

## ECM CEM

### ECM CEMS – main functions

- Periodic data acquisition from the data loggers on immediately from the monitoring instruments
- Presentation of instantaneous values of pollutants and auxiliary parameters (SO<sub>2</sub>, CO, NO<sub>x</sub>, CO<sub>2</sub>, HCl, HF, NH<sub>3</sub>, TOC, dust, flow, O<sub>2</sub>, temperature, pressure, moisture and others).



	Zdroj 1051	Zdroj 1052	Zdroj 1053	Zdroj 1054
NO	51.8	120	97.8	120
O	3.3	1	3.4	3.3
H2O	0.6	0.6	0.6	0.6
Turbidity	30.4	30.5	30.3	29.3
TSS	100.5	100.5	100.5	100.5
PPM	00151.3	00174.2	00000.0	00199.0

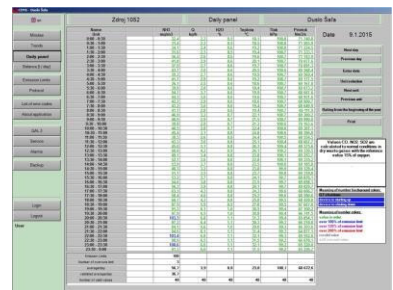
### PROCESSING

- One minute averages of all monitored values
- 30 min (and / or 10 min)
- Daily averages
- Achieving into standard data base system (MS SQL, DBase, Access)
- Data recovery upon establishing of communication to data loggers to avoid loss of data



### EVALUATION

- Emissions in terms of kg/day (Month, Year)
- Limit values
- Pollution forecast (usually for current 30 min time interval) – warning for exceeding of limit values
- Statistics of exceeding of limits, invalid data, down time
- Protocols in accordance to EU regulation
- Automatic winter / summer time function
- Logging of important events and alarms
- QAL 3 evaluation support



	SO2	CO	NOx	O2	Temp	Humid	Pressure	Flow
2015.01.01 00:00	...	...	...	...	...	...	...	...
2015.01.01 01:00	...	...	...	...	...	...	...	...

### MONITORING

- Monitoring and parameter setting in central PC
- Data presentation in tabular and graphical form
- Included Web Server - possibility to present the monitoring on Intranet Web client visualization
- Multilingual support
- Safe password protection system

### SERVICE

- Possibility of a remote service supervision
- Remote access to the application allows flexible service on the main PC and data loggers both

### ECM CEMS – Optional functions

- System extension
- Multifuel System functions
- Modbus, MB US, BAC NET interconnection to other systems
- Data export to plant information systems or data bases
- Data transfer to DCS and other plant control systems
- Adding of new local or web clients on Intranet

## DLX1 datalogger



DLX1's compact design combines a menu-driven firmware package with versatile I/O module options for optimum performance in monitoring systems. DLX1 offers a broad range of communication to upper systems and portable devices of system operators and servicing personal. DLX1 datalogger is primarily designed for CEMS in accordance to EN 14181 standard.

## DL software capabilities

Built-in capabilities of the Model DLX1 far exceed more expensive PLC's or PC-based data loggers, with no customer software programming required. The Model DLX1 onboard menu is offering a broad repertoire of available functions.

The Model DLX1 interfaces with virtually any sensor output, whether analog or digital and is readily adapted to the newest serial-based analyzers, including stack gas monitors, particle / flow instruments and gas chromatographs. Representing the culmination of over 20 years of experience in the field of microprocessor-based data acquisition components, each Model DLX1 is backed by ECM's reputation for quality, reliability and uncompromising service.

Many practical features needed specifically for ambient and CEMS are built in. For example, the Model DL X1 computes and stores block and rolling averages (up to 3 user-selectable averages per parameter), as well as more complex mathematical functions (vector average calculations, sensor linearization, standard deviations, etc.) using built-in math channels. It detects and reports alarms based on digital inputs, min/max analog input levels, or logger-computed parameters. Monitored data and calibration results are treated separately. DLX1 is designed to provide automatic calibration or calibration check of connected analyzers, including automatic multi point calibration. Reports of topical or stored data are provided in either tabular or graphical form.

Beyond standard functions DLX1's language (similar to BASIC) allows free programming of input / output channels to allow control of monitoring system components like channel switching, purge control, filter and flow watch, etc.

## Model DLX1 Hardware and I/O Options

The Model DLX1 hardware is optimized for CEMS and ambient air monitoring applications. Its flexibility is based on rear-mounted I/O modules in different combinations. These I/O modules can fit analyzer analog outputs, digitally controlled devices and multi-point calibrators, provide analog output signals (instantaneous, averaged or computed) to an upper system or strip-chart recorder. The meteorological interface module provides direct support for wind speed and direction, rainfall, temperature and other sensors.

The Model DLX1 can be used as a stand-alone data logger or as a node in a multi-station monitoring system, with any of ECM's PC-based data management software packages. ECM data systems simplify real time and historical data management and automate reporting tasks to meet European Standards and local regulations. Most international regulatory requirements for stack emissions and ambient air quality monitoring can also be achieved with ECM data systems using the Model DLX1 Data Logger.



