

ESF Exploratory Workshop on Wireless Sensor Networks

ETH Zurich, April 1-2, 2004

Welcome to Zurich!



ESF Exploratory Workshop on Wireless Sensor Networks

ETH Zurich, April 1-2, 2004

Friedemann Mattern

Kay Römer

ETH Zurich

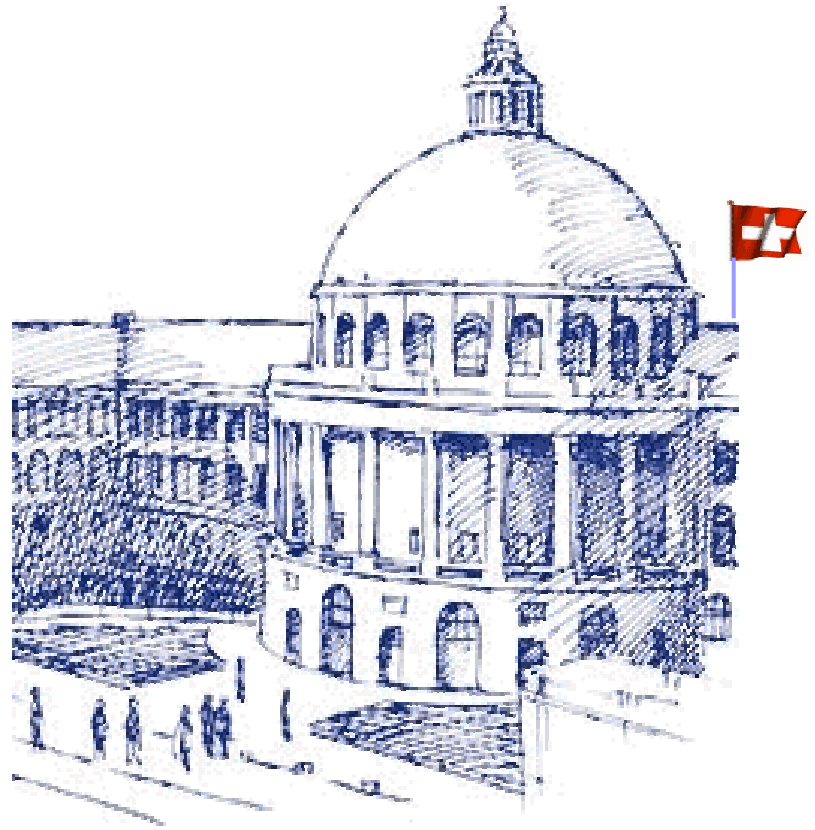
**Institute for
Pervasive Computing**



Welcome at ETH Zurich!

