

# D'Homme

## Dialogues in the Home Machine Environment

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# D'Homme

- Our homes will become increasingly populated with small networked computational devices, each with a small range of abilities.
  - How will we control them?
  - How will we find out what they are up to?
  - How will we find out what they can do?
- **Answer: provide centralised dialogue based control enabling**
  - Control of multiple devices
  - Remote control of devices e.g. via mobile phone
  - Sharing of language processing components e.g. recogniser

# Examples

- Control/query of a single device
  - *User: Is the central heating on?*
  - *User: Turn on the central heating*
- Control/query of multiple devices
  - *User: Turn off all the lights*
- Control/query requiring knowledge of device locations
  - *User: Switch on the kitchen light*
- Device initiative
  - *System: Garden security light has gone on.*

# D'Homme Aims

- Leverage *existing/incipient standards* in Home Automation & Language Processing
- Support *plug and play*
- Allow *query and control* of devices and interacting collections of such
- Support language *localisation* for device manufacturers
- *Upgrade path* for increasingly intelligent devices, and *programming* of devices

# Some challenges

- **Weak plug and play**
  - devices can be added or taken away with automatic reconfiguring of speech and language components
- **Strong plug and play**
  - System can cope with a completely new device which comes with a standard language wrapper
- **User reconfigurability**
  - ensure consistency e.g.
    - “stop” = emergency halt, not pause

# Work Plan

- Investigate Home Automation standards which
  - support plug and play
  - permit device control and query
- Identify some devices, their interfaces and typical interaction scenarios
- Build demonstrator systems in
  - English
  - Swedish
  - Spanish
- Explore & evaluate methods to allow strong plug and play
- Investigate appropriate architectures, interfaces, dialogue management