

Vaisala MetMan

Meteorological Data Management System



Efficient and flexible data management

Comprehensive Meteorological Data Management

Vaisala MetMan is a new meteorological data management system for national meteorological services and other organizations that need to measure surface weather. It is an efficient software tool for gathering and managing surface weather data from a variety of automatic weather stations (AWSs), manned weather stations and sensors.

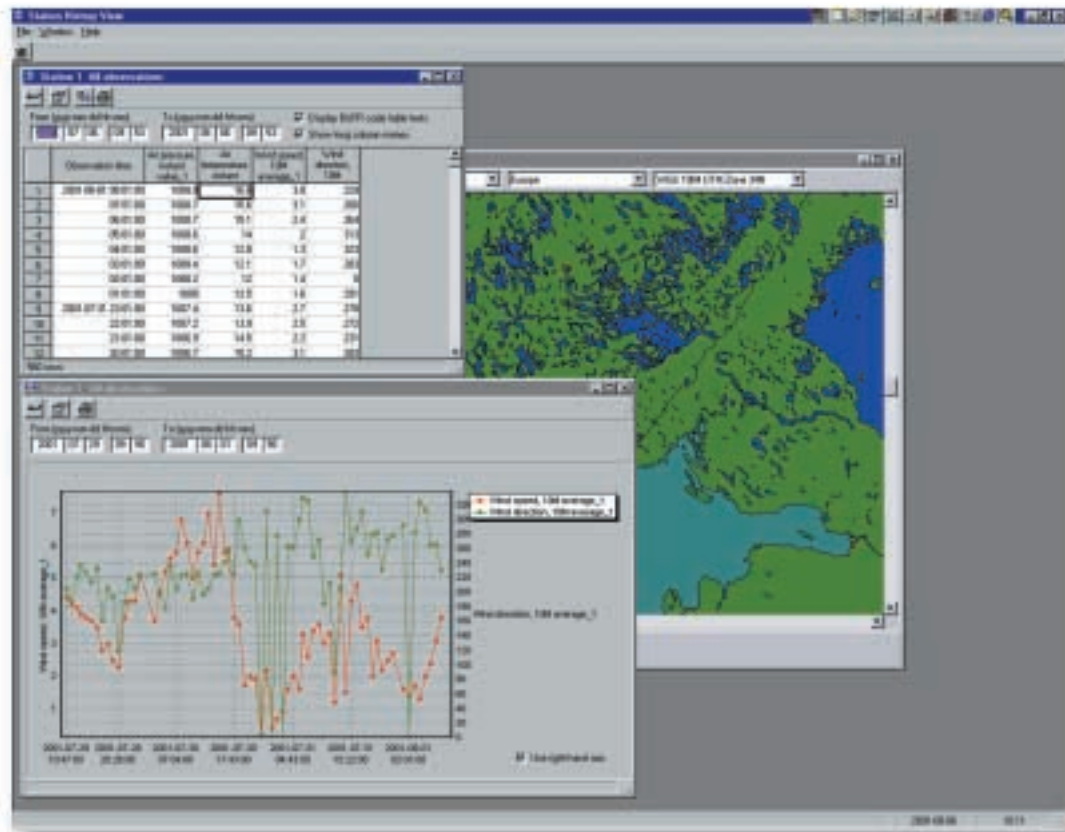


Efficient tool for managing surface weather data

Makes it easier to maintain your AWS network

Scalable and flexible: start small, grow as needed

Powerful relational database



In Station History View, you can simultaneously view measurement data in tabular and graphical form, as well as a map of the AWS network.

Introducing MetMan

In its standard configuration, MetMan consists of a relational database and applications for AWS network configuration, setting communication parameters, data display and editing, and alarm generation. MetMan communicates with and retrieves measurement data from a wide range of AWSs and sensors, storing it securely in a relational database. You can view the data in real-time or in station history mode. In real-time mode (Weather View), you can track the weather observations as

they are made. In station history mode (Station History View), you can study past weather patterns.

Getting started

MetMan is easy to install, configure and use. After installation you configure the AWS network structure, set the data collection schedule, and MetMan is ready for automatic operation. Measurement data and alarms are stored in the database, and you can view them in the real-time, station history or alarm displays. The SYNOP

Editor application, provided as an option, generates SYNOP messages both automatically and manually.