- Swiss Federal Institute of Technology

- Founded 1855
- 350 professors
- 12000 students
- 17 departments



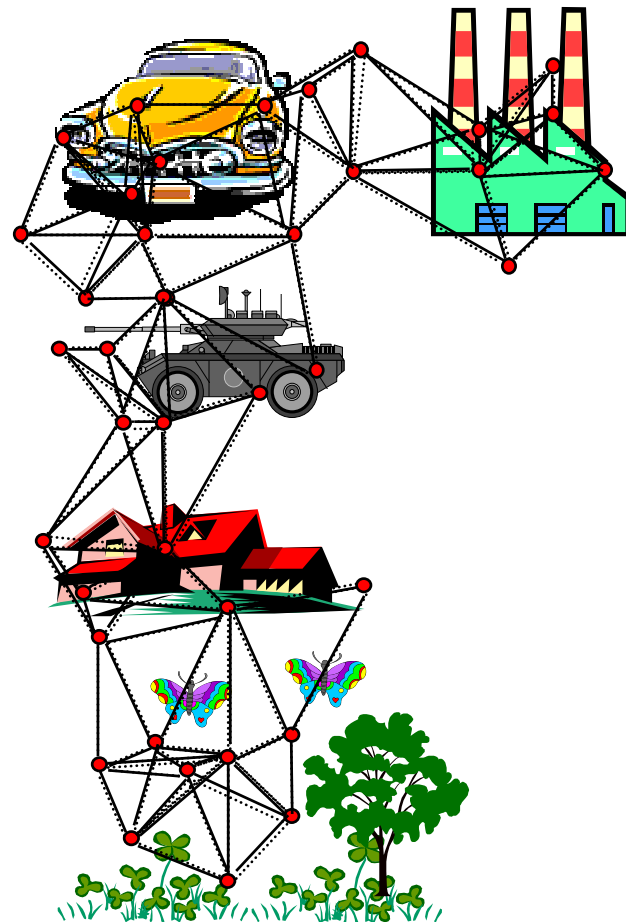
Department of Computer Science

- 25 professors
- 160 researchers
- 1240 students
- Institutes
 - Computational Science
 - Computer Systems
 - Information Security
 - Information Systems
 - Pervasive Computing
 - Software Engineering
 - Theoretical Computer Science

