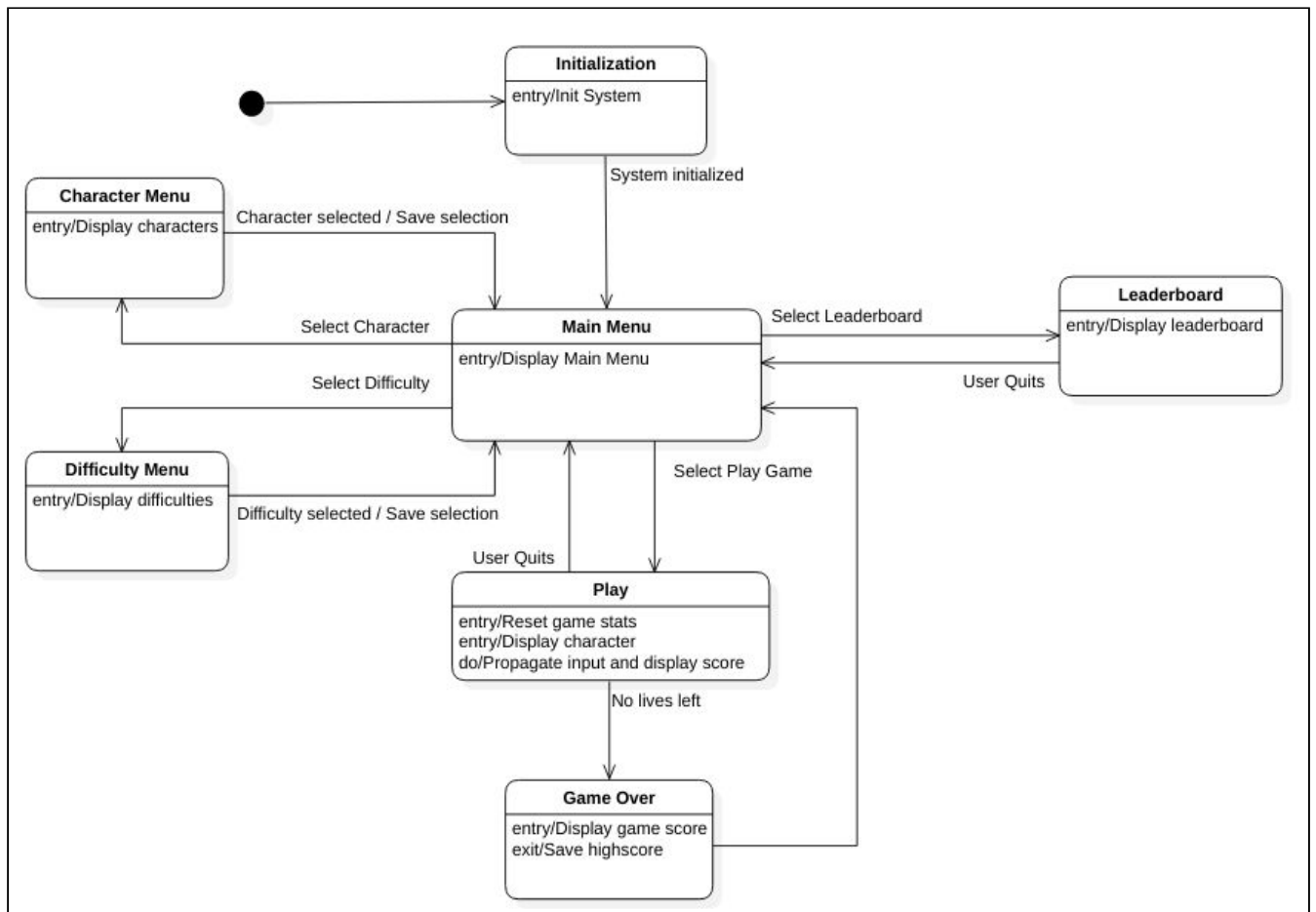


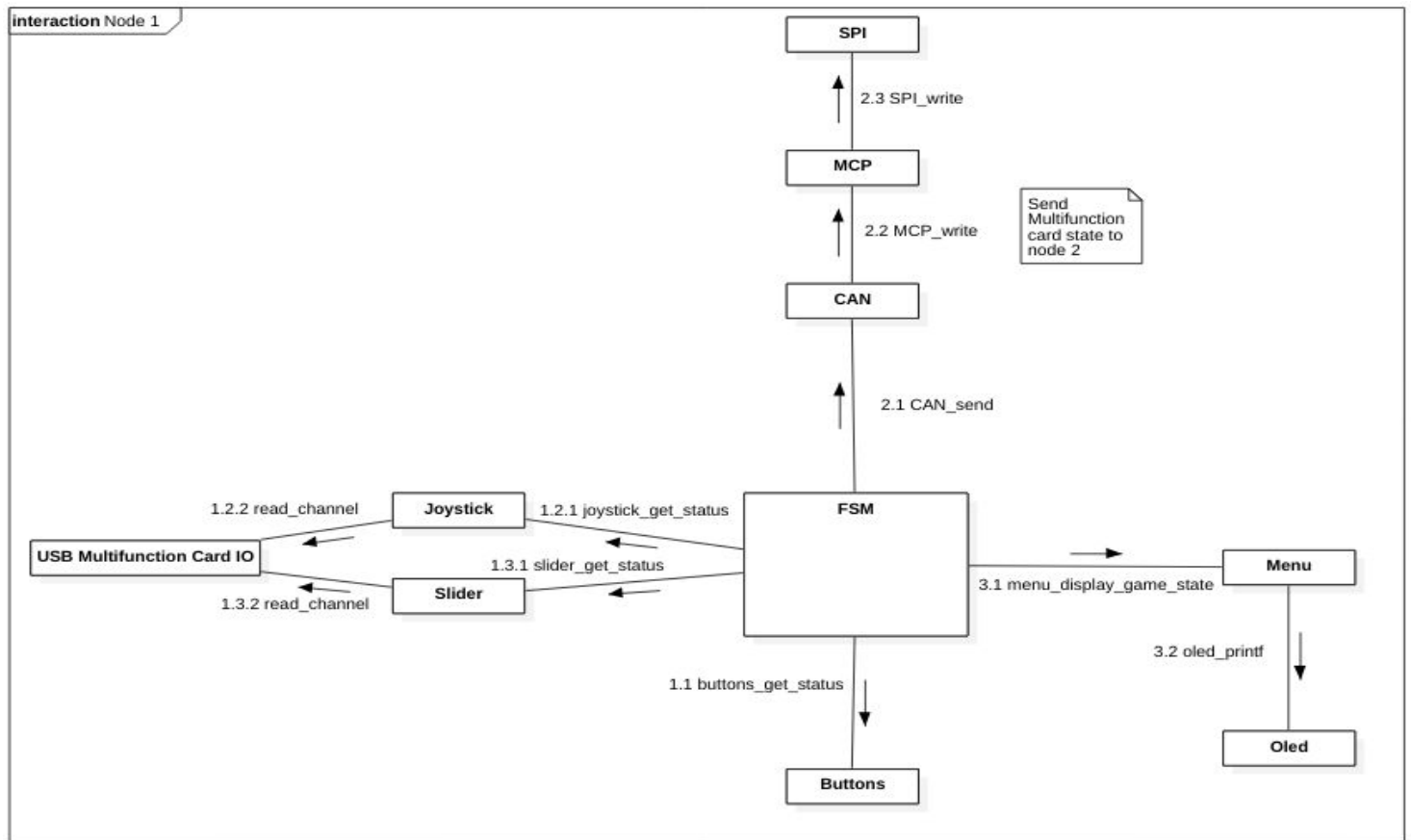
State diagram

The main FSM of the system is shown below. Transitioning between the states is mainly done by selecting different options displayed on the OLED screen. Node 1 will handle the main logic and states, using node 2 as a slave MCU for controlling the game board and detecting goals.

