

Sharing Experiences and Joint Initiatives - Energy Efficiency and Environment Monitoring

Addressing the challenges of Energy Efficiency through ICT – a pilot case in the APOLLON Project

June 22nd, 2011

Pentti Launonen

Center for Knowledge and Innovation Research (CKIR)

Aalto University

pentti.launonen@aalto.fi

D3.3 – Cross Border Activities (1/3)

Business matching & partnerships

- Business partnership between participants
- Clustering SMEs in participating countries (Finland, Sweden, Portugal, Netherlands)

D3.3 – Cross Border Activities (2/3)

Knowledge Transfer

- Roadshows: Portugal, Sweden-Finland, Netherlands
- Cross Border Activities: Living Lab Engagement: EU-Brazil
- User behaviour changes methodology: Living Lab → Living Lab
- Motivation, awareness and behavioural change
- Energy portal for energy saving
- Energy saving minigames

D3.3 – Cross Border Activities (3/3)

Technology Testing

- Technology testing: HAE → Luleå energy/ Botnia LL
- Technology Testing: HAE + ISA → Helsinki LL
- Technology testing & benchmarking: Smart Office
 - Cross border benchmarking results: Liander office (Amsterdam)
- Technology testing: ISA → Process Vision
- Technology testing: ISA → KYAB/ Botnia LL
- Technology testing: Process Vision → ISA, Luleå, Amsterdam; energy data management

Task 3.3: Cross-border piloting

Lisbon Pilot

SMART METER - Real life tests

- The Portuguese Energy Regulator (ERSE) has funded the acquisition of smart meters. **300 homes participate in the project.**
- Main provider ISA (SME)
- Other technology SME providers
 - Home Automation Europe
 - Kyab



Cross border experiments and piloting

- A strong effort is being made by Lisboa E-Nova and Alfamicro, to involve other Portuguese SME to join the Lisbon's experiment (supporting partners)



Task 3.3: Cross-border piloting

Amsterdam Pilot

- Gain insight in cultural differences to make suitable user-interfaces
- Gain experience of business drivers in different countries
- Build network to facilitate expansion beyond the Netherlands



Energy display in various Amsterdam-pilots

- Initial pilots: 20 displays
- West-Orange: pilot 500 residences
- Quby: smart thermostat & link to standardized



Task 3.3: Cross-border piloting

Lulea Pilot

- Test of four different technologies for visualisation
 - Two from Sweden, two from Netherlands
 - SABER, ELIQ, PlugWise and PowerPlayer
 - Ten households for each technology
 - District heating, water and electricity is measured and visualised in the different products.
 - User behaviour change studies
- Kulturens Hus



Task 3.3: Cross-border piloting

Helsinki Pilot

Varma House

- **Location:**
 - Office building in Helsinki
 - Built 1989
- **Companies:**
 - 12 different companies have rented office space, incl. Process Vision
- **Current metering:**
 - Helsinki Energy owns official meter for energy consumption billing purpose
 - Building owner has installed own analog sub-meters in every floor and wing

