**Background**

**Overview, motivation**

**The Spoken Web**
Existing network of interconnected and interactive voice sites—speech-driven applications available via the public telecom network
Accessible using any type of phone by dialling unique telephone numbers; no extra software or hardware needed
Often aimed at less-literate users due to easy access and creation of content

**Existing interaction options**
- Intuitive, low cognitive load; no literacy required
- Pauses or cues needed to prompt interaction
- Not always appropriate: context; ambient noise
- Quick to enter; many input sequences
- Need to look at phone to see keypad
- Must remember button sequences and associations
- No support for continuous interaction

**Design**

**Requirements, our approach**

**New interactions should be:**
- Recognisable in real-time
- Robust enough to cope with background noise
- Usable while simultaneously listening to content
- Detectable on the devices users already own
- Based upon common metaphors that users are already familiar with

**Back-of-device input**
No need for new devices. Use the rear casing of users’ existing phones as an input surface; sounds generated are captured over the voice connection

**Example**

**Scenarios, benefits**

**Advantages**
- Smoother interaction flow with voice sites—no need to look at the phone when entering commands
- Background cues help users understand what actions are possible at each stage
- Simple interactions; no need to upgrade existing devices

**Implementation**

**Evaluation**

**Recogniser testing**
Accurate real-time recognition is required in order to demonstrate the viability of the new methods. Measures include:
- Input recognition rates
- Response times
- Ease of use; error rates

**In-situ evaluation**
User studies will be undertaken to measure aspects of the new system’s usability against existing voice site interaction methods
Two separate approaches in order to gather both browsing and goal-driven usage data

**Exploratory usage**
A small proportion of the existing user pool is automatically diverted to the new system
Usage statistics are collected and used to form a picture of typical user interactions

**Task-based analysis**
A comparison of the new interaction methods against the existing baseline techniques
Assessing task completion rates and times to measure viability and accuracy of the system