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| Date | May 22nd, 2020 |
| Goal | Demonstrate the ability to transmit data via the CAN bus on the STM32F303RE. |
| Proof of Concept | Create a visualization that shows various pieces of data being sent from the transmitter and likewise shows the same data being received at the receiver. |
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| **TEST PLAN** | | | | | |
| Step | Task | Pass Criteria | Pass | Fail | Notes |
| 1 | Acquire an F303 board and ensure it powers on | LD3 lights up | X |  | Nucleo board must be set to U5V power |
| 2 | Install the STM32CubeIDE software and open the STM32projectCubeMX\_CAN | Software opens successfully | X |  |  |
| 3 | Configure Pinout and Clock configurations | Pinout and Clock configuration matches *Setting up CAN and GPIO on the STM32F303* page | X |  | Loopback mode must be set under Pinout -> Parameter Settings -> Advanced Parameters -> Operating Mode |
| 4 | Flash project code to the Nucleo | IDE will indicate success in the Console window | X |  | ST-Link firmware had to be updated |
| 5 | Run the code and verify functionality | Pressing the blue button results in LD2 lighting up | X |  |  |
| 6 | Verify that data is being transmitted successfully over the CAN bus | Run the debugger. Data should be sent to the Transmit mailbox when the button is pressed. | X |  | GO\_TO\_FLOOR\_1 equates to 5 as an integer, and can be seen via the debugger entering the transmit mailbox |
| 7 | Verify that data is being received successfully from the CAN bus. | Run the debugger. Data from the transmit mailbox should be set into the receive data buffer upon the next cycle after the button is pressed. | X |  | The receive data register contains 5 as an integer after the button is pressed. |
| 8 | Verify that different data values can be sent over the CAN bus. | Change the data being sent when the button is pressed and observe the same data being set in the receive buffer. |  |  |  |
| 9 | Verify that data can be successfully transmitted and received during runtime (outside of the debugger) | Print the contents of the receive data buffer to the console when it’s received. Verify it matches the data being sent. |  |  |  |
| 10 | Verify that different commands can be received during runtime (outside of the debugger) | Cycle through different values of data between button presses. Print values received to the console. Verify all values appear and match those being sent. |  |  |  |