

sdmay18-34: Integration of personnel tracking in an Augmented reality environment

Week 4 Report

October 2 - October 15

Team MembersLogan Highland — *QA Lead*Chandler Chockalingam — *Project Manager*Christopher Stapler — *Report Manager*Josua Gonzales-Neal — *Chief Engineer*Jason Ramirez — *Software Architect*Victor Da Silva — *Chief Engineer***Summary of Progress this Report**

best for us in regards to tracking personnel in an open construction area. From the previous reporting period, we had narrowed down our search to WiFi-based approaches. The two methods we focused on during these two weeks used RSSI and CSI. As there were many solutions available we split up the work of finding solutions based on using the information provided by these two different measurements. Half of the team worked on finding solutions using RSSI with an RTK implementation and the other half of the team focused on CSI based solutions.

Pending Issues

We will need to make sure that as we narrow down potential solutions we pick the solution we are confident that we can implement.

Plans for Upcoming Reporting Period

For the next reporting period we hope to have a solution narrowed down to then will be able to start our testing phase.

Individual Contributions

Team Member	Contribution	Weekly Hours	Total Hours
Logan Highland	Narrowed down previous research done to find ones that would actually be useful to our new project. Went over conferences sent by advisor to find more ideas about wifi tracking. Started researching RTK solutions that we would be able to use, as asked by client. Talked to past student who worked with RTK to get a better understanding of how we could get it to work with our project. Studied up on open source library for RTK called RTKLIB, went through some src code files to try to determine if it would work for us.	9	23

Chandler Chockalingam	Researched channel state information (CSI) technologies to potentially implement in the project; researched real time kinematic (RTK) technologies to potentially use; put together slides to present to our client and advisor over the information found; worked on design document assignment	9	21
Christopher Stapler	Did more research on Different tracking methods this time with the focus on solutions which implement CSI-based tracking method. First looked at solutions that used that used were based on SpotFi a paper that I had previously researched into. Although, SpotFi had only been published in 2016 it had been cited many times by other current papers. I looked at all the papers that cited SpotFi, narrowed it down to two papers that had solutions we were looking for.	10	25
Josua Gonzales-Neal	Did research on RSSI methods for location tracking. Looked for open-sourced software that could be used for our project. Looked over suggested conference papers. Looked over RTK solutions and open source code. Looked at what additional hardware is needed and the compatibility of the hardware for our specifications. Went through some publications and conference papers to help with our search in using RTK and the challenges of tracking.	10	23
Jason Ramirez	Getting signatures for IP information. Researching CSI techniques to implement for the project. Researching hardware to implement our current applications. Sketching out the software architecture for the current location tracking service.	10	22
Victor Da Silva	Did research on CSI and RSSI methods for location tracking by looking at published papers and open-sourced software. Looked over 2 conferences that involved projects for location tracking. Looked at some hololens applications made using Unity Game Engine. More research on CSI and RSSI. Narrowing down a definitive method that we will be using for our location-tracking system	9	20