

Intelligent Home

Assignment

Develop the design documentation for the software system described in this document.

The **design documentation must describe** and discuss at least: (1) functional and quality requirements, (2) design space including QOC description and rationale, (3) design solution by means of both graphical representation and textual illustration. The final report must adhere to good documentation quality.

The design must reflect one of the topics presented during the lessons. The selected topic must be explicitly mentioned in the final report, and it should be clear how the developed design solution relates to the topic elements.

The **grading criteria are**: correctness, originality, internal consistency & traceability, documentation quality (e.g. UML correctness, essence, relevant decisions), link to the selected topic.

System description

HomeGuard is a company developing alarm systems for protecting buildings from incursions. Currently, the leaders of HomeGuard decided to extend their simple alarming systems to offer a wider range of services to their customers. The next generation of their systems will be called "IntelliHome". Next to the already available alarming services, IntelliHome will offer its clients a range of services to control home devices (e.g. video-recorder, LAN/ADSL, heating), both remotely and/or locally.

In order to use IntelliHome, customers need to subscribe to its services. The subscription can be done by connecting on-line to the service department of HomeGuard. During the subscription, customers can specify which configuration of IntelliHome they want to have. The necessary data and the specific requirements of the customers are recorded and stored to create invoices and configuring IntelliHome at the client side.

Clients can specify which home devices they want to control. Data from the devices are stored and can be analyzed on demand. Clients are given the possibility to query and set the current state of their home equipments using for instance an on-line application, PDA, SMS service or a home PC. Secured control of IntelliHome is crucial for the clients. The system should also be resilient to failures.

Certain events can be fully automated. For instance, the heating can be turned on/off during specified time intervals. Automated actions can be based on either the actual or the historical information on devices. For instance, making an appointment with the last called gardening service when the grass reaches a max length.

When a special event, like an incursion or an accident happens, notifications are sent to the appropriate parties (e.g. the Police, fire department). What the special events are and who should be informed can be defined by the customers. The customers can receive a message about events in various ways (SMS, e-mail, voice message, phone call, none).

Note

This assignment description can be ambiguous and incomplete. It hence requires to be further elaborated.