
Supplementary Material for SIG: Making Maps Accessible and Putting Accessibility in Maps

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Communities to which this SIG would be of interest and why

With this SIG we aim to bring together and network scholars and practitioners who are broadly working on accessible maps. This topic is situated at the intersection of two communities within HCI

- **The Accessibility and Assistive Technology community.** SIGACCESS is a specific interest group of ACM which has many members in common with SIGCHI. Indeed, many of the people who publish at the annual ACM ASSETS conference, also publish at the CHI conference. This is also expressed by the fact that CHI paper track has a subcommittee “Health, Accessibility and Aging”. Mobility and orientation are important challenges for people with special needs. Therefore, we believe that many CHI attendees working in the area of accessibility would be interested in a SIG on accessibility of maps.
- **The Geographic Human-Computer Interaction community.** There has been a lot of work in the HCI community on interaction with geographic maps. A SIG on Geographic Human-Computer Interaction was successfully held at CHI’11 [6]. Our SIG could be considered a follow-up, but with a more specific focus on accessibility. However, we also hope to attract researchers working broadly in the space of

GeographicHCI as this SIG will enable them to approach accessibility of maps a novel research topic, which is a subset of their field of interest. This subcommunity of CHI partly overlaps with the ACM SIGSPATIAL special interest group.

We welcome participants who cannot participate in person but use a telepresence robot (be it for accessibility reasons or any other reason).

Assumed attendee background

In accordance with what has been proposed above, we expect participants to bring in previous knowledge, experience, and/or interest in GeographicHCI or Accessibility, or both areas. Accessibility itself is a large area, covering people with various special needs and cognitive, sensory and motor abilities. Consequently, we expect the participants to have heterogeneous prior knowledge. We will take this into account in the organization and presentation of our SIG. While preparing this SIG, we noted a disproportionate focus on accessible GIS research aimed at users with visual or motor impairments while potentially overlooking cognition, literacy, and language. We hope that this SIG will also attract researchers working on these topics to help advance the field in this area.

The approach we will use for organizing and presenting the SIG

As mentioned in the SIG proposal, we have outlined a schedule for the SIG. To sum up:

We will begin by presenting organizers and the motivation for the SIG. An ice breaker activity will allow us to form smaller groups for the following brainstorming session, including people who do not

necessarily know each other. In these smaller groups, we will then brainstorm on key challenges for this field of research based on an initial list as mentioned in the proposal. Each group will be seeded with a separate list of initial ideas to ensure topic coverage. The number of groups will depend on the number of participants in the SIG (brainstorming groups are most efficient when the group size is between 5 to 12 participants [7]). We will also take care to make the brainstorming session accessible to people with impairments, e.g. by orally reading out written notes to visually impaired people [3].

Results will then be reported back to the collective. A live Google Doc projected on a shared display will be maintained to keep notes. Once all groups have presented, attendees will prioritize the top ~5 key challenges and again split into small groups to discuss solutions.

Finally, we will reconvene to discuss potential solutions, key future research topics, and a submission to the SIGACCESS newsletter about the SIG. One possibility is to organize and present results in form of a mind map.

Informal schedule of discussion topics

A key goal of this SIG will be to identify open challenges in the area of accessible maps. In the submitted paper, we present an initial list to seed discussion which consists of data collection, modeling, personalization, access, data interoperability, and other transformative uses (please refer to the paper for details).

Publicity before the event

This SIG will be announced through our professional network of researchers working on related topics. We will also announce it through dedicated mailing lists for the HCI and the SIGACCESS community [1, 4]. Moreover, we will make use of social media, such as twitter and Facebook. The latter has several groups related to the interested communities such as SIGACCESS [11], SIGCHI [12], and SIGSPATIAL [13]. We will also set up a website with the purpose of sparking thoughts and discussion prior to the event, as well as to serve for follow-up after CHI'18.

About the Organizers

Making maps accessible and imbuing maps with accessibility data is a diverse research area. In putting together this SIG's organizing panel, we attempted to capture topical diversity, expertise across different disabilities (sensory, motor and cognitive impairments), and diversity of organizers in terms of geography and gender. Our panel is comprised of industry professionals and academics. Organizers have been involved in a wide-range of (commercially) deployed projects like OpenSidewalks, Project Sidewalk, Accessmap.io and Touch Graphics products.

