

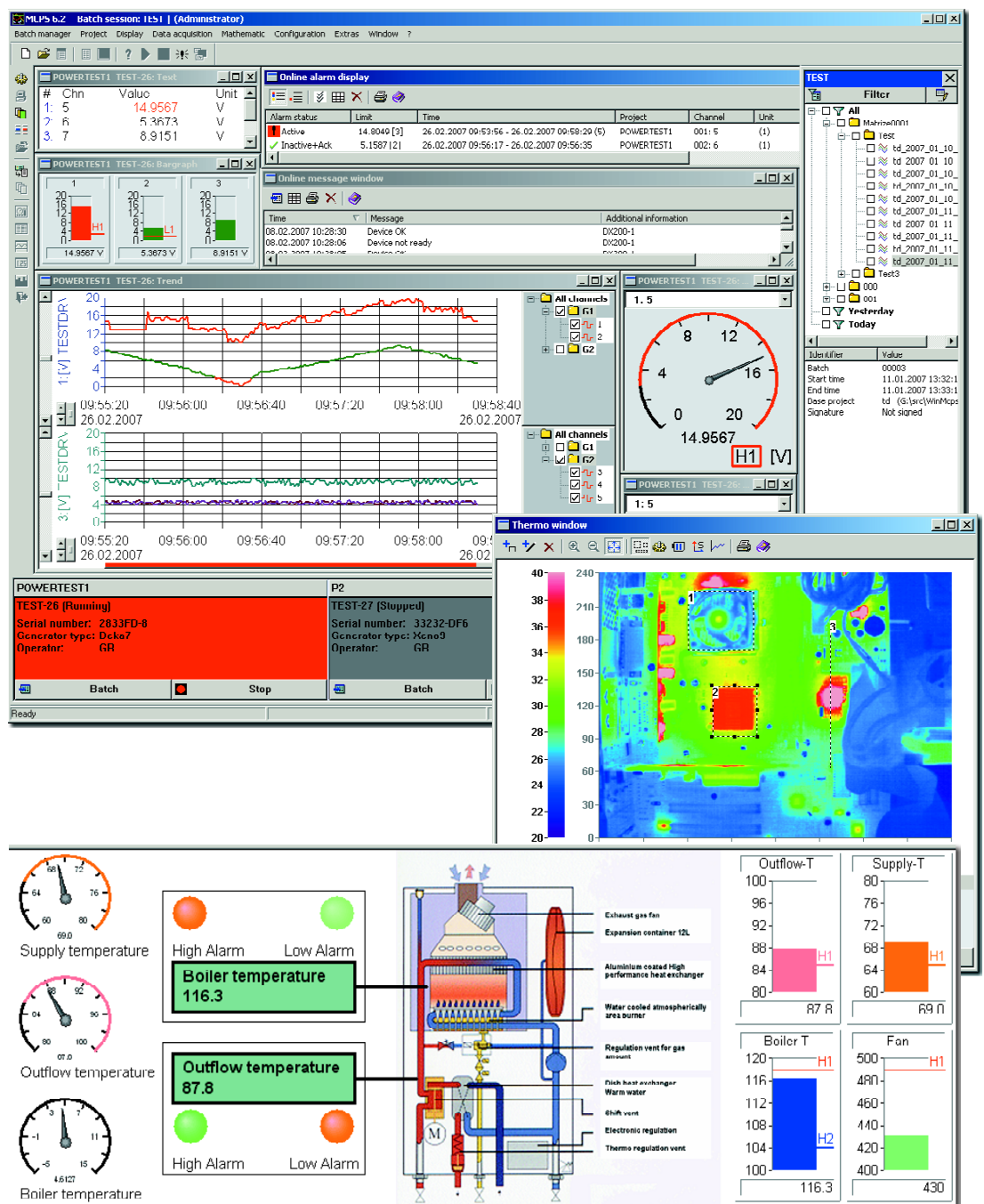
M.C.P.S

MULTI CHANNEL PROCESS SYSTEM



The complete software studio for data acquisition and evaluation

- Flexible trend and numeric display
- Excellent alarm monitoring and logging
- Efficient analyses and tests
- Clear and functional process monitoring
- 21CFR11 compliant
- Optimal support for batch applications
- Extended data and alarm visualization over the network
- Powerful math functions
- Customized reports
- Parallel measurements at the same time
- Special concept for thermographical applications
- Support of many devices



