

Muir Matheson enhances accurate weather reporting system

All pilots need to know what the weather is doing when arriving or departing from an airport. From the cloud base and wind direction, to runway visibility and ground temperature, the prevailing conditions may affect the operation of modern jet aircraft. Real-time access to accurate weather information is vital.

Muir Matheson Ltd has been in the aviation weather business since 1982 when it developed its first system for Leeds-Bradford airport. The company is now the UK's leading supplier of airport weather systems with fully integrated products that incorporate weather observing, data handling, and forecast information. Its systems are installed at major UK airports such as London Heathrow, Manchester, Edinburgh, and Birmingham as well as Police air support units throughout the UK.

The key to such systems is a constant flow of data. Air traffic control has to give pilots an accurate report of prevailing conditions and vital readings for height calculations such as barometric pressure. Muir Matheson's Semi-Automatic Met Observation System (SAMOS) provides that up-to-the-minute information.

Managing the weather data flow

SAMOS as a rack unit placed in airport control towers consisting of two servers running Muir Matheson's weather application software (Metcom), a local display with KVM switch and a UPS to guarantee up-time. Installed in each server is a Perle SX Multiport Serial Card with an 8 port external SXDC serial device concentrator. As there are two servers within the rack, one server is operational while the other is used as a hot standby. In case of a failure, one server backs up the other within 30 seconds.

Multiple meteorological sensors are located in weather stations placed near the airport runways. Each meteorological sensor is hardwire connected to the SX serial device concentrators at the servers to transmit the weather data over RS485 serial lines into the Muir Matheson's Metcom data processing system.

Following automatic processing and some manual input, the information is made available to air traffic controllers and other staff. Weather readings are displayed graphically in the control tower and sent to pilots by a computer-based voice system (ATIS), or to the aircrafts onboard computer, which gives them the option to print out the weather data in the cockpit (D-ATIS).



By using Perle SX serial cards, Muir Matheson makes sure that all instrument readings are received reliably for automatic processing and visual display. The Metcom system not only records the meteorological data for 30 days but has also earned a high operational reliability rating within the aviation industry. Perle's serial interface technology is also proving vital for the migration of Muir Matheson's original DOS-based system to Microsoft Windows 2000/XP offering enhanced processing power and full-colour graphics.

“Perle's SX Multiport serial cards will be in every control tower of every major airport in the UK”

Colin Crighton, Senior Project Engineer, Muir Matheson Ltd.

