

Primary author: **Penman, John** (Met Office Edinburgh), john.penman@metoffice.gov.uk

Abstract ID: 7P6

A new Observing System MMS (Meteorological Monitoring System)

The UK Met Office collects synoptic data from approximately 250 sites around the UK every hour. This data includes wind, temperature and pressure values and is used in real time and historically. The data contributes towards the production of forecasts for anything up to 5 days ahead and it is also archived in our database for use in Climat research.

The data had been supplied by well trained Observers for many years but progressively over the last 25 years automatic sites have began to provide the majority of our data. Until recently there were 5 different types of automatic weather stations reporting hourly data, MMS (Meteorological Monitoring System) will replace them.

The new observing system is designed to improve data gathering and reliability. It will allow remote access which will reduce many long journeys to distant sites by engineers by a substantial amount. This remote access can be used to investigate faults and alter software where necessary.

The new MMS system is more flexible to allow for changing customer needs. There is also the function to carry out repair work remotely resulting in a reduction in long and expensive engineering visits when there is a problem with the system. The system can be easily configured to allow for evolving communication methods and requirements.

The poster presentation will describe the MMS system at a high level.



Meteorological Monitoring System (MMS)

The new automatic observations reporting system

John Penman

About MMS

The Meteorological Monitoring System (MMS) Project is a project to replace existing Met Office automatic weather stations (AWSs).

The MMS will replace all existing SAMOS, CDL, ESAWS, SIESAWS and WSOP sites. The MMS takes advantage of advances in IT and will help the Met Office achieve uniformity across the AWS network.

Crucially, the MMS will enable the Met Office to meet changing requirements more effectively, especially in relation to adding/changing sensors to respond more flexibly to evolving customer needs.

Reasons for change

- Mix of different systems to support
 - Four different systems require four support teams
- Legacy technology, increasingly becoming obsolete
 - ISU Interface between sensors and PC is bespoke hardware and obsolete
 - SAMOS software is costly to maintain
 - Source code for ESAWS software no longer exists!
 - Few in the Met Office still have knowledge of CDL and SIESAWS systems
- Almost entirely restricted alpha-numeric coding conventions
 - All systems designed round hourly reporting – SYNOP, NCM, HCM, SREW
 - No facility to send new parameters
- Limits to what sensors can be added to different types of AWS sites
 - Adding a new sensor type to SAMOS requires major programme of change
 - Cannot add new sensors to ESAWS or SIESAWS
- SAMOS and ESAWS have been designed as stand alone systems
 - Engineer visits required to update software, reset sensors, reset loggers, etc
 - No central monitoring and control available
 - Configuration information only available on site



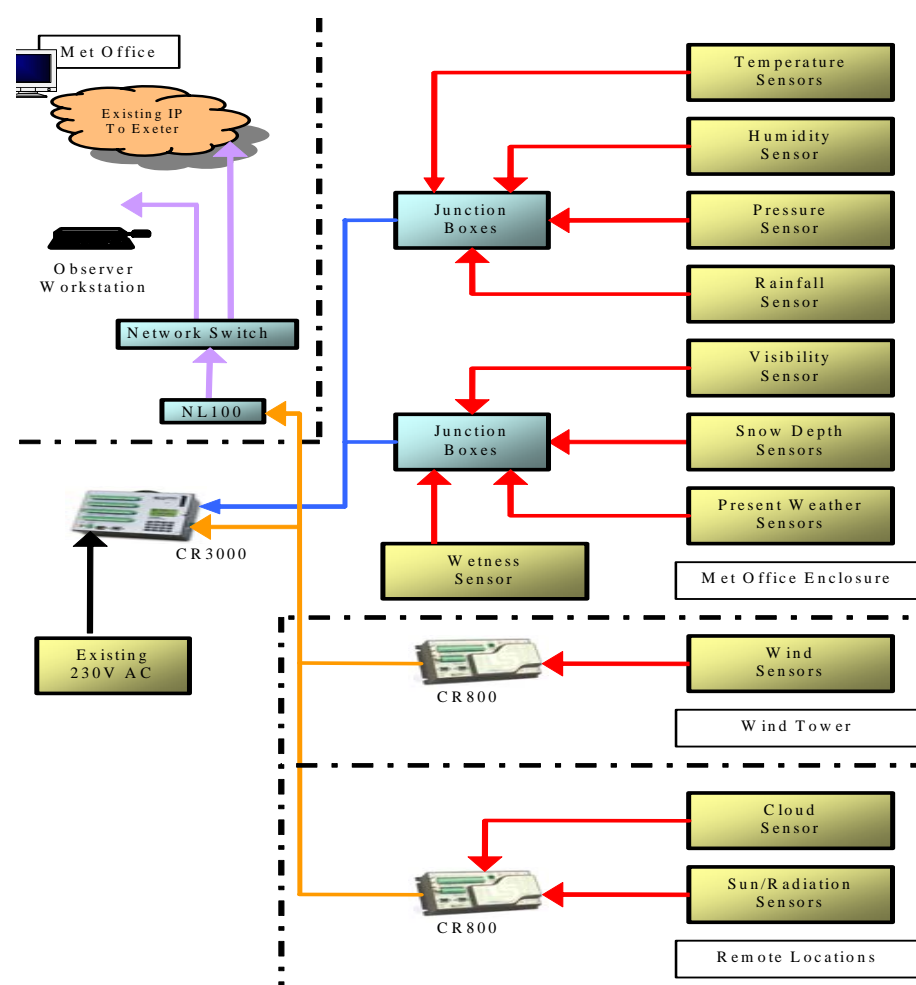
Inside the workings of an MMS site with the CR3000 logger and the feeds from the various sensors into it.

