Fachhochschule Nordwestschweiz

Windisch, 26.02.2025

Protocol – Kickoff

Time, Date: 08:30 – 10:30, 26.02.2025

Location: SCDH, Nidau

Participants:

- David Wollschlegel (SCDH)
- Monika Codourey (SCDH)
- Hilko Cords (Coach IP6)
- Kevin Kim (Coach IP6)
- Jasjot Singh (Student IP6, 1:1 Sandbox)
- Luc Hartmann (Student IP6, 1:1 Sandbox)
- Simon Friedli (Student IP6, AR)
- Sean Mengis (Student IP6, AR)

Presentation

The participants briefly presented themselves.

Project presentation and tour (SCDH)

David presented the different facilities of SCDH while explaining the core interests of the project. There will be two student teams: one for the "1:1 Architect's Sandbox" (Jasjot, Luc, coach: Kevin) and the other for the "Lifesize Floorplans in AR" (Simon, Sean, coach: Hilko).

Questions about the project "1:1 Architect's Sandbox"

- **How will the interaction with the user work (tablet, display table, etc.)?**
  The focus lies on collaborative work on a display table.
- **How does the workflow look like?**
  The envisioned workflow is from a display table to the projector floor.

After an exchange with Monika Codourey the goal was defined as a blank slate sandbox where the user can start drawing from zero and create sketch building plans and explore.

- Rayon as an example of existing software: https://www.rayon.design/
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Questions about the project "Lifesize floorplans in AR"

This project consists of representing the projected floorplans in an AR environment. Following questions have been answered (in no particular order):

- **How accurate do the representations have to be?**
  2-3 cm offsets are fine
- **Why should AR be used?**
  AR should replace the cardboard walls and some assets/furniture

- **What should be virtualised?**
  - complex machines (MRI, health tech)
  - things which require a lot of resources (waiting patients, active life)
  - windows, doors, ceilings, etc.
- **What kind of plans and data can we expect?**
  The team will receive 2D and 3D examples of plans as PDF and CAD-Exports
- **How can the projectors be accessed?**
  Via HDMI like an external monitor (7680 x 4320 resolution cropped down, videos up to 30 fps)
- **What is the UWB tracking system?**
  It is a tracking system that allows to position objects or people by using tags that can be attached.
  - Track different scenarios running simultaneously
  - Heat maps
  - Spaghetti Diagrams
  - Count how many times people are in which room
  - Refresh rate up to 10 times per second
  - currently 25 tags but more could be bought
  - API can only be used in-house, recordings can be exported
- **What AR-device should be used?**
  SCDH possesses 5 or 6 Pico 4 headsets which could be borrowed. For the project it would be interesting to get a comparison to the HoloLens.

Administrative and project agreement (Coaches)

The coaches presented the FHNW-requirements for this project which will be similar to the IP5 requirements.

Students are free to organise the project however they decide is best.

The students can use the facilities of SCDH but are required to schedule an appointment beforehand.

Appointments (everyone)

First draft of the project agreements should be handed in as soon as possible (2-3 weeks) and will then be discussed with the coaches.

Around the beginning of April, the students should have completed a rough outline of the thesis document (table of contents).

There will be a mid-term presentation that will be a preparation for the final presentation.

On the 21.03.2025 there is the presentation of the previous Bachelor projects.

The students will organize feedback and status updates directly with their coach.

Once a month a sync-meeting with everyone will be held.

The thesis presentation will be held in between the 1st. and 12th of September at the FHNW in Windisch.

Next Steps (everyone)

The students write a first version of the project agreement and send it to the coaches for a review.

The students schedule appointments for future meetings.

The students create a Teams channel to exchange information.

The SCDH will provide following information and files to the students:

- 2D (PDF, CAD-Export) and 3D (CAD-Export, if available other models) floorplans
- Links to furniture and health equipment models (ex. vitra.com)
- Tracking system API specification and recordings if available
- Code of the POC that was made for the AR APP (QR-Codes on floor)