

Embedded WiSeNts

Overview of the *Embedded WiSeNts* European Coordination Action

Silvia Santini, 28.04.2005

Outline



- WiSeNts Project Description
- WiSeNts Goals
- ETHZ Contribution to the Project

What's WiSeNts?



Embedded WiSeNts

*“Cooperating **Embedded** Systems for
Exploration and Control featuring
Wireless Sensor Networks”*

European
bison → wisent



American
bison



Embedded WiSeNts – Basics



- ➔ European Coordination Action (FP6, IST)
- ➔ 12 partners from: Germany, Sweden, Netherlands, UK , Turkey, Italy, France, **Switzerland (ETHZ)**
- ➔ September 1st, 2004 → August 31st, 2006
- ➔ Industry Cooperation Board

Embedded WiSeNts - Goals



➔ **1. Research Integration**



➔ **2. Research Roadmap**



➔ **3. Dissemination**

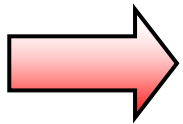


Embedded WiSeNts - Goals



1. Research Integration

2. Research Roadmap



3. Dissemination

Dissemination



→ Teaching

- share experience
- share teaching material (www)

→ Students Mobility

→ Events

- Summer School

→ Distinguished Visitors Program



Dissemination – Summer School



International Summer School on Wireless Sensor Networks and Smart Objects

Dagstuhl Castle, Germany, August 28-September 3, 2005

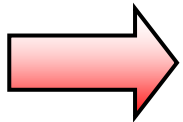


<http://www.vs.inf.ethz.ch/events/dag2005/>

Embedded WiSeNts - Goals



1. Research Integration



2. Research Roadmap

3. Dissemination

Research Roadmap



→ Studies

- Application and Application Scenarios
- Paradigms for Algorithms and Interactions
- Vertical System Functions
- System Architectures and Programming Models

→ Vision for Innovative Applications

→ Research Roadmap preparation

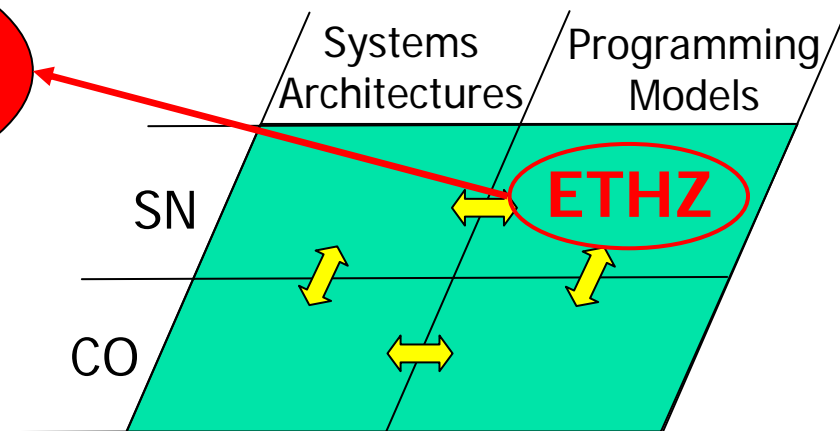




Motivation

- Our background in infrastructure for **distributed systems**, ubiquitous computing and **wireless sensor networks**
- Traditional distributed programming abstractions cannot be simply applied to sensor networks
- Programming sensor networks: **several different approaches** within the sensor network community

Programming Models for Sensor Networks



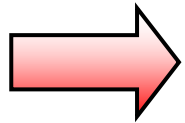
Programming Models for Sensor Networks



Outline:

- **Database View** (TinyDB, Cougar)
- **Event Detection** (DSWare)
- **Spatial Programming** (Smart Messages)
- **Mobile Code and Mobile Agents** (SensorWare)
- **Region-based approach** (Abstract Regions, Hood)
- **Role-based Models** (Generic Role Assignment)
- **Virtual Markets** (MBM)
- **Virtual Machines** (Matè, MagnetOS)
- **Shared Information Space** (SWARMS)

Embedded WiSeNts - Goals



1. Research Integration

2. Research Roadmap

3. Dissemination

Research Integration



→ Research Facilitation

- Platforms and tools

→ Distinguished Visitors Program

→ Events

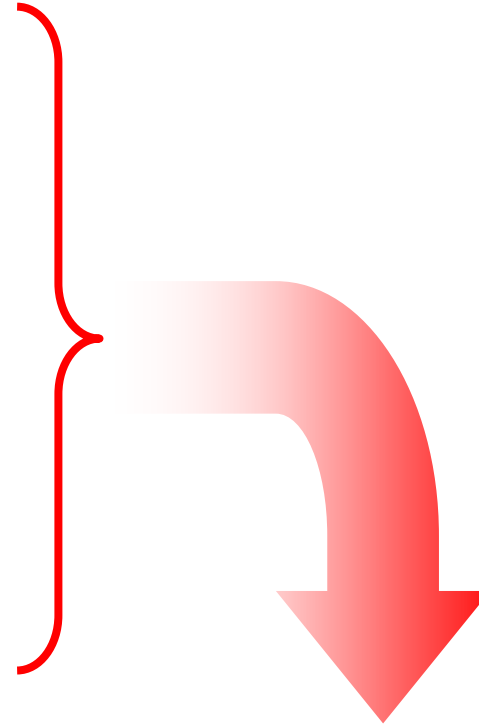
- EWSN 2006



Research Integration - Platforms and Tools



- WiSeNts Platforms
- European Platforms
- Other Platforms



**Survey
Document**

ETH Platform



BTnode rev3



www.btnode.ethz.ch



European Workshop on Wireless Sensor Networks



<http://www.ewsn.org/?index>



Thank you!