

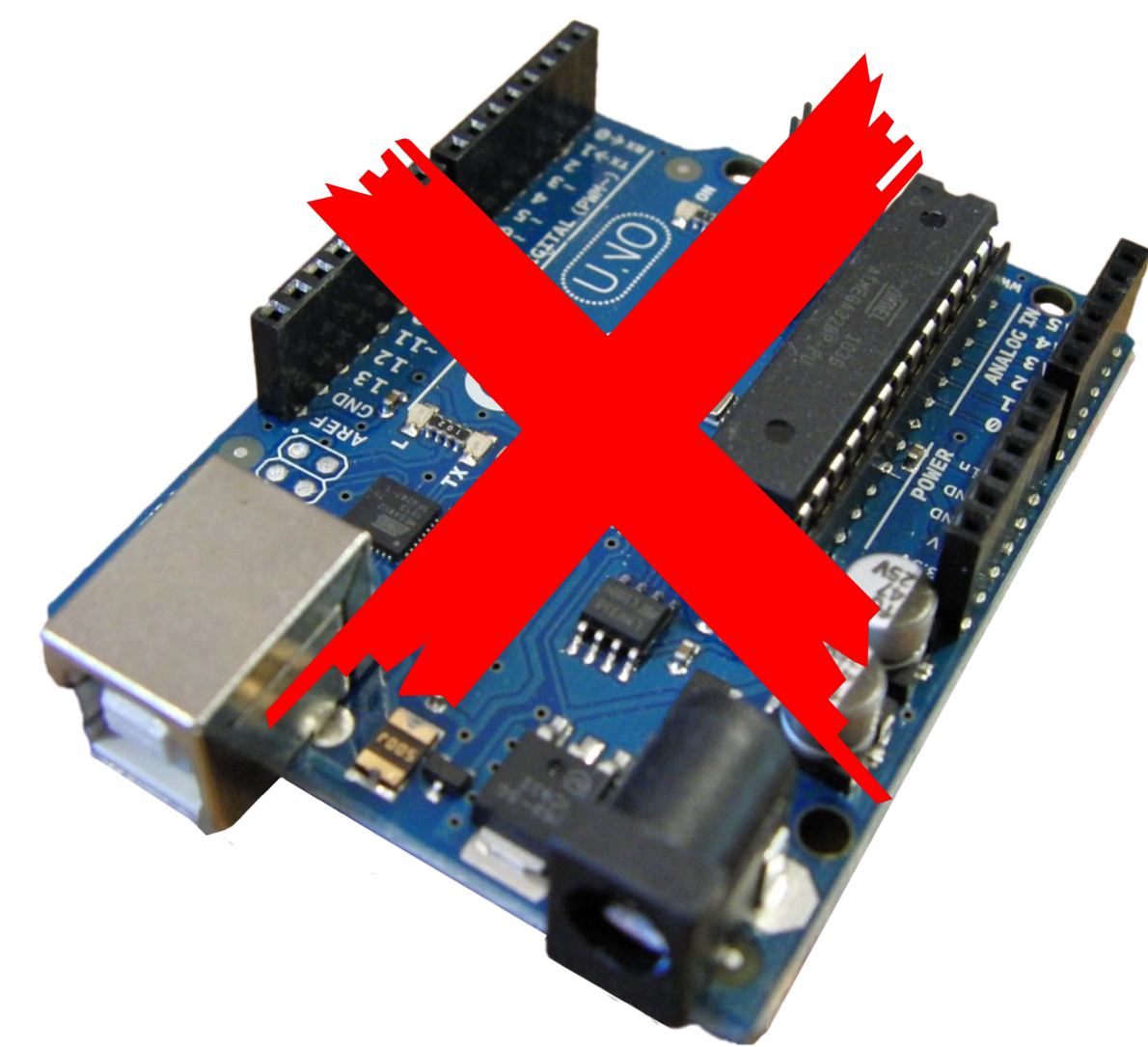


# seL4 DOOM Pendulum Demo Modification

## DORNERWORKS

### Goals of the Project

- Enhance existing demo
- Run two independent Virtual Machines
  - One balances the inverted pendulum
  - One runs DOOM
- When one VM is interrupted the other remains operational
- Improve inverted pendulum performance
- Improve algorithm response time



