

Work package: Speech-Based Interface

Partner: TBA

Outline

In order to support data collection from a broader range of users, including children, illiterate and elderly people, a speech-based user interface will be developed in addition to the traditional, touch-based system.

This speech-based user interface, “SUI”, will use a text-to-speech system to read out visible menu options. The user can then select them by simply saying the name of the option, or sensible variations, such as “<Option>, please”.

Implementation

To implement the SUI as described above, both speech input and output are required.

Speech Output

Established TTS systems, such as the ones integrated in the mobile operating systems of the target devices, as well as online services such as the free and open-source MARY TTS and similar commercial offerings will be evaluated in a pilot study. To this end, we will develop a survey interface where native speakers of the language that match with our target demographic rate the TTS voice's intelligibility. The best performing solution will be incorporated as the TTS engine for the SUI.

Speech Input

Because of the expected difficult recording conditions, a dedicated speech input system will be developed based on the Simon speech recognition system.

The speech model will be developed specifically for the target languages (Spanish and English) and take local dialects, as well as the task specific vocabulary into account.

Budget

Task	Man-Days
Source audio data for ASR acoustic model (Spanish)	30
Source audio data for ASR acoustic model (English)	30
Develop and tune speech models for Spanish and English	35
Develop TTS pilot interface, conduct study	20
Develop SUI prototype and integrate it with other components on the target platform	25
Improve and extend prototype based on results from pilot study	20
Total (Man-Days)	160
Rate per Man-Day (EUR)	500.-
Total (EUR)	80.000.-