Phase 2 (revisions)

Use Case

Current/Voltage Measurement

BASIC COURSE:
The Measurement Timer expires and uses the Measurement ISR to wake up the system. The system reads values from the Sensor ADCs. The system stores the recorded values in a System Measurement Struct.

ALTERNATE COURSES:
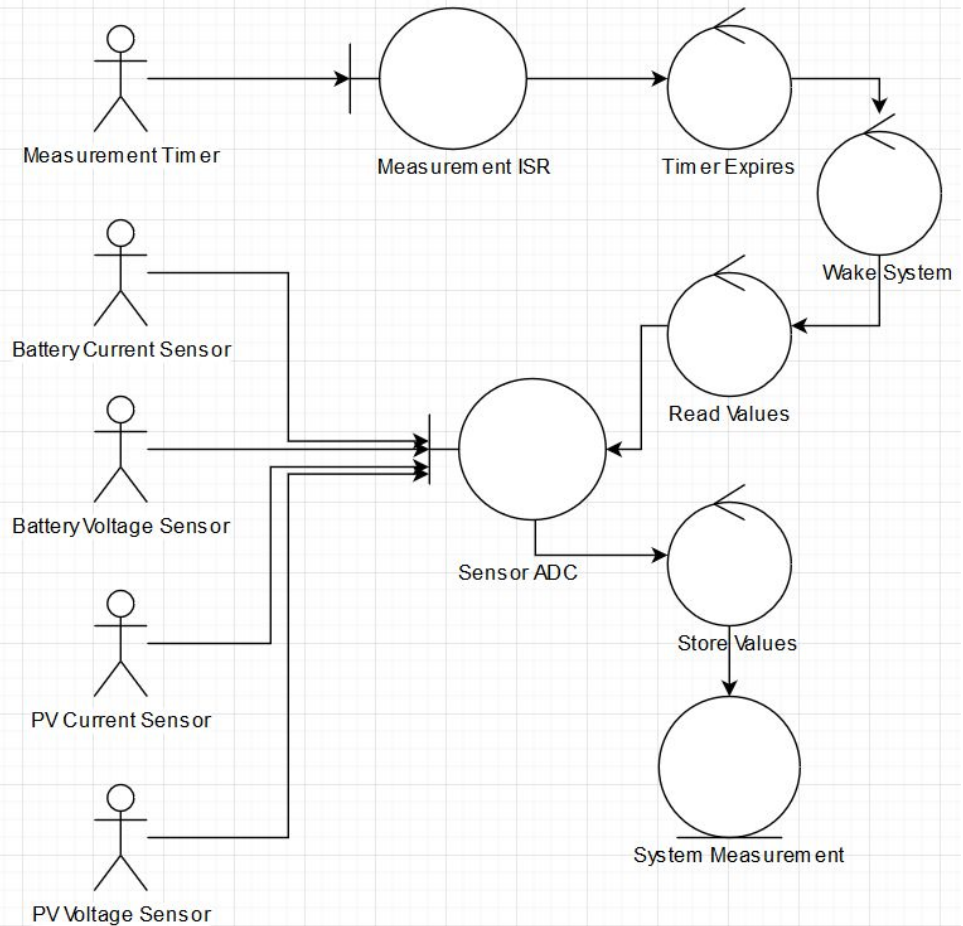*N/A*

Robustness Diagram

Current/Voltage Measurement

BASIC COURSE:
The Measurement Timer expires and uses the Measurement ISR to wake up the system. The system reads values from the Sensor ADCs. The system stores the recorded values in a System Measurement Struct.

ALTERNATE COURSES:

