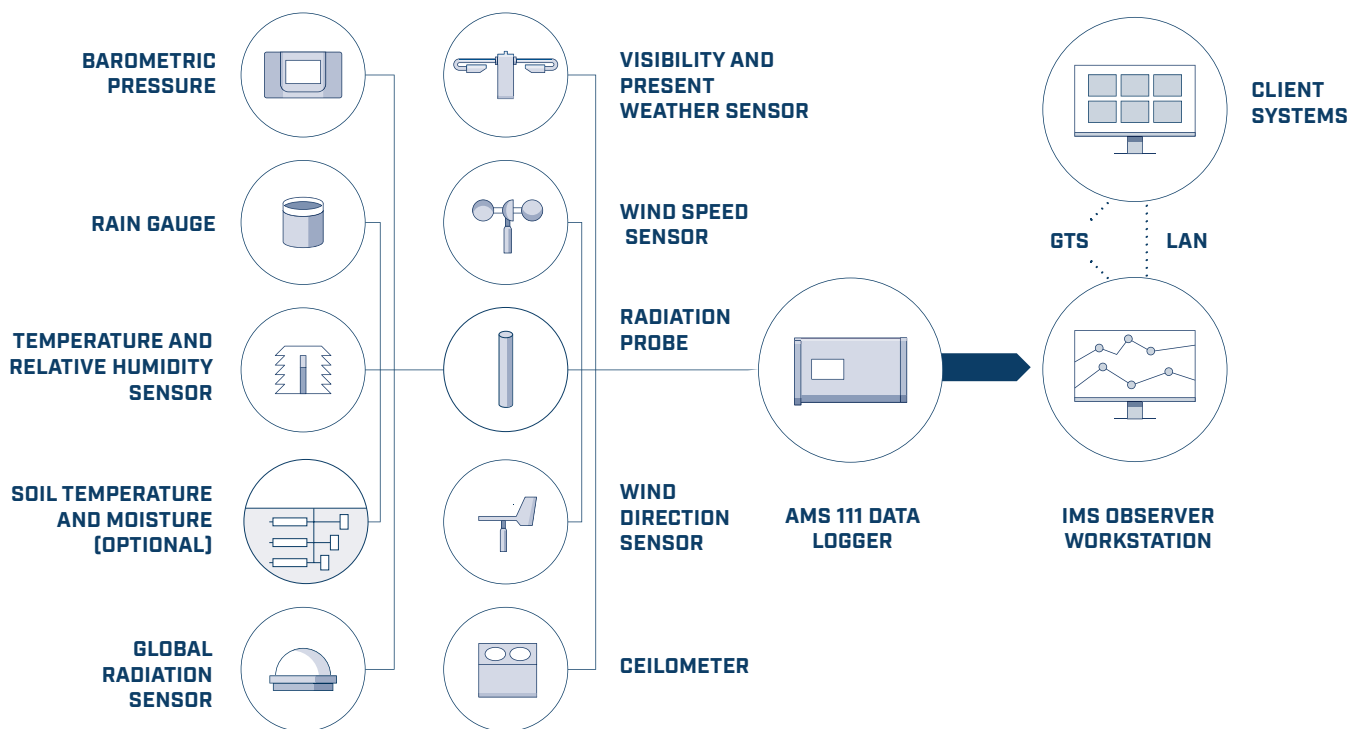# IMS4 Observer Workstation

Manned Weather Station

Integrated Meteorological System IMS4 is MicroStep-MIS open meteorological system, suitable for building of national meteorological networks, airport weather systems, and meteorological stations for commercial use.

BAROMETRIC PRESSURE

RAIN GAUGE

TEMPERATURE AND RELATIVE HUMIDITY SENSOR

SOIL TEMPERATURE AND MOISTURE (OPTIONAL)

GLOBAL RADIATION SENSOR

VISIBILITY AND PRESENT WEATHER SENSOR

WIND SPEED SENSOR

RADIATION PROBE

WIND DIRECTION SENSOR

CEILOMETER

AMS 111 DATA LOGGER

IMS OBSERVER WORKSTATION

CLIENT SYSTEMS

GTS   LAN

Interfaces to the various sensors and data loggers

Quality control, verification of measured data

Real-time weather data display

Visualization of measured data

IMS4 Observer Workstation is the version of Integrated Meteorological System application software designed to interface the automatic weather station MicroStep-MIS AMS 111 model or a 3rd party data logger. It performs continuous measurement and/or data collection from the connected automatic weather station, data processing (quality control, recalculations), and archiving. IMS4 provides the user with the real-time screen displaying the current data, as well as modules for data export into Microsoft Excel / OpenOffice. Org Calc, and for displaying the data time series in the form of charts.

