Battery System Control Unit

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# Overview

*General need and purpose, overall description, Constraints, Assumptions.*

This battery system control unit is for the purpose of managing a battery system in order to use it for system balancing, ancillary services and other commercial programmes. The unit will be installed alongside the battery and will control various aspects of it's running, including switching between charge states, maintaining optimum state of charge and managing the system within key operating parameters such as temperature, current and voltage constraints.

# Functional Requirements

*What does it need to do? What are its function and components?*

* Monitor DC Voltage
* Monitor DC Current
* Monitor AC Voltage
* Monitor AC Current
* Measure and monitor the State of Charge of the Cells
* Measure and monitor the temperature of the Cells
* Switch the battery system to charge, discharge and to a resting state
* Switch between states if temperature parameters are breached

## Performance, Availability, Scalability, Extensibility

*How well does it have to do these things? How critical is it?*

* This system is for a single phase set-up in this current version
* It must switch off if high temperatures are reached
* It should fail safe: i.e. turn off the battery charging if it fails
* it should restart itself if the network connection is lost

# Architecture

*Logical & Process / Service Orientation*

*Hardware & Software*

*Communications*

*Security*

## Interfaces

*Human, Machine*

The system will be interfaced to via an API for m2m communications

The system will be interfaced to via a web page for human access

# User scenarios

*Who does what, when? Use cases, specific edge cases?*

# Data Models

*What data items are required to be created, managed & stored?*

# Development Strategy

*Development scope & approach, partners, assurance, testing*

# Annex 1 – Related Technical Documentation