## ECM ECO Monitoring, a.s.

Nevádzová 5,  
821 01 Bratislava,  
Slovak Republic  
Phone: +421 2 4822 4811  
Fax: +421 2 4822 4823  
E-mail: [ecm@ecm.sk](mailto:ecm@ecm.sk)

## ECM AIR

ECM AIR is an ambient air monitoring data systems providing data collection, archiving and presentation in accordance to EU regulations.

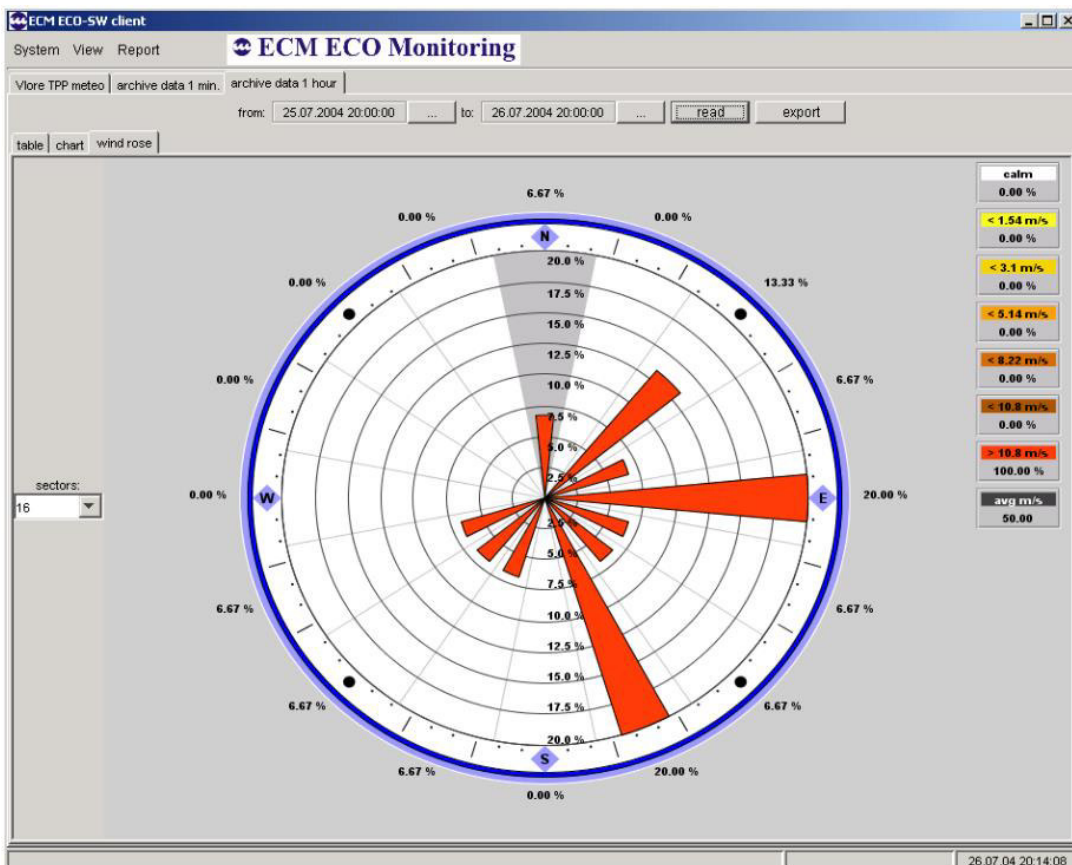
The architecture is a client / server one allowing web server functions.

Data can be presented in graphical or table forms, accessed via internet or mobile devices and is supporting presentation on public display units.

The system is consisting from station level equipment and from a central station.

The station level equipment is a DLX1 data logger communicating to the analyzers, monitors and sensors.

The central station is a PC server with a software based on a Promotic Amb system.



### ECM AIR – main functions

- Periodic data acquisition from the data loggers
- Presentation of collected data in form of wind roses, time lines, maps, tables or other desired formats
- Archiving of data in a safe data base

