

The HYDRA project



Project Overview
Markus Eisenhauer, FIT

IST-2005-034891



Project vision

The vision of the HYDRA project is to create a widely deployed middleware for intelligent networked embedded systems that enables:

- Cost effective development of innovative ambient intelligence solutions
- Low cost for device manufacturers to be part of “Internet of things”
- Secure and reliable services for end-users



Project technical objectives

- Develop a middleware for networked embedded systems based on a Service-oriented Architecture including:
 - Support for distributed as well as centralised ambient intelligent architectures
 - Support for reflective properties of components of the middleware
 - Support for security and trust enabling components
- Develop a generic semantic model-based architecture supporting model-driven development of ambient intelligence applications.

2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting



Project technical objectives

- Tools for solutions providers, SDK
 - Easy to integrate and use devices in applications
 - Hide complexity of underlying network and device access protocols
 - Integrated into familiar programming environments
- Tools for device manufacturers, DDK
 - Low cost for networking devices
 - Support for their devices to be part of “Internet of Things”

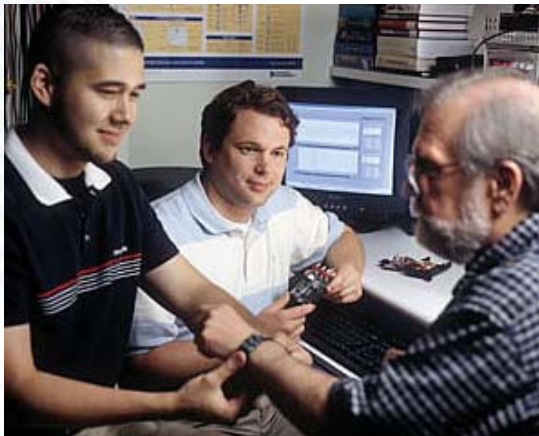
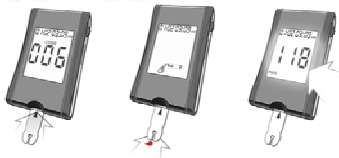
2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting





Monitor your health



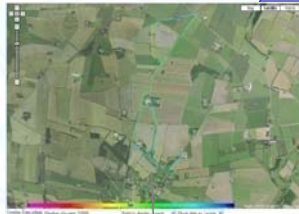
2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting



Cooler pigs

HVAC Status



Device Accessibility



Water Flow

2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting



Project Data

- 52 months (2006/07/01-2010/10/31)
- FP6 Integrated Project, co-financed by European Commission
- 12 partners
- 12,5 MEuro budget, 1300 pms.
- Selected among the ten best European Projects at the ICT-Event in Lyon

2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting



Hydra brings semantics and web services to the embedded world.