N/A

Measurement Timer

Measurement ISR

Timer Expires

Wake System

Battery Current Sensor

Battery Voltage Sensor

Sensor ADC

Read Values

PV Current Sensor

Store Values

PV Voltage Sensor

System Measurement
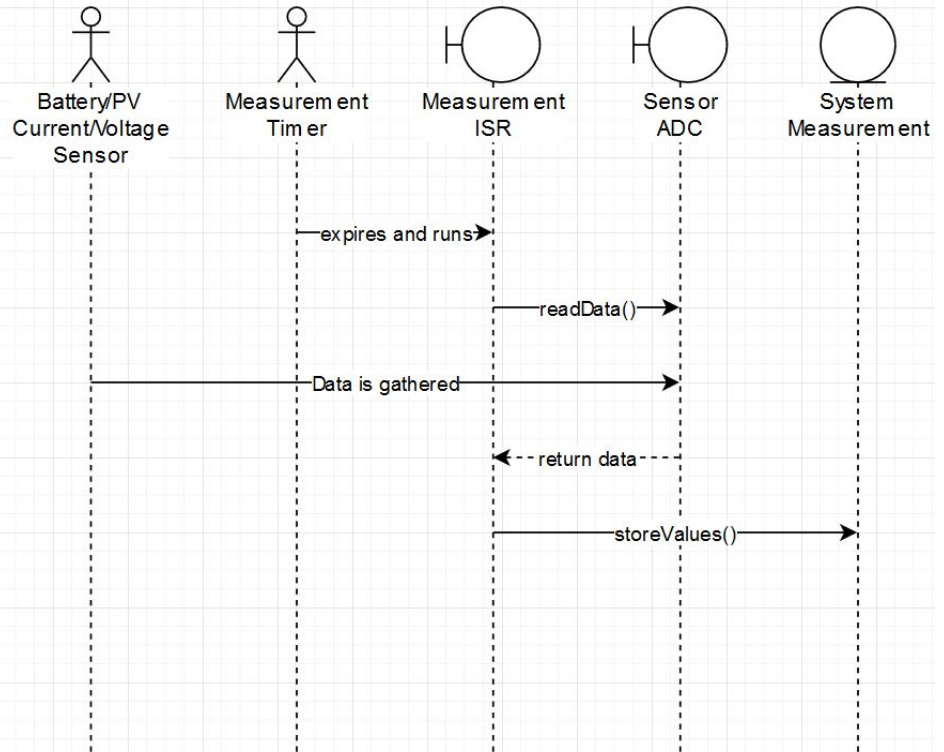
Sequence Diagram

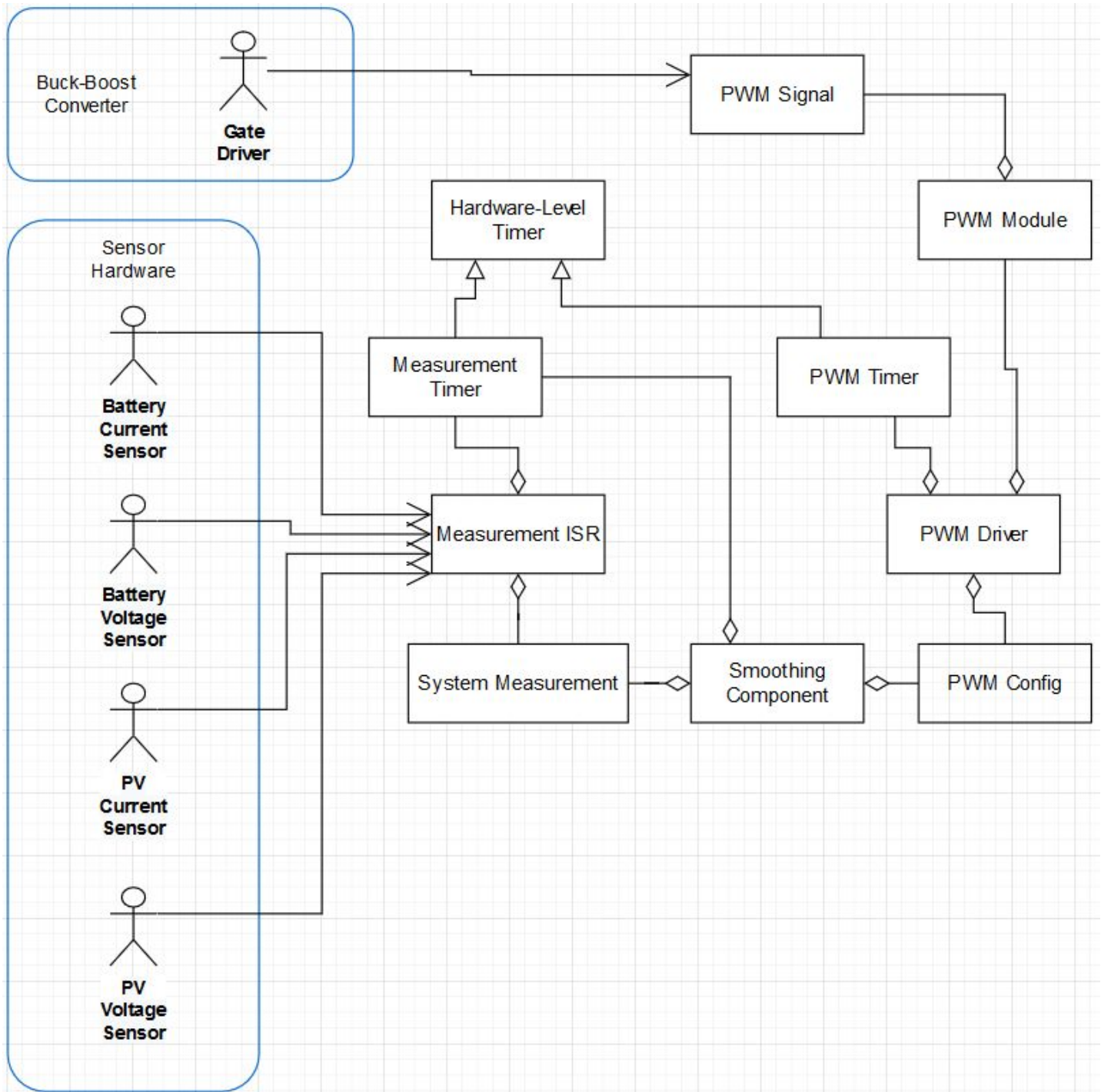**Current/Voltage Measurement**

BASIC COURSE:
The Measurement Timer expires and uses the Measurement ISR to wake up the system. The system reads values from the Sensor ADCs. The system stores the recorded values in a System Measurement Struct.

ALTERNATE COURSES:

N/A

Battery/PV Current/Voltage Sensor	Measurement Timer	Measurement ISR	Sensor ADC	System Measurement

expires and runs→

readData()→

Data is gathered→

←- - return data - - -

storeValues()→

Domain Diagram

Buck-Boost Converter

Gate Driver

PWM Signal → PWM Module

Sensor Hardware

Battery Current Sensor

Battery Voltage Sensor

PV Current Sensor

PV Voltage Sensor

Hardware-Level Timer

Measurement Timer

PWM Timer

Measurement ISR

PWM Driver

System Measurement

Smoothing Component

PWM Config

System Architecture

Component Layer

SmoothingComponent

Driver Layer

MeasurementDriver

PWMDriver