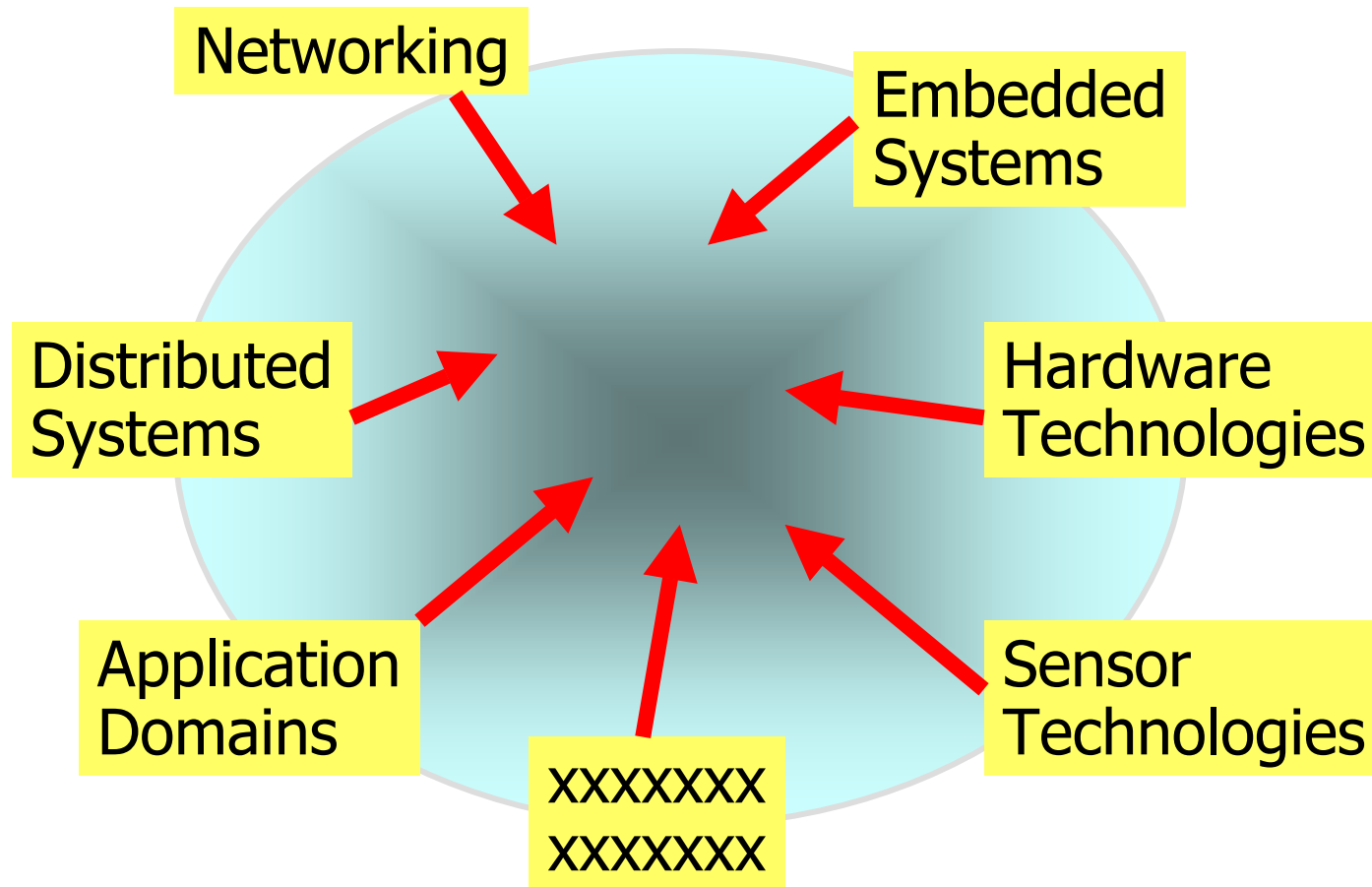


The Motivation of the Workshop

- **Vision**
 - Soon possible: very cheap and small nodes that combine **sensing, computing, and wireless communication**
 - Infrastructure-less, spontaneously networked
- Very interesting potential **applications**
- High **expectations**
 - Or even hype?



Formation of a “New” Area



Recent Activities



- New **workshops** and **conferences**
- New **ACM Transactions** on Sensor Networks
- **EU actions** and plans
- More dedicated **research projects**, e.g.:
 - **EYES** project
 - Swiss National Center of Competence in Research *Mobile Information and Communication Systems* („**NCCR MICS**“)
- ...

Europe?



- Ed. Board of **ACM Transactions on Sensor Networks**

- Microsoft Corp.
- The Ohio State University
- University of Copenhagen
- University of California at Berkeley
- University of California at Los Angeles
- University of Southern California
- Stanford University
- University of Illinois at Urbana Champaign
- University of Illinois at Urbana Champaign
- Carnegie Mellon University
- Rutgers University
- University of Wisconsin-Madison
- Carnegie Mellon University
- Massachusetts Institute of Technology
- University of California at Los Angeles
- University of Virginia
- Vanderbilt University

- Why is Europe almost non-existent?
- Consequences?

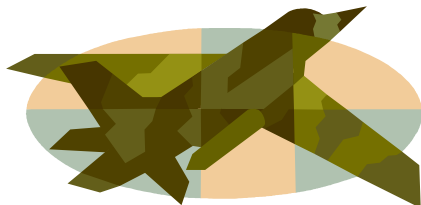
Europe?



- Last year a number of initial workshops were devoted to WSN (WSNA 2002, IPSN 2003, SNPA 2003). Of the 55 papers presented at these three workshops, only 4 had European (co)authors, whereas 48 papers were authored by US-based researchers.

Security the Main Driver?

- Military applications



- “Culler and fellow Berkeley researcher S. Shankar Sastry are convinced that **wireless sensor webs will be an essential component of homeland security**. Noting that current U.S. infrastructure is too difficult to shield from sabotage and attacks, Sastry asserts that mote technology could more effectively and efficiently monitor power plants, transportation systems, and buildings”

-- ACM TechNews, March 19, 2004

- What is the **European position**?

Research Coordination?



- Realization of the visions and fulfillment of the expectations requires some **research coordination** in a variety of technical disciplines (and also expertise from application domains)
- **Purpose of this workshop**: initiate and promote loosely coordinated research within European academia and industry
 - Identify **state of the art** and European **research groups**
 - Community forming
 - **Concrete outcome** of the workshop?

Outcome?



- “One desirable outcome of an ESF Exploratory Workshop may be that participants submit **high quality proposals for further ESF activities ...**, or **research funding applications** for submission to the EU 6th Framework Programme or to other European or international funding organisations.”
- Forming **special interest groups**?
- Establishing **task forces** that define common research projects?

