Logbook

Weekly Report

1st Week Report (2025-02-21 - 2025-02-27)

In the first week, we participated in team building activities organised by other teams, and on Thursday we had the first group meeting. During the meeting, we shared our initial impressions on the project topic proposals, and through discussion we choose our top three project topics that we want to explore further. We created a list of ground rules to go by throughout the project for smooth cooperation. Until Saturday, we will focus on looking for more specific project ideas in the scope of the topics that we agreed on. Furthermore, we updated the materials on wiki and prepared the agenda for our second meeting.

2nd Week Report (2025-02-28 - 2025-03-06)

In the second week, we focused on specifying the direction of our project. We got assigned project topic of Smart, Ergonomic, Multipurpose Public Equipment by the supervisor of the programme. From there we were more aware of what to look for, not excluding the option of changing the topic if any better idea arises within the team. We prepared a short presentation of our problem definition, where we defined the problem we would like to solve, its' target audience and relevance, which we presented to other groups on Wednesday. On Thursday we had the first meeting with the supervisors, where we briefed them on our idea and received feedback, as well as the suggestion on the next steps which we should take. After that, we met within our group and created Jira to have a clear overview on the division of the tasks that need to be done. We divided the research into parts, and assigned some team members to update the wiki pages - Report and the Logbook. The research on the current State of Art will be our main focus for the upcoming week, along with the preparation of written reports and graphical materials to present the results of the research.

3rd Week Report (2025-03-07 - 2025-03-13)

In the third week, we focused on conducting research and preparing the State of the Art presentation. We identified similar concepts, existing products, and previous EPS projects, noting that while they are functional, they present opportunities for further enhancement.

As part of our project management strategy, we explored Jira in greater detail. However, after evaluating its usability, we opted to switch to Microsoft Planner on Teams due to its more intuitive user interface, which better aligns with our workflow.

Additionally, we participated in a Design Thinking Workshop, which provided valuable insights into potential implementations for our project. This session also included an unofficial team-building activity, where we collaboratively created a short idea video to refine our vision. Furthermore, we attended a team-building course, where we established key team rules through the Individual and Team Attitude Test. This process helped us define crucial aspects of our teamwork dynamics and led to the selection of our team leader.

From a technical perspective, we worked on the initial designs of our project, including the first iteration of the Black Box diagram. However, these elements require further refinement. We also updated our project Wiki with relevant materials and concluded the week with a progress meeting and feedback session with the professors.

4th Week Report (2025-03-14 - 2025-03-20)

In the fourth week, the main goal was to finalize a list of materials and components required in the project. For this, the group conducted rigorous research on the materials required with multiple alternatives considered in mind for making the best choices for each group based on multiple factors. Other than material selection, the team worked on building the business model canvas. Furthermore, the original Gantt chart was created to have a specific timeline for the project. Overall, this week was significant in establishing the foundation of both the technical and strategic aspects of the project.

5th Week Report (2025-03-21 - 2025-03-27)

In the fifth week, the primary goal was the completion of the cardboard model of the product. To achieve this, the development of the 3D model was finalized and implemented in the physical scaled model. Additionally, detailed system schematics were created to outline the power supply requirements and operational framework of the product.

On Tuesday, the team delivered a marketing and communication presentation, which included the Business Model Canvas, an elevator pitch, and the initial version of the product flyer. This session served as an opportunity to practice presentation skills and gather feedback for further refinement.

6th Week Report (2025-03-28 - 2025-04-03)

During the sixth week, the team finalized the project scope scheme and assessed the efficiency of the project management process up to this point. Significant progress was made on the interim report, with a primary focus on enhancing the marketing plan, including detailed work on the Market Analysis, SWOT Analysis, and Marketing Strategy. Although notable advancements were achieved, the marketing plan remains incomplete and will be revised based on the feedback received and throughout upcoming Marketing course sessions. The team also addressed the sustainability and eco-efficiency aspects of the project. These were evaluated through the lenses of environmental, economic, and social impact, and considered using a life cycle analysis approach. Additionally, ethical and deontological concerns related to the product were discussed and taken into account. As a result of ongoing refinements to the 3D model, a final decision was made regarding the movability of the co-working space, aligning with the practical goals of the design. The flyer promoting the project also underwent further refinements based on the feedback from the 5th meeting.

In the upcoming week, the team will concentrate on finalizing the interim report and preparing for the interim presentation, ensuring that all key elements of the project are clearly presented.

7th Week Report (2025-04-04 - 2025-04-10)

During the seventh week, the team concentrated primarily on the interim presentation and the

completion of all required components for its submission. The interim report was finalized and submitted in accordance with the set deadlines. At the same time, the presentation was carefully prepared and aligned with the project's branding to ensure consistency and clarity. Significant effort was dedicated to enhancing and practicing communication and presentation skills to deliver a clear, professional, and effective performance in front of the professors. Following the presentation, the team gathered and reviewed feedback regarding both the report and the overall project, identifying key areas for improvement.

