Gün Sirer: A comprehensive localizing framework for self-organizing systems

- **Localization problem**: knowing where nodes are is a difficult problem if assuming realistic assumptions.
- Sextant
  - Uses both **positive and negative information** to localize nodes.
    - **Positive constraints**
    - **Negative constraints**
    - **Bézier curves to represent regions**
  - Nodes constantly disseminates information on their location.
  - Event localization interacts with node localization: events helps node localization and vice-versa.
- Mobility and malicious behaviors introduce new problems
- Programming model see mobile networks as a system of systems. Resource mediation layer is needed.
- Replicated objects can be used to provide some redundancy (may have node identification problems)

Rick Schlichting: A network service provider view of ubiquitous nomadic computing

- **Scale matters**: ubiquitous computing means more endpoints and more data. **The huge amount data is the problem**!
- Heterogeneity is there.
- RFID (Radio Frequency Identification) is essential for ubiquitous computing
- RFID services will change information exchange volumes.
- Object Naming Services (ONS), a kind of DNS for ubiquitous computing.
- Research issues:
  - CPU speed, memory,.. constraints are not the problem
  - The amount of data is the problem. How to manage, analyze and visualize all that data? Traditional DB cannot handle this amount of data.
  - Data reduction techniques?
  - Data → Information → Knowledge

Question: no research issues on dependability?