MST Google Project 2 – 12/02/16

Daniel Eldar, Carla Hyenne

Overview of previous weeks

The last two weeks have been decisive for the project. We had a meeting with all our clients from UCL, Google and MSF, and were able to gather all the requirements that we have divided amongst the team. Our focus is now on completing all tasks within the time frame. We have also submitted an abstract for a Global Health project at UCL, and will be presenting our project at the event on March 2nd.

Meetings

4/02/16

Attendees:

Garrett May
Hekla Helgadottir
Carla Hyenne
Daniel Eldar
Aron Monszpart (Teaching Assistant)
Dean Mohammedali (Supervisor)
Dr. Kostkova (Client – UCL)
Usama Inam (Client – Google)
Idriss Ait-Bouziad (Client – MSF)

Points discussed:

Defining the requirements for the rest of the project and use cases that we should focus on to produce a good quality project for both MSF and Google.

Tasks completed and time estimate

After our meeting with our clients from MSF, Google, we have agreed on the requirements and have prioritized them. They are, in order from highest to lowest priority:

- Gather temperature and humidity sensor data
- Connect back-end and front-end via Bluetooth connection to transmit data
- Implement the Raspberry Pi transmitter and receiver

- Connect the gimbal with head movements to control the camera
- Gather GPS coordinates and data for points of interests
- Get drone location using GPS data
- Display point of interest tag on the fly over video footage
- Add an Open Street Map view to the cardboard menu, and overlay the POI tag as well
- Trigger a new landmark (POI) from the front-end
- Create an 'iron-man' view in the Google Cardboard
- Create more esthetic graphs for the UI
- Implement a population count functionality

Plan for the upcoming weeks

Our teams have divided the tasks to ensure all is covered within the time limitations.
Team 1 (Garrett May and Hekla Helgadottir): will be focusing on hardware, which is: gathering sensor data, setting up the transmitters and receivers, implementing the gimbal. They are also updating the UI.
Team 2 (Carla Hyenne and Daniel Eldar): computer graphics, computer vision and GPS tracking. This focuses on video analysis to extract data, tracking the drone during flight and geotagging video, as well as implementing the POI functionality on the video and map views.

Work Packages

Carla Hyenne
Over the last two weeks I have focused on the video analysis. Using OpenCv libraries in C and Java, I have been able to detect motion from aerial video footage to detect moving people. I also have developed a program to detect contours. This is a starting point, and now I will be focused on geotagging and locating points of interest on the video footage from the drone, using data from Open Street Map.

Daniel Eldar
My two weeks were split across 2 tasks, for the first week I focused on finding a system to transmit the video and found quite a few transmitters which were all analogue, therefore, I had to find a digitiser and I chose one with an open source driver as it would make working with it much easier than any other one we would have chosen. Afterwards, we got some advice from Anthony Steed through our teaching assistant Aron saying that analogue works faster than digital so we chose to go with that option. During my second week I focused on the production of the overlay for the video using OpenGL, OpenCV and homography.