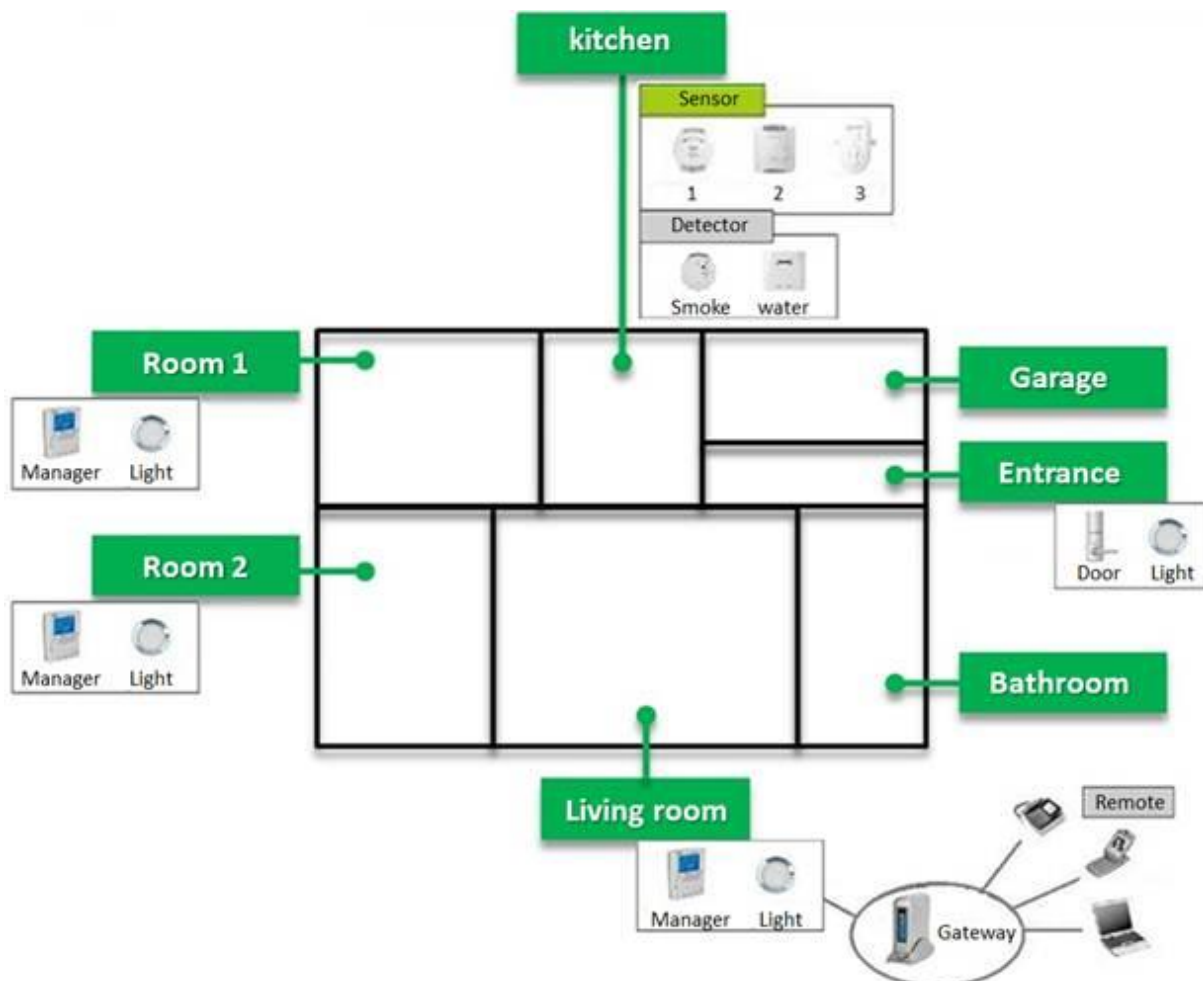
- Step 1: the inputs, which are the relevant previous results based on users' feedbacks (other projects, internal brainstorming) in order to explore and widen functional aspects within the scope of ACEMIND
- Step 2: the interviews, which are face-to-face and multi-countries, in order to deepen each aspect with European end-users
- Step 3: the synthesis which enables to define users' expectations, to prioritize them, to identify users' brakes and potential specificities according to the countries

Regarding the operator, this analysis is based on the main expectations of the operators regarding the provision of services to their customers with a satisfactory quality of experience from the installation to the use and refurbish of their home network equipment. Expectations regarding the profitability of the home network are also captured in the document.

