

Heathrow Airport handled 481,479 aircraft traffic movements (take offs and landings) in 2007, by this measure making it the 14th busiest airport in the world. It is situated approximately 20km west of Central London and, although convenient for travellers, its proximity to the city means that it is surrounded by areas of high population density.

For those living or working near the airport, or under an aircraft flight path, the noise created by aircraft during take off, landing and in flight can represent a significant annoyance and detriment to quality of life.

The spatial distribution of aircraft induced noise is represented as contour maps, used by the government and airport authorities in policy and operational decision making related to aircraft noise. Using data describing aircraft movements, routes, noise generation and sound propagation contour maps are created by the Civil Aviation Authority (CAA) using the Airport Noise CONtour computer model, ANCON.

The opportunity - Despite noise pollution being a phenomenon that inevitably affects people at a local level, the established mechanism for data collection, information distribution and decision making represents a 'top down' approach in which there is little public participation, but much public scepticism.

Mobile phones represent ubiquitous and evermore sophisticated devices whose application beyond simple communication tools are emerging as personal measurement instruments capable of sensing the environment and empowering collective action through everyday grassroots citizen science. Leveraging their widespread usage, location awareness and capacity to detect noise levels, mobile phones have great potential in facilitating a 'bottom up' citizen driven approach to noise collection.

My aims - By identifying and developing mobile phone technology capable of capturing noise levels, together with an infrastructure for collating, analysing and visualising this information, the LhrNOISEmap project aims to use mobile phones to develop a citizen driven model for the collection of aircraft noise pollution data and the production of noise intensity maps. Engagement with local communities is key, both in the collection of data and the contribution of local knowledge and experience.

AudioBoo and the Audio Map - An application for the iPhone AudioBoo allows users to share sound recordings in a similar way sites such as YouTube help share video. For the LhrNOISEmap project AudioBoo represents an eloquent means for participants to remotely record and publish their observations of aircraft noise using their phone. In addition to providing a mechanism for data collection and communication, by making audio recordings rather than simple noise level readings AudioBoo facilitates the creation of an audio map on which markers represent the location of a sample, which once clicked play a sample of aircraft pollution recorded at that location.

Noise contour maps - As mentioned the traditional method of representing aircraft noise pollution is by the use of noise contour maps. With a sufficient number of samples the LhrNOISEmap project aims to produce a similar visualization by quantifying and analysing the level of aircraft noise in the Audioboo samples submitted for the Audio Map.