Setting the Sensor Scene

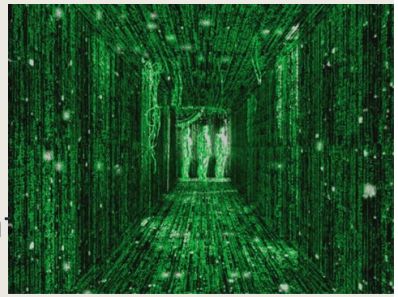
Kris Pister, Professor at UC Berkeley, in 1999 on sensors in 2010

- In 2010 your house will be aware of your presence and even orientation … lighting, heating, and other comfort will be adjusted accordingly…
- In 2010 there will be no unanticipated illness. Chronic sensors implants will monitor all of the major circulator systems in the human body …
- sensors will be immortal, completely self contained, single chip computers with sensing, communication, and power supply built in

HP project: Central Nervous System for the Earth (CeNSE)

- Data handling and storage on a gigantic scale
- A workable process and tools for continuous monitoring and analysis
- A means of routing automatic alerts – including relevant background information – when threshold conditions are exceeded anywhere in the system
- A resilient networking and computing fabric that can absorb and recover from attacks

And of course there are (plans for) ….



- Early warning systems for Tsunamis, Earthquakes, …
- Climate change monitoring systems
- Systems for the monitoring of the global Nuclear Non-Proliferation Trea
- …..

FI Functionality

- Network contains a clock distribution system that provides precision timing for connected sensor nodes
- Separate control and data channels
- The possibility for priority data transfer
- Sufficient addressing space matching the number of sensor nodes constituting extended sensor networks
- Handling of large amounts of data without disturbance on timing and control
- Power over the internet for the sensor nodes

Starting points

Saskatchewan – Canada

Long term vision of a large scale environmental monitoring systems in the North of Saskatchewan (largest Uranium exporter, oil sand exploration)

- locations distributed over 650.000 km²
- extreme temperature regime: +30℃ ... -50℃
- long term operation
- first initiatives: May 2010

Sensor City – Assen, The Netherlands

Vision of a city wide experimentation and measuring grid

- locations distributed over 35 km²
- mid term operation
- start of activities: September 2010
- 18 M€ funding granted

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