

Mobile Clients for Smart Room

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Abstract

Smart Room provides a service set to automate such research and educational activity as conferences, lectures, and meetings. For human participants the services are accessible via mobile personal end-user devices. A mobile device hosts a smart room client, which registers the participant in the smart room space, shares her/his personal data and context, and accesses available services in the room. This demo shows recent progress of the smart room client development for such mobile platforms as Windows Phone, Windows, Symbian, Android, and iOS.

Smart Room client for the Windows family (Windows XP/Vista/7/8 and Windows Phone) uses MVVM pattern and consists of the following components.

- 1) Client logic performs local processing of obtained data from the Smart Room space. The code is implemented in C#. Access to the Smart Room space is based on C# SmartSlog ontology library.
- 2) Graphical user interface (GUI) binds data and commands coming from the logic. The implementation uses the WPF technology for desktop PC, smartphones, and tablets.

The client logic is common (within the Windows family), so only GUI needs modification to run on another platform.

Smart Room client for Symbian is Qt-based. The Qt framework allows cross-platform development, so the code can run (with minor modifications) on some other mobile platforms. The user interface uses QML with its declarative way to construct highly dynamic user interfaces. The client logic is implemented using C++ programming language and ANSI C SmartSlog ontology library.

Smart Room client for iOS uses IDE XCode, SDK from Apple for creating iPhone & iPad mobile applications. Programming language is Objective-C, so the development can easily inherit the client logic of our client for Symbian. The client architecture is based on Model-View-Controller (MVC) scheme, where the data model, user interface and interaction with user are divided into three separate components. Smart Room client for Android is implemented in Java. Since Android supports the ANSI C standard the client uses native code and prebuild C/C++ libraries of ANSI C SmartSlog ontology library. The Android runtime environment provides Dalvik Virtual Machine. We use IDE Eclipse as the most widespread for Android application development. GUI is based on XML and supports various screen sizes of mobile devices.

Index Terms: Smart Room, Mobile platforms, Mobile programming.