



CAP4Access e-Newsletter No. 4, May 2016

Revised set of tools published

Dear Readers,

The project has entered its third and final year at the start of 2016. After a successful project review in mid-February, the revised set of tools has now been made public. All CAP4Access tools deal with accessibility of the built environment and make extensive use of crowd-sourced data instead of – or in addition to – official data from well-established sources. In the present, fourth newsletter of the European CAP4Access project, you will find a short description of each tool, together with a link to the online resources and to additional information about for what and how to use it.

The CAP4Access Team

Wheelmap – Find and tag accessible places online

Thought up initially by CAP4Access partner Sozialhelden e.V. from Berlin, the Wheelmap allows users to find wheelchair-accessible places on an interactive map covering the whole world. If the accessibility of a place has not been reviewed yet, users are invited to tag places themselves. Wheelmap is available for Android, Windows10 and IOS-powered mobile devices as well as for personal computers. In 2015, Wheelmap was further developed by adding a feature for tagging and displaying the **availability of an accessible toilet** within buildings intended for the public. The **search interface** has been enhanced to allow people to look for accessible toilets in the vicinity of their current location. In addition, Wheelmap can now also be included as a **widget** on third parties' websites. Check it out [here](#).



Open Route Service Wheelchair Routing – Plan your wheelchair-accessible trip through the city

OpenRouteService, developed by Heidelberg University's GIScience unit, offers routing services by using user-generated, collaboratively collected free geographic data from OpenStreetMap (OSM). Within CAP4Access, OpenRouteService has been extended to allow for **wheelchair routing**, i.e. routing where important properties for people with reduced



mobility are taken into account. These properties include avoiding steps, the specification of maximum values for slope and curb height, and the selection of preferred surface material to traverse. Check it out [here](#).

Wheelchair Navigation App – Find an accessible route when out-and-about

The Wheelchair Navigation App is an **Android navigation tool** that makes use of the wheelchair routing provided by the OpenRouteService to navigate a person from their current location to a desired destination. This destination can be selected from Wheelmap locations, local public toilets, or can simply be searched for within the app. Not only does it provide routes that aim to be suitable for wheelchair users **based on accessibility related preferences** entered by the user, it also delivers instructions in a format that is easier for pedestrians to understand by making use of **local landmarks** within the instructions. Check it out [here](#).



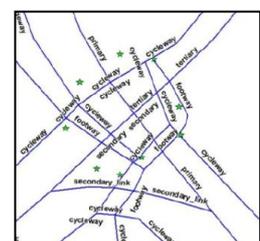
Visualization Dashboard – Display the effect of local mapping activities

Activists who use Wheelmap to tag places, for instance in the context of a “**mapping party**”, are eager to learn about their contributions to accessibility mapping of a city or area. Likewise, policy-makers may want to compare their city to others in terms of the **ratio of accessible to inaccessible places**. For these purposes, CAP4Access together with end users has developed **visualisation tools** with which accessibility information on OpenStreetMap can be tracked and compared. The Dashboard facilitates the browsing of Wheelmap tags and provides aggregate information. Given the visible extent of the map, statistical diagrams and specific aggregate icons on the map will show, for example, the overall number of Wheelmap-tagged objects, and the overall or relative number of red (object not accessible), green (object accessible), orange (object partially accessible) and grey (object not yet evaluated) tags. Check it out [here](#).



Kerb Data Integrator – Process Open Data so that they can be integrated with OpenStreetMap

Mobility-impaired pedestrians, such as wheelchair users or people with walking frames or rolling walkers, have needs that differ significantly from car drivers and non-impaired pedestrians with regard to information about the built environment. This is due to their limited physical abilities when it comes to e.g. taking one or more steps, mastering slopes up- or downwards, or navigating



on a narrow sidewalk. CAP4Access has developed Kerb Data Integrator as a process for **converting data available from public sources** (e.g. city administrations) into a format which allows **integration with OpenStreetMap**. Once integration has been achieved, data about dropped kerbs and other accessibility related features can be utilised by the routing and navigation algorithms used by other CAP4Access tools (see above). Check it out [here](#).