Computing platform

The MetMan computing platform consists of a base server – a PC running Microsoft® NT™ 4.0 – which runs the basic data collection modules. The data collection modules communicate with the AWSs using serial lines, dial-up modems or a LAN/WAN.



Efficient data processing and management

MetMan uses a standard relational database to store weather data securely. To help you manage it, a number of standard administration and security features are provided. Data consistency and continuity is assured, regardless of whether the data is collected at manned or unmanned stations. You can also use the data for your own applications: for example, you can easily transfer it to your own web pages.

MetMan stores the parameters of every weather station in your surface weather observation network. Configuration tools are provided which make

it very easy to view and modify the parameters. After installing a new sensor or weather station, you just input the parameter information into the database and MetMan is ready to go. Then use the MetMan Checker application to ensure the consistency and accuracy of the new sensor or weather station parameters.

The MetMan relational database uses BUFR coding (Binary Universal For the Representation of Meteorological Data) to identify observation variables and devices. Using BUFR coding ensures that the weather observation database can be systematically maintained and expanded. However, knowledge of BUFR codes is not

necessary to use the database: predefined measurements are installed to reduce configuration work during implementation.

System administration

MetMan stores the metadata related to the weather stations, and allows you to edit it when adjusting the weather station parameters. You can view and edit measurement variables, SYNOP configurations and device-specific parameters. The System Control Center application displays all the status information necessary for managing the entire AWS network.

Applications

Configuration editors

MetMan offers two configuration editors for easy system configuration. The first is Metadata Control, used to define the weather stations in the network and to edit the parameters associated with them. In the database, Metadata Control also correlates the data with the weather stations. The second is Communications Control, used to define the AWS communication parameters – the connection protocols and parameters related to them, as well as the backup communication lines. With Communications Control you can also define how to initiate a communications session, the number of AWSs to be polled, and the kind of information to be polled.

System Control Center

The System Control Center starts and stops data collection. It displays the status of the entire AWS network, any errors in data transmission, and the latest data received from each station. The system status information includes an event log containing detailed information on errors and warnings, and, if required, information on the status of every computer in the MetMan system.

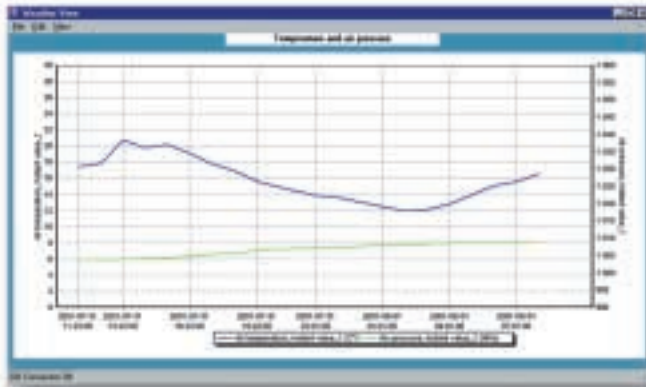
Weather View

The Weather View application offers 8 screens which present real-time weather information. Weather View can be configured to retrieve data from the database at startup, to show the

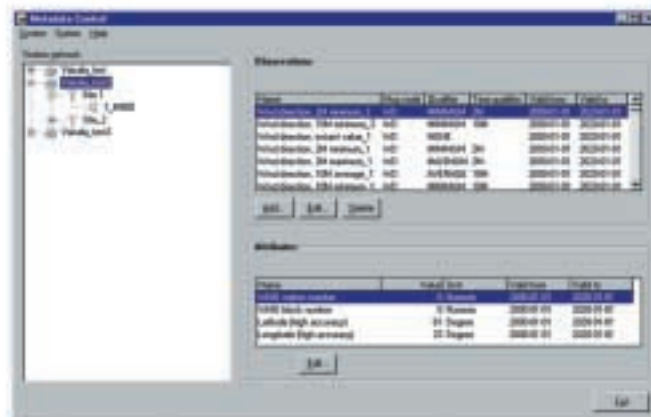
network's most recent observation history. The screens are updated continuously in real-time, and you can select your own mix of the following graphical elements: text table, graphs, and wind meter. The views can be printed or saved as bitmaps in a file.