Anke Brock is an Assistant Professor at ENAC (University of Toulouse, France). Her research for the past years has focused on accessible maps for visually impaired people. She is currently involved in the European Project VISTE on this topic [2, 15]. She has also been a co-organizer of OSM mapping parties.

Anat Caspi is the director of the TASKAR Center. TASKAR center has done accessmap.io and OpenSidewalks, working mostly with mobility impaired

users. Anat is interested in translating research into real-world tools that are actually deployed.

Jon Froehlich is an Associate Professor at Paul G. Allen School of Computer Science at University Washington. His research interests, among others, include ways of making the physical world more accessible through computational methods. Project Sidewalk [9, 10], for example, combines crowdsourcing and computer vision to find, label, and assess sidewalk accessibility problems using online imagery.

João Guerreiro is a postdoc at Carnegie Mellon University and working on the NavCog project [5, 8]. He has recently been interested in accessibility information in maps for the use in navigation systems.

Steven Landau has been President and Director of Research at Touch Graphics since 1997 [14]. Touch Graphics creates products and exhibits that rely on multi-sensory display techniques and audio-haptic interactivity.

Johannes Schöning is a professor at University of Bremen in Germany. One of his research interests is the area of Geographic HCI and Johannes has already organized a CHI SIG on this topic. He has recently been interested in accessible map information for wheelchair users.

Benjamin Tannert is a postdoc at University of Bremen in Germany. He is working on a navigation system for wheelchair users.

Which organizer should serve as the primary contact

The main organizers of this SIG are Anke Brock (anke.brock@enac.fr) and Jon Froehlich (jonf@cs.uw.edu)

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References

- [1] Access announcements mailing list: access-announcements@ACM.ORG.
- [2] Albouys-Perrois, J., Laviole, J., Briant, C. and Brock, A. 2018. Towards a Multisensory Augmented Reality Map for Blind and Low Vision People: a Participatory Design Approach. CHI'18 - CHI Conference on Human Factors in Computing Systems (Montreal, Canada, 2018).
- [3] Brock, A., Brulé, E., Oriola, B., Truillet, P., Gentes, A. and Jouffrais, C. 2016. A Method Story about Brainstorming with Visually Impaired People for Designing an Accessible Route Calculation System. International Conference for Human-Computer Interaction (CHI 2016) – Workshop Sharing Methods for Involving People with Impairments in Design: Exploring the Method Story Approach. (May 2016).
- [4] Chi announcements mailing list: CHI-ANNOUNCEMENTS@LISTSERV.ACM.ORG.
- [5] Guerreiro, J., Ahmetovic, D., Kitani, K.M. and Asakawa, C. 2017. Virtual Navigation for Blind

People: Building Sequential Representations of the Real-World. ASSETS'17 (Baltimore, USA, 2017).

- [6] Hecht, B., Schöning, J., Haklay, M., Capra, L., Mashhadi, A.J., Terveen, L. and Kwan, M.-P. 2013. Geographic human-computer interaction. CHI '13 Extended Abstracts on Human Factors in Computing Systems - CHI EA '13 (New York, New York, USA, Apr. 2013), 3163–3166.
- [7] Hurt, F. 1994. Better Brainstorming. Training & Development. 48, 11 (1994).
- [8] NavCog project: <http://www.cs.cmu.edu/~NavCog/navcog.html>.
- [9] Project Sidewalk: <http://sidewalk.umiacs.umd.edu/>.
- [10] Saha, M., Hara, K., Behnezhad, S., Li, A., Saugstad, M., Maddali, H., Chen, S. and Froehlich, J.E. 2017. A Pilot Deployment of an Online Tool for Large-Scale Virtual Auditing of Urban Accessibility. Proceedings of the 19th International ACM SIGACCESS Conference on Computers and Accessibility - ASSETS '17 (New York, New York, USA, 2017), 305–306.
- [11] SIGACCESS facebook group: <https://www.facebook.com/groups/SIGCHIaccess/>.
- [12] SIGCHI facebook group: <https://www.facebook.com/groups/17585169432/>.
- [13] SIGSPATIAL facebook group: <https://www.facebook.com/groups/1450681355222657/>.
- [14] Touch Graphics: <http://touchgraphics.com/>.
- [15] VISTE project: www.visteproject.eu.