This deliverable draws up the results of these analyses, both for a user's point of view and for an operator's point of view.

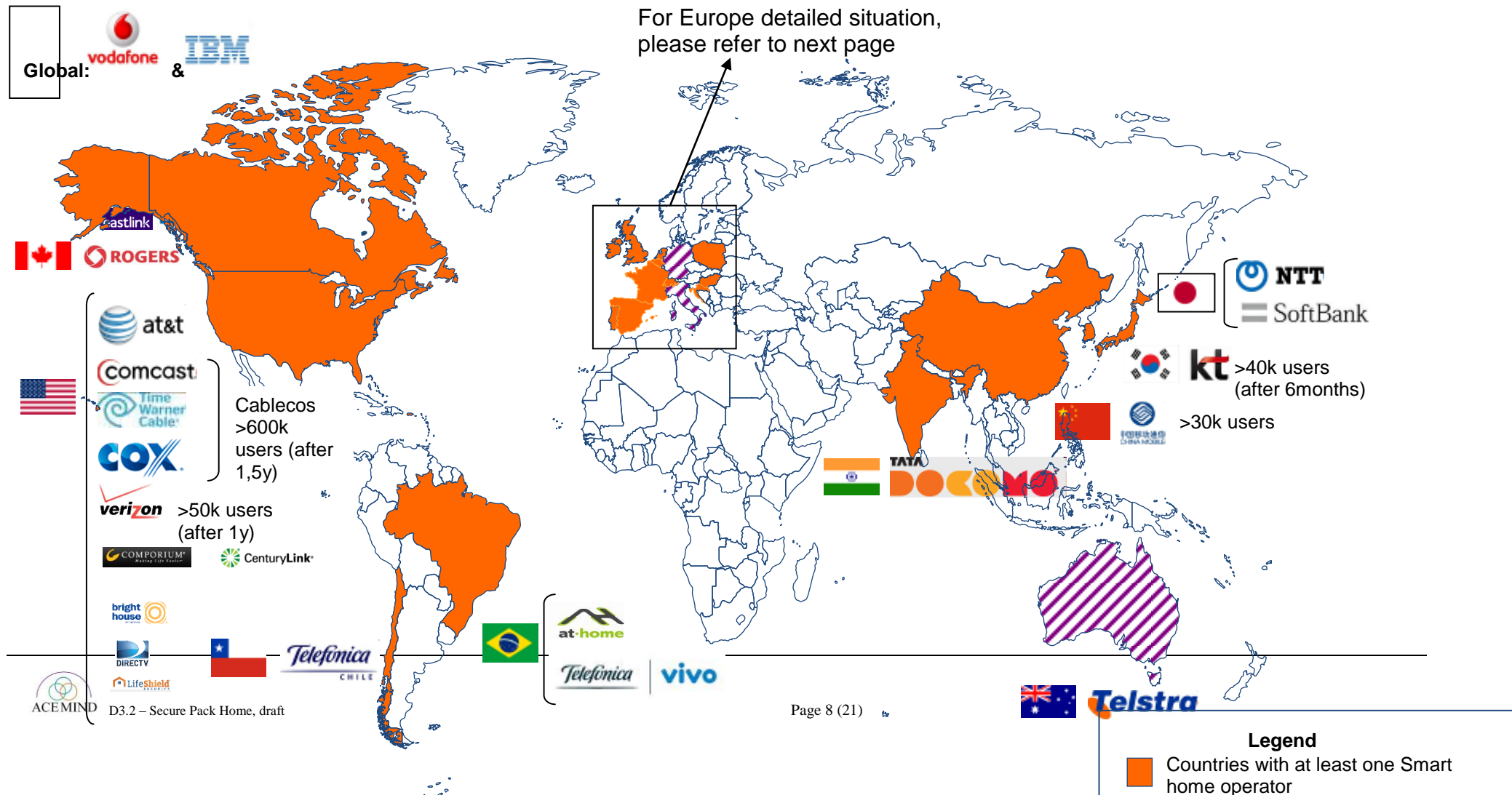
## 2 User Requirement Result :Main conclusions

