Access to Smart Room Service Set from End-User Mobile Devices

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PetrSU Smart Room

External services
- KP google scholar

RedLand SIB (SmartSpace)

Blogging services
- SmartScribo
  - BlogClient
  - BlogMediator
  - BlogProcessor

Conference services
- SmartConference
  - Agenda-service
  - Projector-service
  - SmartConference client

Sensor services
- Temperature sensor
- Light sensor
- Others sensors...
- Noise sensor

Internal services
- KP tracking user activity
Problem

- User runs smart room client on personal mobile device
- Client is an access point for available services in the room
- Scalability and dynamics
  - services: service selection
  - users: context and dynamics
  - data sources: agenda, presenter, chairman, participants, sensing&control equipment
  - knowledge generation: service composition and accumulation
Mobile platforms

- (smart)phones
- tablets
- netbooks
- ...

- Windows 7, 8
- Windows Phone 7, 8
- Android 2.3-4.0
- iOS 6.xx
- Symbian (Anna, Belle)
- Nokia Asha
- ...

Platforms and SDK
A lot of programming languages and IDE
- GUI is platform-aware
- Qt and QML?
- HTML5?
Smart Spaces SDK

The primary SDK is SmartSlog
http://oss.fruct.org/wiki/SmartSlog/

- ANSI C and C# version
- High-level (model-driven, ontology-based) programming
- Modest to device capacity
- Tested platforms:
  mobile Linux family, Qt/Symbian, Qt/Android,
  Windows 7&8, Windows Phone 7

Use of native code is required for some platforms
Service Navigation (1)

Each service is a tab. User moves from one tab to another
Service Navigation (2)

User joins provision of Projector service
Services classification

- Static services
  specialized client

- Dynamic services
  client is constructed on-the-fly
Options

- **HTML5 application with specialized mobile frameworks** (PhoneGap, jQuery Mobile, ...):
  - ”+” one code for any platform
  - ”+” application can be used in any browser
  - ”-” bad performance on old mobile devices

- **HTML5+CSS+JavaScript pages**
  - ”+” many platforms support HTML5
  - ”+” one page for all platforms
  - ”+” cross-platform
  - ”-” some difficulties in implementation
control: main class, initialization and configuration (if needed)
available services: handling user and smart space actions
config: login, password, plugin configuration
services: set of classes for available services; each sends and receives service data and transforms it to required format
etc.: other knowledge
Conclusion

The development is on the initial phase
http://oss.fruct.org/wiki/SmartRoom

- Concept elaboration: accessing services at the client side
- Client architecture: cross-platform options
- Static pages implementation is started
- Dynamic page construction is at the design phase