The IMS4 Observer Workstation supports WMO codes (SYNOP, METAR, etc.), as well as data protocols and formats for data exchange over GTS & AFTN networks or other media (asynchronous lines, dial-up lines, FTP, PPP, e-mail). An integrated part of the IMS4 Observer Workstation system is a built-in web server providing access to the data over the intranet/Internet.

Measurement

The system can interface numerous types of data loggers and sensors. It is designed to measure, calculate, and process different meteorological quantities, including but not limited to temperature (dry, surface, soil, soil under vegetation), wind speed and direction, pressure (station, QNH, QFE, QFF), relative humidity, water vapour pressure and dew point, precipitation (indicator and amount), sunshine duration, solar and gamma radiation, visibility, evaporation, O3 concentration, and is open to extension for measuring and processing of other

quantities, if requested.

- Interfaces to the various sensors and data loggers: RS-232 / RS-422
- RS-485, SDI-12, TCP/IP (http, ftp, and telnet protocols) and UDP
- Data collection based on TCP/IP network and/or RS lines, radio, USB, satellite
- Automatic or on-demand download of missing data from sensors / data loggers
- Numerous input data formats supported (raw text/ binary, XML, CSV), data input based on Plain2XML convertors
- Quality control, verification of measured data, format validation
- Configurable real-time weather displays, web screens displaying raw data, as well as statistics (mean, max, min, sum computed from measured values (wind, temperature, precipitation, etc)

Data presentation

The IMS4 Observer sends, receives, and presents the data on the Internet/intranet in the form of meteorological messages via the GTS network.

The system supports creating of standard WMO codes SYNOP, METAR, SPECI, etc. and it is open for other national messages.
- Data processing based on XML & XSLT technology
- Data archiving POstgreSQL relational database
- Automatic / manual creating of standard METAR and SPECI messages and national code forms with data verification
- Data distribution within GTS network
- Data export to various formats (ASCII, XML, log files, Microsoft® Office formats)

Alarms

IMS4 Observer allows to configure rich set of alarms including:
- Diagnostics of the data-logger and sensor errors
- User configurable quality control of measured data (limits, consistency)
- Operational alarms (user-defined thresholds and limits)
- Communication errors

Configuration

The user-friendly interface enables configuration of the IMS4 Observer Workstation software to meet the requirements of many different applications, ranging from simple synoptic stations to a research stations with dozens of sensors and communication lines.
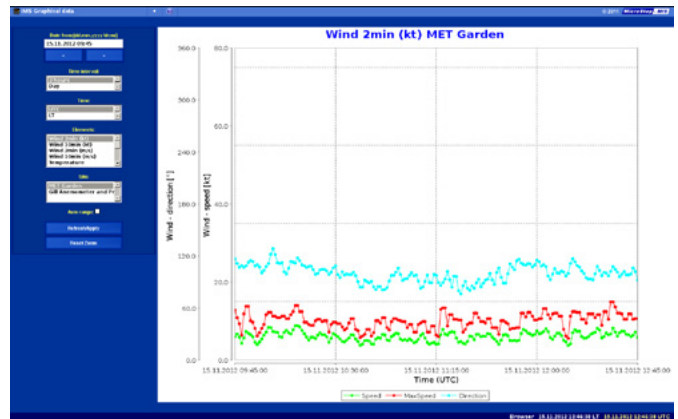- Customization based on XML configuration files
- Station metadata
- Data logger and sensor parameters
- Communication line setup
- Alarms
- Customization of the Web presentation

Remote access

The web-server built in the IMS4 Observer allows remote access to the data over Internet/intranet and provides user with full maintenance capabilities including download of measured data, maintenance of the sensors, and data loggers and software upgrade.

System requirements

- Standard Intel® PC compatible
- Linux or MS Windows XP / Vista / Windows 7 / Windows 8 operating system

IMS4 Observer Workstation - data display

IMS4 Observer Workstation - graph display