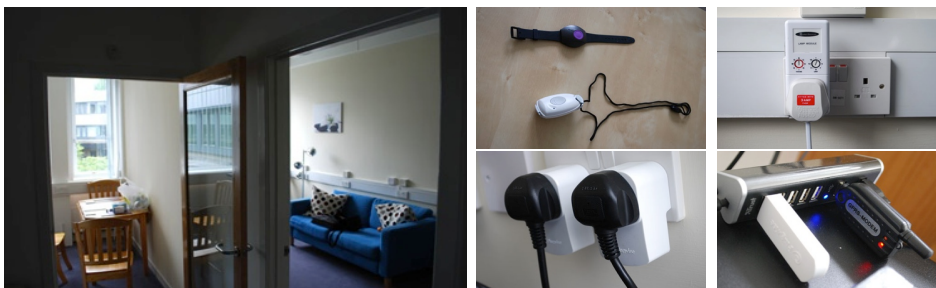


GOALS AND POLICIES FOR TELECARE

Building a policy library
for the MATCH telecare system

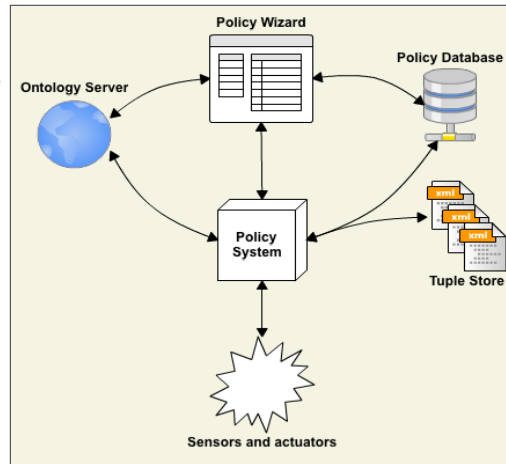
The Home Care Lab

- Work began on a physical installation of the MATCH system at the Home Care Lab in June – this is where the goals and policies library will be tested



ACCENT, MATCH and Telecare

- ACCENT supports management of a system through **goals** and **policies**
- Web-based **Policy Wizard** used to define goals and policies
- **Database** maintains user credentials
- **Tuple Store** maintains policies in xml form
- **Policy System** processes input from **sensors**, and performs actions using **actuators**, according to policies
- Originally developed for internet telephony, ACCENT has now been adapted for telecare
- MATCH project involves using home automation and communications technology to help people in their own homes



Adapted from Technical Report CSM-188, K. J. Turner, p.5

User Requirements

- **What are telecare systems trying to achieve?**
 - Helping people to remain independent in their own homes
 - Largest user group – older people in various different circumstances, e.g. living alone or with a family member, in their own home or a care home, in full health or in recovery from a stay in hospital
 - Users also include people who are involved with caring – family members, wardens, care workers, medical workers, and others
- **Ethical considerations**
 - Most important issue – “informed consent”
 - Residents should not have monitoring of their lives forced upon them, nor should the control of their living environment be out of their hands

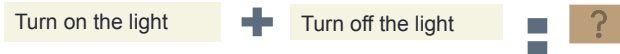
Goals and Policies

- Appell is the xml-based policy language used by ACCENT to define policies and goals



- A **goal** is a policy defining something for the system to aim for
 - **Prototype policies** have **effects** on system variables, such as “*security level*” or “*outside temperature*”
 - The system optimises the choice of prototype policies to best match the goals

- What about contradictory actions?



- APPEL provides for **resolution policies** that define what should be done in the event of such a conflict

Extending the policy library

- Central aim of project is to significantly extend the library of goals and policies
- Library includes templates for policies, goals, prototypes and resolutions

WHEN ?DOOR is opened IF Temperature below ?MIN_TEMP DO Say, “It’s cold outside, remember your jacket.”	WHEN Movement detected in ? LOCATION IF Time is between 22:00 and 08:00 DO ?LOCATION light on
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- Users can instantiate template policies to create their own custom MATCH installation

New capabilities

- Knopflerfish – an OSGi implementation
 - X10, SMSDriver, PolicyServer, TupleServer, etc are “bundles”
- A new bundle is being developed to support Cerevoice TTS and this will be worked into the policy library

WHEN	The bed is occupied
IF	The kitchen window is open
DO	Say, “The kitchen window is open.”



- Wireless speakers will be used to deliver messages around the home
- The new bundle will also include support for playback of voice recordings

Summary

- The MATCH system will provide users with a library of policies and goals which they can instantiate for their own individual installation
- The current system of goals and policies is being significantly extended to make the system more immediately useable
- MATCH makes use of a service-oriented framework and can be easily extended – Cerevoice TTS and voice recording support for example
- The service-oriented framework is being extended to support output of synthesised speech and recorded messages