



Networking session

FIEMSER and the REEB Technological Roadmap

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Context

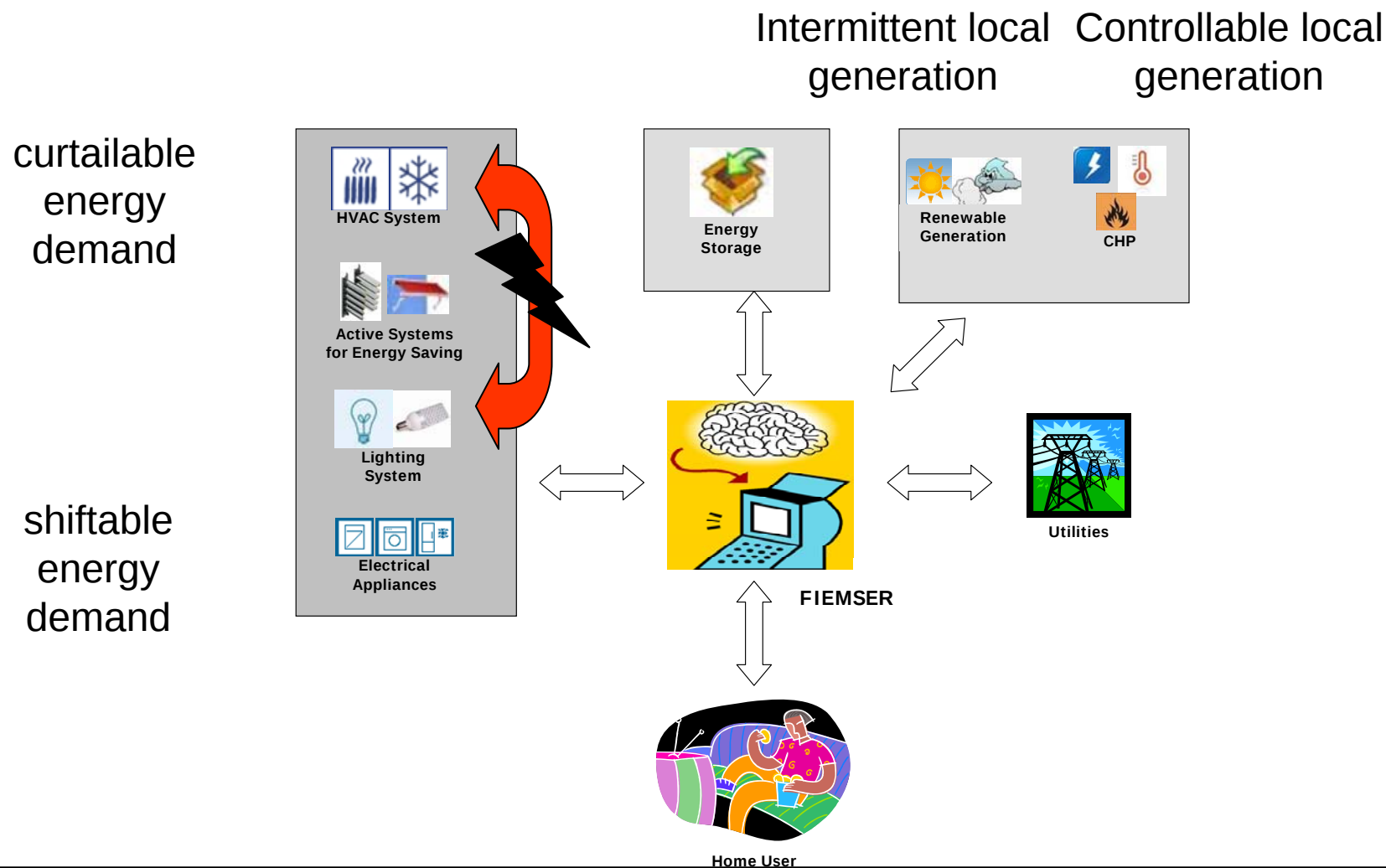
- **Buildings are responsible for up to 40% of energy use in most countries.**
- **There are three key elements to achieving progress:**
 - Use less energy
 - Make more energy locally
 - Share surplus energy



