Prototyping Physical User Interfaces

Short Course @ **IT University of Göteborg**

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Brief Course Outline

- **Breaking Interface Conventions?**
- **Exercise – creating a cooperative multi user game**
- **Nature and Value of Physical Prototyping**
- **Break**
- **Smart-its basics**
- **Smart-its enhanced light**
- **Lunch break**
- **Students project (afternoon) Smart-its enhanced light**
- **Smart-its enhanced light – results**
- **Building Smart-its hardware**
- **Break**
- **Developing Smart-its Software**
- **Smart-its Examples**
- **Wrap-Up**

Example - table as a sensor and a picture frame as actuator
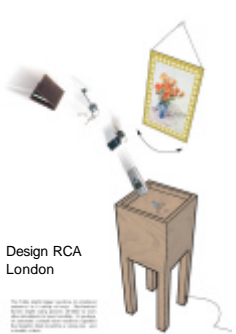
Design RCA
London
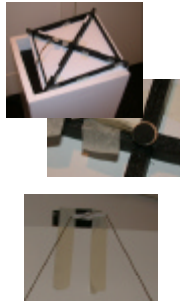
Implementation
- Smart-Its sensor AddOn board
- simple pressure sensor

The *Pendle* – a minimal wearable computer

A personalized, wireless, wearable device (Realized using Smart-Its)

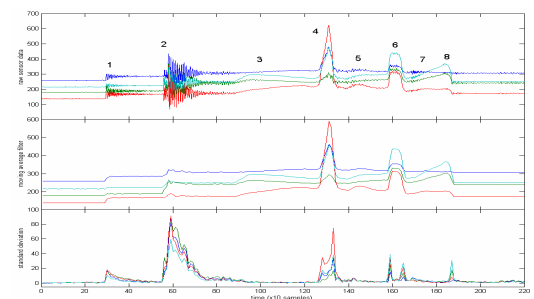- processor, memory, sensors, communication, battery
- customizing the local environment
- support for explicit and implicit interaction

Table & Floor as Sensors
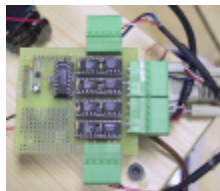
- Smart-Its sensor AddOn board
- 16 Bit DA
- Instrumentation Amps
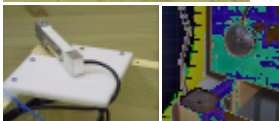
Load-Sensing Surface
Surfaces as Interaction Device

The Environment is the Interface
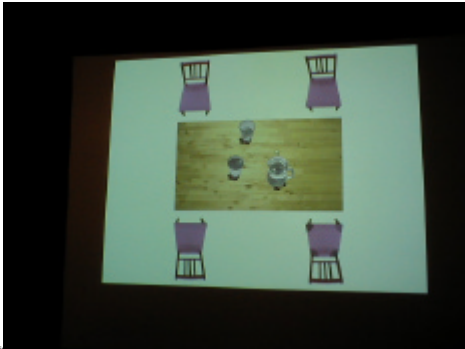(SIGGRAPH Demo)

- Everyday objects augmented with sensing
  - table
  - chairs
  - glasses
  - …

- Creating a digital shadow reflecting the interaction

The Environment is the Interface
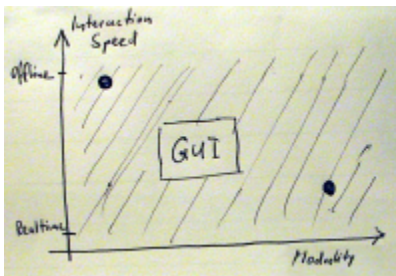

The Environment is the Interface

So far, so good…

- Having a platform speeded up the exploration of ideas for an user interfaces

- Building those interfaces includes often skills beyond what we call *academic*

- …sometimes it is beyond the understanding of your colleges

Dare to Explore …

- New Freedom & new responsibilities
- New Modalities
- Experience as the key
- Prototyping the method

Word of Warning…