In the upcoming week, the team will focus on finalizing the 3D model and making a corresponding 3D model video for submission. Additionally, efforts will continue to implement the feedback received during the interim evaluation.

8th Week Report (2025-04-11 - 2025-04-17)

During the eighth week, the primary focus was on applying the feedback received during the interim evaluation. Revisions to the interim report were initiated to address the identified areas of improvement. The 3D model of the product was finalized, and based on it, a detailed 3D model video was created, effectively illustrating the functionality and operation of the proposed solution.

Work also started on the development of simulations. However, due to some uncertainty regarding the expected format and scope, this task will require further development in the following weeks. In parallel, the financial aspects of the project were addressed. This included the preparation of an estimated budget, outlining both the expected costs and the projected selling price of the final product, in order to prepare for ordering materials for the prototype. Furthermore, a power budget was calculated to assess the energy requirements of the product.

The team also took time to reflect on the broader impact of the project, formally identifying the United Nations Sustainable Development Goals (SDGs) addressed by the proposed solution. The project was found to align with Goal 9 – Industry, Innovation and Infrastructure, and Goal 11 – Sustainable Cities and Communities.

Although the upcoming week includes the Easter Break, the team intends to allocate some time to further address the feedback provided during the Thursday's meeting with the professors.

9th Week Report (2025-04-28 - 2025-05-02)

During the ninth week, the team finalized revisions to the interim report, ensuring that all feedback from the evaluation and follow-up meetings was thoroughly addressed. Attention then shifted to dissemination materials, with the team starting work on the project poster and promotional leaflet. These materials aim to visually communicate the core concept, functionality, and societal impact of the solution. Simultaneously, technical development continued. Initial load and stress simulations were carried out to some extent to evaluate the structural integrity of the design under expected usage scenarios. The team had some doubts, therefore this part has to be developed further. While preliminary, these simulations still provided some valuable insight into potential areas requiring reinforcement. The team also began finalizing the list of components and materials required for building the prototype. This included verifying availability, estimating quantities, and considering potential suppliers to ensure timely procurement. The power budget was finalized, yet it might require more refinements.

In the coming week, the team will focus on finalizing the poster and leaflet, integrating any necessary revisions. The component list will be completed and followed by initiating the ordering process for prototype materials. Additional simulations will be conducted to explore more extreme use cases and refine the design further if needed. The team also plans to begin outlining the structure of the final paper, in anticipation of the full draft submission due in June. Efforts will continue to ensure all technical, visual, and promotional outputs align with the project's sustainability goals and user-centered design principles.

10th Week Report (2025-05-12 - 2025-05-15)

During the tenth week, the team focused on beginning to analyze the best way to organize the prototype, presented the poster and leaflet in the communication class, and continued developing the paper. In addition, they received feedback from the marketing and sustainability professor about the chapters in the wiki related to these topics. At the end of the week, they had a meeting where they cleared up some doubts about the functional tests and presented the packaging solution developed during the week.

Next week, the team will finalize the poster and leaflet, continue working on the paper, and begin assembling the prototype. They will also begin writing the necessary instructions.

11th Week Report (2025-05-16 - 2025-05-22)

During the eleventh week, the team successfully completed the load and stress simulations, obtaining comprehensive results that confirmed the structural reliability of the design under a variety of conditions. These findings have informed minor design optimizations to enhance overall durability. Concurrently, significant progress was made on dissemination materials - the leaflet and project poster were refined according to the feedback to better highlight the solution's key features and visual appeal.

The team gathered materials for the prototype, ensuring that all necessary components are available for the upcoming construction phase. Initial work on the electrical system also commenced, laying the groundwork for integrating core functionalities into the prototype. In parallel, iterative improvements to the 3D model continued to ensure alignment between the digital design and the physical build.

Progress on the project paper advanced considerably this week. Most sections are now complete, with final adjustments underway to polish the content and ensure coherence, clarity, and adherence to formatting guidelines.

In the upcoming week, the team will focus on building the prototype to enable functional testing and validation. Simultaneously, the team will finalize the project paper. All activities will be aligned with the overarching goals of creating a reliable, user-centered, and sustainable solution.

12th Week Report (2025-05-23 - 2025-05-29)

Throughout the week, the team majorly concentrated on the construction of the prototype and successfully implemented the majority of its intended functionalities, effectively demonstrating the product concept. The only major technical challenge encountered was the integration of the solar panel. During testing, it was determined that the selected solar panel was insufficient to power the

chosen microcontroller. This limitation is specific to the prototype setup, and the final product would incorporate a different power management unit, thereby resolving this issue.

The project paper has undergone continued refinement and is now nearing completion, with most chapters finalised and only minor edits in wording and formatting remaining.

