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 [Luandro](#) posted ~2h ago:

Huin!om



San women learning to use the Huiom application on a mobile device from a project collaborator

Although I've known [@Nico Pace](#) for two years thru SSB, I only personally met him during the last [#dweb-camp](#). In the first days he approached to talk about a project that had received funding from [APC](#) and he believed it to be aligned with the work I had started with [#community-first](#) applications.

We connected with Professor Nic Bidwell and [@Mike Jensen](#) from APC, who were responsible for the project and they explained the objective was to connect 40 villages of the [San people](#) that live in the [Kalahari](#), territory known as Namibia, thru phones to each other. Nic has loads of experience on community-based action and research for technology design in the global south, she's big on [#decolonisation](#) and very careful on how we discuss things and work on the project. Both her and Mike work mainly on [#communitynetworks](#) with APC.

After many more calls we all agreed Secure Scuttlebutt would be a perfect protocol for creating such [#sneakernet](#), and a decided that we'd could create a voice-messaging app prototype built on SSB. During Dweb [@mixmix](#) and [@Maui](#) also approached me about [#ahau](#), and later we also agreed there were parallels between the two projects.

The San villages don't have electricity and the environmental conditions are harsh (desert), so each of them was given a [rugged, low-end, Android device](#), a solar panel, from where to charge the phone, a speaker and a box to store the gear.

Video of full kit that each San village got, includes solar panel, protective box, speakers and phone running the huiom app. Audio in the video is coming thru the speaker and the app, which got it thru SSB.

Software development

I had gathered some experience with SSB on mobile for the past years with [Manyverse](#) for the [#mobile-ssb-quests](#), the [Open App Hub](#) for [#moinho-mesh](#), [the mebêngôkre project](#) and the research for a [#community-first](#) architecture.

To be sure we had a chance of success we asked Nic to run Manyverse and try syncing between phones. As that was a success I started pulling together the fundamental parts of the app to start our own client.

Mix helped out with the code early on with the first [p2pstories](#) prototype. His contribution with the ssb part of the project was of huge value, and so was his help with code review and project management. Early on he advised us to get some test phones of the same kind that would be used in production in my hands, and presented opportunities for that to happen. Unfortunately we weren't pro-active enough to take the advice, could have given the project much better results.

We were able to get a working prototype with most functionality early on, leaving time for debugging. Nico, Nic and Mike helped a lot with testing, as two of the Android phones I initially had for testing died during the months of development, leaving me only one device to test.

There were problems with `blobs` showing on newer Android phones, and a few native Android libraries not behaving well with the low-end production devices. One of the most important lessons from this project was how difficult it is to develop for Android and it's huge array of hardware and software versions. Relying on [#react-native](#) also proved to be a challenge, as many fundamental libraries for dealing with the file system and WiFi for example, had very different behaviors across devices. [@andrestaltz](#) was an amazing and patient mentor, helping out with whatever he could.

On the last few days before the project going to production I updated Android Studio, which completely ruined the development environment on my machine. But in the end I was able to hand the apks with all the changes we had agreed were needed.

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Conclusion



San women dressed very colorfully gathered in a circle, as a project collaborator shows how the huiom application works

Unfortunately our application had limitations we couldn't have foreseen without appropriate development environment and much more testing, as Mix had warned us.

This was the killing bug reported by Nic from the ground:

There must also be a problem with the RAM because after receiving relatively short messages 1 to 4 minutes from 5 profiles/ phones (one by one over a period of 6 hours turning off when they have been correctly transferred) the phones crash at trying to save a recording. I tried completely fresh phones - it starts off ok but by the 5 phone and 7 recording they freeze or crash.

They have turned to recording messages with the native Android recorder, and sharing them thru Bluetooth with the phones.

Despite the application having failed, I felt the project was an overall success as it presented a huge challenge, and had little funding and time to achieve it. We learned of many software and hardware problems that we can definitely improve on in future iterations. [@Dominic](#), me and Mike had a meeting while I was visiting Mike in person. Dominic has shown interest in joining the next development phase of the project.

We're looking for funding to put me and Dominic on the ground for a few months, together with the San people, in order for us to have real environment for development. That would be a dream come true. In the meantime, I've been researching ways to better the system, as I intend to collaborate with many realities that are similar to the San's.

Maybe take the lessons from SSB and build a simpler sneaker net system from scratch with less security but more performance; built without a framework, directly in Kotlin; or adapt some of the work being done by [#sunrise-choir](#)...

Me and Staltz started mobile development on [#ahau](#), and although it's needs are a bit different to this project we're learning a lot from it as well in order to keep on improving how we approach low-end devices with SSB.

The code and released apks are on [this repo](#). I'm looking forward for more experiments and to actually see a digital communication system working for the purposes of [#decolonisation](#) !

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