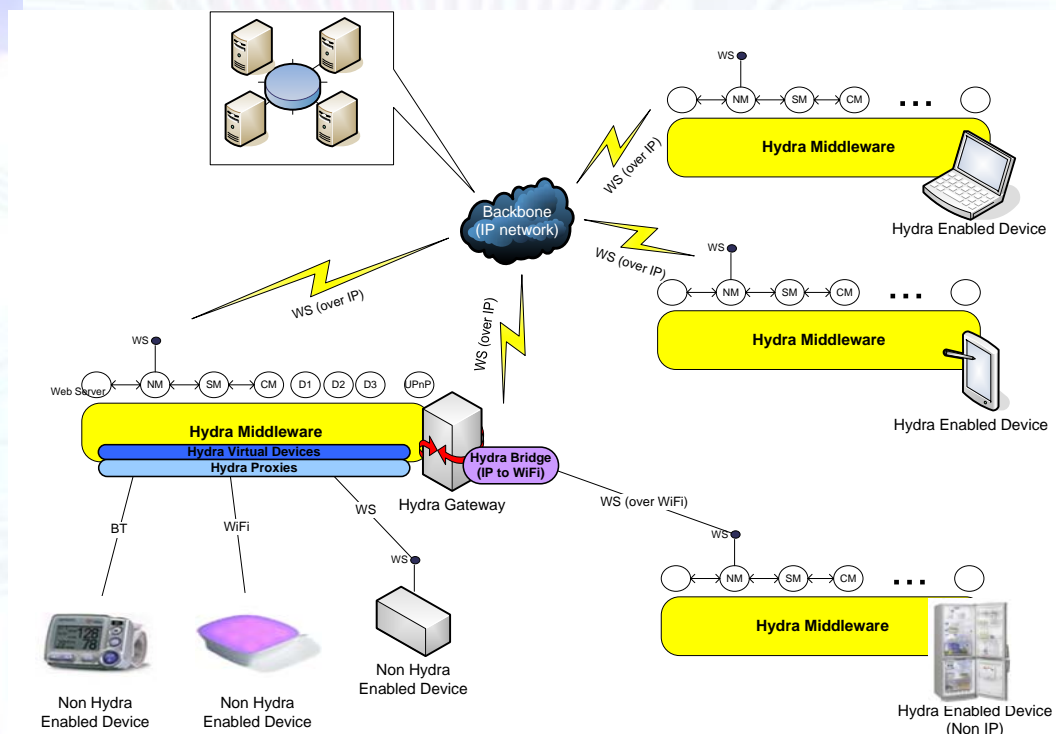
- SoA (Service Oriented Architecture)
 - Each device is represented as a web service
 - Each middleware component is a web service in itself (centralised or distributed ambient intelligence architecture)
- Semantic Model Driven Architecture
 - Device Ontology
 - Security Ontology
 - Software Components Ontology

