

## **Measuring Accessibility by Mapping Mobility**

9 to 11 December, 2013, University College London

**UK Lead:** Dr Catherine Holloway, University College London (UCL)

**Lead from Japan:** Associate Professor Tatsuto Suzuki, Maizuru National College of Technology

### **Invited speakers:**

Prof Takashi Watanabe, ECEI, Tohoku university

Prof Taizo Miyachi, School of Information Science and Technology, Tokai university

Prof Peter Jones, Centre for Transport Studies, UCL

Prof Ann Frye, Accessibility Consultant, Ann Frye Ltd.

Mr Daisuke Sawada, Section Manager, ECO MO Foundation

Dr Hiroshi Kitagawa, Chief Researcher, The Hyogo Institute of Assistive Technology

Mr Tatsuto Suzuki, formerly associated with Maizuru National College of Technology

Mr Pete Donnelly, Outreach and Support Manager, BackUp Trust

Ms Louise Francis, Co-founder and Managing Director, Mapping for Change

Mr Ross Atkin, Designer and Engineer, Royal College of Arts

**Number of participants:** Day 1 (41), Day 2 (30), Day 3 (30)

The aim of the symposium was to examine the state of the art of accessibility research in Japan and the UK and build on this to create projects which can actively measure and map accessibility. The Symposium had three main objectives:

1. Review the state of the art of research, policy and implementation of all areas of accessibility in the UK and Japan.
2. Case studies showing how accessibility has been mapped and measured
3. Developing new evidenced based projects which can be undertaken by multidisciplinary teams from the UK and Japan

Objectives 1 and 2 were met through day 1 of the symposium which was open to the public and objective 3 was met through detailed workshops with a smaller number of delegates.

Please provide a report of the symposium including details about impact as well as the UK-Japan collaborations resulting from this event (do not exceed space provided):

Day 1 of the symposium heard presentations on best practice and case studies from across the UK, Japan and internationally from a diverse range of viewpoints these included how people move (biomechanics), best practice design of the environment and transport systems (engineers), advances in assistive devices (engineers), the value of training (wheelchair user group), and the role of citizen science in mapping. This highlighted the advantages of combining traditional engineering approaches with the more novel citizen science approach. However it left a number of questions as to how exactly that could be achieved.

On day 2 there were more detailed presentations on the technical aspects of the various approaches in the morning combined with talks on future funding. Following these presentations, groups of people which included engineers, designers, local authority street auditors and disabled persons set about conducting developing methods for measuring accessibility. This led to the development of two prototype mobile phone applications to crowdsource data on the environment as well as a more specific measurement of wheelchair accessibility. These applications were further refined in day 3 and a plan for other projects were discussed in a 'thinking outside the box' session.

One of the most striking things to come out of the 3 day event was for people to have a genuine change of viewpoint as to how to solve the problem of disabled accessibility and mobility. As an example engineers and architects had not given consideration to the effect of training for wheelchair users or those with visual impairments or how the provision of information plays such a key role in way-finding for these people. The fact the symposium was free for people to attend meant that a number of disabled people were able to attend, something which is not often achieved and which facilitated this change in perspective.

There has been great interest in the Accessibility Symposium which has reached a diverse section of the population from a number of disability groups to High Speed Rail 2 consultants (who attended day 1) who are now seeking to find ways to learn from Japan in terms of delivering accessible stations; and the Baroness Tanni Grey-Thompson who has since engaged with hosting a

delegation from Japan to develop plans to make Tokyo fully accessible for the 2020 Olympics.

As many people were not going to be able to attend physically a number of modes of social media were used to highlight and record the symposium. We had active twitter followers from Canada, the US and the UK, to sketchnotes which can be found here <http://rossnotes.tumblr.com/>. This also had the consequence of highlighting to the Japanese contingent the great power of social media in highlighting their research. A further impact of the symposium was to build relationships between PhD students at UCL and Tohoku University. This has led to a number of project ideas for PhD student exchanges which are currently being developed. In conjunction with the Accessibility Symposium there was a photograph competition which received over 50 entries.

Currently there are 3 areas of research being developed as a direct consequence of the Accessibility Symposium:

1. A crowd-sourced accessibility map for Tokyo 2020. This idea has gained support from transport for London and will be presented to a delegate from Japan hosted by transport for London in 2014.
2. The development of a sensor and algorithms to automatically map and detect accessibility features of the environment for wheelchair users. Currently grants are being written in collaboration between Japan and the UK. The aim is to apply for funding in our respective countries and then use PhD student exchanges to ensure the projects work continue to work together. This has the advantage that we can draw on one another's skill sets and also continue to develop links between the two countries.
3. The investigation into using street 'furniture' e.g. vending machines to give accessibility information to people about the area. Currently we have made contact with vending machine operators in Japan and traffic light operators in the UK both of whom are excited by the idea although challenges remain as to how to implement the idea. We are looking to develop a research project between the Royal College of Arts in the UK, UCL ECO MO Foundation and The Hyogo Institute of Assistive Technology to find a small area in which it could be tested in and around The Hyogo Institute of Assistive Technology as a pilot demonstration project.

Since running the accessibility symposium I have been approached by a number of organisations which would like to see this become an annual event and have offered funding to help achieve this. Therefore, we believe this will be the first of many accessibility symposiums! The website

(<http://theaccessibilitysymposium.wordpress.com/>) will remain active and results of the projects etc will continue to be posted on the site.

– Catherine Holloway



Symposium attendees