



ZigBee Home Automation and Telecom Services

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WSN in the real world – Barcelona - 2011



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Summary

- **ZigBee Home Automation**
 - **Energy@home**
- **ZigBee Telecom Services Profile**



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Current ZigBee Applications

- **ZigBee Home Automation (ZHA)**
- **ZigBee Smart Energy (ZSE)**
- **ZigBee Building Automation (ZBA)**
- **ZigBee Health Care (ZHC)**
- **ZigBee Telecom Services (ZTS)**



- **ZigBee RF4CE Remote Control**
- **ZigBee Retail**

ZigBee Home Automation





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HA: Home Control

● Scope & Purpose

Applications for the residential automation market to allow OEMs to produce products that will meet the needs of customers ranging from DIY homeowners to professional installers.

Remote access



Lighting



Closures



Switches



Security



Heating/cooling



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HA: Devices

● Generic

- On/off switch
- Level control switch
- On/off output
- Level controllable output
- Scene selector
- Configuration tool
- Remote control
- Combined interface
- Range extender
- Mains power outlet

● HVAC

- Heating/cooling unit
- Thermostat
- Temperature sensor
- Pump
- Pump controller
- Pressure sensor
- Flow sensor

● Intruder alarm systems

- IAS controller (CIE)
- IAS ancillary control (ACE)
- IAS zone
- IAS warning device

● Closures

- Shade
- Shade controller

● Lighting

- On/off light
- Dimmable light
- Color dimmable light
- On/off light switch
- Dimmer switch
- Color dimmer switch
- Light sensor
- Occupancy sensor



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New Features for HA

- **Easy commissioning (easy pairing) feature**
- **ZigBee Whitegoods control**
- **User-centric energy management**
- **Energy Management Center (home gateway) for smart appliance orchestration**
- **Advanced management for sleeping device (poll coordination)**
- **Use of green Power feature for battery-less devices**
- **Enable interop with other profiles**
- **Advanced interoperability**



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Home Energy management ecosystem

- Working with other ecosystems to extend ZigBee Home Automation:
 - Big payers involved
 - Security Monitoring market: sensors for home automation, security and control
 - Energy@home: user-centric energy management and appliance control



Energy@home

Thinking of you
 **Electrolux**

 **Enel**
L'ENERGIA CHE TI ASCOLTA.

 **INDESIT**
company

 **TELECOM**
ITALIA



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Energy@Home HA Devices

User interfaces (e.g. TV)

Home Gateway



Smart Plugs



Meter interface (Smart Info)



Energy@home



Whitegoods





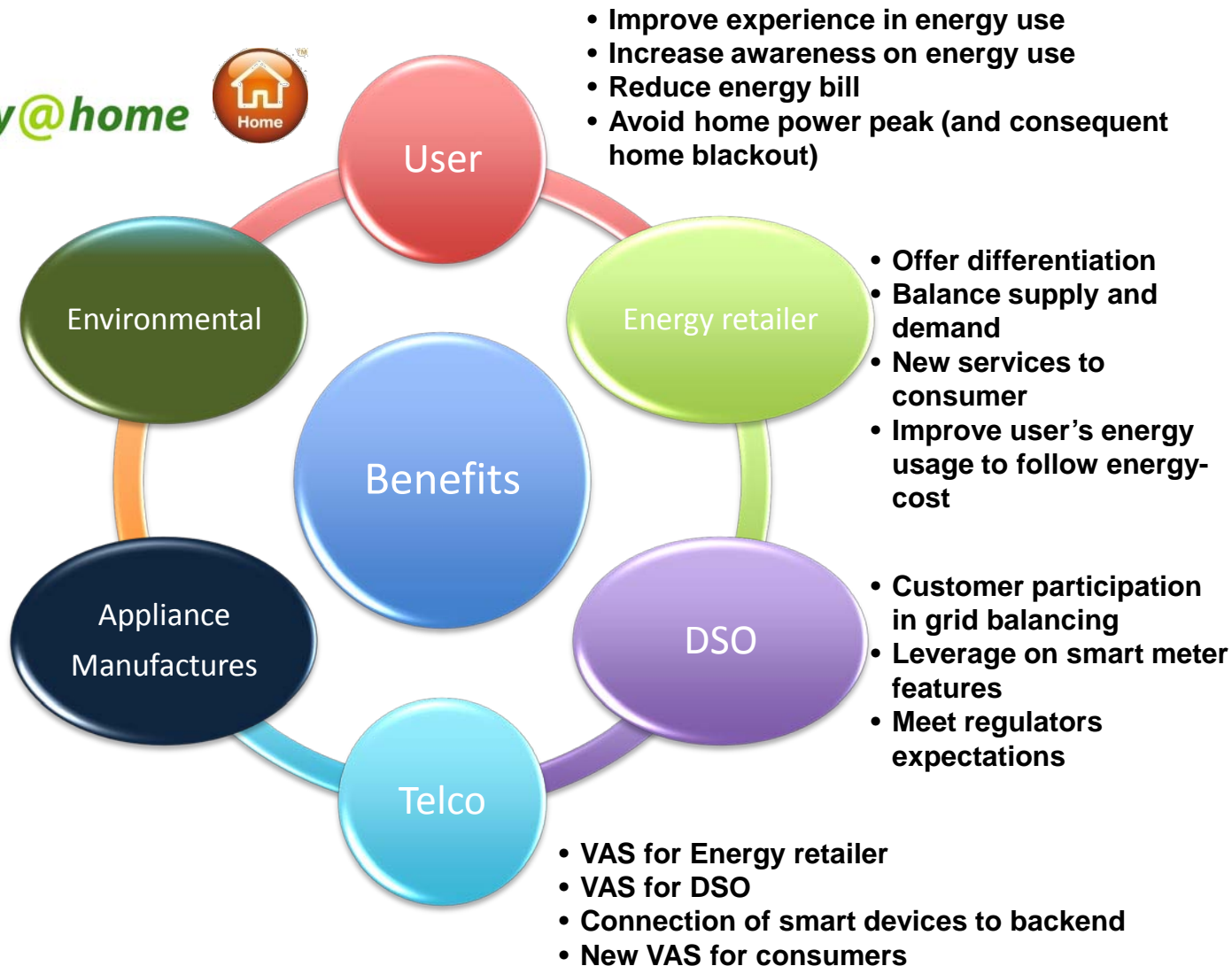
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Benefits and stakeholder interests



