



Conference 2011



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**Let's Construct Europe's Future  
With Innovative Buildings and Infrastructures  
*Construction and Societal Challenges***

**Radisson Blu Centrum Hotel - WARSAW  
04 / 05 October 2011**

# ICT Project Review

## ECTP conference – session

### *Energy-Efficient Buildings & Districts: the role of ICT*



**Alain ZARLI, CSTB**  
Head of Division

*Information Technologies and Knowledge Dissemination Department*



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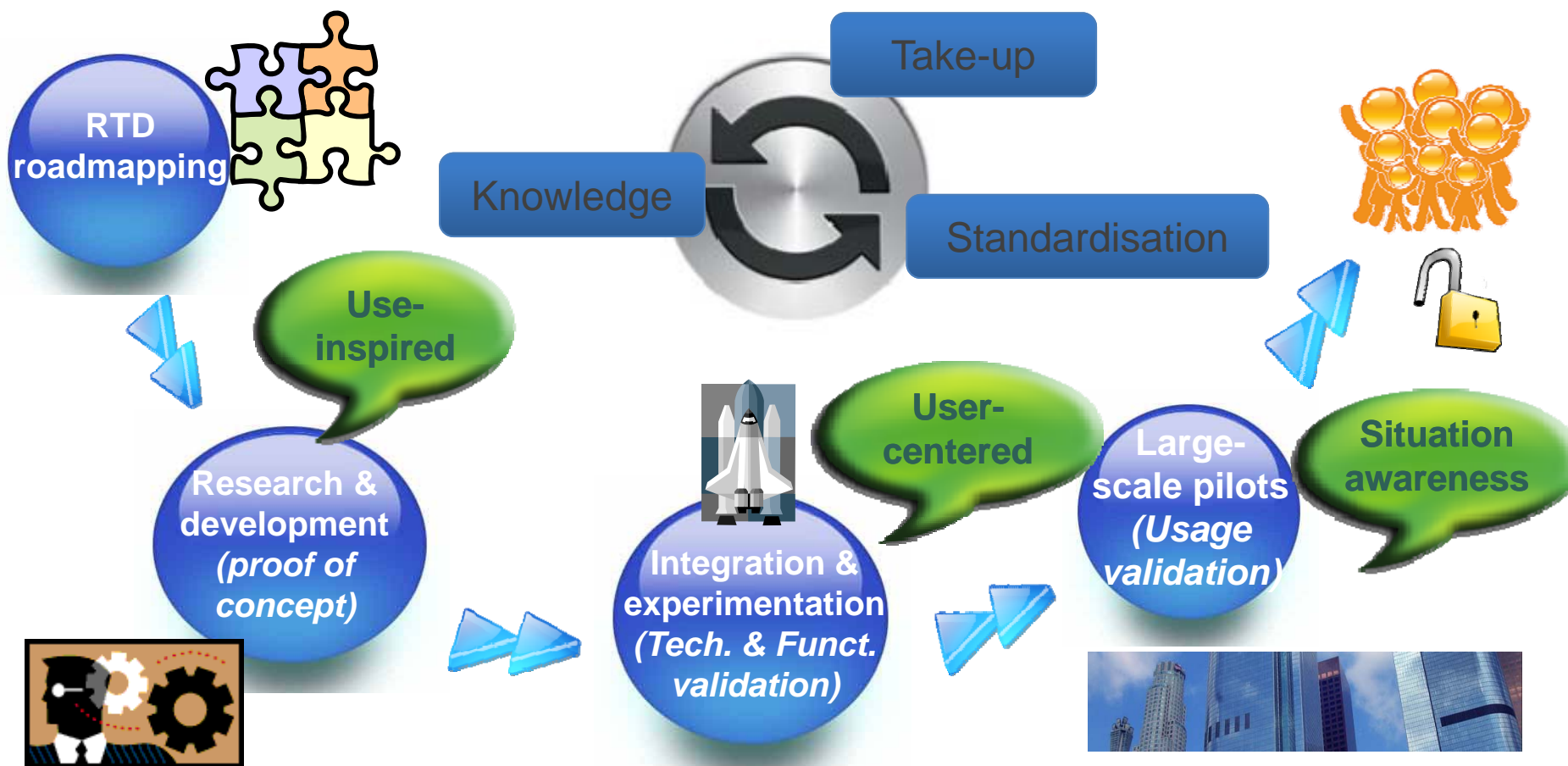
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An innovation continuum...targeting societal challenges!





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Let's Construct Europe  
With Innovative Building



## Societal Challenges

### 3 key societal issues:

- Ensure on the long-term the security of energy provision in buildings, neighbourhoods, cities & urban/rural communities
- Fight against the threat of climate change i.e. improve energy management (production, storage, consumption)
- Prepare the energetic transition of the 21<sup>st</sup> century

### 3 key domains from a (EE) Buildings perspective:

- Integrated design, production and operation of ICT-supported EE smart Buildings, in the context of new urbanisation patterns...
- Smart built environments adapted to citizen needs & expectations...
- Integration in a multi-domain global scheme - including smart green buildings, energy grids, mobility

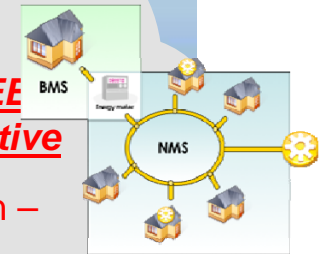


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### 3 key domains from a (EE) districts & cities perspective

- Multi-domains integration – buildings, mobility, energy grids,...
- Decentralised/distributed energy management (*local vs global*)
- Urban energetic global patterns





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## Coordination Actions for ICT support to EE Build. & Districts



Finished

- **REEB:** The European strategic research roadmap to ICT enabled energy efficiency in buildings and construction ([www.ict-reeb.eu](http://www.ict-reeb.eu))

*Results:* Vision + SRA + IAP.  
*Duration:* May 2008 – Oct 2010.

