# Introduction

This document describes how Scope should be set up to allow for Diagrams in the webMI GUI.

# Background

Important things to consider:

1. Scope creates a DB of historical values directly on the controller – but there is limited space on the controller
2. Each “Recording” in Scope works like so:
   1. Check all the values to be recorded with cycle time provided
   2. If any one of them has changed, write a new row in the DB of the recording
3. Configuration of Scope cannot be done automatically based on Qinous.ini – therefore each project requires a configuration of Scope by hand, and this must be correct for the diagrams to appear in the GUI

# Concept

1. Each recorder name is prefixed with task name (i.e. how it appears in Solution Centre under Software – not the module .m name!) and datastructure that is corresponds to.   
     
   Example, for any recording dealing with BCU number 1 (i.e. BCUData[1], BCUConfig[1], etc) in SAMVAC (use the Task name, and not the module.m), prefix is SAMVAC\_BCU1\_
2. Three types of recorders are setup:
   1. fast changing, i.e., power, frequency, voltage – these are pretty much always different no matter how fast you check
   2. slow changing, i.e., SOC, temperature – these won’t necessarily change significantly within one second, but are very often different after 10s
   3. status – i.e., digital input/output, running state, alarms. These might change really quickly in one minute, and then never change for several hours.
3. For each type of microgrid component (BCU, diesel, grid, Samsung Rack, etc) there is a FIXED definition of what is contained each in the Fast, Slow, and Status diagrams
   1. The system component should not duplicate the values from any other recorder, but rather show values that are unique to Q\_SYS
4. For fast and slow recorders, there are two time spans to cover
   1. Very fast resolution occurs automatically via the live-ticker, so we can ignore that
   2. For one-to-two weeks, we should have good-resolution data (roughly 1s)
   3. For one-to-three months, we should have acceptable-resolution data (roughly 1 minute)
5. For status recorders, there is just a maximum number of datapoints, with no regard for how long into the past it goes.
6. This makes for a total of 5 recorders for each component of the microgrid. The actual resolution, maximum datapoints, and maximum history length can all be decided on a project-by-project basis.
7. For every possible recorder, we maintain a copy of the definition in the repository. We must simply install the correct recorder for each project (updating some of the archiving and cycle time parameters if needed)

Example for data of the BCU number 1 in SAMVAC

SAMVAC\_BCU1\_FAST\_HR  
SAMVAC\_BCU1\_FAST\_LR  
SAMVAC\_BCU1\_SLOW\_HR  
SAMVAC\_BCU1\_SLOW\_LR  
SAMVAC\_BCU1\_STAT

# Standard Definitions

## BCU

### Fast

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### Slow

### Status

## System