



# Embedded WiSeNts

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## Overview of the *Embedded WiSeNts* European Coordination Action

Silvia Santini, 28.04.2005

# Outline

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- 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**



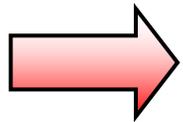
➔ **3. Dissemination**





**1. Research Integration**

**2. Research Roadmap**



**3. Dissemination**

# Dissemination



## → Teaching

- share experiences
- 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*

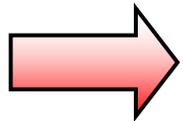
Dagstuhl Castle, Germany, August 28-September 3, 2005



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



## 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



# ETHZ Contribution to the Study

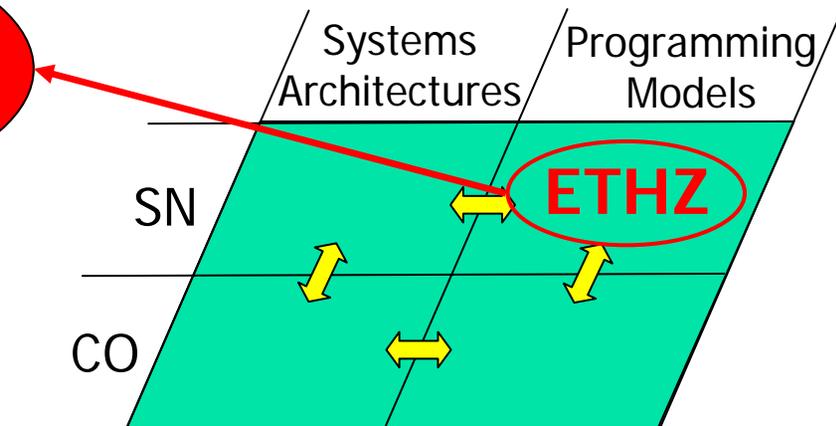
## "System Architectures and Programming Models"



### 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**



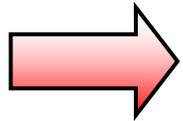
# Programming Models for Sensor Networks



## 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



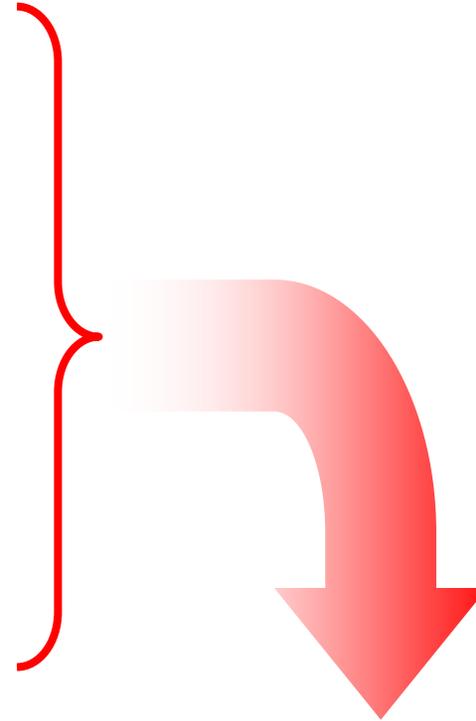
# Research Integration - Platforms and Tools



→ WiSeNts Platforms

→ European Platforms

→ Other Platforms



**Survey  
Document**





## *European Workshop on Wireless Sensor Networks*



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



**Thank you!**