**Wireless laptop control for supervised subjective testing**

The ISESS project required the testing of secondary school students in classrooms across the country. Each class could be comprised of up to 29 students and the classroom layout could vary between schools.

Hardware

* 30 Acer 1810TZ laptops (1 acting as controller)
* 30 Beyerdynamic DT100 headphones
* Linksys Wireless-G Broadband Router WRT54GL

Software

* Windows XP
* E-Prime psychology test software
* Microsoft Visual Studio 2010
* PS-EXEC telnet software

The test software used to run the subjective tasks was E-Prime (<http://www.pstnet.com/eprime.cfm>). For each task, E-Prime logged the response time and accuracy of answers to a set of questions. Subjects would complete up to 4 tasks wearing headphones under a number of different noise conditions. Noise conditions were selected programmatically by the E-Prime script at task run time. Before beginning the first task, subjects would be presented with a small pop-up window asking them to enter some demographic data. This data was stored in a text file, which was then read by E-Prime and used to store alongside the E-Prime response data for each task. Subsequent tasks would also read from this file and log the demographics, negating the need to ask for this data repeatedly before each task.

Each laptop was setup with registry changes ensuring that none of the shortcut keys functioned, such as the Windows key or control+alt+delete. The start menu button and all desktop icons and interactivity were also disabled via the registry. A program that can perform these changes can be found here: <http://www.randyrants.com/sharpkeys/>. This was done to make sure that subjects could not play with the laptops while the tasks were being introduced, change volume settings, tamper with files and also this ensured that the tasks could not be exited from whilst running. Each laptop had A, B, C, D, E stickers placed over equally spaced keys in the centre of the keyboard so the subject would not spend any time searching for the correct key to press during the multiple choice tasks.

With each laptop being locked, each was controlled using a single ‘controller’ laptop connected to a wireless network running from a Linksys Wireless-G Broadband Router WRT54GL (<http://homesupport.cisco.com/en-eu/support/routers/WRT54G>). All task script files and audio stimuli were copied across the wireless network to each laptop before each run of testing began. Tasks were triggered to run on each laptop from the controller laptop using a small program called PSEXEC (<http://technet.microsoft.com/en-us/sysinternals/bb897553.aspx>), which allows you to trigger batch files on networked computers. These batch files launched the E-Prime task files, as well as passing on stimuli type data to make sure subjects were presented with the correct noise signal. Subject response data was collected remotely after each session over the wireless network and collated at the controller laptop into a single data file for each task per school.