Logbook

Weekly Report

1st Week Report

This week we started with teambuilding. We also picked our top 3 themes:

1. smartification of everyday objects
2. smartification of buildings
3. smart marine habitat structures

2nd Week Report

1. Define target group: households
2. Define problem: water usage waste
3. Come up with a planning: the editing of the wiki will be rotated through every team member every week
4. Brainstorm ideas

3rd Week Report

1. define solution: smart mixer for shower. Cold water gets redirected to water boiler, instead of spilling
2. set up JIRA
3. black box diagram
4. Cost analysis

4th Week Report

1. meeting with professor Manuel Silva
2. Research on boilers
3. Selection of materials
4. Target group tweaked: environmentally conscious home owners who own a tankless boiler

5th Week Report

1. Version tweaked: we are going to redirect the cold water to the toilet instead of the boiler
2. Target group tweaked: environmentally conscious homeowners who have a bathroom with a toilet and shower in it
3. Meeting with Professor Benedita
4. Made the drawings for the tank for the toilet where the water can go
5. Made a cardboard model
6. Finished the structural schematics

7. Choose a topic for the Ethical Case Study
8. Update the black box
9. Made an Elevator pitch, BMC, flyer for MACOM
10. Brainstormed about different kind of sensors and valves

6th Week Report

1. Started refining the interim report and wikipedia
2. Almost finished the final component list
3. Calculated the product cost
4. Decided which SDG fits with our product
5. Made the 3d model
6. Calculated expected cost of operation of the product

7th Week Report

1. Uploaded 3D model
2. Finalize the interim report
3. Improve cost calculations

8th Week Report

1. Leaflet
2. Poster
3. Paper abstract
4. Packaging Solution

9th Week Report

- Plan the prototype hardware and software configurations

10th Week Report

- Wait for prototype components
- Prototype coding
- Scientific article chapter 1 and 2

11th Week Report

- Assemble the prototype components
- Correct some wiki chapters

12th Week Report

- Temperature sensor does not work, figure out why and how to get it to work
- Finish the report
- Finish the Scientific paper in Overleaf

13th Week Report

- Attach prototype to a structure
- Incorporate feedback on scientific article
- Incorporate feedback on report
- Incorporate feedback on presentation concept
- Finish video

Meetings

1st Meeting (2025-02-27)

Agenda:

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

Minute:

Introduce here a brief report of the meeting.

2nd Meeting (2025-03-06)

Agenda:

1. *Define target group*
2. *Define problem*
3. *Come up with a planning*
4. *Brainstorm ideas if time allows it*

Minute:

We did not know this agenda was for the meeting with teachers. Benedita told us about the report. We explained the three problems we came up with:

1. Food waste
2. Water consumption waste

3. Energy consumption waste

3rd Meeting (2025-03-13)

Agenda:

1. Problem
2. Target audience
3. First solution blackbox
4. Gant chart
5. Discussion about the components

Minute:

Instead of thinking of a whole system, we should focus on making a product. We are going to focus on a smart mixer. We need to know how to control the expansion tank. We need to figure out if it is worth making the product with a cost analysis. The professors recommended us to have a meeting with Professor Manuel Silva

Minute meeting with Professor Manuel Silva

Think of the question: 'if it was your own, would you want it? Where should the device be in the room?' Professor Silva did not know if it is possible to send the water back to the boiler. We have to ask ourselves the question why we need the tank and why we don't send the cold water back to the boiler. We need to do research on how the boiler works. The main 3 problems are: - Cost - Space - Construction Works

4th Meeting (2025-03-19)

Agenda:

1. Cost analysis
2. Competitor analysis
3. What we have learned from boiler research
4. Explaining our version choice

Minute:

We need to redo our components and material list with prices because it was not correct.

We also need to redo the black box diagram with all the updates of our product.

We have to analyse which of the two versions(back to the boiler, guided to the toilet tank) we want to focus on.

Meeting Professor Benedita (2025-03-25)

We chose to go through with the toilet tank version. We still have to do some research on different valves, should we use a 3 way electrical valve or two seperate solenoid valves? Where should the extra toilet tank be located and how would we make the connection between the two tanks? We came up with two volume sensors that would send out the signs to the valves between the tank, the water supply and the toilet.

5th Meeting (2025-03-26)

Agenda:

1. Show System Schematic
2. Show Cardboard model
3. Show flyer and logo?

Minute:

1. We have to justify why we want to use certain components which are more expensive like the solenoid valves
2. School has electrical 3-way valves
3. Professor Benedita thinks we can put a tank above the toilet and it provides enough pressure to direct the water to the toilet
4. Professor Jorge told us he also thinks the solenoid valves work better because you have the Normally Open and Normally Closed function

Flyer:

1. Suggestion: Background pipes could be more colourful; Use the word 'maintenance' instead of 'repairment'; Text needs to be as straight forward and simple as possible.
2. Likes: Sans Serif typography

To do:

1. Improve chapter 7
2. Update component list in deliverables

6th Meeting (2025-04-3)

Agenda:

1. Electrical Scheme
2. New flyer version
3. Progress so far
4. How to reference in wiki

Minute:

Feedback wiki: - Start page has no titel, goals and requirement - Logbook: add completed activities - Report: add glossary - SOTA: introduction, big description - Chapter 7: caption the figures, reference the figures - No description about smart system (chapter 7) - Colours for the concept drawing - Figure on the ideation (of brainstorm) remove letters up top - No drawings of the actual product

Feedback schematics: - Upload schematics to the wiki, teams and maybe in mail to Paolo - Is the Arduino capable to power the leds without a intermediate circuit

