

Global Meeting Report 19.11.2013

Team ITU

Date	Time	Duration	Attendees	Communication medium
Tuesday, 19.11.2013	17:10pm (CET) 19:10pm (EAT)	~ 2:00 h	ITU Team (4 total): <ul style="list-style-type: none">• Tomas• Christoffer• Jacob• Theresa Kenya Team (2 total): <ul style="list-style-type: none">• Cecil• Wayua	Skype

Agenda: Status-Update

Agenda (planned):

- 1) Discuss Status Update Kenya
- 2) Discuss Status Update ITU
- 3) Feedback to Kenya
 - a. Feedback from Theresa
 - b. Why do you want to know where a person is in the room?
- 4) Future Collaboration
- 5) Assignments for this week

Meeting progress

- Started at around 17:10 CEST (19:10 EAT)
- Kenya student (Wayua) attended at 18:10 CEST (20:10 EAT)
- Kenya student (Ann) was missing

Status update from Team Kenya

- Delegated duties:
 - Ann: User Interface
 - Cecil, Wayua: Development and documentation of the functional part (retrieve data from database and represent them)
- Decided to work with canvas to map object coordinates in the App (Representation of the room data)
- Thoughts on prediction:
 - Prefer to use alerts (android toast)
 - The predictions only become live for a short time before the target achieves them. i.e The android user will only see an alert such as “object1 is headed to room2,

heater started” or “object1 is headed to room2, AC start”. Once object1 has gone to room2, the prediction ceases to exist.

- Prediction: What room we foresee the use going after he/she leaves the current
- Update on requirements: Documentation
 - University staff will check on the progress and require a documentation at the end of the project

Status update from Team ITU

- **Image Processing:** Same status as last week
- **Prediction model:** Looked into the Hidden Markov library (jahmm) for possible prediction. It works just as described on the wiki page about HMM. Not sure yet if we want to use this library or Jacob’s implementation on the prediction, since jahmm is not very flexible when it comes to taking into account if person turned around and etc.
- **Server**
 - Team ITU uses wamp for running the server locally
 - What the database more or less looks like:
 - Objects: (Raspi_Id, Room_id, Object_id)
 - ObjectPath: (X_Coord, Y_Coord, timestamp)
 - Datatypes:
 - All IDs are UUIDs
 - Coordinates are in Integer
 - Timestamps are in Long
- **Setting up RaspberryPIs**
 - Compiled OpenCV on the second Raspberry PI
 - Connected a webcam to the Raspberry PI and build up a Livestream
- **Report:** Created a Latex document with the general structure and the frontpage of the report

Decisions/Disussions

- **Using canvas to map the objects (room occupants) in the App**
 - To pin point people coordinates
 - Keep in mind: The coordinates are image coordinates and are inaccurate when translating to a top down view. The image will have an angle, but it is not something that should be considered too much as it will increase the project size too much.
- **Format of the JSON request**
 - Generic example:

```
{"command": "commandName", "param": [{"name": "param1", "value": "605925756000"}, {"name": "param2", "value": "1384877575145"}]}
```

 - For example “commandName” could be replaced with getRoomStatus, “param1” with startTime, “param2” with endTime, and “param3” with roomid
 - The RoomID must be an UUID in the request to the server (can be translated to a nicer representation by the App for the end-user)

- **Output of the method “getRoomStatus”**
 - Object list with number of objects (occupants) if any
 - The object entities contain an Object ID and the latest coordinate/position in the room (X and Y coordinate of the image)
 - **NEEDS CLARIFICATION:**
Question to Team Kenya: If you send a request with a start time and an end time, you expect a list of objects, where each object represents a person with the latest coordinate. Why do you send a start time and an end time to the server in the first place, when you only want the latest coordinate of a person?
When you want the end-user to provide a start time and an end time, you probably want the path of each person in that time span. That means that you will get several coordinates for each person. To clarify, please write down EXACTLY what you want. What input and what output (including the format). Is one method enough to cover all App functionalities?
 - Timestamps are in Long and must be converted by the App
 - Format of the coordinates
 - Integer, long or double doesn't matter, since Team Kenya is not considering too much of accuracy
 - Team Kenya will give Team ITU an update on this if any changes in the format must be done (Deadline for changes: 1.12.2013)
- **Livestream of the current occupants in a room**
 - App queries the server for example every 5-10 seconds
 - App checks output of the query for detected objects
 - If there are detected objects, they will be displayed on the App
- **Servers will be set up locally**
 - Team Kenya can run the server locally
 - Reason: Due to the amount of maintenance, Team ITU won't provide a public reachable server for Team Kenya
 - Team ITU develops the server application and will send Team Kenya a compiled jar file, so that Team Kenya can run the server application on a local server
 - Team ITU will send Team Kenya the database-data (data, which the raspberryPIs sent to the database)

Future Collaboration

Team ITU -> Team Kenya: For future collaboration we would want to encourage you to try to be more active, and propose your own solutions to problems, and not only wait for our proposals. You shouldn't be afraid to be more proactive, because we are at the same page as you, and we have 0 experience in image processing and prediction models, so everything is new to us, and we are not always right on certain things and certain ways we do things. Furthermore, we would like for you to put more effort by completing the tasks you have, and ALWAYS send email asking us for further

explanation, if you have any questions so we could give you any feedback you need. You shouldn't wait till the next meeting, if something you're doing right now requires any information from us.

Assignments Team ITU

- Theresa will write the meeting report
- Feedback to Cecils document (ITUquestions.docx)
- Christoffer will implement the getRoomStatus method and will send a compiled jar-file of the server application to Team Kenya afterwards
 - There will be instructions provided to set up the server application
 - Database-data will be provided
- Christoffer will set up a meeting with Cecil and Wayua after the jar-file is sent
- In General: Further development on the image processing, raspberryPis and server part
- Will talk with supervisor about this whole prediction thing. (What is the usage? Where does this requirement come from?)
- Write an status update on the day of the next regularly meeting (Tuesday, 26.11.2013) and send it to Team Kenya before the meeting

Assignments Team Kenya

- **EXACT definition of the methods needed from the server for the Android App**
 - **What name for each method. Just one name for each method.**
 - **What input for each method? List of EACH variable with a description and a format (including the formats we already decided on)**
 - **What output for each method? List of EACH variable with a description and a format (including the formats we already decided on)**
 - **Also have a look in the “NEEDS CLARIFICATION”-Part in this document**
- Installation of the server application (with the instructions from Team ITU), which Team ITU will send
- Meeting with Christoffer of Team ITU
- Start to implement the android app
- Write an status update on the day of the next regularly meeting (Tuesday, 26.11.2013) and send it to Team ITU before the meeting

Reminder

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| 1.12.2013 | Finishing a first working prototype of the occupancy analyzer. After this Team ITU will concentrate on writing the mandatory report. Further minor improvements and testing will be made in parallel. |
| 16.12.2013 | Hand-in of the report (End of project) |

➔ Just 11 days for finishing the prototype!