IMPLEMENTATION OF VIRTUAL ASSISTANT INTO E-DOORMAN

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Information Society, Ljubljana, Slovenia, 8th October 2013
VIRTUAL ASSISTANT

- Virtual assistant is a program that uses artificial intelligence to provide communication with a computer system using natural language.
E-DOORMAN

- E-doorman transforms a tablet into a video surveillance device that detects motion based on video analysis and sends alarms and warnings via SMS and e-mail. The app offers high level of security and is packed with handy features such as: remote control via SMS, power supply lost warning, etc.

[http://dis.ijs.si/e-vratar/]
People who lack computer skill usually find systems like e-doorman too complex to handle.

By including NLP in such systems, people can operate them more easily.
QUESTIONS TYPES

Static questions
- Answers to these questions are predefined and stored in a database.
- „How are you?“, „Tell me more about your creator.“

Dynamic questions
- Answers are **not** predefined. They are derived from current system state and stored in DB as JavaScript functions.
- „Is the door open?“, „Is my father home?“

```javascript
status = window.myHandler.checkDoorOpen();
if (!status) { x = „The door is opened.“}
else {x = „The door is closed.“}
```
**SYSTEM ARCHITECTURE**

![Diagram of System Architecture]

- **Ways of accessing the VA**
  - www
  - HTTPS
  - Phone
  - SMS
  - User
  - directly on tablet PC

**Tablet PC**
- Server for intelligent home
- Database
- Virtual assistant
- Graphical interface
- Event detection
- JavaScript engine
- Controller communication
- SMS sender / receiver

**Server (VA)**
- HTTPS
- Lock
- Controller
- USB
- Sensors
AUTOMATED RELATION BUILDER

- Help us to add relations between users.
- Important for answering dynamic questions.
  - “Is my father home?”

Diagram:
- Angela (f) is a daughter of Eva (f).
- Eva (f) is a daughter of Maj (m).
- Ivan (m) is a husband of Ana (f).
- Ana (f) is a mother of Angela (f).
- Eva (f) is a mother of Maj (m).
- Maj (m) is a father of Eva (f).
- Ivan (m) is a husband of Eva (f).
- Eva (f) is a daughter of Ivan (m).
- Angela (f) is a daughter of Ivan (m).
- Ivan (m) is a husband of Angela (f).
- Ivan (m) is a son of Maj (m).
- Eva (f) is a sister of Angela (f).
- Eva (f) is a sister of Ivan (m).
- Eva (f) is a sister of Maj (m).
- Maj (m) is a brother of Eva (f).
- Maj (m) is a brother of Ivan (m).
- Ivan (m) is a brother of Maj (m).
- Angela (f) is a grandmother of Ivan (m).
- Eva (f) is a grandmother of Ivan (m).
- Maj (m) is a grandmother of Eva (f).
- Ivan (m) is a grandson of Eva (f).
- Ivan (m) is a grandson of Maj (m).

Database
Virtual assistant
CONCLUSION

- Implementation of virtual assistant into e-doorman was presented
  - NLP provides more user friendly environment
  - Distributed system insure user’s privacy
  - Automated relation builder helps to add new users

Thank you for your attention!