

<http://www.terraswarm.org>

Organization

Sponsorship

The center is funded by the STARnet phase of the Focus Center Research Program (FCRP) administered by the Semiconductor Research Corporation (SRC). Funding comes from the Defense Advanced Research Projects Agency (DARPA) and the SRC industry partners, including Applied Materials, GLOBALFOUNDRIES, IBM, Intel Corporation, Micron Technology, Raytheon, Texas Instruments, and United Technologies.

Academic Partners

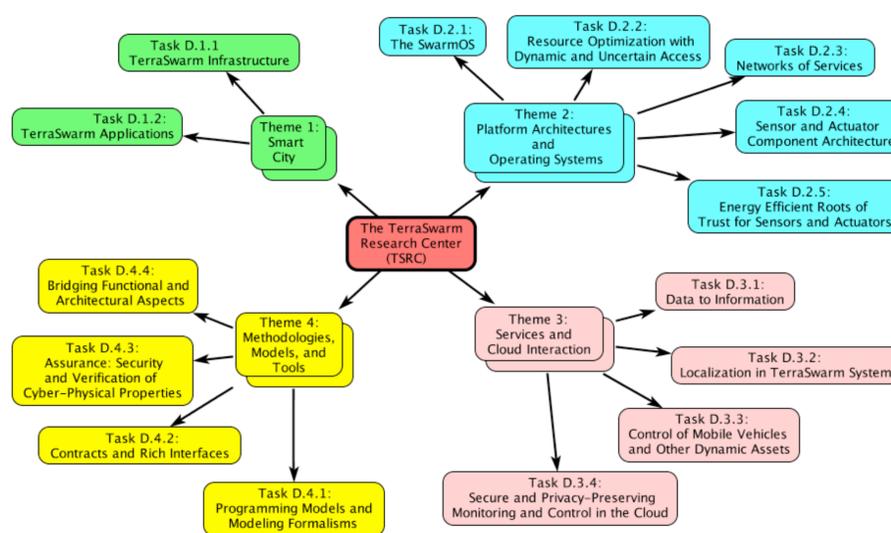
University of California, Berkeley (lead)
University of Pennsylvania
California Institute of Technology
Carnegie Mellon University
University of Washington
The University of Texas at Dallas
University of Michigan
University of California, San Diego
Intel Labs, Berkeley
University of Illinois, Urbana-Champaign

The TerraSwarm Research Center, launched on January 15, 2013, is addressing the huge potential (and associated risks) of pervasive integration of smart, networked sensors and actuators into our connected world.

