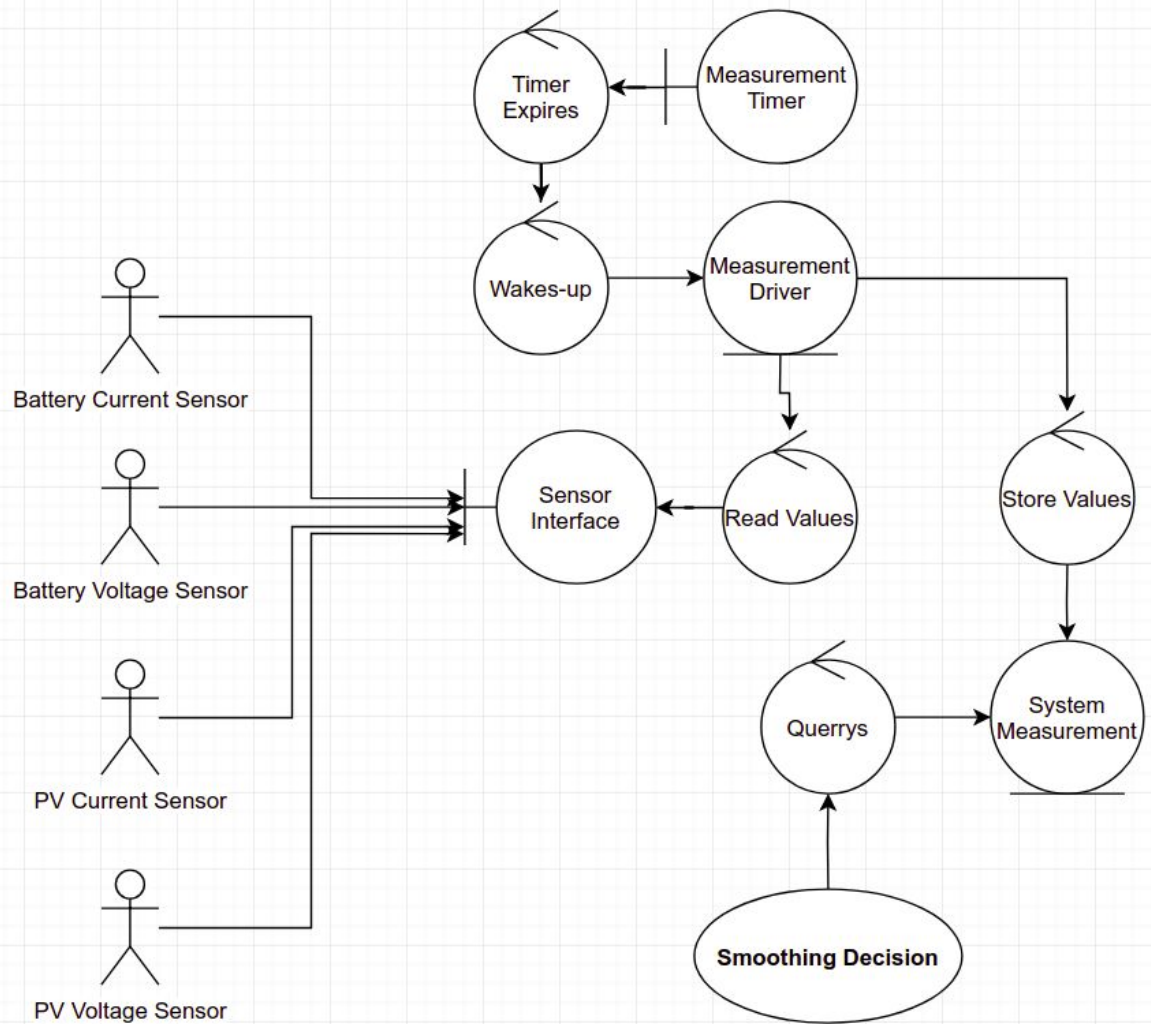# Robustness Diagrams

Current/Voltage Measurement

BASIC COURSE:
The Measurement Timer expires and wakes-up the Measurement Driver. The Measurement Driver reads values from the Sensor Interface. The Sensor Interface relays data from the Battery Current Sensor, Battery Voltage Sensor, PV Current Sensor, and PV Voltage Sensor. The Measurement Driver stores the recorded values in a System Measurement.