- **4 key functionalities** stand out (over 90%):
  - smoke and fire detection
  - intruder or motion detection
  - water leak detection
  - heating control
- **« Topology »**: participants are interested in the view of their connected devices at home (over 90%):
  - both multimedia and home automation devices
  - a functional view, with the status of the devices / services
  - simple to interpret (physical localization required by participants)
- **Commercial offer**:
  - 37% prefer a single offer, including Lifestyle, Health and Smart Energy services.
  - Average fair price estimated by participants = 11,01€ / month (service part only – without equipment)
  - 63% prefer 3 offers (cumulated prices = 10,76€):
    - o Health: average fair price estimated by participants = 4,54€ / month
    - o Lifestyle: average fair price estimated by participants = 3,55€ / month
    - o Smart Energy: average fair price estimated by participants = 2,67€ / month



### 3 Benchmark

# Smart Home Services in the world

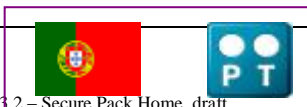
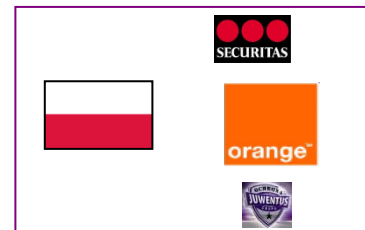
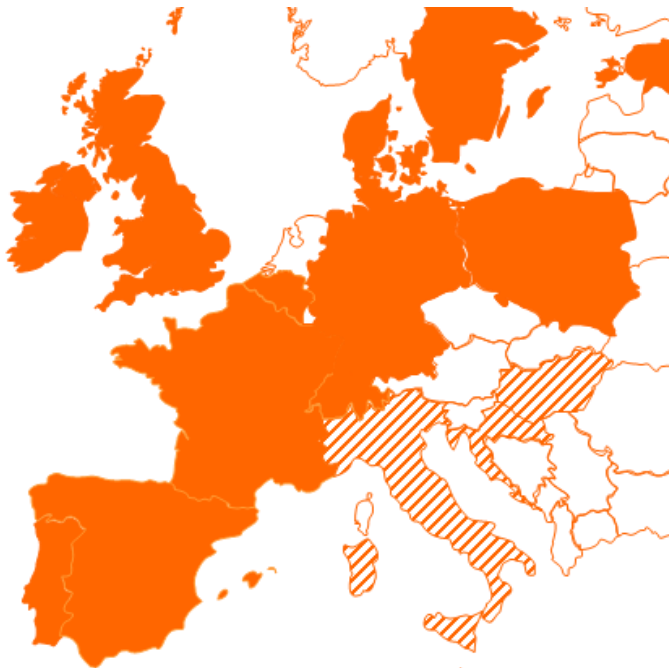




# Smart Home Services: Zoom on Europe.



>100k users





### 3.1 Smart Home service and products benchmark


#### 3.1.1 Nest (company owned by Google)

**Description of the solution :** <https://nest.com/>

**The smoke + CO alarm, reimagined by Nest.**  
**A friendly warning :** Before an emergency, Nest Protect gives you an early Heads-Up telling you what the danger is and where it is.  
**Silence the chirp :** Low-battery chirps ever rattle your dreams? Nest protect shows you its batteries are good. Before you doze off.  
**Know what's going on :** Nest Protect will send a message to your smartphone if the alarm goes off or if the batteries need replacing.



