

And now you will hear Emily Eros, a Geographic Information Systems Officer at the American Red Cross. She will present the *Missing Maps Project*. So, the *Missing Maps Project* is a collaboration between the Red Cross and some other humanitarian organizations, that we started as an effort to map places where vulnerable people are living before a disaster occurs. Missing Maps is a project where we work with remote volunteers all around the world, community volunteers in these locations, and we start adding data to OpenStreetMap so that we have this material in advance. There are three kinds of phases to the Missing Maps Project. The first is remote mapping, the second is working with community members on the ground to add data, and then the third is making that data useful. The goal of the Missing Maps Project is to put 20 million people on the map by the beginning of 2017. We have mapping parties all around the world, where anywhere between 10, 20, 60, 80 people will come; they'll bring their computers, we'll have food and drinks, and they'll spend a couple of hours just remotely tracing buildings and roads. So, we remotely trace all those buildings, and the next step is trying to figure out what these buildings are.

Notes

Summary



0m 04s



We can tell a lot from satellite imagery, but we can't tell where are all the hospitals, all the schools, all the community facilities, and things like that, that we might really need to know about if there were a disaster. So, the next step is going into these communities with local volunteers. We find ways to invite people, we bring phones, we bring computers. And, first of all, we'll start by doing a training of what it is we're doing, why is it important, how it's used, how they can use it as well. And then we'll train volunteers in actually using the technology, we'll do some practice with them, and we'll talk about, "Okay, these are some things that we want to add to the map, but what's important for you? What are your needs, and what would be useful for people to know?" Then we go into communities with them, and we spend at least a couple of weeks, and sometimes much longer doing detailed mapping. And then, finally, it's making this data useful. So, in Washington, our team will create maps and products that we give to the communities, to the Red Cross, for projects that they're doing. The data is openly available online, and we're still trying to work on who are other partners locally that might need to know about this, so they could use it as well.

Notes

Summary

1m 21s





Because we don't just want data for humanitarian purposes, we want other people to be able to know, contribute, and access it. In terms of differences between remote and field mapping: remote mapping is very good for using a very large group of people remotely to do some tracing and create a base map, whereas on-the-ground mapping is a more limited resource. You'll only have so many volunteers that you can train, and so many phones, and so you really want to use them for the maximum benefit. You want them adding things that you can't tell from a satellite image. So, things like hospitals, things like what the different lands are used for, that's what we really want to focus on for on-the-ground mapping. So, all types of people are involved with this. And then locally, on the ground, it tends to be younger people who are more comfortable using technology. But I've also had women over 50 who are mothers, grandmothers, coming to say, "Hey, this seems really interesting, I'd like to know how to use a phone, maybe this is a way I could get some training." So, in general, we use various different pieces of technology.

Notes

Summary

2m 29s





We think of ourselves as omnivores, where whatever technology we can find that works where we're operating, we would love to use and try that out. So, for mapathons, we use some different websites that can take an area, divide it into a grid, and then people can select a grid square and say, "I'm going to map this." So, it makes a big area more manageable, and that's called the HOT Tasking Manager. For the tracing, there's some different online tools that people can use. The one that we use the most is called iD Editor, it's a very user-friendly interface for just drawing in buildings and roads. And then we also have created a tracking tool and website that keeps track of people's username and what they've mapped. It gives badges, it tries to make it a little bit more of a game, and that we designed as a tool for keeping people engaged between disasters. It's very easy to think, "Why should I care about this and why should I come when there's been no recent earthquake?" But we really want to engage people between disasters. In terms of community mapping, it really depends on the area, so we have some paper-based tools that we can use without any technology whatsoever.