### Original Version

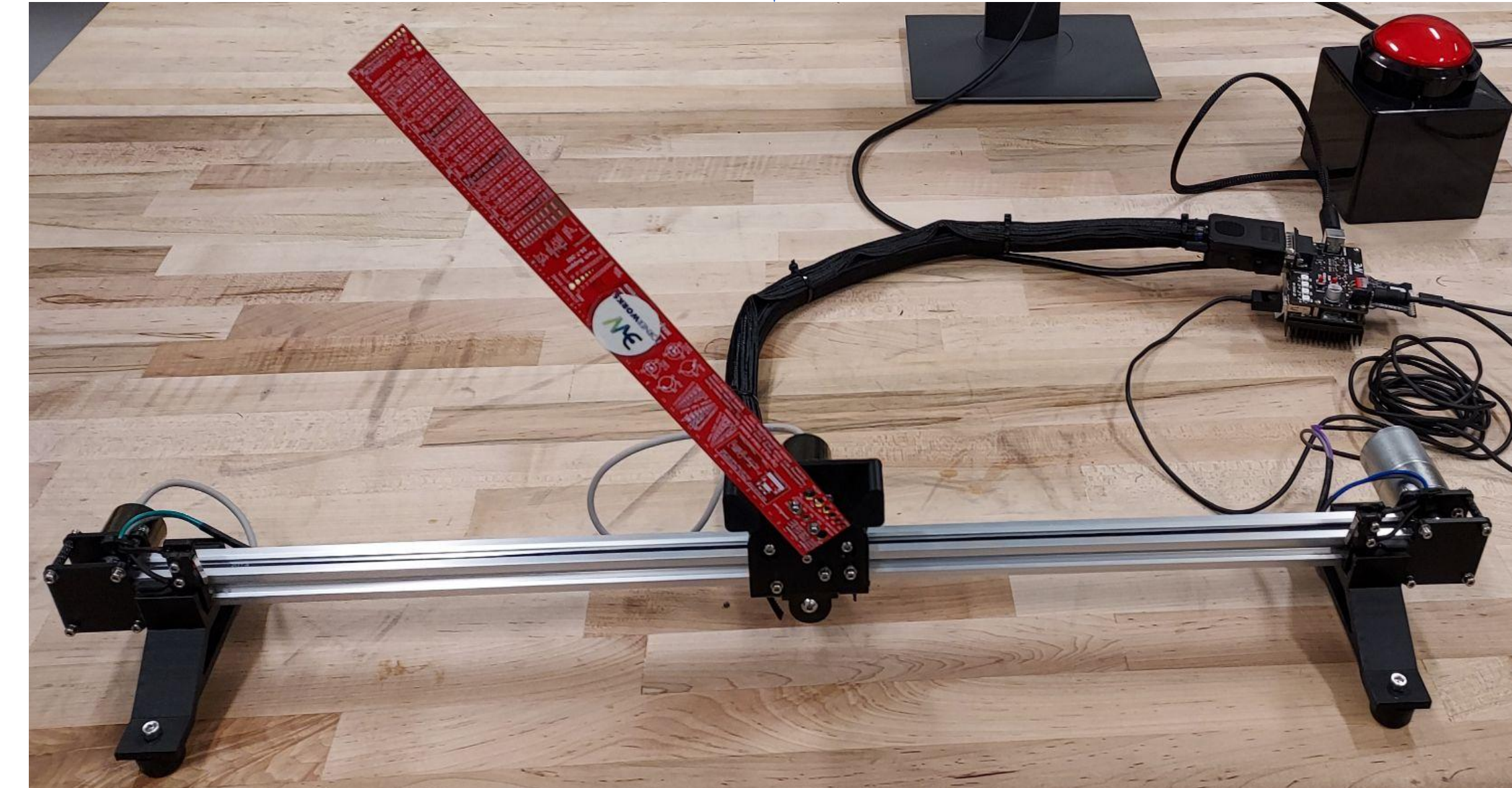
- Used Arduino as communication
  - Visually misleading
- Slower response time
- Low resolution sensors
- Little feedback on VM status