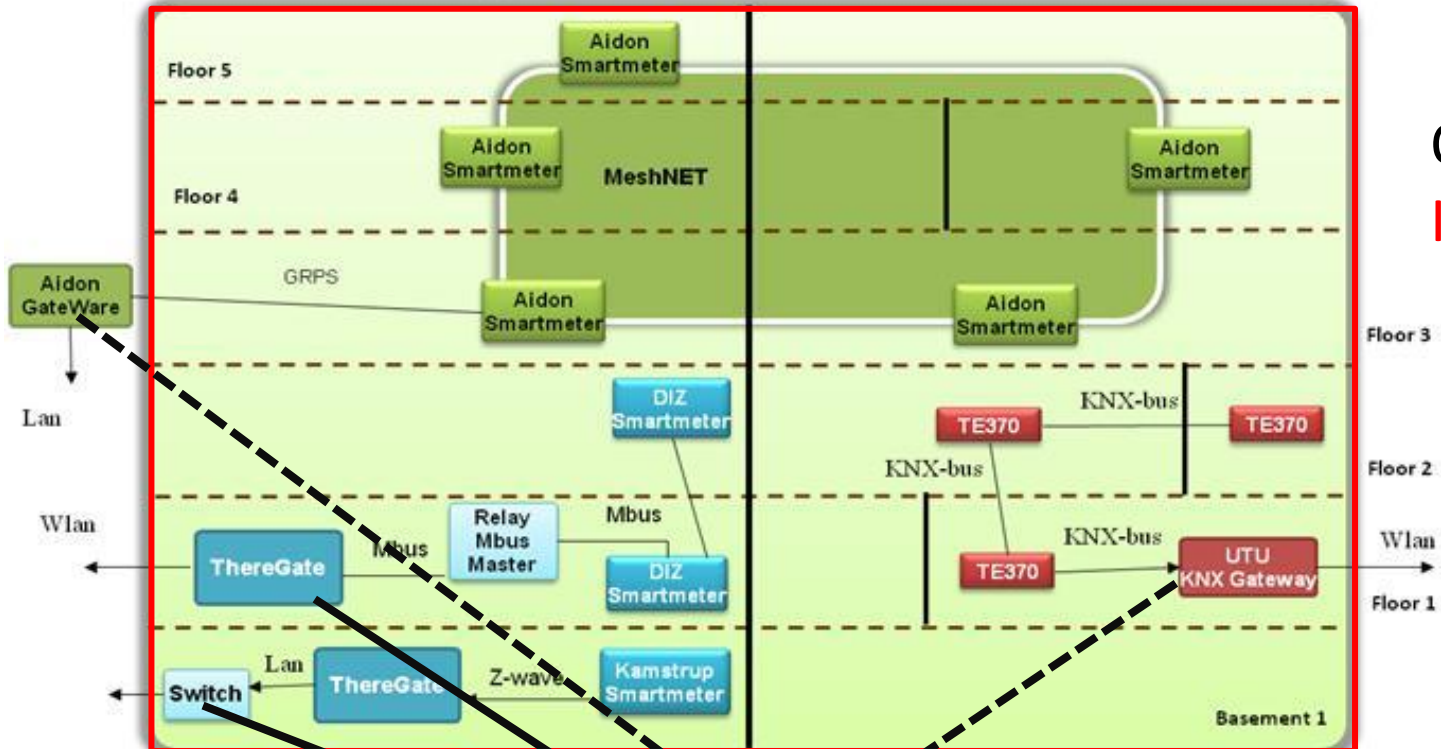


Task 3.3: Cross-border piloting Helsinki Pilot

North-wing

South-wing

Office building
Installed



Task 3.3: Cross-border piloting

Helsinki Pilot

User behavior study

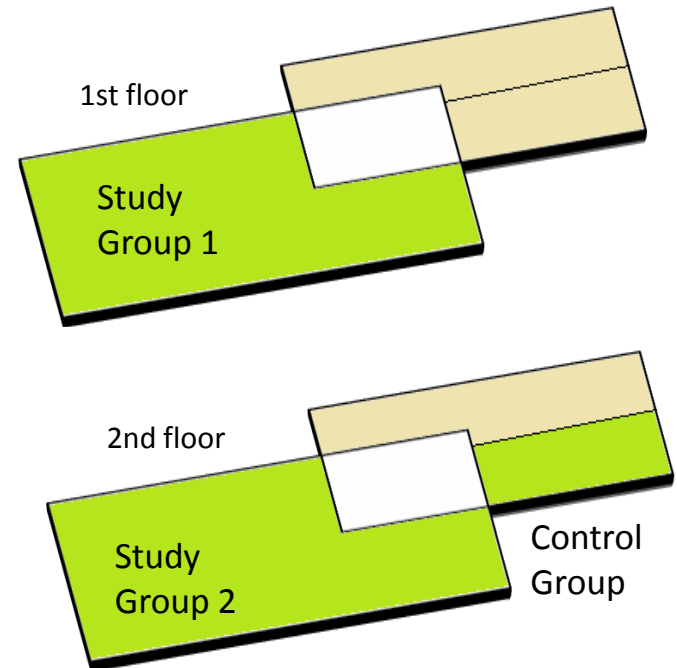
- **Planned (2 stages):**

- Stage 1: Competition

2 user groups will compete with each other and think of energy saving ideas that will then be refined to be used in the 2nd stage of the study

- Stage 2: Guided involvement

Users will be given energy saving instructions on a weekly basis and questionnaires will be sent on how these instructions were implemented



SME Business Realities

- Ongoing product development during project
 - No desire to work on last-years technology
 - New insights in needs from cross-border cooperation
- Current business always prevails above (subsidized) research projects
- Capital-intensive energy-projects have a much lower heart-beat than SME product development
- Large business deal in home country is currently more interesting than small pilots abroad