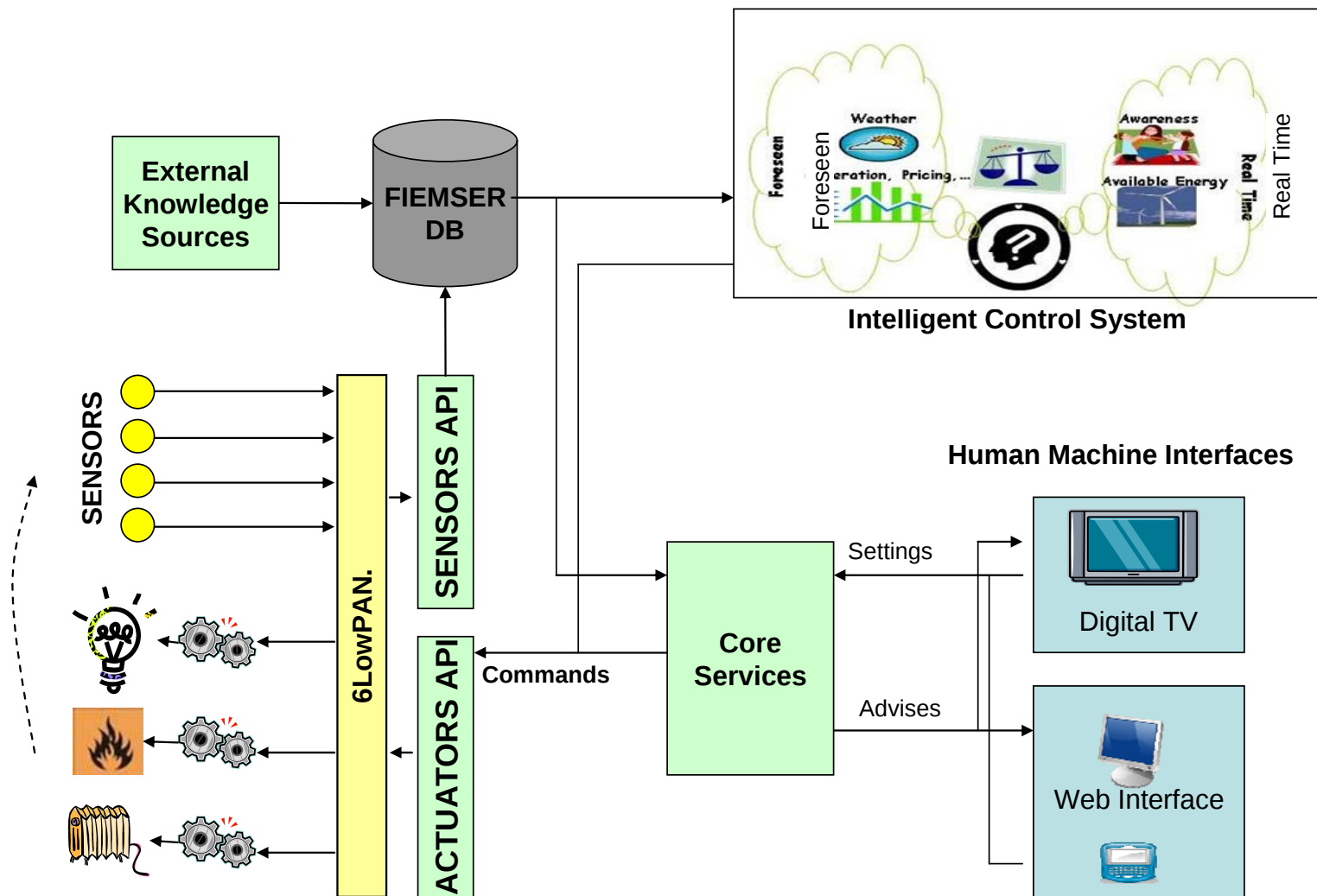
Objectives

- **Main objective:**
The development of an **innovative energy management system** for **existing and new residential buildings** (BEMS), which pursues the **increase of the efficiency of the energy used** and the **reduction of the global energy demand of the building**, but **without penalizing the comfort levels of the users**.
- **In order to achieve this goal, two main strategies will be followed:**
 - **Minimizing the energy demand from external resources**, through the **reduction of the energy consumption** in the building and the correct **management of local generation** (heat and electricity) and **energy storage equipment** to satisfy the energy demand of the building, and even provide the capability to export energy to the utilities when needed.
 - **Interaction with the building user**, in such a way as to increase the consciousness of the consumer of his energy consumption and CO2 emissions, providing hints to make punctual changes in his behavior without major disruptions of his comfort conditions.

Global Overview



Overall Architecture



Consortium



PHILIPS



CLARITY
clarity-centre.org

THALES



Main Expertise	
ACCIONA	End-users requirements
UCD Clarity	Wireless communication networks
TECNALIA	Energy efficiency in buildings
TENESOL	Local Generation
CSTB	Standardization and data models
THALES	ICT Platforms
PHILIPS	Digital TV
Fhg IBP	Evaluation of energy performances

REEB & FIEMSER

REEB Best practices guide and collection of case studies

6 of 12 being relevant :

- “Integrated solutions based on BIM”
- “Smart metering for energy consumption awareness”
- “Building Management Systems”
- “Wireless sensor networks for energy performance monitoring”
- “SmartGrids”
- “Standards-based energy data exchange solutions”

Identify current best
practices & RTD



FIEMSER, a step forward

- BIM in control systems.
- Realtime energy saving advices.
- Holistic predictive management of local generation and loads.
- Wireless sensor in control networks.
- Interoperability with existing systems.

REEB & FIEMSER

REEB Vision & roadmap 4 of 5 relevant categories:

- Intelligent control
 - *Automation and Control*
 - *Wireless sensors network*
- User awareness and decision support
 - *Visualization of energy use*
- Energy management & trading
 - *Building as a prosumer*
- Integration technologies
 - *System integration*
 - *Interperability and standards*

Vision, Roadmap,



Recommendations

FIEMSER project implementation

- Holistic control strategies
- Taking user and buildings activities into account
- Predictive control by considering weather forecast
- Integration of simulation tools in BMS
- Reduce energy consumption of WSN
- Plug&play
- Interfaces for energy display
- Energy awareness impact on user behavior
- Real-time self assessment
- Integration service platform
- Integration with existitng BIM and communication standards

Conclusion

FIEMSER, a FP7 STREP ICT project, is aligned with several Best Practices that have been defined in the REEB project and means a step forward by developing some of the technological needs that have been identified in the REEB roadmap in relation with the Building Energy Management Systems (BEMS).

Acknowledgement

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Thank very much you for your attention.