Notes

Summary

3m 37s





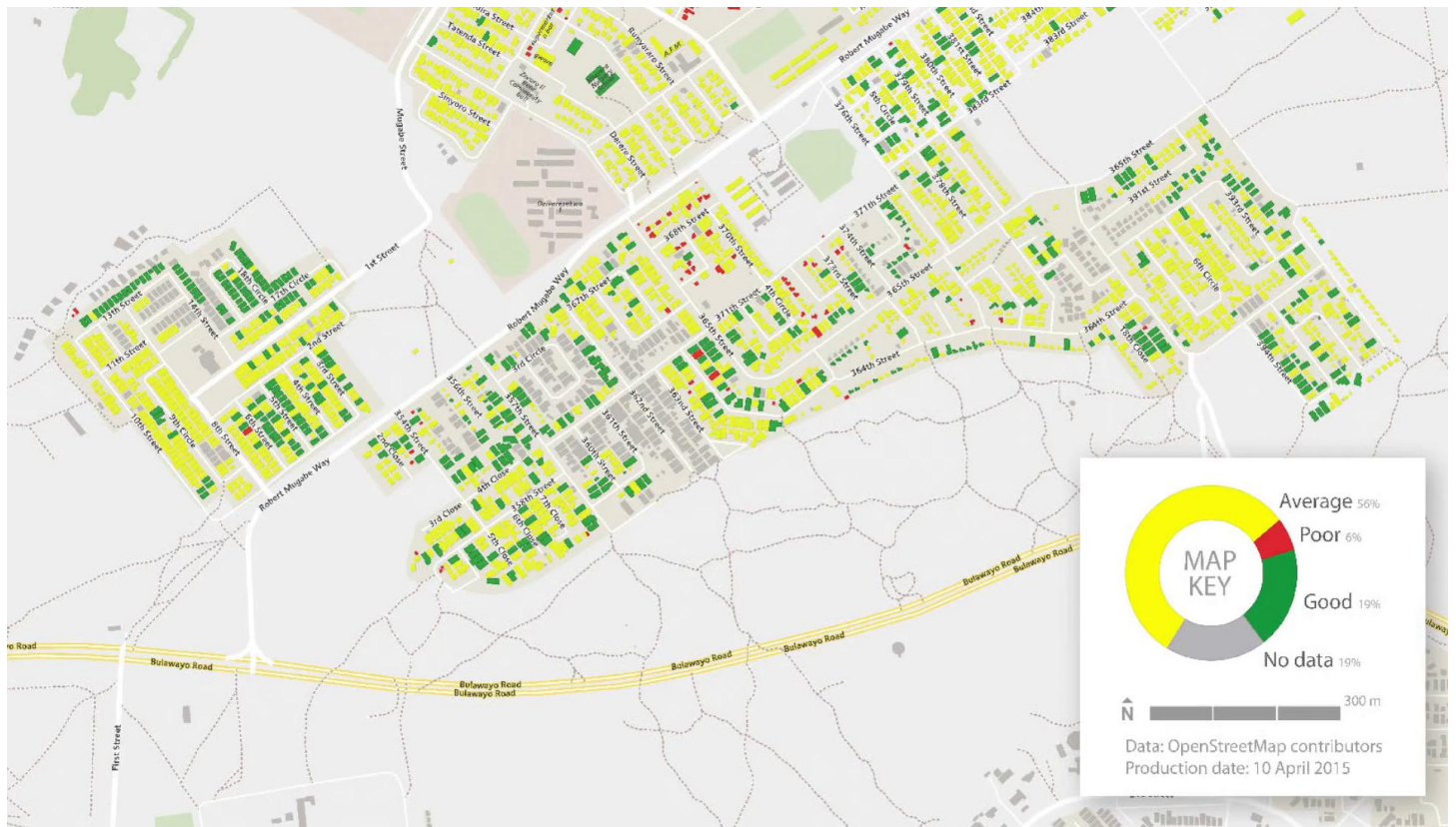
We use something called FieldPapers, where we input the area that we want to map. Again, it divides it into a little grid, and then it prints an atlas where each page is a different street on a local area. Volunteers will take this into the community, they'll write down the address numbers, or whatever it is they're trying to map, and then there's a little QR code, so they take a photo, it comes up online and they can see where all that is in real space, and add that to the map. So, that's FieldPapers, and we use that if it's not safe to be using phones, like in a slum area we might use that. If for some reason our plan A failed, that's our backup. And then everything that we can do with mobile phones, we do, because it makes data input a lot easier and it's just a little bit faster on the ground. There is an app called the Open Data Kit, which is, you can create a survey that someone can flip through, and we've used that for years for doing damage assessments, or things like that. We modified that into an app we call Open Map Kit, where you pull up the phone and you can see all that base map that we've created.

Notes

Summary



4m 49s



You can tap on the building in front of you, and then it'll ask a series of questions about that, and you can just tap your way through and then it inputs all of that into the map in a very easy format. And then, finally, what we've been working on last is a portable offline server.

Notes

Summary



5m 54s



PORTABLE OPEN STREET MAP



1 PREP

Select the area of interest to download imagery, map tiles, and forms



2 UNPLUG

POSM is ready for use; disconnect and travel to the field site



3 USE

Connect to POSM to prepare devices and upload data in the field



4 RECONNECT

After returning from the field, reconnect POSM to the internet



5 SYNC

Mapping data sync to OSM and are available for anyone to use

Humanitarians are increasingly using technology really well, but we're also working in really remote areas. And, while mobile phones and other tools work offline, creating surveys and preparing things, and the advance work usually needs an Internet connection. So, with that, in the past, we've had to go back to an area with Internet connection at least every couple of days to keep going, and if we have a problem, we need to go to a plan B. So, as we're doing bigger projects in more remote areas, we've created some portable offline servers which we call POSM. It's a little box about this big, and we download a bunch of material to it before we go to this country at all, and then every time we connect to its Wi-Fi, it's basically as though we had an Internet connection. So, all these tools that I've just mentioned, they need Internet to get them ready.

Notes

Summary



6m 10s



With these POSM boxes, we can go months at a time without needing electricity or Internet connectivity. If the power goes out, if the Internet fails, if any of these things happen, we don't have to change our schedule, we don't have to work around it, we can just keep going. Everything that we use is free open source and available online. Anything that we develop is available. In terms of hardware, like the server, I think the components cost about US\$ 300, but everything that you need to install in there, we've made available on our GitHub webpage.

Notes

Summary

7m 05s



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And so we're very excited to be working with developers, working with other people in this space to continue to make these tools better.

Notes

Summary



7/m 38s