ALTERNATE COURSES:
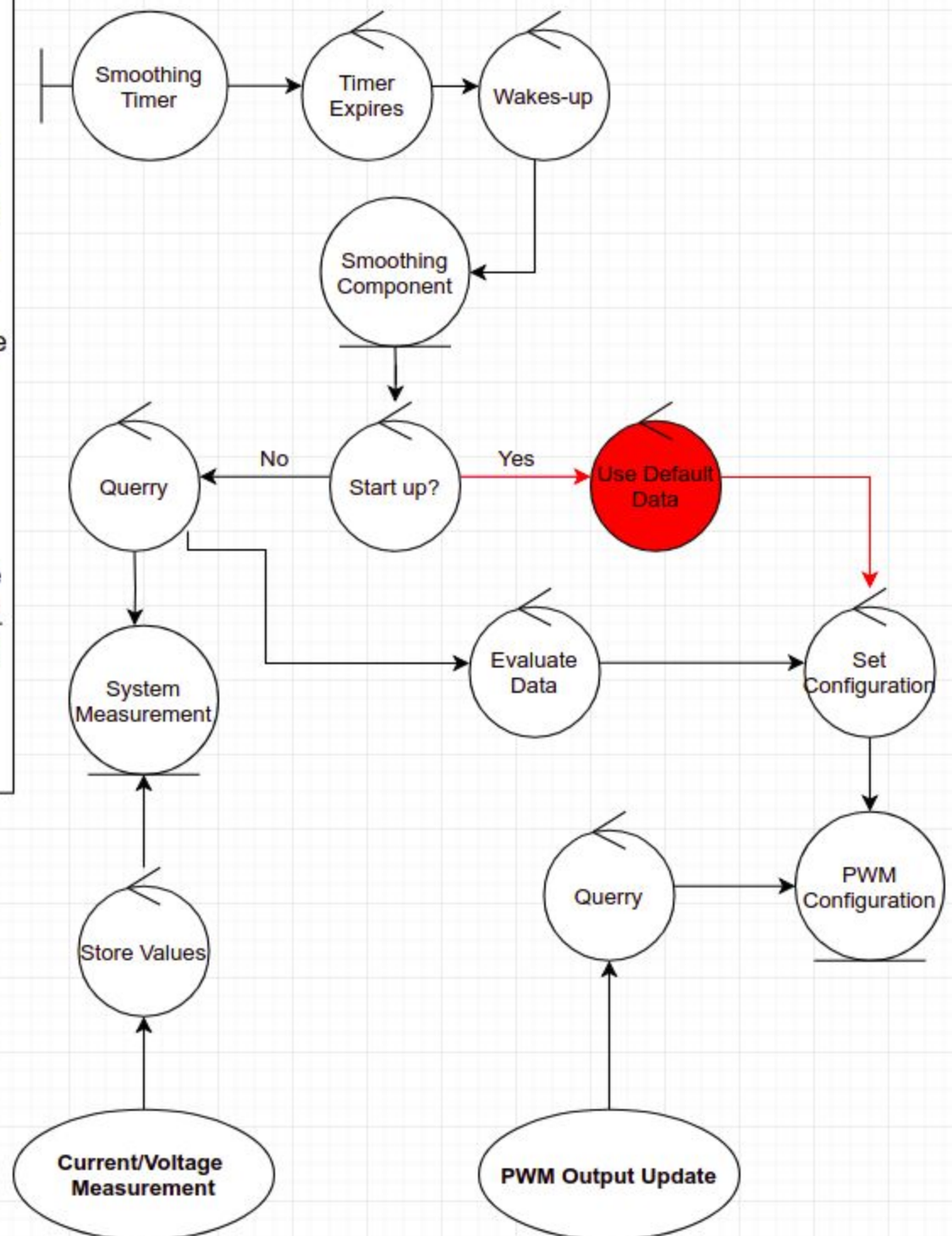
N/A

Smoothing Decision

BASIC COURSE:

The Smoothing Timer expires and wakes-up the Smoothing Component. The Smoothing Component querrys the most recent System Measurement. The Smoothing Component evaluates the System Measurement data and sets the next PWM Configuration.

ALTERNATE COURSES:

System Start-Up: When the system is starting up, the Smoothing Component will use default values to set the PWM Configuration and will not read the System Measurement.

Smoothing Timer → Timer Expires → Wakes-up → Smoothing Component

Smoothing Component → Start up?

Start up? —No→ Query

Start up? —Yes→ Use Default Data

Query → System Measurement

Query → Evaluate Data

Evaluate Data → Set Configuration

Use Default Data → Set Configuration

Set Configuration → PWM Configuration

Query → PWM Configuration

Store Values → System Measurement

Current/Voltage Measurement → Store Values

PWM Output Update → Query

PWM Output Update

BASIC COURSE:
The PWM Timer expires and wakes-up the PWM Driver. The PWM Driver reads the PWM Configuration and loads it into the PWM Module.

ALTERNATE COURSES:

N/A

PWM Timer → Timer Expires → Wakes-up → PWM Driver → Reads → PWM Configuration

PWM Driver → Loads → PWM Module

Smoothing Decision → Set Configuration → PWM Configuration