2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting



Hydra Device Network

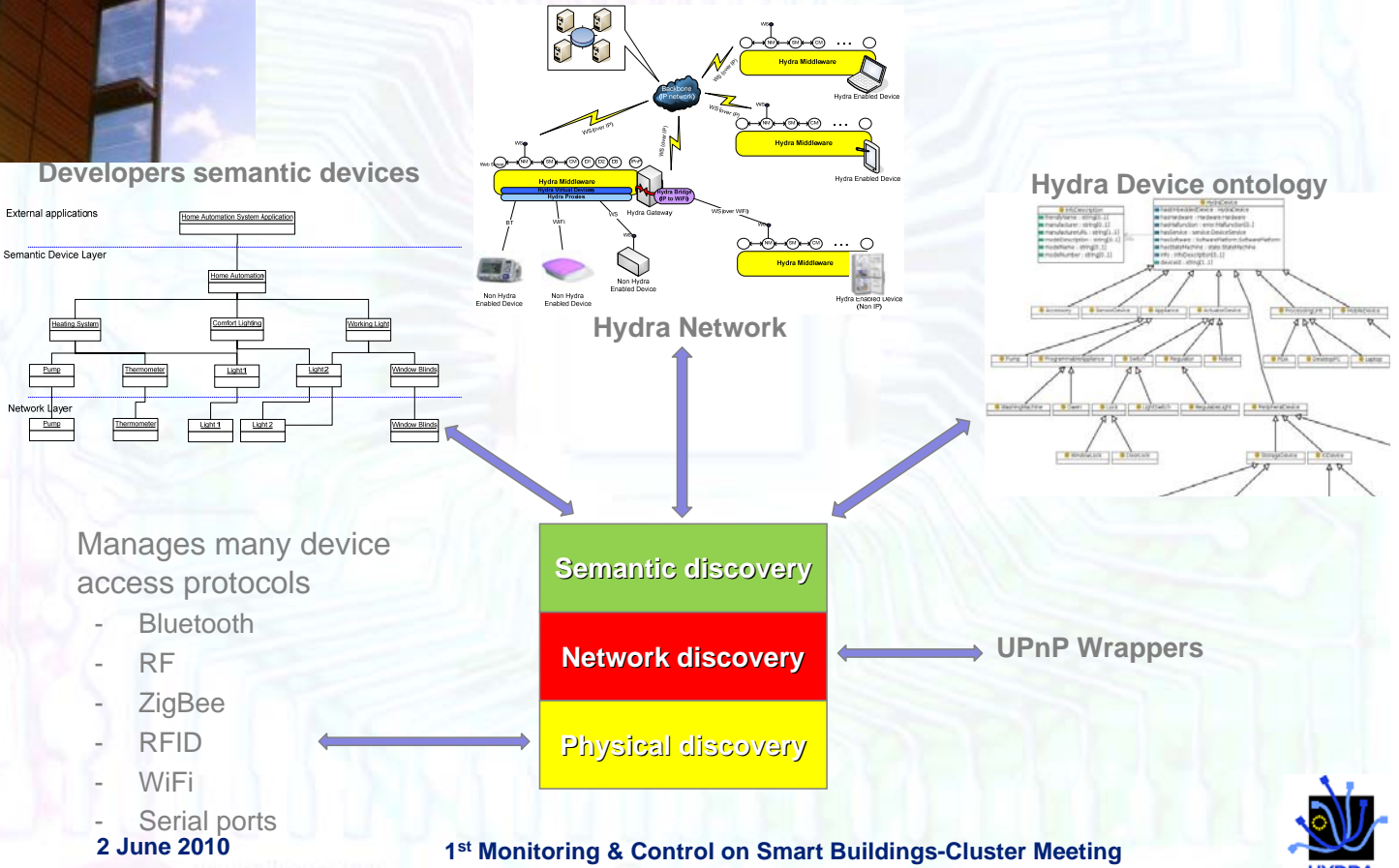


2 June 2010

1st Monitoring & Control on Smart Buildings-Cluster Meeting

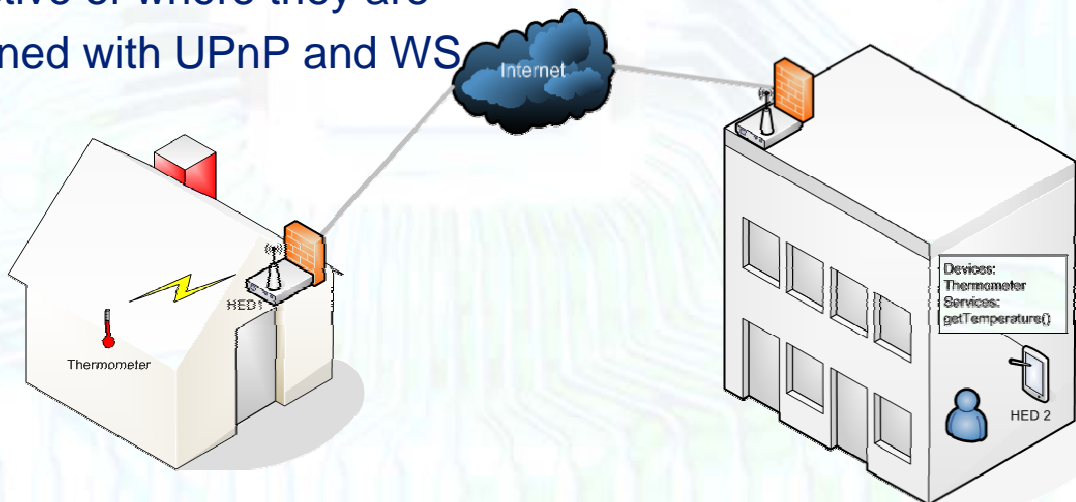


3-layered Discovery architecture



P2P and SOAP Tunnelling

- P2P architecture for Device Networks
 - Accessing and controlling devices irrespective of where they are
- P2P combined with UPnP and WS





More info

- <http://www.hydramiddleware.eu>
- peter.rosengren@cnet.se
- markus.eisenhauer@fit.fraunhofer.de

7 october 2009

Network Monitoring and Control and the PPPs