1. See what is the maximum current to send out
2. Usually you need a current boost !check before sharing!

Feedback flyer: - Maybe: reuse instead of save your cold water - Maybe: use drain instead of let it go to waste - Heading on the second checkmark, so you need a heading on the first checkmark - Water reservoir with a small W - Maintainance is without capital M if support is without

Presentation: Professors will share with the teams a questionnaire, you will do a self-assessment No papers, no smartphones for the presentation, be relaxed, equal presenting, probably 10 minutes, at most 10 slides, Problem → requirements that derives from SOTA, from analysis, market analysis, ethics analysis → proposed concept → detailed schematics (smart system and object) → list of materials and components All about presenting proposed solution. How do all the research merge together

7th Meeting (2025-04-16)

Agenda:

1. 3D Model
2. Expected cost and selling price of product
3. Ask professors about components we can use
4. Sustainable Development Goal
5. Ask professors about reference in bibliography

Minute:

- The professors can't enter in the scrum's link.
- Video: Should write the capacity of the tank and think about putting plastic fish inside or something like that to make it mor fun and decorative.
- Prices must be writen like XX.XX €
- Portuguese taxes are 23% of the price, make sure we have that in order.
- For the prototype's components we need to make a table and send it to the professors. Probably Abel or Jorge can help us.

8th Meeting (2025-04-30)

Agenda:

1. Updated schematics
2. Components
3. Report 2.5 table 2
4. Questions about packaging solution

9th Meeting (2025-05-15)

Agenda:

1. Questions about the stress test
2. Status of the components
3. Leaflet
4. Electricity lab?

Minute:

!Next week: introduction and related studies regarding the scientific paper !Calculations written and inserted using wiki facilities !Write 7.5 Prototype Development Do not use spaces in the string which corresponds to the key, the one about direct macro Chapter 4: missing 4.7 and 4.8

Packaging solutions What kind of recycled plastic? One thing is to have recyclable material, the other is to have degradable plastic What kind of filament. Provide a comparison table: is it degradable, biodegradable, reused, water resistant The packaging solution is for transport, it often comes with marks and dents, this case can suffer from that. It needs extra protection for shipping, our packaging can be when you get it from the store. Create a narrative to explain the situation The corners need to be maybe rounded, so people don’t hit on the hard corners. Maybe some protective corners How do we connect the two parts

Questions about the stress test Fixtures: Fix the points Take everything you don’t need away from the simulation, only the important things Take the hole from the pipe on top away and fill it with the same material (of the tank), then you can apply pressure What is the thickness of the wall? Ask professor for help: jfj@

Status of the components Benedita made the request to have authorization to order, probably this week

Electricity lab If we have breadboards and jump boards, we don’t need it. If we solder, they can not reuse it next year

Last meeting We exemplified the user interface. Potentiometers are components that have some wear and tear (friction). We are placing it in a wet environment, so we must ensure that the shaft is waterproof, if it is plastic it is fine.

To do Work on paper Work on structure of prototype Work on report - calculations

10th Meeting (2025-05-22)

Agenda:

1. Updates packaging solution
   - Microcontroller not working?
2. Comparison table packaging
3. Book a space for assembly with basic equipment

Minute:

PACKAGING:

- Round the edges
- Sucking components might be in different color
- Packaging for the tank should be written (solution could be wrapped in film or cardboard)

OTHER

- Components we need (juction box, pipes (talk to Abel))
- Paper 1st and 2nd chapter is due this week
- Chapter 1.6 Test: define the functional test(Berta)
- Chapter 3.11 and 3.12 need to be updated (Kristoffer)

11th Meeting (2025-05-29)

Agenda:

1. Show prototype video
2. New microcontroller?
3. Scientific Article

Minute:

Overvoltage from microcontroller In the meanwhile buy one, because she has Arduino but no others, buy at mouse? Near to train station Test chapter is too generative, be more specific; which electrical functions, … ? what will you be testing, which functionalities? Project management add sprints In project development report give final solution and explain, do not explain step by step In paper: don’t force placing images and others Find better way of using words, try to make it shorter and more focused Instead of ‘ways of saving water’ → ‘method’ Reduce columns to 1,5 cm instead of 2 ‘liters saved’ → ‘savings’ User awareness? → yes or no Smartness → yes or no (if you want to specify, add footnote Check example she will leave behind. Cost should be price. If you want to refer to wiki: ‘for further information, go to this link’ Deadline: 10 of June. So it should be ready 5 of June!!!!!

12th Meeting (2025-05-29)

Agenda:

1. Problems with the temperature sensor

Minute:

The problem with the temperature sensor is not actually a problem. we should redo the test letting hot water pas through the pipes longer so it has time to warm up. we need to do a performance test. Ask Abel for the outside termometer.

Benedita will lend us a plastic box for the casing.

Corners of the tank must be rounded

Redo images

13th Meeting (2025-06-5)

- Talk about the temperature sensor
- Stress simulation

14th Meeting (2025-06-12)

Agenda

- show draft presentation for feedback
- show video for feedback
- question about casing/structure

Minute

Overleaf

- Writting should be non-personal
- Delete the code
- Reference the tables
- Summarize text so it fits in 10 pages

Presentation

- Units should be written correctly
- There's a difference between requirements and objectives
- Check spelling

Activities

https://eps2025group4.atlassian.net/jira/software/projects/SCRUM/boards/1/backlog?atlOrigin=eyJpIjoiN2Y3ZmU4ZGI0ODQwNDRmYzhiNDdmZjc1MzU2MzdkNzQiLCJwIjoiaiJ9

Start	End	Task	Description	Who

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Last update: **2025/06/12 12:08**