Energy@home





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E@H use cases

● Customer Energy Awareness

- current power usage.
- historical consumption data.
- current tariff and tariff time frames.
- overload alarms.

— Coordinated Management Appliance Regulation

- Condition where any Smart Appliance coordinates its operations with the Home Gateway.
- The Home Gateway, through a dialogue with the Smart Appliances, plans their operations taking into account price and volume signals, selected household appliances programs and customer needs and constraints.

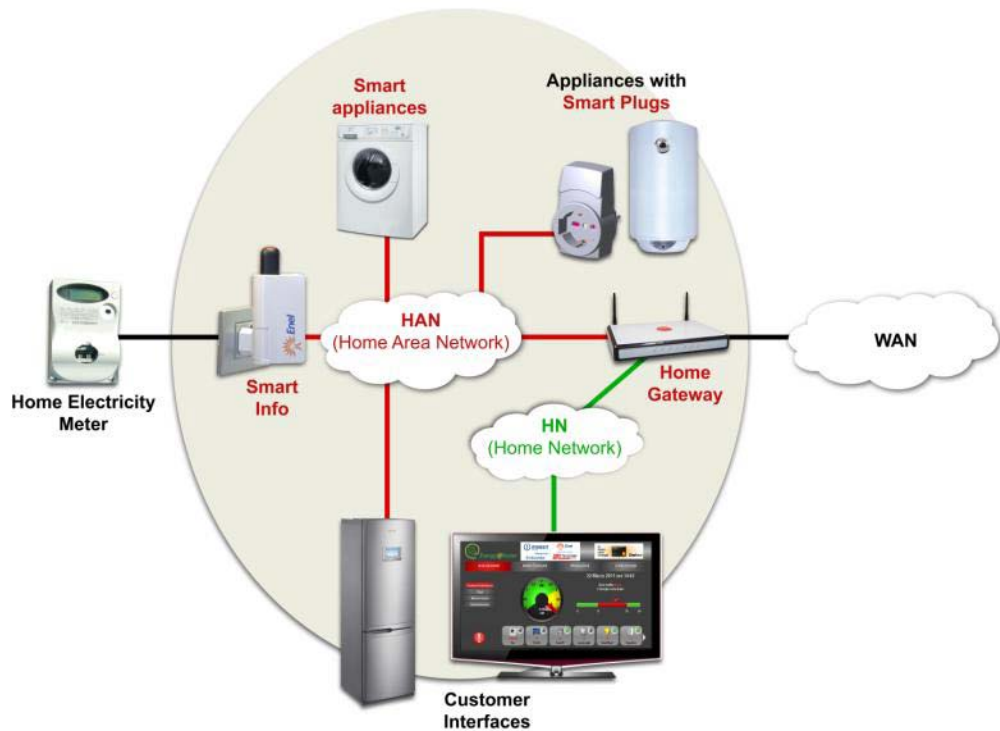




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Energy@Home and Standards



Brand new **Smart Gateway** (HAN coordinator) bridges HAN, HN and WAN



ZigBee as HAN communication technology



Energy@home protocol is extending the existing EN50523-1 (standard Cenelec EN50523-1: "Household appliances interworking") and ZigBee Home Automation profile.