Additionally, a user manual for the product has been drafted. While the structural framework is complete, further work is needed to enhance its clarity and usability, specifically by incorporating visual materials and expanding the descriptive content to make it more comprehensive.

In the upcoming week, the team will focus on finalising all deliverables initiated this week, including completing the user manual and project paper. Moreover, efforts will be directed toward concluding the communication materials, specifically the promotional leaflet and poster.

13th Week Report (2025-05-30 - 2025-06-05)

During this week, the team continued working on the paper, finished the leaflet and poster, and started working on the presentation. In addition, they also worked on the assembly instructions and instructions for the user. Over the next week, the team will focus on finishing the two manuals, trying to finish the final report, and starting the promotional video. As for the presentation, the team will set aside a day to meet and do this task together next week.

14th Week Report (2025-06-06 - 2025-06-12)

During this week, the group focused on finishing the paper, starting to prepare the video, continuing to execute the final presentation and finishing the manuals. The manuals were successfully finished as well as the paper. The presentation will be finished next week as well as the video and the report.

15th Week Report (2025-06-13 - 2025-06-19)

During this last week, the group finished all the tasks and made the final presentation as well as the individual evaluation.

Meetings

1st Meeting (2025-02-27)

Agenda:

1. Presentation
2. Modus operandi
3. Project proposals
4. Electronic logbook (Wiki)

Minutes:

We learnt how to use our wiki website. We got acknowledged with the project topic proposals and shared initial impressions. We decided on the top three project topics to explore:

1. Smartification of Everyday Objects
2. Smart Ergonomic Multipurpose Public Equipment
3. Smartification of Buildings

We shared some initial ideas for specific projects, agreed to collect them until Saturday. We planned the next meeting agenda.

2nd Meeting (2025-03-06)

Agenda:

1. Briefing the professor about our ideas
2. Feedback from professor
3. Specific project ideas

Minutes:

In the second meeting, the group presented some ideas for the chosen topic to the supervisors. Furthermore, we received feedback from them on these ideas and guidance on how to conduct research for the State of the Art. We divided the work to do for the next week's meeting.

3rd Meeting (2025-03-13)

Agenda:

1. Summary of design thinking workshop
2. Discuss the state-of-the-art
3. Discuss our drawings for the project
4. Show the black box diagram
5. Approach the group attitude rules
6. Doubts about the section “activities”
7. Doubts about the mechanisms
8. Next steps

Minutes:

In the third meeting, the team presented the idea video from design thinking workshop, the state of the art research that was done - the professors provided some additional products that are available on the market. The initial drawings and 3D models were shown, the feedback was to correct them, think about robustness and ergonomy and consider the target audience and the accessibility of the

solution. Blackbox is to be corrected and enhanced based on the notes taken, the team should understand the concept of making such type of diagram better. The team got a suggestion on the team rules - to focus on managing in advance the situation of the conflict.

Concerning activities - they can be inputted in the activities section on a copy-paste base from Jira.

Concerning mechanisms - should be researched and chosen based on the study of the market, and consult the expert professor in that topic.

4th Meeting (2025-03-20)

Agenda:

1. Show the business model canvas
2. Present the list of materials and research about it
3. Show the gantt chart

Minutes:

In the fourth meeting, the team presented the business model canvas prepared during Marketing course. The feedback was that mostly everything connects together into one reasonable plan, but the wording of some parts needs enhancing. As the list of components and materials was submitted, the team presented it to professors along with briefing on the research. Gantt chart is to be corrected, should be more specific, divided based on human resources, and include milestones. Improved 3D models were shown - there were concerns about the backrest, how it should be implemented, as well as the pole in the middle of the table - take into consideration removing it or making it thinner.

Requirements are to be done as soon as possible, along with the comparative analysis of the state of art based on these requirements.

The team also got feedback on the presented logo - it was fine, consider some refining of the visibility of the elements of it.

5th Meeting (2025-03-27)

Agenda:

1. Final 3D Model and drawings
2. Cartboard Model
3. Detailed System Schematics + feedback
4. Flyer

Minutes:

In the fifth meeting the team presented the cardboard model developed throughout the week, along with the finalized 3D model on which it was based. Additionally, the detailed system schematics were

reviewed, and the feedback received helped address inconsistencies and clarify uncertainties encountered during the development.

Improvements were suggested for the flyer, including changing the form and the amount of text, adopting a different layout, and making adjustments to the color palette.

6th Meeting (2025-04-03)

Agenda:

1. Project scope scheme
2. Vending machine idea, bigger workstation and inclined solar panels
3. Final decision about the awnings and movable feature
4. Flyer

Minutes:

Suggestions were made to complete the start page and ensure all necessary chapters are included in the report before the interim report submission. Feedback included the possibility of adjusting the roof manually or via a mobile app, the need to finalize the list of materials, and the importance of conducting a power budget analysis to estimate energy needs and prepare a cohesive budget. The flyer also requires further refinement. Several new ideas were discussed by the team during this session.

