Elevator Phase Two Test Plan

DISCLAIMER: This test plan is intended to test and confirm that elevator floor commands are fully functioning and logged into a database via LAN and CAN communication for an elevator network. The person performing these tests must meet the following criteria:

Safety Training: The tester must have appropriate safety training, which includes passing the Electronics Systems Engineering Safety Quiz.

Training Prerequisites: The tester must have successfully completed all prerequisite classes required for participation in Project VI.

Additionally, the following points should be considered:

Only qualified personnel with relevant experience and knowledge should conduct these tests. All safety protocols and guidelines must be strictly followed during testing to ensure the tester's and others' safety. Testers must be proficient in using all relevant equipment and tools required for the testing procedures. Comprehensive documentation of all test results, observations, and anomalies must be maintained. Testers should be familiar with emergency procedures and have access to emergency contact information. Testing should be conducted in an environment that meets all safety and operational requirements for the equipment being tested.

Failure to adhere to these guidelines may result in inaccurate test results, equipment damage, or personal injury. The tester acknowledges and accepts these conditions by proceeding with the testing.

Name of Test Inspector: _Brandon Hauck_____ Date: _July 26 2024_____

Test Number	Test Description	Pass/Fail Criteria	Measurements/ Observations	Results: Pass/Fail
Section 1 Initial Elevator Inspection				
1.1 Visual Inspection	Inspect the elevator system for correct assembly and connection of all hardware components. Verify that all wires and connectors are correctly attached. Ensure there are no loose parts or exposed wires. Check that the Raspberry Pi and other electronic components are securely mounted.	**Pass:** All components are correctly connected with no loose or exposed wires. **Fail:** Any component is incorrectly connected, loose, or has exposed wires.	All components Connected and Secure	Pass

1.2 Power-On Check	Confirm that the elevator system powers on correctly. Connect the power supply to the system. Switch on the power and observe the system's startup. Ensure all indicator lights are functioning as expected.	**Pass:** The system powers on without issues, and all indicator lights function correctly. **Fail:** All systems do not power on, or indicator lights do not function as expected.	All Components Power on as expected.	Pass
1.3 Safety Check	Verify that the system is in a safe operational state to proceed with further testing. Ensure emergency stop mechanisms are accessible and functional. Confirm that there are no hazards (e.g., items that may interfere with moving components within the elevator).	**Pass:** Emergency stop mechanisms are functional, and no hazards are present. **Fail:** Emergency stop mechanisms are non-functional, or hazards are present.	E-Stop is accessible and functional no hazards Present.	Pass
Section 2 CAN Communication Testing				
2.1 Network Connectivity Test	Ensure all elevator nodes operate on the CAN network with the same communication protocol by pushing the blue button on any node (STM32 Dev. Board).	**Pass:** All elevator floor controllers respond to any blue push button press by illuminating their LEDs. **Fail:** Any floor controller fails to illuminate their LED.	All components respond to the CAN broadcast as expected	Pass
2.2 Command Execution Test	Validate that floor requests are received and transmitted to the correct controller by testing each floor request button. Observe the execution via floor and button LEDs to verify that the correct controllers respond.	**Pass:** Every push button yields the correct command execution, and the expected LEDs illuminate in response. **Fail:** The elevator fails to respond to the command, or the action does not occur as expected.	All physical Elevator push buttons and LED's respond as expected. Hardware is OK.	Pass

Section 3 User Interface and Database Testing				
3.1 User Interface Action Buttons and Icons	Verify that the user interface action buttons and icons are capable of changing values in the database and that they change in response to changes in the database. Remote elevator call buttons should control the elevator and illuminate in response to database values.	**Pass:** Remote elevator buttons correctly update the database and reflect changes from the database with specific button illumination. **Fail:** Elevator buttons do not update or reflect changes from the database.	All virtual elevator Call buttons Write to the database. They also respond to the values and Control the elevator	Pass
3.2 Database Logging	Confirm that the system can recognize and extract information from the CAN bus and store the necessary information in the database log.	**Pass:** The system recognizes a local floor request when the physical elevator buttons are pressed and logged into the database. **Fail:** The system doesn't recognize or log when a local floor request is made.	All Physical elevator button requests are recognized and logged on the database as local requests.	Pass
3.3 System Status / Diagnostic Report	Ensure diagnostic reports are produced and displayed based on data stored in the database.	**Pass:** Actively reflects and displays the command status based on the most recent command logged in the database. **Fail:** Elevator command status fails to display or reflect the current state of the system.	The Current Status of the System is Actively and correctly displayed on the terminal. Complete log history is active.	Pass
3.4 Remote Access and Authentication	Verify that the user interface can be accessed remotely and provides data/accepts commands only to/from authorized users who are authenticated via username/password.	**Pass:** Only authorized users can access the database and send remote commands to the system. **Fail:** Unauthorized users can access the database and system remotely.	Elevator terminal and database GUI can only be accessed when user is authorized.	Pass
3.5 Floor Announcement	Validate that the system announces floor numbers for users who are visually impaired.	**Pass:** The correct floor numbers are announced. **Fail:** The floor numbers are incorrect or not announced.	Elevator System announces floor numbers upon arrival on Both physical elevator and web-application	Pass

| 3.6 Sabbath Mode | Confirm that Sabbath Mode operation has been implemented so that the elevator may be operated without the need to push buttons. | **Pass:** When activated, the elevator cycles from bottom to top, then top to bottom floors continuously without the need to push any buttons until deactivated.

Fail: The sequence is not continuous, or the floors are automatically selected in an unpredictable manner. | Elevator cycles automatically in a predictable sequence and stops when sabbath mode is turned off. | Pass |

I, _____Brandon Hanek_____(print name here), hereby confirm that the test results documented herein are accurate and truthful to the best of my knowledge and ability.

Signature: _____ Date: ___July 26 2024___