

Final Report Rebuttal

Project 26: An Engineering Solution to a Local Indoor Safety and Comfort Regulation System

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Response to Reviewer 1 Comments

1. Summary

We sincerely thank the reviewer for the careful evaluation of the final report. The comments helped us identify issues in figure numbering, figure placement, and unit formatting in the Requirements and Verification section.

2. Questions for General Evaluation

Reviewer's Evaluation

Category	Score
Introduction	4/5
Design	6/9
Cost and Schedule	2/2
Requirements and Verification	2/8
Conclusion	5/6
Total Score	23/30

3. Point-by-point Response to Comments and Suggestions

Comment 1: Figure labels are not in order. Figure 10 appears after Figure 3. Correct the figure order.

Response 1: We agree with the reviewer. The figure numbering problem was caused by placing the simplified hardware interconnection schematic after the actuator subsystem figure while keeping its old label as Figure 10. This made the Design section appear out of order. In the revised report, all figures have been renumbered sequentially according to their first appearance in the text. The simplified hardware schematic has been moved to the hardware design subsection and renumbered to maintain a continuous sequence. The corrected figure sequence is shown below.

Corrected Label	Corrected Figure Content
Figure 1	Overall system architecture and data/control flow
Figure 2	Sensor subsystem and STM32 input mapping
Figure 3	Actuator subsystem and STM32 output mapping
Figure 4	Simplified hardware interconnection schematic
Figure 5	Wireless communication and MQTT message flow
Figure 6	Embedded software control flowchart
Figure 7	Android application interface screens
Figure 8	Estimated bill of materials and cost breakdown
Figure 9	Semester work schedule
Figure 10	Requirements and verification workflow or summary

Comment 2: Requirements and Verification contains many small mistakes, such as "Temperature error approximately 1-2 C". The unit is incorrect and should be written as "1-2 °C". Correct these errors.

Response 2: We agree with the reviewer. The Requirements and Verification section has been revised to use correct engineering units and consistent notation. Temperature errors are now reported in degrees Celsius with

the degree symbol, humidity is reported as %RH, time is reported in seconds, and normalized light and smoke values are reported as percentages. The table below summarizes the main corrections.

Original wording	Revised wording
Temperature error approximately 1-2 C	Temperature error approximately 1-2 °C
Humidity error approximately 3-5% RH	Humidity error approximately 3-5% RH
Actuators responded within approximately 1-2 s	Actuators responded within approximately 1-2 s
Wi-Fi connection completed within approximately 20-30 s	Wi-Fi connection completed within approximately 20-30 s
Application data updated within approximately 3-5 s	Application data updated within approximately 3-5 s

In addition, the quantitative results table was reviewed line by line so that each result now matches the corresponding verification method and includes a measurable unit or pass/fail criterion. This revision strengthens the reproducibility and engineering validity of the Requirements and Verification section.

Response to Reviewer 2 Comments

1. Summary

We sincerely appreciate the reviewer's comments. The second review also identified figure-placement problems and accidental blank boxes in the report. These comments have been addressed by moving the hardware schematic to the correct Design subsection, renumbering the figures, and deleting unrelated blank boxes from the document layout.

2. Questions for General Evaluation

Reviewer's Evaluation

Category	Score
Introduction	4/5
Design	5/9
Cost and Schedule	2/2
Requirements and Verification	4/8
Conclusion	5/6
Total Score	20/30

3. Point-by-point Response to Comments and Suggestions

Comment 1: Figure 10 is in the wrong place. Delete random boxes.

Response 1: We agree with the reviewer. The simplified hardware interconnection schematic was originally placed immediately after Figure 3, but it was still labeled as Figure 10. This created a confusing order in the Design chapter. In the revised document, this figure has been moved to the correct hardware design location and renumbered sequentially. The design figures now appear in the same order as they are discussed: architecture, sensor subsystem, actuator subsystem, hardware wiring, communication topology, and software flow.

All accidental blank square boxes in the report layout have also been deleted. These boxes were not part of the technical design and did not contain useful information. Removing them improves the professional appearance and prevents readers from mistaking them for missing figures or annotations.

Issue Identified by Reviewer	Correction Made in Revised Report
Figure 10 appeared in the wrong place	The hardware schematic was moved to the hardware design subsection and renumbered in sequence
Figure labels were inconsistent	All captions were checked and renumbered based on first appearance
Random blank boxes appeared in the document	All accidental empty boxes were removed
Design section was unclear due to figure order	Design visuals were reorganized to follow the explanation order

Overall Revision Summary

Based on both reviewers' comments, the final report has been revised in the following ways:

- All figure captions and in-text figure references were renumbered in proper order.
- The simplified hardware interconnection schematic was moved to the correct position in the Design chapter.
- Random blank boxes were removed from the report layout.
- Engineering units in the Requirements and Verification section were corrected, including °C, %RH, %, and s.
- Quantitative results were checked to ensure that each result corresponds to a requirement and verification method.
- The Design section was reorganized so that subsystem descriptions, schematics, communication design, and software flow appear in a logical sequence.

Closing Statement

We thank both reviewers for their constructive comments. The revisions improve the technical readability, figure organization, and quantitative accuracy of the final report. The corrected report now better satisfies the final report evaluation criteria for design clarity and requirements verification.