All this has to be discussed

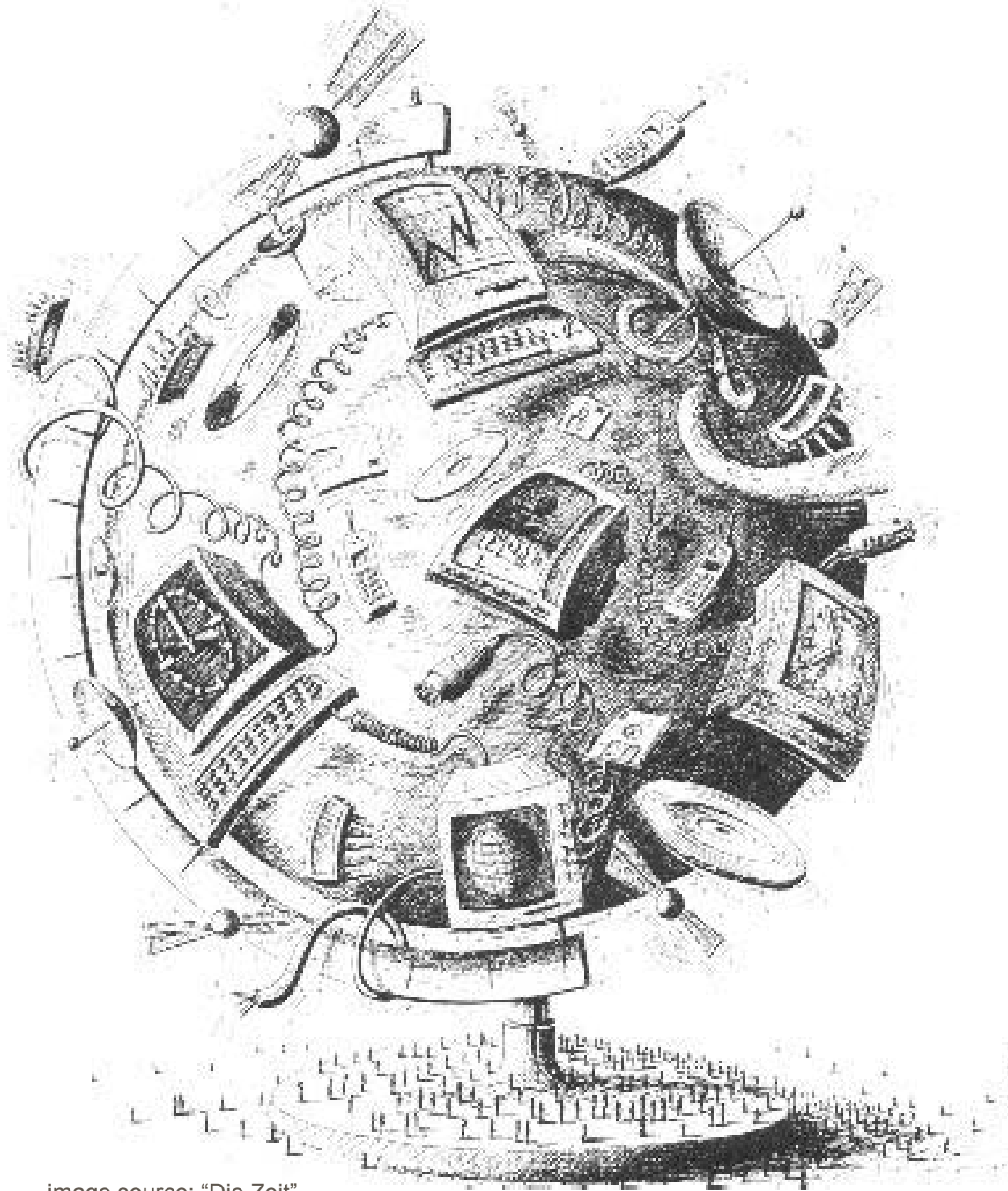


image source: "Die Zeit"