

Engineering Notebook

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Senior Design- Communication Team

Fall 2024- Spring 2025

Sprint 1:

- Week 1
 - September 17th: Research on Literature (find papers to cite for our potential paper)
 - September 18th: Research on what rovers we could use to detect enemies and friends
 - September 19th: Proposal Draft (objective)
 - September 20th: Proposal Draft (Communication Requirements for two semesters)
 - September 21th: Proposal Draft (Proposed solution)
- Week 2
 - October 23rd: Proposal (wrote communication part and schedule plan for this and next semester with relative requirements)
 - October 24th: Proposal (final edits on proposed solution before submission)
 - October 25th: Update scrum for all the team and report to scrum master
 - October 26th: Backlog item list for sprint 2
 - October 26th: Final draft of proposal and submission

Sprint 2:

- Week 1
 - October 1st: Research on how to use the Wi-Fi module on raspberry pi 5 for communication
 - October 3rd: Help with powerpoint slides (add simulation details and edit
 - October 4th: Research on the best modulation scheme to use based on how far the ground station has to be
 - October 5th: Update scrum and report to scrum master
- Week 2
 - October 8th: Prepare requirements for sprint 3
 - October 9th: Parts to order for new requirements of the project
 - October 10th: Decide new requirements

Sprint 3:

- Week 1
 - October 15th: Proposal: Rewrite the proposed solution
 - October 16th: Proposal Communication Part: Rewrite communication part and requirements
 - October 16th: Started Backlog items for sprint 4
 - October 16th: Update scrum
 - Fall break from 17th to 20th: no relevant work, just scrum update for the team

- Week 2
 - October 21st: Write Agile Process Check 1
 - October 22nd: Include tables and specifications on backlog items, task assignments, weight assignments, and teammates' effort level
 - October 23rd: Requirements for new project scope
 - October 23rd: Start SRS
 - October 24th: Organization of GitHub

Sprint 4:

- Week 1
 - October 29th: SRS: Intro section Draft
 - October 30th: SRS: Help with section 2 (2.1,2.2,2.3)
 - October 31th: SDD: Set-up of the document and start drafting intro section
 - November 1st: Update scrum for all the communication team
- Week 2
 - November 4th: SDD: Sections 1.1, 1.2, 1.3, 1.4 of intro finalized
 - November 5th: SDD: Finish all section 1 of the document and update scrum with progress of the communication team
 - November 6th: work on presentation, make the slides less textual and more visual
 - November 7th: team meeting to decide how to move forward, how to structure the presentation and who will present

Sprint 5:

- Week 1
 - November 12th: prepared all backlog items to start the sprint, requirements, and testing scenarios
 - November 13th: finish section 1 of SDD and help on section 2 (system architecture)
 - November 14th: start working on poster (helping Rachel), made a ppt slide that will include visual of the robot, abstract, project scope, purpose, and description
 - November 16th: Update scrum with team efforts and progress
- Week 2:
 - November 18th: work more on SDD to prepare for submission
 - November 19th: make sure that scrum reflect team efforts and progress for agile check
 - November 20th: review SRS (adjust some communication requirements)
 - November 21st: close sprint, help on editing poster, perform LoRa simulation on MATLAB to get a graph to add on the poster

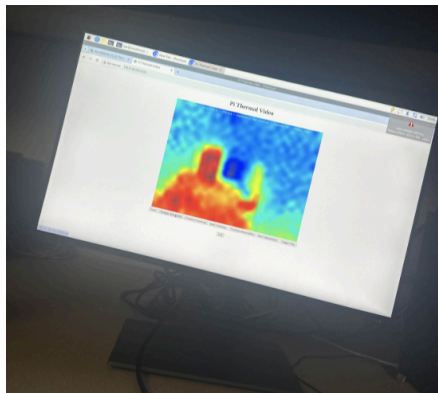
Sprint 6:

- Week 1
 - November 26th: review SRS (in particular I put the comments provide from TA and fixed some requirements)
 - November 27th: final review SRS (prepare for submission)
 - November 28th: start working on test plan, just general structure
 - November 29th/30th/Dec. 1st: no work was performed due to Thanksgiving break

- December 2nd: Poster final review (fixed a typo), video recording for communication part, edit the communication video, create a google drive containing all videos and documents
- December 3rd: work on test plan (finished all part 1 of the document)
- December 4th: finalize test plan (make sure communication requirements all have test cases)
- December 5th: Poster presentation, test plan submission

Sprint 7

- Week 1:
 - January 9th: Discuss and finalize requirements on the SRS
 - January 10th: Edited the first section of the SRS based on Walter's comments
 - January 12th: Thermal Camera testing (got the camera working and live streaming), asked the software team to integrate the live stream to the GUI



- January 13th: SRS: edited all the use case sections, made new scenarios, and made sure that the document is consistent with names
 - January 15th: Camera testing (could not get it working because the camera that we have does not interface well with the PI, ordered another one)
- Week 2:
 - January 17th: SRS final edits and asked Walter to provide feedback
 - January 18th: Speaker testing (it works!), found out that the speaker also has a microphone incorporated so we do not need to use two different tools
 - January 20th: Heartbeat sensor testing (not fully functional yet, could not receive data)
 - January 21st: Prepare the sprint backlog requirements and assign new sections of SRS to each team member

Sprint 8:

- Week 1:
 - January 23rd: SRS Edits after Walter's feedback (requirements fix)
 - January 24th: Heartbeat sensor testing (still does not work properly, can not figure out how to transmit data over uart)
 - January 25th: LoRa modulation scheme testing using GNU radio (ran a simulation using the block diagrams on GNU radio)
 - January 26th: Microphone testing (works!)
 - January 28th: Tried to find a way to transmit data over uart for the heartbeat sensor
 - January 30th: Downloaded programs needed for the radar

- Week 2:
 - February 1st: Heartbeat sensor testing (now getting data!, wrote a script to interpret the data)
 - February 2nd: Camera Testing: got it fully working, talked to the software team to integrate it in their GUI
 - February 3rd: SDD high level communication diagram (started working on it with Rachel)
 - February 4th: sprint planning for the next 2 weeks, final review and submission of SRS

Sprint 9:

- Week 1:
 - February 6th: update poster for submission to conference
 - February 7th: modified and shared the code for heartbeat sensor with the software team so that they could integrate it in the GUI
 - February 8th: Tried to transmit over WiFi for demo purposes (we tried to transmit a file and it works)
 - February 9th: Radar setup (downloaded all the softwares on both Pi and tried to get data, not fully working yet)
 - February 12th: prepare submission for poster at conference (edited the poster, answer all the questions on the form, and edited the abstract to make it under 250 words)
- Week 2:
 - February 13th: simulated LoRa modulation to send a file (we will need this to send data to the software team, it was successful)
 - February 14th: Radar Testing (got the software installed on George's computer to test it, not functional yet), worked on high level communication diagram
 - February 15th: SDD Revision (reviewed Walter's comments and fixed communication parts)
 - February 16th: Final edits on poster (submitted)
 - February 17th: MMWave Studio Troubleshooting
 - February 18th: tried to get radar software working on Windows (not fully functional yet)