About TerraSwarm

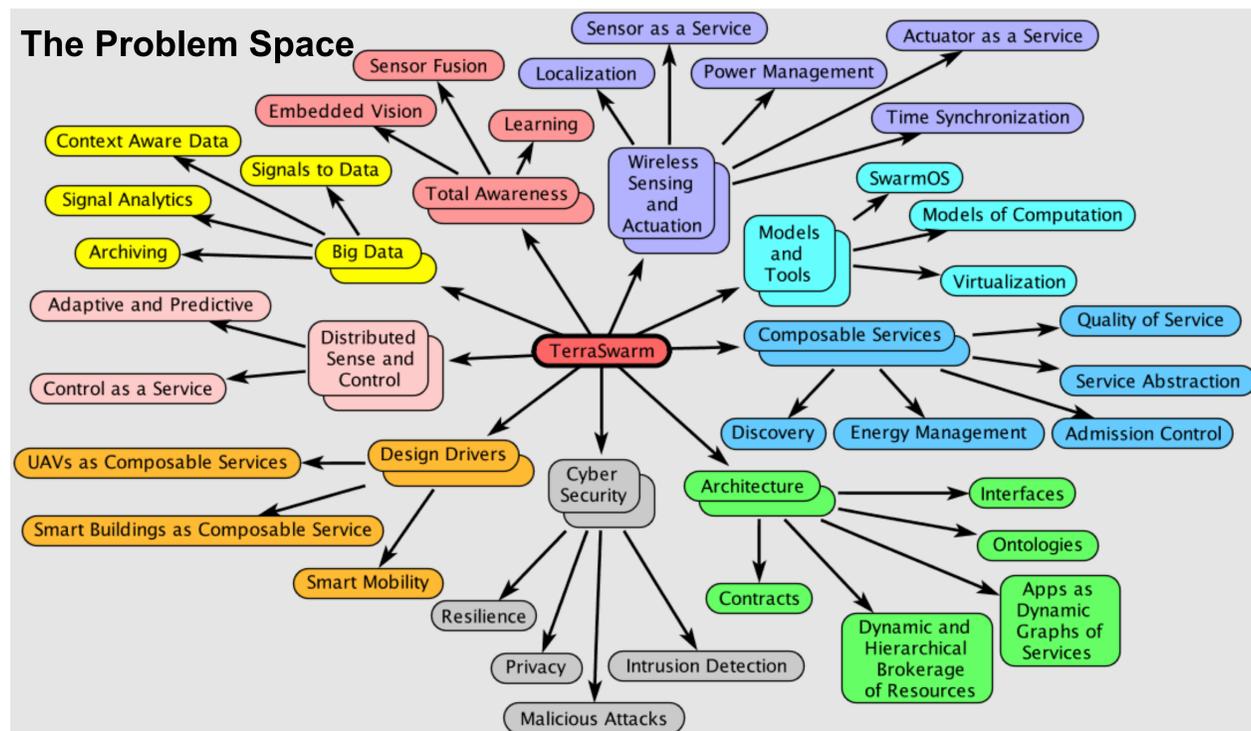
The project is about what people are calling "the swarm," which is the collection of millions of smart devices that are able to sense properties of the physical world around them and are able to affect the physical world around them. These devices are getting deployed in large numbers today, making measurements of temperature, humidity, and air quality, observing motion of people through video surveillance, listening for sounds, etc. But more interestingly, these devices are getting networked, either wirelessly or through wires, so that they can access each other's information, can interact with computers and hand-held devices, and they can interact with the computing infrastructure in "the cloud."

Center Themes

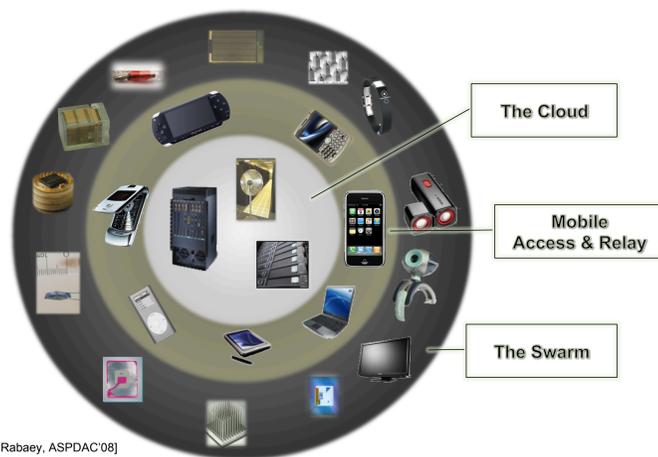


Challenges

- Data collection and storage
- Data integrity
- Safety of physical interactions
- Design of complex systems
- Design of self-adaptive systems
- Security and privacy
- Energy efficiency

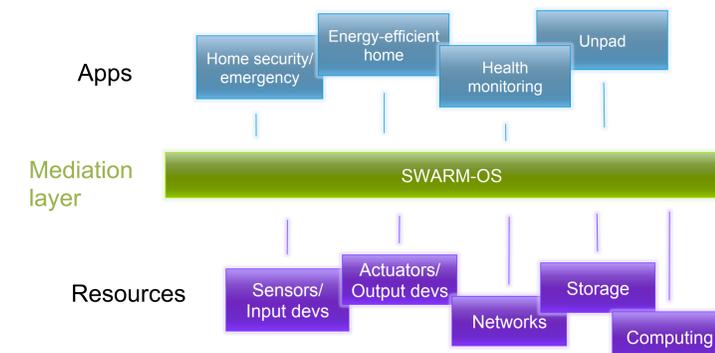


The Swarm at the Edge of the Cloud



[J. Rabaey, ASPDAC'08]

The Swarm as a Platform



Presenting a uniform API to Apps Developers (similar to trends in the Cloud)

[J. Rabaey, VLSI '11]