Telecom Services



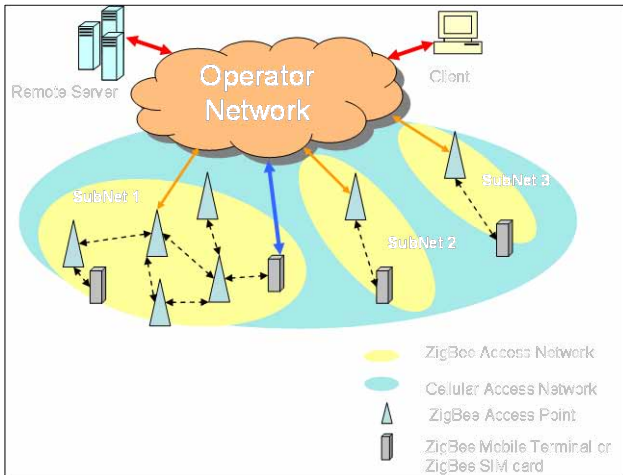


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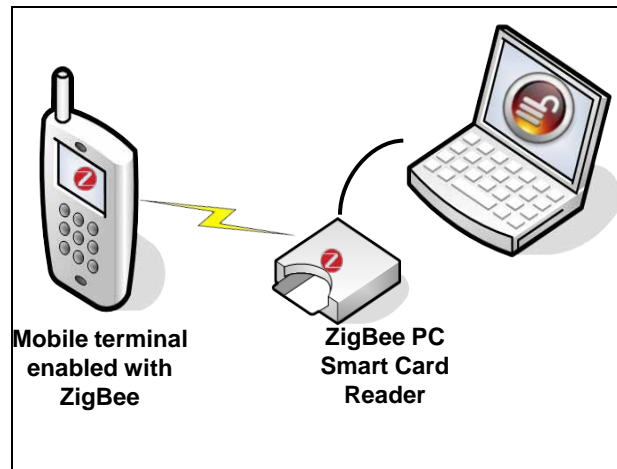
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ZigBee Telecom Services scenarios

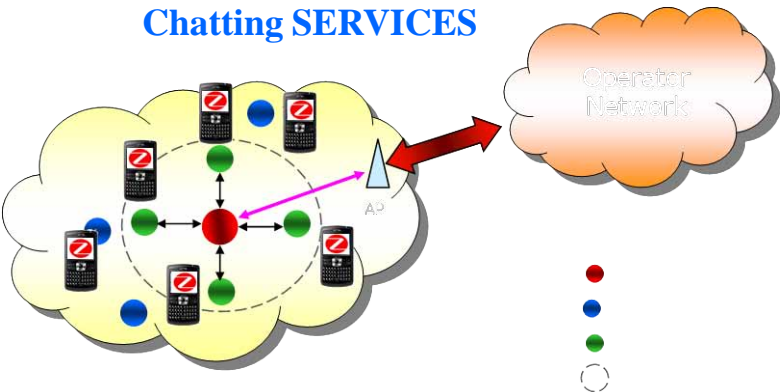
LOCATION BASED INFORMATION SERVICES



MOBILE OFFICE SERVICES

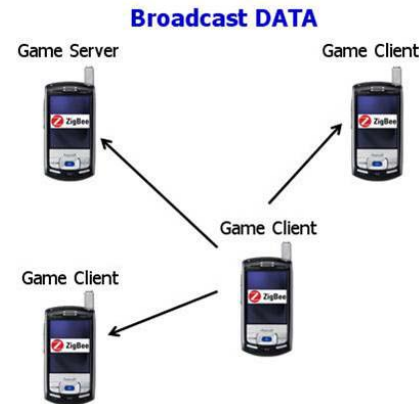


Chatting SERVICES



- Information delivery
- Location Based Services
- Mobile Office
- Mobile Payments
- P2P small data sharing
- Mobile Gaming
- Chatting
- VoZ

GAMING and chatting SERVICES



ZTS specification has been finalized and public available 



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ZigBee Retail



Work with other profiles



Shipping/Receiving



Consumer Devices



Video/Voice



Monitoring/Alerts



Scan/Shop



Proximity Marketing



Customer Services



Payment Services





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Conclusions

- **ZigBee Home Automation**
 - Enriching standard with new features
 - Enhanced easy-to-use and interoperability
 - Collaboration with ecosystems (big home automation players, Energy@home, security,..)
- **ZigBee Telecom Services covers a number of use cases**
 - Enable ZigBee to be used in mobile devices
 - Leverages on the ZigBee mesh to enable multi-user services

**Questions?
Thanks!**

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