All reports public  
& downloadable  
from the Web



On-going

- **REViSITE:** Roadmap Enabling Vision and Strategy for ICT-enabled Energy Efficiency ([www.revisite.eu](http://www.revisite.eu))

*Results:* Common ICT priorities for grids, manufacturing, construction and lighting.  
*Duration:* Feb 2010 – Jan 2012.



On-going

- **ICT 4 E2B FORUM:** European stakeholders forum crossing value and innovation chains to explore needs, challenges and opportunities in further research and integration of ICT systems for Energy Efficiency in Buildings (<http://www.ict4e2b.eu>)

*Results:* Updated roadmap (based on REEB + E2B + ...).  
*Duration:* Sep 2010 – Oct 2012.



NEW

- **IREEN:** ICT Roadmap for Energy-Efficient Neighbourhoods

*Results:* RTD & Innovation roadmap.  
*Duration:* Sept 2011 – August 2013



NEW

- **NiCE:** Networking intelligent Cities for Energy Efficiency

*Results:* Promote / advance implementation of commitments to the Green Digital Charter.  
*Duration:* Sept 2011 – Feb 2014.





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## Let's Construct Europe's Future With Innovative Buildings and Infrastructures Construction and Societal Challenges

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### FP7 ICT4EEB projects

ICT-2007.6.3, ICT-2009.6.3, ICT-2010.10.2, ARTEMIS-2008-1

From  
Matti Hannus (VTT)

- **AIM:** A novel architecture for modelling, virtualising and managing the energy consumption of household appliances
- **BE AWARE:** Boosting energy awareness with adaptive real-time environments
- **BEYWATCH :** Building energy watcher
- **DEHEMS:** Digital environment home energy management system
- **E4U:** Electronics enabling efficient energy usage
- **eDIANA:** Embedded Systems for Energy Efficient Buildings
- **ENERGY WARDEN:** Design and real time energy sourcing decisions in buildings
- **ENERsip:** ENERgy Saving Information Platform for Generation and Consumption Networks
- **EnPROVE:** Energy consumption prediction with building usage measurements for software-based decision support
- **ENRIMA:** Energy Efficiency and Risk Management in Public Buildings
- **FIEMSER:** Friendly Intelligent Energy Management System for Existing Residential Buildings
- **HESMOS:** ICT Platform for Holistic Energy Efficiency Simulation and Lifecycle Management Of Public Use Facilities
- **ICT 4 E2B FORUM:** European stakeholders forum ... ICT systems for Energy Efficiency in Buildings
- **INTUBE:** Intelligent use of buildings' energy information
- **NOBEL:** Neighbourhood Oriented Brokerage ELectricity and monitoring system
- **PEBBLE:** Positive-energy buildings thru better control decisions
- **REEB:** The European strategic research roadmap to ICT enabled energy-efficiency in buildings and construction
- **REVISITE:** Roadmap Enabling Vision and Strategy for ICT-enabled Energy Efficiency
- **SAVE ENERGY:** Save energy
- **SEEMPUBS:** Smart Energy Efficient Middleware for Public Spaces
- **SmartCoDe:** Smart Control of Demand for Consumption and Supply to enable balanced, energy-positive buildings and neighbourhoods
- **SMARTHOUSE/SMARTGRID:** Smart houses interacting with smart grids to achieve next-generation energy efficiency and sustainability
- **SPORTE2:** Intelligent Management System to integrate and control energy generation, consumption and exchange for European Sport and Recreation Buildings
- **TIBUCON:** Self Powered Wireless Sensor Network for HVAC System Energy Improvement - Towards Integral Building Connectivity



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**CIP ICT-PSP projects - *from 2007 to 2010 – 1 call / year***

- **CIP - Competitiveness & Innovation project**



– R&D



– Integration (*Research*)



– Deployment /  
Demonstration



– Evaluation / assessment



– Recommendations

- **Sector: ICT + Energy + Construction**

- **3e-Houses:** Energy Efficient e-Houses
- **BEST Energy:** Built Environment Sustainability and Technology in Energy
- **E3SoHo:** ICT services for Energy Efficiency in European Social Housing
- **eSESH:** Saving Energy in Social Housing with ICT
- **HosPilot:** Efficient energy efficiency control in hospitals
- **LITES:** Intelligent street lighting for energy saving
- **SAVE ENERGY:** Save Energy



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## ICT for EE buildings and spaces of public use – new projects EEB-ICT-2011.6.4

- BEAMS
- Campus21
- CASCADE
- KnohoLEM
- SEAM4US
- SEEDS
- S4EeB





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## Session papers

### ■ **Piotr Dymarski, Mostostal**

- Self Powered Wireless Sensor Network for HVAC System Energy Improvement (TIBUCON)

### ■ **Marc Bourdeau, CSTB**

- ICT Services for Energy Efficiency in European Social Housing (E3SOHO)

### ■ **Arnaud Jay, CEA INES RDI - LITEN/DTS/LEB**

- A KIC-InnoEnergy Innovation project: Development of a Convergent Design tool to Improve Simultaneously Hydrothermal and Aero-thermal Simulation of Building (DECODE)

### ■ **Leandro Madrazo, ARC Engenharia i Arquitectura La Salle**

- Semantic Technologies for Carbon Reduction in Urban Planning (SEMANCO)

### ■ **Christian Mastrodonato, D'Appolonia**

- Intelligent Management System to Integrate and Control Energy Generation, Consumption and Exchange for European Sport and Recreation Buildings (SportE<sup>2</sup>)





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*Thank you for your attention*



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