

Community mapping in the commercial environment using HERE base maps as an example

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Abstract: The HERE map, used by millions worldwide through mobile apps, social networks and car navigation systems, combines information of more than 80.000 sources. One of those sources is our community of map enthusiasts that voluntarily provide edits in their local areas. Learn more on how HERE builds its maps and how we engage with communities worldwide to keep our map fresh and build the reality index.

1 About HERE

HERE empowers the world with location data. The HERE Map is used by millions worldwide through mobile apps, social networks and in 4 out of 5 cars equipped with a navigation system. We are committed to delivering the highest quality location data as the go-to destination for location services for any need. From healthcare, transportation and logistics to infrastructure, manufacturing and financial services.

The core of our solutions is a rich, always evolving, map that captures the complexity of the world in the greatest possible detail. Offering nearly one thousand attributes, we create flexible solutions that enrich customer products with location intelligence and help their applications reach the scalability.

2 HERE map updating process

HERE combines information from more than 80.000 sources including a global fleet of mapping vehicles, GPS probe data, vehicle sensors, local authorities and a global community of map editors.

3 HERE Community program

Our global community of map editors improve their cities and neighborhoods by contributing to the HERE Map through HERE Map Creator or a Map feedback form. Contributors around the world can add, delete or update roads, places (e.g. business details, categories) and house numbers to improve navigation, attract new customers and much more.

Members of our global community can access HERE Map Creator through iOS and Google Play apps and mapcreator.here.com.

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4 Community inputs are an essential element to keep the HERE map fresh

4.1 Benefits for the HERE map

The map feedback provided by the HERE map community is essential to reflect the real world in our map. Our community allows us to:

- Detect and implement immediate changes by bringing in local knowledge
- Confirm changes detected by other sources
- Integrate features where no other or source is available
- Detect changes before they actually happen
- Alert on temporary changes like road works, speed traps, fuel prices.²

4.2 Types of map contributors

The global HERE map community is built on different types of map contributors, depending on their level of mapping knowledge, their engagement and their contribution goal. Through different activities, our community managers engage with them on a personal level, going from teaching digital mapping tools to students to working with advanced users on enhancing our map feedback tools.

Why do these groups of people contribute to the HERE map?

- Map enthusiasts: individuals that like mapping and want to make sure that the map reflects the real world. They take pride in the fact that the map is used by so many people worldwide
- Students: to get a practical knowledge of digital mapping or on development topics (location related APIs and SDKs) in the scope of their academic curriculum.
- Locals and tourism: to promote local highlights, make sure that emergency services arrive on time
- Small businesses: to keep their info like opening hours and contact information updated
- Car drivers or other people that use our maps: they want to make sure that an error they have noticed gets corrected

5 HERE Community Management

Around the world, more than 40 HERE community managers take care of the users of more than 100 countries.

² These attributes cannot be changed via Map Creator. However, users do alert us on their changes via other communication means and our community managers do the integration for them.

They are in contact daily with the Map Creator users to discuss features, answer their questions and provide personal support. We organize regular trainings and events, mapathons, contests, and smaller meetups.

5.1 Ambassador Programs

Our best editors (called Map Masters or HERE Ambassadors) get specific moderation rights allowing them to moderate their own and other user edits. They also benefit from accelerated validation and integration.

They represent the HERE Map Creator community. Our ambassadors spread the word, by actively recruiting new users and working on community engagement. They provide valuable feedback on new features and implementations and work with the developer team on future enhancements. They help us out by providing user support via our forums, when responding to other users' questions, but also by co-organizing our local events. Their presence is essential to make our meetings a success.

5.2 Academic Programs

HERE has a long-lasting relationship with universities and high schools all over the world. Together with the teachers we setup a real academic training program around digital mapping (combining theory and practical sessions). The students mostly work around updating their local area, but can also focus on specific tasks like working on specific map attributes like speed limits or geometry. Thanks to our partner Mapillary (www.mapillary.com), a tool that allows imagery collection, we can provide the students a complete theoretical and practical understanding of the complete mapping cycle, from collection over editing into validated changes.

We are also expanding our academic approach with a focus on future developers: students gain practical development experience by working on location related applications using the HERE APIs and SDKs.

3 audiences:

- High schools
- Universities
- Young entrepreneurs

Since 2017, we benefit from back-up from the European Union through the Erasmus+ program. We also partner with inter(national) organizations like iGEO where digital mapping challenges via Map Creator become part of the official program.

5.3 Associations

A variety of associations use Map Creator to update the map in remote or rural areas or to focus on specific attributes. For instance, sports associations add bike pathways or NGO's focus on local wheelchair access.

We have more long term agreements with Auto-Moto clubs for continuous imagery collection (using our partner tool Mapillary) and then integration of the detected changes into Map Creator, often also working as ambassadors

5.4 Local Government

We work with local government to enhance the map for citizens and tourists. Locals update the map with shops, emergency access roads etc. In some cases, they can also use our APIs to create their own application and provide it to the citizens.

If they dispose of large volume datasets, they can also use our supplier portal – upload.here.com – to upload these to the HERE map for further integration.

5.5 Partner Programs

Here has been partnering with 3rd parties to ensure a feedback loop for our map users (e.g. Ford, BMW), to update the map on specific attributes or to provide edits in restricted areas that are inaccessible for non-authorized persons. Other parties, like insurance companies, use our map data to verify road attributes and correct them if needed through Map Creator, creating a real win-win situation.

6 Community statistics 2017

Number of Monthly active users globally: more than 5.000

Number of edits globally: 24.7M edits, 1.3M added kilometers

Number of edits in Germany: 700.000

Number of active users in Germany: 5.000

Number of communities: 316 active communities globally, 45 in Germany

Events in Germany: User Meetings in north, east, west and south Germany, Map Master meeting, Map Job campaigns, participation in conferences

Map Masters: 11 Map Masters in Germany

Academic Programs: 5 Universities with more than 200 students in Germany

7 Conclusion

HERE Technologies combines decades of map building expertise with high quality sources, valuable customer feedback and advanced engineering capabilities to orchestrate the publishing of the freshest map on the market. We detect new road geometry and verify changes in real world conditions quickly, building a digital representation of the world – a “Reality Index”.

This Reality Index is only possible thanks to the valuable inputs of a highly motivated community of map enthusiasts that reflect real time and hyperlocal changes in our maps. To foster this community, HERE has set up a global program, where community managers work with students and mentors to build the map of the future.