**Who :** 

**Solution** 






**When :** Décembre 2013

**Type :**  Smart Box  
 **Devices**  
 Service



















**Device**  Unique  
 Multiple

**Price** 129 \$  
 Thermostat : 249 \$









**Interface and remote control devices**



Smartphone - Tablet    
 PC/Mac   
 TV  

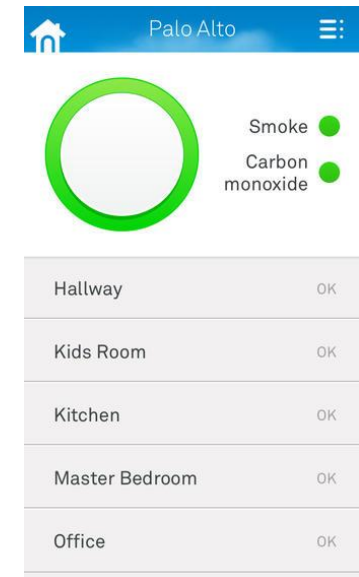
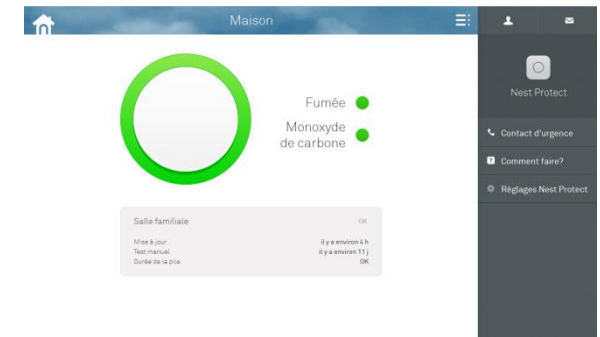
**Smart Home Devices**

**Wireless protocols used for communicating**

							
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**Legend:**  Not available     in option or external solution



### 3.1.2 Home By SFR

**Description of the solution :** <http://boutique.home.sfr.fr/>

Home by SFR is alarm system connected, winner of the 2013 Trophy House. Whatever happens to you (motion, intrusion, smoke, water leak, ...), you are alerted on your mobile, you can check through the camera what happens and if you need to ask the intervention of a security agent 24h/24. Scalable, depending on your needs, Home by SFR also integrates the automation to allow you to remotely control or program your shutters, your lights or other electrical appliances.



**Interface and remote control devices**

- Smartphone - Tablet
- PC/Mac
- TV
- Voice

**Smart Home Devices**

- Presence detector
- Gating detector
- Smoke detector
- CO/CO2 detector
- Water leak
- Controllable outlet
- Heat detector
- Video camera
- Smart TV
- Siren alarm
- Weather station
- GPS tracker
- Light Bulb
- Door or shutter
- Door lock
- Audio system
- Remote

**Wireless protocols used for communicating**

- WiFi
- LigBee
- Bluetooth
- Bluetooth +
- ZigBee
- 4G
- Proprietary Protocol

**Who :** 

**Solution** 

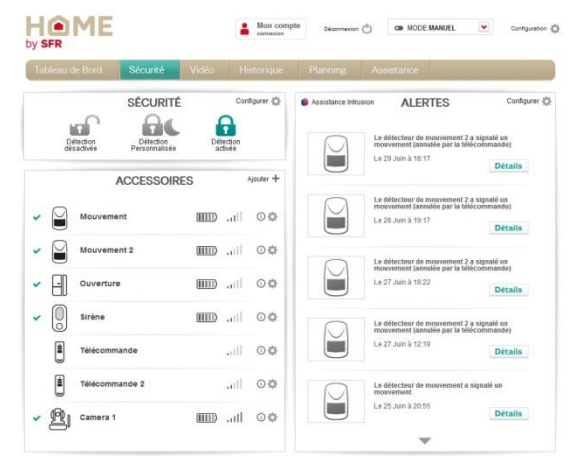
**When :** Juin 2012

**Type :**

- Smart Box
- Devices
- Service
- Unique
- Multiple

**Device**

**Price** 99 € + 10 € or 20 €/month



### 3.1.3 IVEE - Sleek

**Description of the solution :** <http://www.helloivee.com/>

Ivee Sleek is the first Wi-Fi Voice-Activated Assistant for the home that helps you manage and control your connected devices without any hands. In addition, ivee helps you set reminders, wakes you up on time, and even fetches live internet content (like weather and news) that is relevant to you: Thermostats, Locks Lights or Hubs : [Solution Iris](#), [Nest](#), [iControl](#), [Lockitron](#), [Goji](#), [Belkin](#), [Philips Hue](#), [Staples Connect](#), [SmartThings](#)

**Interface and remote control devices**

- Smartphone - Tablet
- PC/Mac
- TV
- Voice

**Smart Home Devices**

Presence detector	Gating detector	Smoke detector	CO/CO2 detector	Water leak	Controllable outlet
Heat detector	Video camera	TI connect d	Siren alarm	Weather station	GPS tracker
Bulb	Door or shutter	Door lock	Audio system	Remote	