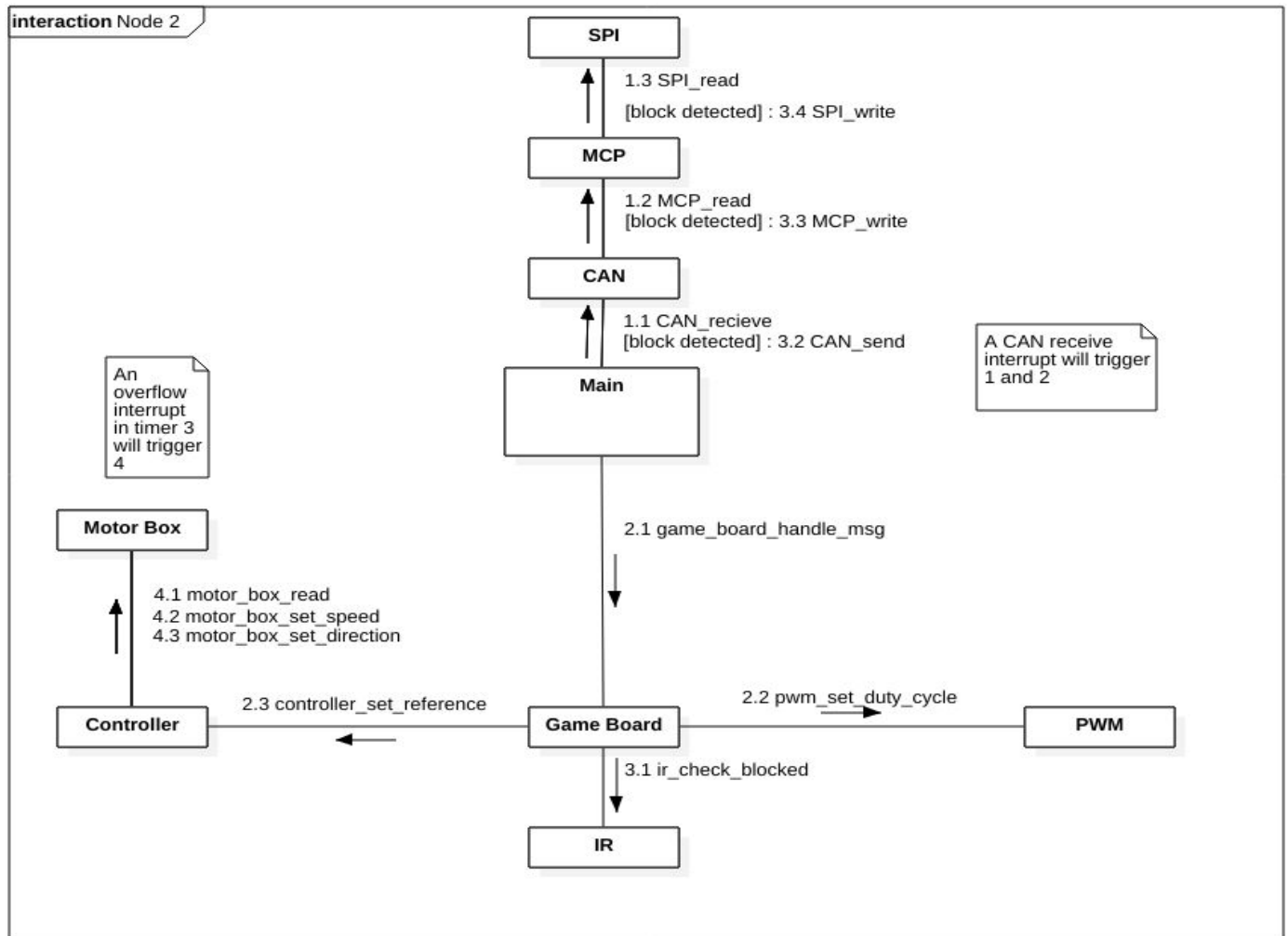


Communication Diagrams

This diagram shows typical communication during the main game loop between modules in node 1. This node will get the current inputs from the USB card and send these to node 2 for processing.



This diagram shows typical communication during the main game loop between modules in node 2. The core responsibility of node 2 is to handle the incoming CAN messages containing the IO information from node 1 and using these to calculate appropriate signals to the actuators. It must also detect goals with the IR sensor and transmit this to node 1.



List of extras

- Software buffered, interrupt driven input and output streams
- Timer based double buffering of OLED screen running using the SRAM
- Support for transferring images from the computer and display on OLED at runtime using UART
- Interrupt driven CAN communication
- Four playable characters
- Three difficulty options
- Highscore loading and saving
- Speaker with sounds for in-game events