

Presence Detection of Mobile Participants in Smart Room Environments

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Presence detection approaches

- Set of cameras and face recognition
- High-Accuracy Indoor Positioning
- User Check-In
- Passive Radio Detection



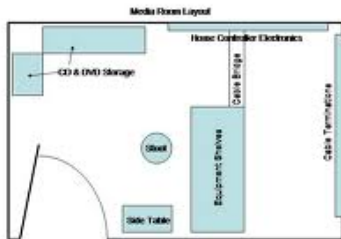
Innorange sensor: Footfall Technology

- Detects presence of WLAN and BT capable devices
- OpenWRT Attitude Adjustment

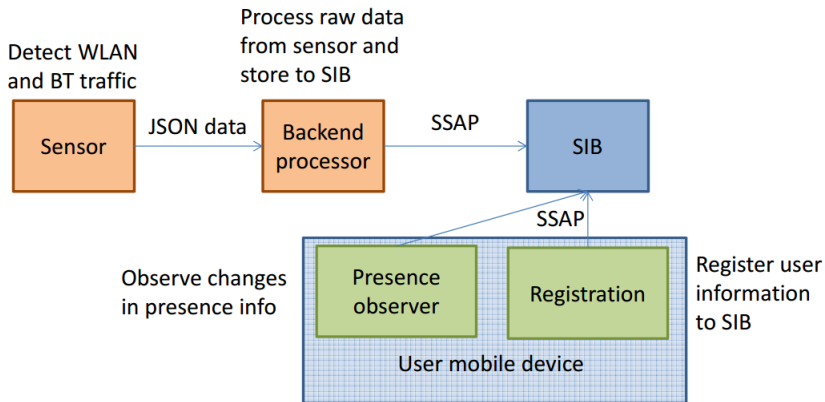


Sensor calibration

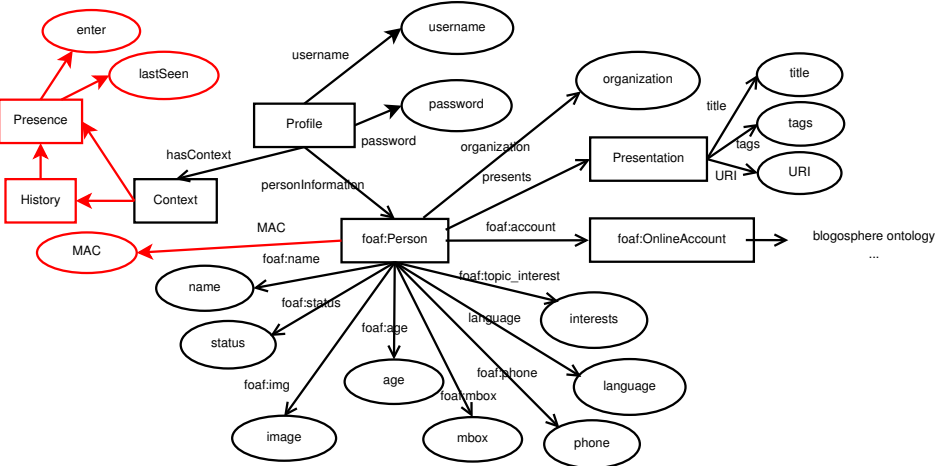
- Basic parameter: Received Signal Strength Indication (RSSI)
- Detect RSSI value in different corners of the room
- Estimate RSSI threshold



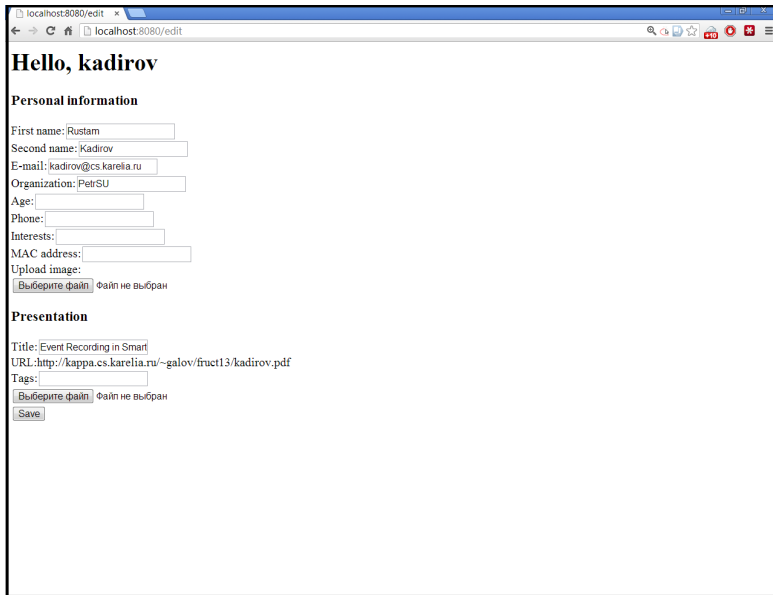
Overall Architecture (for Smart-M3)



Integration using Smart Room Ontology



Registration KP



A screenshot of a web browser window displaying a registration form. The browser's address bar shows 'localhost:8080/edit'. The page content includes a greeting, a 'Personal information' section with various input fields, and a 'Presentation' section with a text area and a file upload button. The form is filled with the following data:

- Greeting: **Hello, kadirov**
- Section: **Personal information**
- First name:
- Second name:
- E-mail:
- Organization:
- Age:
- Phone:
- Interests:
- MAC address:
- Upload image: файл не выбран
- Section: **Presentation**
- Title:
- URL:
- Tags:
- File upload: файл не выбран
- Save button:

Observer KP

Name	Last seen (time elapsed)
Rustam Kadirov	1 min
Dmitry Korzun	2 min
Andrey Vdovenko	5 min
Sergey Marchenkov	5 min
Ivan Galov	10 min

Possible Use Cases for Smart Room

- Automatic check-in
When user comes to Smart Room, the client starts
- Presence related statistics
Show user activity during the event



Demo

- Integration of Footfall Sensor into Smart Room:
 - ▶ aud. 104, RSSI threshold is -35
 - ▶ **Live demo today**
- Future plans
 - ▶ Integration of presence data into Smart Room use cases
 - ▶ Study of approaches for user presence history analysis