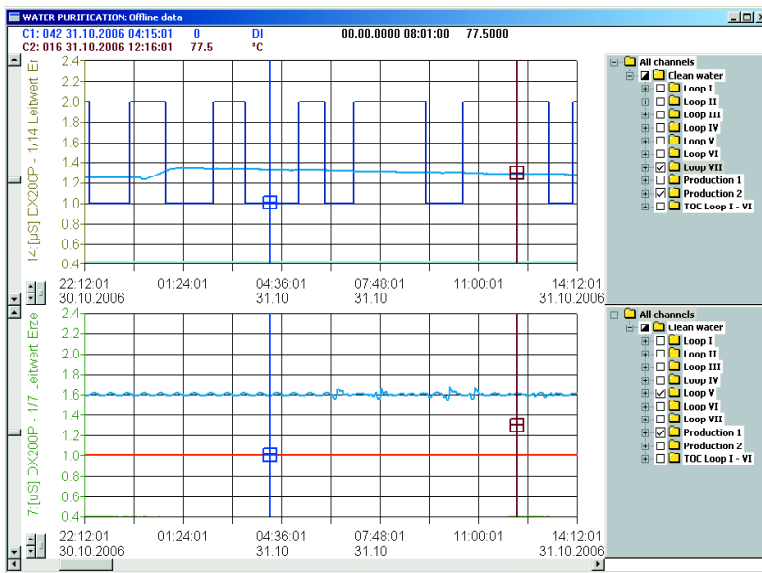
■ Application field ■■■

MCPS has been developed for long term data acquisition. Most popular data loggers, recorders, power meters, Modbus or OPC devices are supported. Typical MCPS applications can be found in production, development, research, and quality control, e.g. energy supply, aviation, environment monitoring, chemical industry, certification and test laboratories and many more. GxP based applications in the pharma, food and biotech industry are supported by MCPS.

A new extension of MCPS is the support of thermographical devices like infrared cameras and pyrometers. The images of an IR camera can be shown together with other process data coming from dataloggers, recorders or PLCs. Regions of interest can be defined (rectangle or line) to compute minimum, maximum or average value. These results can be used as channel values, which are stored and used in text and trend displays.



Climate chambers



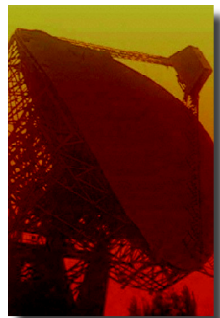
Environment monitoring



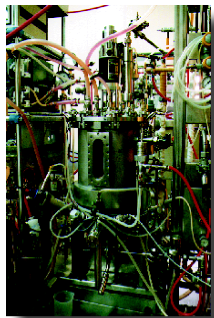
Renewable energies



Aerospace



Communication



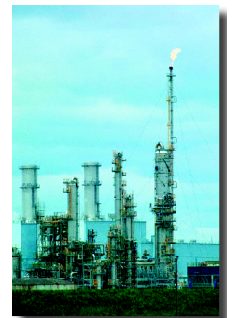
Biotechnology



Pharmaceuticals



Power providers



Chem. Industry

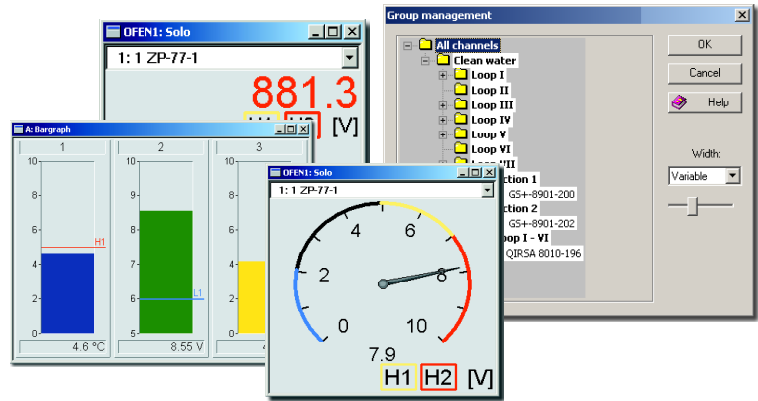
■ Easy measurement configuration ■■■

All channels are administrated in a table. There is no (graphical) programming necessary. All settings are simply configured by buttons, selections or text inputs. With block operations even several hundred items can be set in one step. Most of the parameters can even be changed during the measurement.