Obstacle Tagging Service – Alert the OSM community to obstacles that need to be mapped

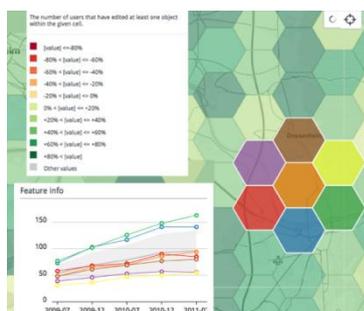
The **Tagging App** is the tool that allows you to tag an obstacle as you are moving around. It is available for the Android platform. The app requires an internet connection to upload tagged obstacles to the viewer and to download base maps for the area users are travelling in. Check it out [here](#). The **Obstacle Viewer** component of the Obstacle Tagging Service is the primary location for people to view the obstacles recorded by others. Not only can they view the obstacles and corresponding description and imagery, they can also view local Mapillary™ imagery alongside the obstacles in the area. You can view the web interface for the tool [here](#).



The **MyAccessibleEU Obstacle Mapper** runs on Android devices and can be used in locations where there is no mobile network connection. It allows people to document obstacles that they encounter that may pose problems for people with restricted mobility. Potential barriers can be mapped via both the mobile app and the mapping interface which let people record a textual description of the obstacle in question, where it is located, whether it is permanent in nature, and also to take or upload a photo so that people can actually see what the obstacle looks like. Check it out [here](#).



OSMatrix – Assess the quality of OpenStreetMap data on accessibility



A major challenge for use of accessibility information tools such as the routing and navigation apps developed by CAP4Access is **data availability on OpenStreetMap**. For this reason, there is a need for a service that allows experts to assess the quality (in particular completeness) of data available on OSM. To meet this demand, Heidelberg University's **OSMatrix tool** has been extended significantly both on its client- and server-side. It can now be used to display OSM statistics such as the degree of coverage of information relevant for accessibility (e.g. availability of sidewalks) in a hexagonal net on top of a geographical map. Check it out [here](#).

MapMyDay – Raise worldwide awareness about accessibility

MapMyDay, an awareness raising campaign launched on 2015's **International Day of Persons with Disabilities**, has a twofold purpose – first to gather as much information on the wheelchair accessibility of places worldwide in a short period of time and second to raise awareness for accessibility issues among a broad, global audience. The tools deployed for the purpose include a website featuring a localisable map, a **social wall** displaying all social media posts using the **#MapMyDay hashtag**, and a long list of **testimonials** in advert-style from prominent supporters. The MapMyDay platform will be used for future campaigns to be scheduled around the International Day of Persons with Disabilities (December 3rd). Check it out [here](#).



News

Wheelmap instrumental for protest against new German legislation about accessibility

Wheelmap.org is playing an important role in an ongoing public debate about the rights of people with disabilities in Germany. Activists staged a public protest against the new “disabled equality law” in early May 2016 by chaining their wheelchairs on the bank of the river Spree, within the no-protest zone around the Bundestag (German parliament). Accessibility activists are not satisfied with the revised legislation, which requires the public sector to ensure full accessibility when putting up or renovating buildings, but does not extend this requirement to private service providers. In communication with the media Wheelmap.org was used extensively to demonstrate the degree to which the built environment is still inaccessible for wheelchair users. Tagesschau, the country’s most widely watched news broadcast, reported; see [here](#) (in German).

Meet CAP4Access at conferences in summer 2016

The consortium will be present at a number of public events, present findings and discuss with stakeholders. These include the [1st International ECSA Conference](#), focusing on citizen science and open innovation (Berlin, 19-21 May); the [AGILE International Conference on Geographic Information Science](#) in Helsinki, a major

get-together for the GIS research community (14-17 June); the [Conference on Computers Helping People with Special Needs \(ICCHP\)](#) in Linz, Austria (13-15 July); and the [Participatory Design Conference in Aarhus, Denmark](#) (15-19 August), where we will present a paper on community engagement strategies for crowdsourcing accessibility information. If you will attend any of these events, you are welcome to drop us a mail beforehand so that we can use the occasion to meet up and discuss possibilities for cooperation.

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Please visit www.cap4access.eu for any further information about the project.

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