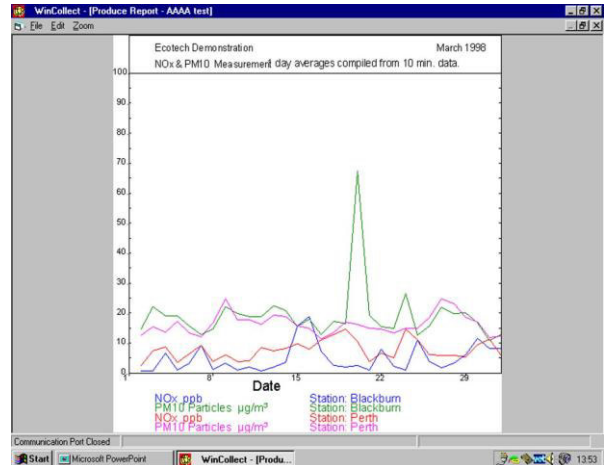
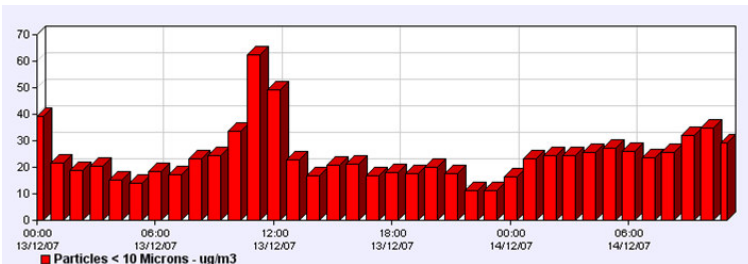
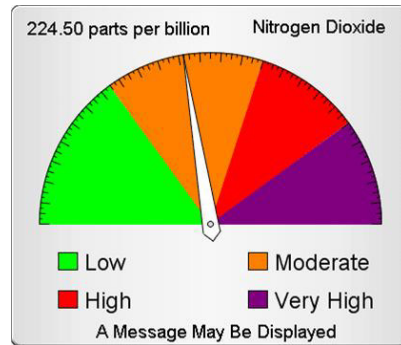
**Processing**

**Aquisition, Processing and Storage of Following Main Data Blocks from Station Dataloggers**

- 1 hour and 10 minute averages of measured parameters (alternatively different time base can be defined)
- Calibration protocols including remote calibration control
- Station configuration including remote modifications
- Test functions
- Processing of alarms
- Monitoring of internal parameters of monitoring equipment
- Running of a database
- Data recovery upon communication or power problems
- Communication to public display devices
- Internet functions

**Data evaluation**

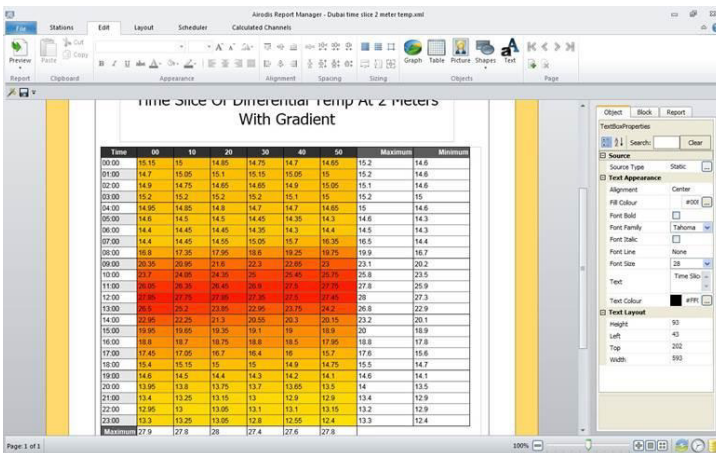
- Pollution characteristics including statistics
- Exceeding of limit values
- Wind roses, time lines, graphs
- Protocols in accordance to EU regulations
- Logging of events and alarms



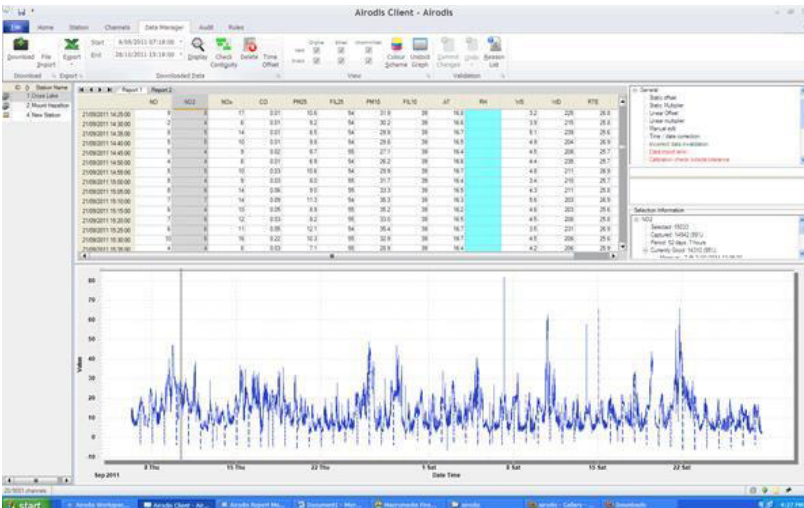
## Monitoring functions

- Possibility to set all parameters in central PC
- Data presentation in tabular and graphical form
- Included Web Server – possibility to present the monitoring on Intranet Web client visualization
- Multilingual support
- Safe password protection system

## Service functions



- Possibility of a remote service supervision
- Remote Access to the application allows flexible service on the main PC and data loggers both



## ECM AIR - Optimal function

- System extension
- Data export in different forms
- Support of new web clients
- Dispersion modeling to forecast pollution in desired locations defined in a GIS system
- Support of simpler monitoring devices using professional stations as a reference