Ultra96v2



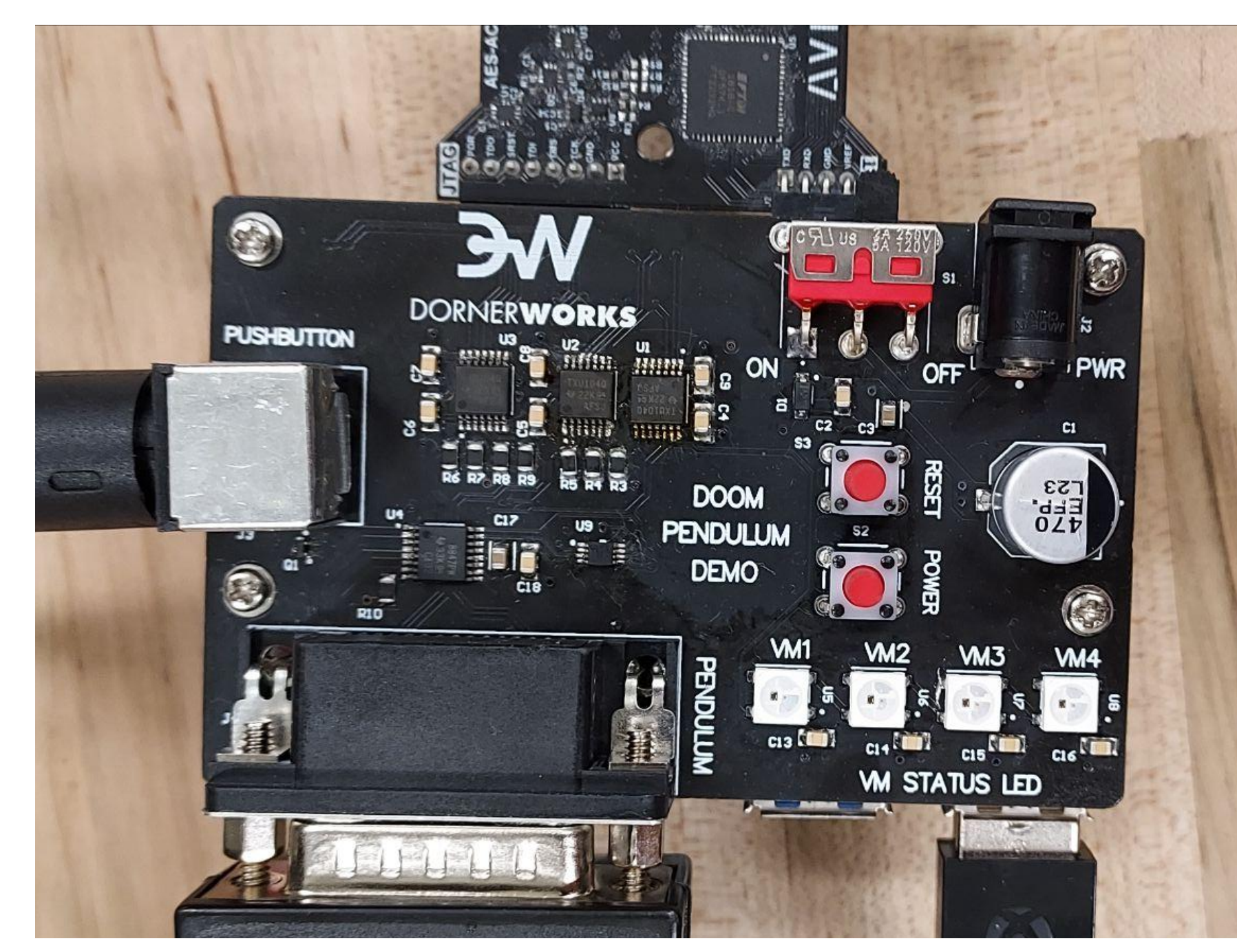
DOOM



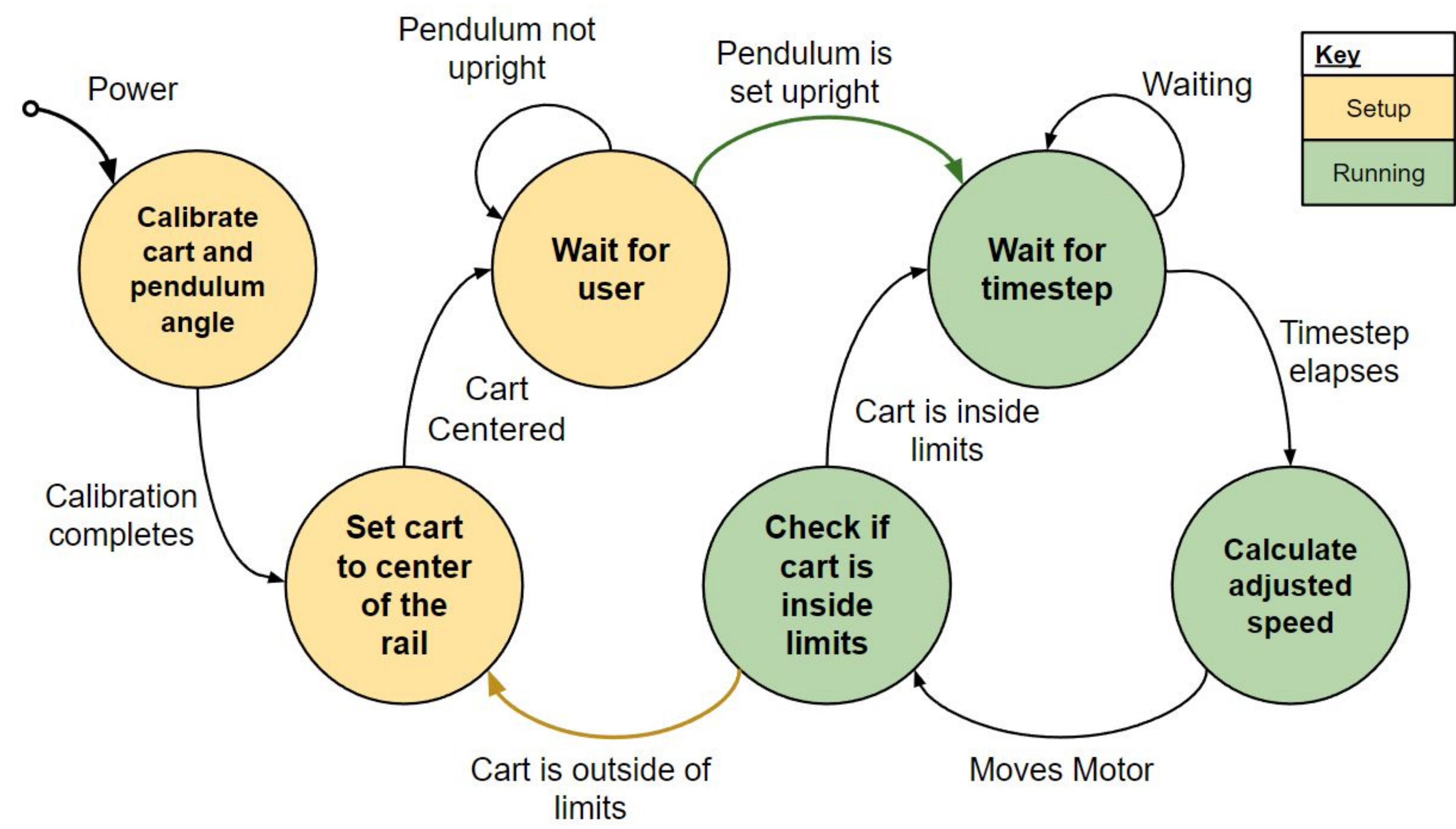
Inverted Pendulum

### Key Specifications

- Remove Arduino and communicate through FPGA
- Respin mezzanine board
- Convert to FreeRTOS from Python
- Display VM status
- Update pendulum hardware



### Inverted Pendulum Flow Diagram



### Block Diagram

