

# Verification and Validation Report: 2D Localizer

Aliyah Jimoh

April 18, 2025

# 1 Revision History

Date	Version	Notes
2024/04/18	1.0	Initial Draft

## 2 Symbols, Abbreviations and Acronyms

symbol	description
T	Test

[symbols, abbreviations or acronyms – you can reference the SRS tables if needed —SS]

# Contents

<b>1</b>	<b>Revision History</b>	<b>i</b>
<b>2</b>	<b>Symbols, Abbreviations and Acronyms</b>	<b>ii</b>
<b>3</b>	<b>Functional Requirements Evaluation</b>	<b>1</b>
3.1	Validate Inputs . . . . .	1
<b>4</b>	<b>Nonfunctional Requirements Evaluation</b>	<b>1</b>
4.1	Usability . . . . .	1
4.2	Performance . . . . .	1
4.3	etc. . . . .	1
<b>5</b>	<b>Comparison to Existing Implementation</b>	<b>1</b>
<b>6</b>	<b>Unit Testing</b>	<b>2</b>
<b>7</b>	<b>Changes Due to Testing</b>	<b>2</b>
<b>8</b>	<b>Automated Testing</b>	<b>2</b>
<b>9</b>	<b>Trace to Requirements</b>	<b>2</b>
<b>10</b>	<b>Trace to Modules</b>	<b>2</b>
<b>11</b>	<b>Code Coverage Metrics</b>	<b>2</b>

## List of Tables

## List of Figures

This document shows the results of the system and unit tests done on the 2D Localizer software. More detailed information of the tests cases performed are documented in this system's [VnV Plan](#).

## 3 Functional Requirements Evaluation

### 3.1 Validate Inputs

- **Test Case(s):** `test_map_image`, `test_coordinates`, `test_range_measurements`
- **Requirement(s) Met:**
  - R1 (Accept a map/image as an input)
  - R2 (Accept sensor and fiducial marker (FM) coordinates as an input)
  - R3 (Accept sensor measurements as an input)
- **Type:** Automatic
- **Testing Method:** `pytest`
- **Result Summary:** All 3 successfully passed
- **Result Location:** Can all be found in `test_inputs_results.txt` located in the timestamp folder of the [results](#) folder

## 4 Nonfunctional Requirements Evaluation

### 4.1 Usability

### 4.2 Performance

### 4.3 etc.

## 5 Comparison to Existing Implementation

This section will not be appropriate for every project.

## 6 Unit Testing

## 7 Changes Due to Testing

[This section should highlight how feedback from the users and from the supervisor (when one exists) shaped the final product. In particular the feedback from the Rev 0 demo to the supervisor (or to potential users) should be highlighted. —SS] Barfoot (2017)

## 8 Automated Testing

## 9 Trace to Requirements

## 10 Trace to Modules

## 11 Code Coverage Metrics

## References

Timothy D. Barfoot. *State Estimation for Robotics*. Cambridge University Press, 2017.

The information in this section will be used to evaluate the team members on the graduate attribute of Reflection.

1. What went well while writing this deliverable?
2. What pain points did you experience during this deliverable, and how did you resolve them?
3. Which parts of this document stemmed from speaking to your client(s) or a proxy (e.g. your peers)? Which ones were not, and why?
4. In what ways was the Verification and Validation (VnV) Plan different from the activities that were actually conducted for VnV? If there were differences, what changes required the modification in the plan? Why did these changes occur? Would you be able to anticipate these changes in future projects? If there weren't any differences, how was your team able to clearly predict a feasible amount of effort and the right tasks needed to build the evidence that demonstrates the required quality? (It is expected that most teams will have had to deviate from their original VnV Plan.)