**Wireless protocols used for communicating**

✗ Not available    △ in option or external solution

**Who :**

**Solution**

**When :** Summer 2013

**Type :**

- Smart Box
- Devices
- Service

**Device**

- Unique
- Multiple

**Price** 229,99 \$





### 3.1.4 Revolv

**Description of the solution :** <http://revolv.com/>

Revolv, the device that connects all your smart devices, will begin sales in selected Home Depot stores across the U.S. As a reminder, Revolv could become an important piece of the so-called Internet of Things. It's a simple \$299 box that you plug in your house, and after that you can control all your smart devices from your phone and get smarter triggers : Device from Insteon, GE, Honeywell, Trane, Sonos, Yale, Kwikset, Philips, Leviton, ...



#### Interface and remote control devices



#### Smart Home Devices



#### Wireless protocols used for communicating



X Not available    Δ in option or external solution    Comming Soon

**Who** **revolv**

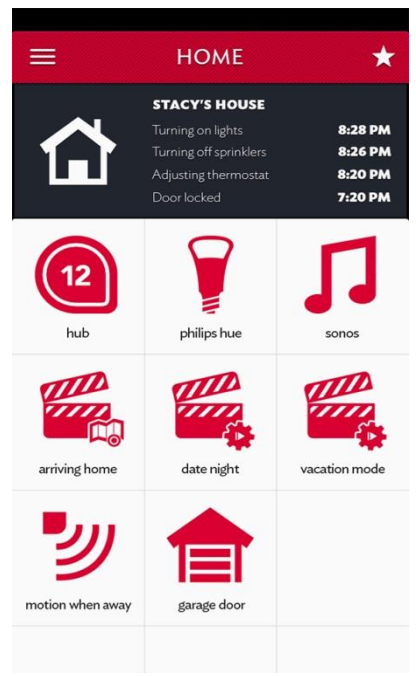
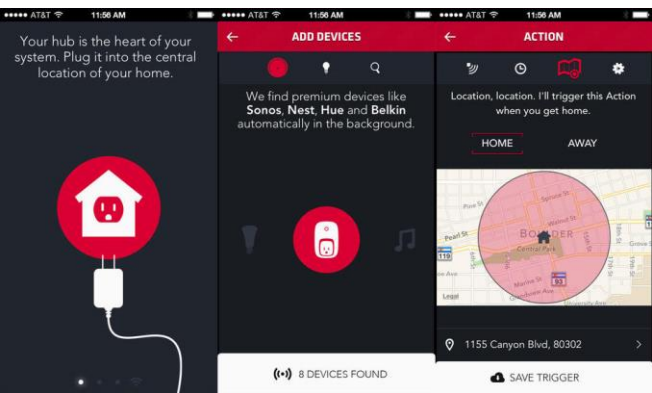
**Solution**

**When :** Novembre 2013

**Type :**  Smart Box,  Devices,  Service

**Device**  Unique,  Multiple

**Price** 299 \$




### 3.1.5 Zipato – Zipabox

#### Description of the solution :

Zipabox is a next-generation automation controller that lets you control all your home electronics. Most often it uses simple, reliable, low-power radio waves that easily travel through walls, floors and cabinets, but it can also use existing powerlines or BUS wires to connect all your home electronics.

Through Zipabox multi-environment capabilities, Zipato control can be added to almost any electronic device in your house, such as appliances, window shades, thermostats and home lighting.



#### Interface and remote control devices

Smartphone - Tablet  PC/Mac   
 TV  Voice

#### Smart Home Devices

<input checked="" type="checkbox"/> Presence detector	<input checked="" type="checkbox"/> Gating detector	<input checked="" type="checkbox"/> Smoke detector	<input checked="" type="checkbox"/> CO/CO2 detector	<input checked="" type="checkbox"/> Water leak	<input checked="" type="checkbox"/> Controllable outlet
<input checked="" type="checkbox"/> Heat detector	<input checked="" type="checkbox"/> Video camera	<input checked="" type="checkbox"/> Tilt sensor	<input checked="" type="checkbox"/> Siren alarm	<input checked="" type="checkbox"/> Weather station	<input checked="" type="checkbox"/> GPS tracker
<input checked="" type="checkbox"/> Light Bulb	<input checked="" type="checkbox"/> Door or shutter	<input checked="" type="checkbox"/> Door lock	<input checked="" type="checkbox"/> Audio system	<input checked="" type="checkbox"/> Remote	