Station History View

The Station History View application allows you to configure displays of historical measured and calculated data in graphical or numerical form. You can define and save settings which give you quick access to predefined graphs. When you browse the measurement database, the data is presented in both tables and graphs.



A Weather View screen displaying real-time weather information.



Metadata Control is used to add, delete or update AWSs and their attributes.

Alarms

If the measurement data coming from an AWS exceeds a preset limit which you have set, MetMan generates an alarm (visual and audible) to notify you. Local alarms are generated when an AWS sends a measurement value which exceeds the preset limit. If you want to set alarms that are triggered by the AWSs themselves, MetMan will store them in the database as remote alarm messages.

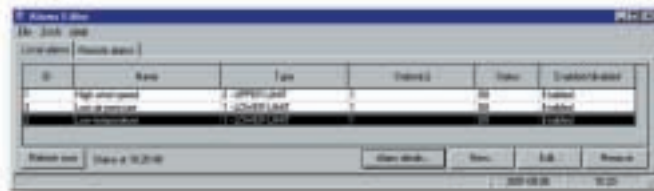
SYNOG Editor (option)

SYNOG Editor makes it easy to generate synoptic weather messages (SYNOG messages), both automatically and manually, for transmission to a data collection center. The application complies with all WMO standards for generating SYNOG messages.

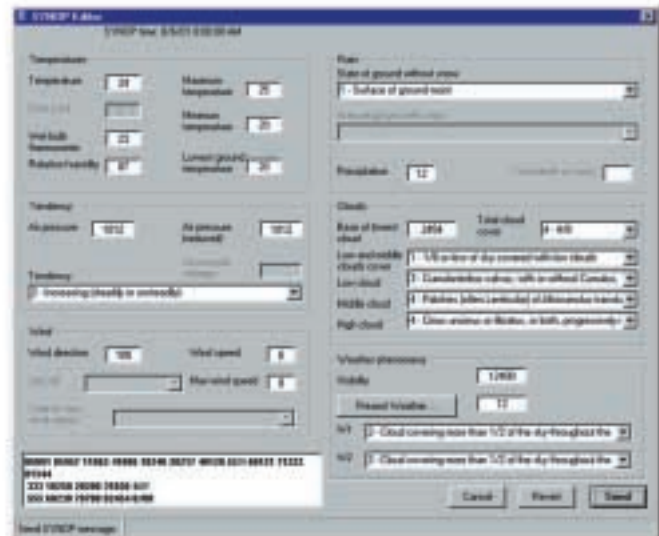
In automatic mode, SYNOG Editor generates coded SYNOG messages from the latest measurement data in the database. In manual mode, SYNOG Editor opens a window in which you can directly edit the measurement data. There are a number of built-in checks

which verify that the data values are entered correctly. In one window all the SYNOG message code numbers are displayed, in another all the SYNOG messages are displayed.

SYNOG Editor makes it possible to build a SYNOG message structure that takes individual weather stations and time of sending into account. A variety of devices can be selected as the primary observation device. SYNOG Editor offers flexible validity checks, which can be set to vary by month. Configurable bulletins may be used along with the SYNOG messages.



Alarm Editor allows you to configure and view alarms.



SYNOG Editor is an optional application that allows you to generate SYNOG messages according to WMO standards.



MetMan can be used by any organization that needs to manage a network of automatic weather stations.



Map interface option

As an option, MetMan can be provided with a map interface. You can access meteorological data and view it superimposed on a map: the AWSs are marked by symbols and shown in their real geographical locations. Click a symbol to view the measurement data from a particular station. At the same

time, you can also access that station's log of historical data. The map interface displays maps that are composed of various layers, and you can add additional layers (rivers, lakes, cities, roads etc.) if required.

Technical Information

Standard features

Base server operating system	Windows® NT™ 4.0 Workstation/ Windows® 2000
Queuing system	Memory-based queues
Weather station support	Vaisala MAWS and MILOS series
Database support	Jet engine (MS Access 97)/Oracle
Collects the data from stations	√
Data logging to database and ASCII files	√
System Control Center for system supervision	√
Communications Control	√
Weather View (tables and graphs)	√
Alarms	√
Station History View	√
Configuration checking tool	√
Automatic time setting	√
Multiple data transmission protocols	√

Options

SYNOP Editor with manual/automatic message transmission	√
Geographical Information System (GIS) for Station History View	√

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