How does it work?

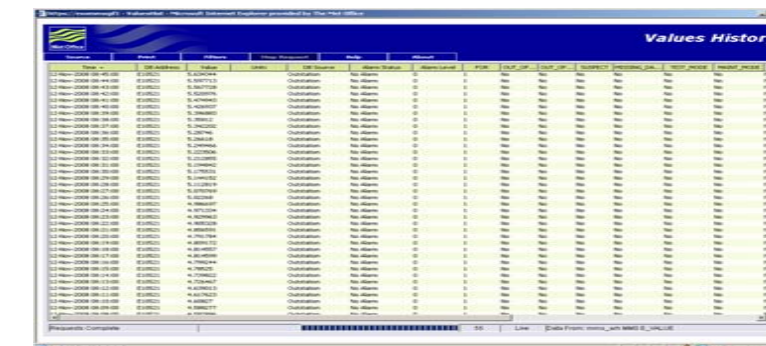
MMS will be controlled by a central system in Exeter which will enable:

- Central monitoring of sensor data
- Remote control of AWS sites and sensors
- Automatic data quality control
- Central formatting / coding of observations.

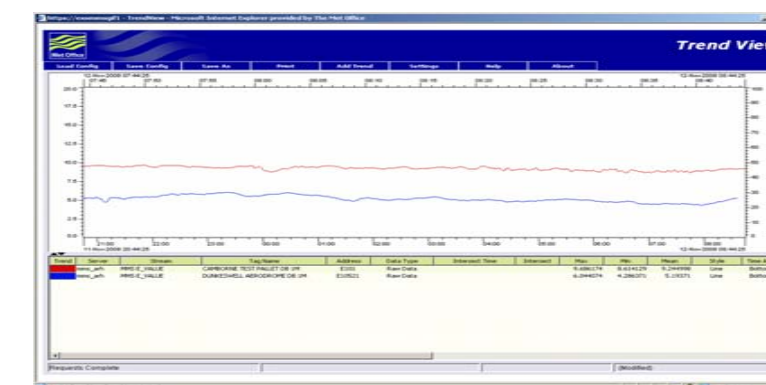
SAMOS replacement MMS system set-up



Examples of user interfaces in MMS



Minute data from a variety of sensors can be easily extracted



A trend view facility can compare different sensor values from different sites

Benefits to the Met Office

- Elimination of obsolete hardware and software
- Far greater central control from Exeter Ops Centre
 - Reboot sensors or loggers
 - Monitor sensor or engineering data
 - Carry out software upgrades
- Will be able to routinely collect more data
 - Increase frequency
 - Dual sensors
 - New data types (raw LCBR data, hydrometeor size, etc.)
- Software changes more easily implemented on a central system
- New sensor types added with ease – upgrade ESAWS sites
- Will allow any station to view real-time data from any other Met Office AWS.
- Will allow rationalisation of display system.