#### Wireless protocols used for communicating

ZigBee  Insteon  X10  KNX  
 WiFi  Bluetooth 4.0

Not available     in option or external solution

**Who :** zipato


**Solution**

**When :** January 2013

**Type :**  Smart Box,  Devices,  Service

**Device**  Unique,  Multiple

**Price** 199 €



**General**  
 Zipabox: 010137020001F566  
 Mark Onions

Total devices	5	Total endpoints	4
New	3	New	1
Active	5	Active	4
Online	5	Online	4
Offline	0	Offline	0
Inactive	0	Inactive	0
Problem	0	Problem	0

Last sync: 08.03.2013, 08:38:30  
 5 devices

Your Zipabox firmware is up to date.  
 Current firmware version: 0.9.961


**Consumption history**  
 Total daily consumption: 54.87kw

**Current consumption**  
 6,23kw

**Thermostat**  
 18,1°C

**Home appliances**  
 Washing machine: 2,18kw

**Energy meter**  
 0,23 kw/kwh



**Meters**

- Living room lights: 45W
- Kids room light: 12W
- Living room humidity: 45%
- Living room temperature: 21°C

### 3.1.6 Thomson-THOMBox

**Description of the solution :**

The ThomBox is a complete and scalable system, designed to meet the basic uses of novices as well as those of more experienced users. The overall solution ThomBox all aspects of the connected home: comfort, safety and mastery of energy consumption. Its interface is designed in HTML5 is available from any computer, tablet or smartphone touch.



**Interface and remote control devices**

Smartphone - Tablet



PC/Mac





TV



Voice



**Smart Home Devices**

 Presence detector	 Gating detector	 Smoke detector	 CO/CO2 detector	 Water leak	 Controllable outlet
 Heat detector	 Video camera	 Smart connect	 Siren alarm	 Weather station	 GPS tracker
 Light Bulb	 Door or shutter	 Door Lock	 Audio system	 Remote	

**Wireless protocols used for communicating**










 Not available
 in option or external solution

*Advidsen Radio Wave*



**Who :** 

**Solution** 

**When :** June 2013

**Type :**

- Smart Box
- Devices
- Service

**Device**

- Unique
- Multiple

**Price**

299 € : THOMbox  
499 € : THOMbox + devices



### 3.1.7 Deutsche Telekom – Quivicon

#### Description of the solution :


QIVICON is intelligent home automation that enables tenants and homeowners alike to monitor and control devices and functions in their homes using a smartphone, PC or tablet PC. Visitors to CeBIT can experience QIVICON live at the Telekom stand and get to know the many possible applications for this technology in the fields of comfort, energy, security and health.

Partnership with:   

#### Interface and remote control devices

Smartphone - Tablet	PC/Mac
	
TV	Digital Watch
	

#### Smart Home Devices

#### Wireless protocols used for communicating

							
--	--	--	--	--	--	---	--

 Not available     in option or external solution

#### Who :

 Deutsche Telekom

#### Solution :



#### When :

#### Type :

- Smart Box
- Devices
- Service

#### Device :

- Unique
- Multiple

#### Price :

500 €






### 3.1.8 Canary

**Description of the solution :** <http://canary.is/>

Canary is a single device that contains an HD video camera and multiple sensors that track everything from motion, temperature and air quality to vibration, sound, and activity to help keep you, your family and your home safe. Controlled entirely from your iPhone or Android device, Canary alerts you when it senses anything out of the ordinary — from sudden temperature changes that can indicate a fire, to the sound and movement that could mean an intrusion. Instantly receive, view and act on the alerts wherever you are.