7th Meeting (2025-04-10)

Interim presentation

8th Meeting (2025-04-16)

Agenda:

1. 3D model video
2. Expected cost and selling price of the product
3. Power budget
4. UN sustainable development goals our solution contributes to

Minutes:

Specific feedback was provided to support further refinement of the report, ensuring the final interim version is submitted on time. The proposed budget was considered reasonable. However, the power budget requires expansion, particularly with regard to detailed calculations and justification of its contents. Although the sustainability goals are correctly identified, they need to be described and justified more thoroughly in the final report. Additionally, the team is encouraged to reflect on

whether the project may contribute to broader sustainability goals beyond those initially identified. The team is also advised to carry out load and stress simulations, considering extreme conditions and scenarios. If any questions arise, they are encouraged to consult the professor for guidance.

9th Meeting (2025-04-30)

Agenda:

1. 3D model video
2. Questions about the simulations

Minutes:

The improved 3D model video was presented. It is recommended to add people, captions, background music, and the EPS logo to enhance clarity and engagement. No agenda was prepared for the meeting, which should be addressed going forward. Agendas must be included in the logbook in advance. The professor responsible for load and stress simulations was absent; related questions will be answered at a later date. Although, the “not supported material” error is likely due to the program’s inability to simulate the selected material's properties.

Next Steps:

- the extended abstract for the ICL conference is due this week. Professors are expected to prepare it, using the required template
- the final paper must be completed by June 9th
- begin designing packaging that ensures protection, is reusable, and made from sustainable materials
- assess whether benches can lift a person standing - this should be detailed in the user manual. Weight sensors are recommended to prevent overload.

About power budget:

- use formal calculations considering worst-case solar input
- document all assumptions and constraints clearly
- the use of solar panels is confirmed and essential.

Maintenance access is limited due to the pole’s small diameter. This should be improved in future designs.

10th Meeting (2025-05-15)

Agenda:

1. Packaging solution
2. Leaflet and poster
3. Paper
4. Questions

Minutes:

The packaging solution was presented as well as the leaflet and the poster. In addition, the team had some questions about the prototype and the functional tests.

Next steps:

- Continue working on the paper
- Start assembling the prototype
- Finish the leaflet and the poster

11th Meeting (2025-05-22)

Agenda:

1. Paper status
2. Prototype status
3. Load and stress simulations

Minutes:

Two chapters of the paper remain to be completed. As for the feedback, there are several cases to still be considered. Key images still need to be added to enhance the understanding of the project. Focus should be placed on visuals that effectively illustrate the concept and implementation. The final paper must stay within the required length limits—comprehensive, yet concise. All content should reflect the completed state of the project, avoiding any mention of future intentions or pending work.

All necessary materials for the prototype have been gathered. A clear and structured schedule for the assembly process has been established. The team has consulted with the relevant faculty members and has a solid understanding of the construction steps. The implementation phase is ready to proceed as planned.

Simulations based on the model have been conducted, showing that the current design performs well under expected load and usage scenarios. However, based on feedback from the professors, there is a need to broaden the scope of these simulations. Future iterations will include a wider range of conditions. These expanded tests will help validate the robustness of the design across different real-world scenarios.

12th Meeting (2025-05-29)

Agenda:

1. Prototype status
2. User manual
3. Assembly instructions
4. Paper status

Minutes:

The prototype has been completed and demonstrates the core functionalities. It lacked fully integrated solar panels during the meeting due to the complexity of interfacing them with the selected microcontroller. A separate testing setup may be implemented to evaluate this component independently. Additionally, the team may receive motor modules to enable mechanical adjustability of structural elements, enhancing the prototype's ergonomic functionality.

The user manual is structurally complete and includes assembly instructions, but the content requires refinement to enhance clarity and usability. The manual will have illustrative images to support user comprehension, to be implemented after the meeting.

The paper is nearing completion and only requires minor revisions, including correction of references and rephrasing of several sections to improve technical accuracy and coherence.

13th Meeting (2025-06-05)

Agenda:

- Final design and 3D model
- Paper status
- Communication update

Minutes:

During this meeting, the necessary changes to the paper before submitting it and the final communication elements (poster and leaflet) were discussed. In addition, some questions about stress and load simulations were also addressed.

14th Meeting (2025-06-12)

Agenda:

- Paper
- Instructions for the user and to assembly
- Draft of the video

Minutes:

During this meeting, the group presented the final paper to the teachers, only to discover that the deadline had been extended by another week. They also presented the final version of the manuals and a draft of the video. The teachers gave positive feedback on both of these deliverables.

Activities

Please register here all accomplished project activities

Start	End	Task	Description	Who