

Towards a software architecture for device management in instrumented environments

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FLUIDUM

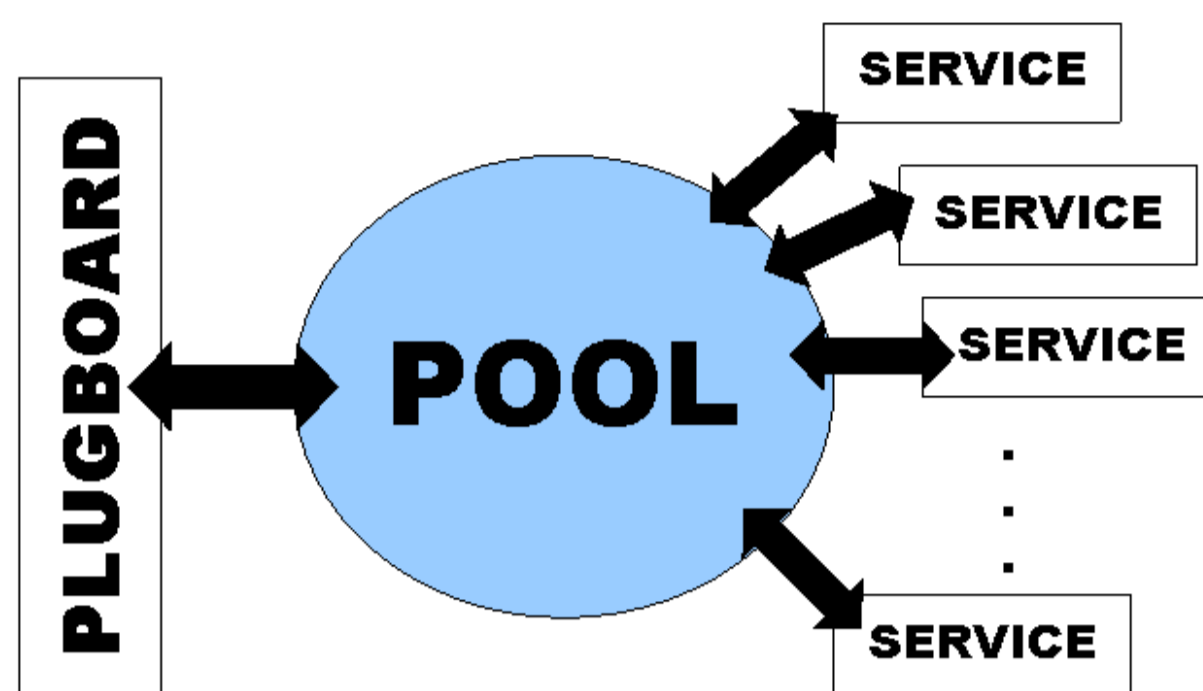
Research goals

- Building instrumented environments in several scales (desk-, room-, and building-level)
- User should not be forced to wear specialized hardware to use the environment
- Prototyping flexible user interfaces for our instrumented environments
- Creating new interaction metaphors

Focus of my thesis

- Providing software infrastructure for uniform access to devices
- Dynamic plugging of devices and services

Integration



Benefits

- Uniform access to devices with similar functionality
- Dynamic plugging of devices and applications in the overall system
- Rapid prototyping

Full Architecture

Integration

- Device management facility plugged to a bigger system

Collaboration

- System contains central data pool
- Connection to other projects with similar goals at the same chair

Data Pool

- Data storage facility
- Stores information, requests and answers from connected components

Discussion issues

- Centralized design as bottleneck
- Reliable recognition of device disconnection
- Ressource management
- Inclusion of future devices
- Dealing with virtual devices

Device Modelling

- No hierarchical device model
- Device properties designed as remotely accessible APIs
- Device described as list of its features

Communication

- Central server, accessible both for applications and devices
- Matchmaker functionality (Yellow Page Service)