**Interface and remote control devices**

Smartphone - Tablet	PC/Mac
TV	Voice


**Smart Home Devices**


Presence detector	<del>Gas detector</del>	Smoke detector	CO/CO2 detector	<del>Direct water leak</del>	<del>Controllable outlet</del>
Heat detector	Video camera	<del>Hub</del>	<del>Siren alarm</del>	<del>Weather station</del>	<del>GPS tracker</del>
<del>Light Bulb</del>	<del>Door or shutter</del>	<del>Light lock</del>	<del>Audio system</del>	<del>Remote</del>	accelerometer

**Wireless protocols used for communicating**

<del>ZigBee</del>	WiFi	<del>ZigBee</del>	<del>Bluetooth</del>	Bluetooth 4.0	<del>4G</del>	<del>Proprietary Protocol</del>
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✗ Not available    
 ⚠ in option or external solution

**Who :** 

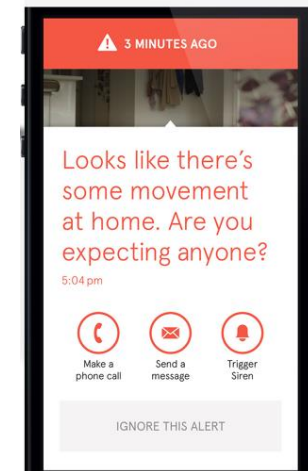
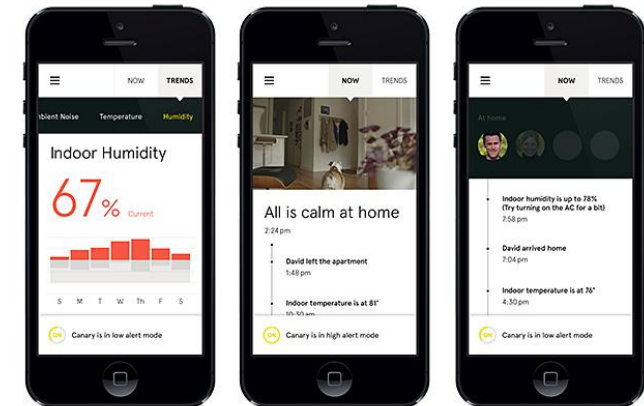
**Solution :** 

**When :** Feb 2015












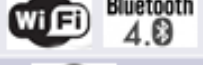
























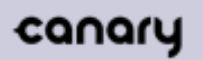


**Type :**  Smart Box,  Devices,  Service

**Device :**  Unique,  Multiple

**Price :** 199 \$



## 4 Synthesis

Solution	Type	Devices / Detectors	Wireless Prot.	Price	Available
	Homelive + Multiple Devices			1 € + 10€/month	Yes
	Smart Home Box + Multiple Devices			99 € + 10 € or 20€ / month	Yes
	Unique Device (Box & devices)			129 \$	yes
	Smart Home Box + Multiple Devices			230 €	Yes
	Smart Home Box + Multiple Devices			230 \$	Yes
	Smart Home Box + Multiple Devices			299 \$	Yes
	Smart Home Box + Multiple Devices				No
	Smart Home Box + Multiple Devices				No
	Smart Home Box + Multiple Devices				No
	Smart Home Box + Multiple Devices			220 \$ + 10 \$/month	Yes
	Smart Home Box + Multiple Devices			299 € or 499 € (with devices)	Yes
	Smart Home Box + Multiple Devices			500 €	Yes
	Unique Device (Box & devices)			199 \$	Fev 2015

## Three types of services :

- 
- Smart Home Box and multiple devices  
(with or without services)



- 
- Smart Home Box compatible with standard devices



- 
- Unique Box integrate captors & detectors



## 5 Conclusion

In this document we first have presented the user expectations with regard to their smart home, in terms of services as well as management/monitoring tools. Most of them prefer a bundle of services covering all needs at home such as security and comfort. Additionally it turned out that users are willing to see their devices located on their home map across the rooms, it would help them visualising their equipment's and thus their services.

As shown as well in this document, many products exist for smart home and most of them propose the connection of multiple devices and consequently support a wide span of services.

ACEMIND brings together all services expected by the customer. On this point, a simple evolution of existing solutions could also lead to such a service bundle. Nevertheless, ACEMIND novelty lies essentially in the performance of the network infrastructure that can connect the various devices (eg. IEEE 1905) and as well into the smart integration of Arcelik devices.

Last but not least, to our knowledge, none of the existing dashboard proposes a mapping of the devices on the home map. ACEMIND will provide a simple interface to realise such a mapping and by the end of the project meet the user expectations for the monitoring and management of its smart home services and devices.

## 6 References