Business Realities

- Growth paths of partners may lead to competing business models and situations, preventing co-op
 - Business models to be designed in the beginning, openly, also for trust building
- SMEs have limited capabilities and tools
- Availability of resources for simultaneous pilots -> sequential piloting
- Who pays the bill? Investments in pilot equipment not covered. Localization costs? Travel costs to LL nw meetings?
- Value of reporting? Missing project mgmt capabilities and time for participation
- Who gets the savings? E.g. when energy cost included in rent (transparency)

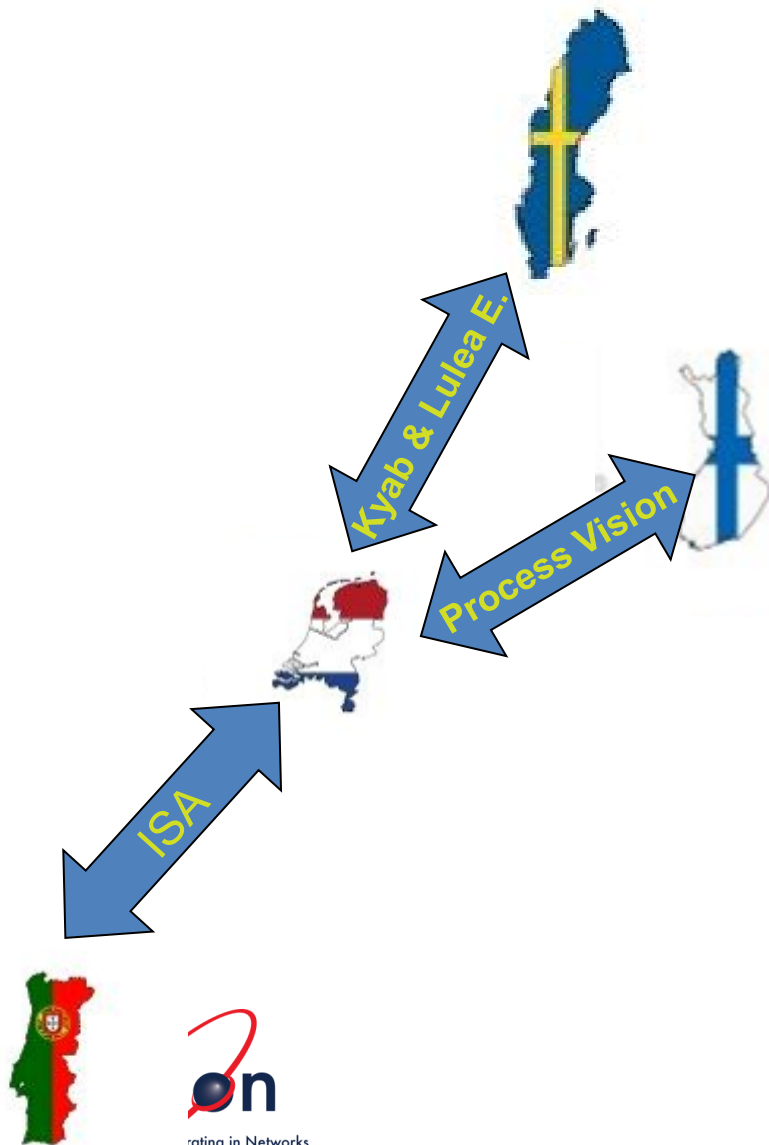
LL local ecosystem reality

- Value of X-border Living Lab network from the viewpoint of local client (e.g. city, homecare organization): Why would they use SME from another country?

Cross-border cooperation - integration

More focus on system integration challenges:

- Local (smart) meter interfaces
- Measuring energy for heating/cooling
 - Gas
 - Electric
 - City-heating (flow & temperature)
- Other unexpected items (plugs?)
- Cooperation with local players for support



North America Grounded NEMA 5-15	Japan Non-grounded JIS C 8303	Europe German style CEE7/4 Schuko	Europe French style Schuko	Europe/Russia Non-grounded CEE7/16 Europlug	Great Britain Grounded BS-1363	Great Britain "Shaver socket" BS-4573
Australia/China Grounded AS-3112	Italy Grounded CEI 23-16	Switzerland Grounded SEV-1011	Denmark Grounded SRAF 1962/DB	Israel Grounded SI 32 (S 16A-R)	India Grounded BS-546 "Small"	South Africa Grounded BS-546 "Large"

17th International Conference on Concurrent Enterprising
Aachen Germany, 20-22 June 2011

Increasing structuration of activities in local practices