#	Device	Channel	Unit	Tag	Comment	Color	YMin	YMax	.*	Text	Gr	Dig	Exp	Marker
1	DX200P - 1	1	ppb	QIRSA 8010-196	TOC-Measurement	Green	-250	1000	1	✓	✓	✓	✓	None
2	DX200P - 1	2	uS	QIRSA 8013-202	Loop IV	Blue	0	20	2	✓	✓	✓	✓	None
3	DX200P - 1	3	uS	QIRSA 8014-202	Loop III	Red	0	20	2	✓	✓	✓	✓	None
4	DX200P - 1	4	uS	QIRSA 8015-202	Loop I	Blue	0	20	2	✓	✓	✓	✓	None
5	MATH		°C	TICRA 8014-130	Temperature Loop III	Purple	0	120	1	✓	✓	✓	✓	None

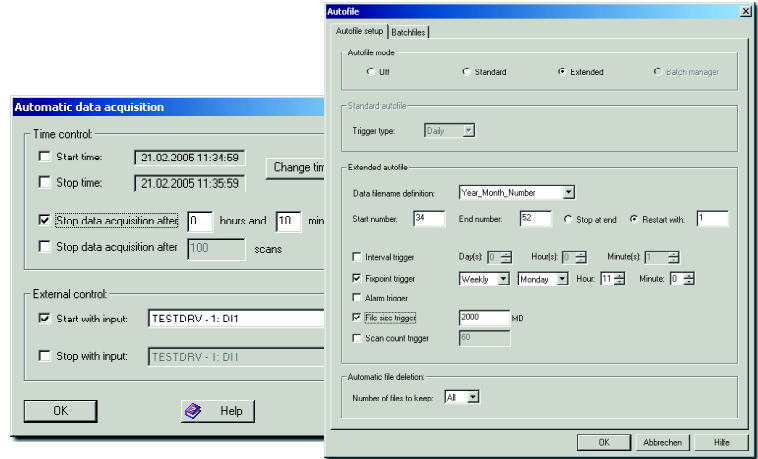
■ Data visualization ■■■

Trend, bar, analog, digital and numeric windows
 Different window types at the same time
 Up to 5 y-axes, grid, markers, comments, tags, events...
 2 cursors with absolute and differential display
 Group manager for easy channel selection
 X/Y-, absolute or relative display



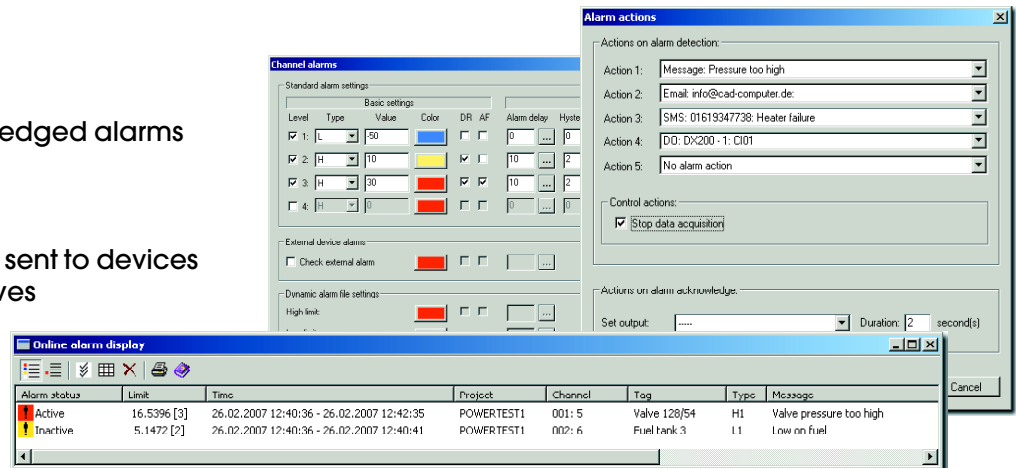
■ Data acquisition ■■■

Several independent measurements at the same time
 Easy handling of even high channel numbers
 Different instruments can be used in one acquisition
 Historical data access/evaluation during measurement
 Automatic creation of continuous (e.g. daily) data files
 Time and event controlled data reduction
 Automatic restart after power fail
 Automatic download of lost data due to network failure (Gap filling)



■ Alarms ■■■

4 software alarm levels per channel
 Detection of hardware alarms
 Display of active and (non) acknowledged alarms
 Extensive alarm logging and history
 Alarm message per SMS or Email
 Alarm actions (Set relay, stop daq...)
 Changes of software alarm limits are sent to devices
 Alarm monitoring with reference curves



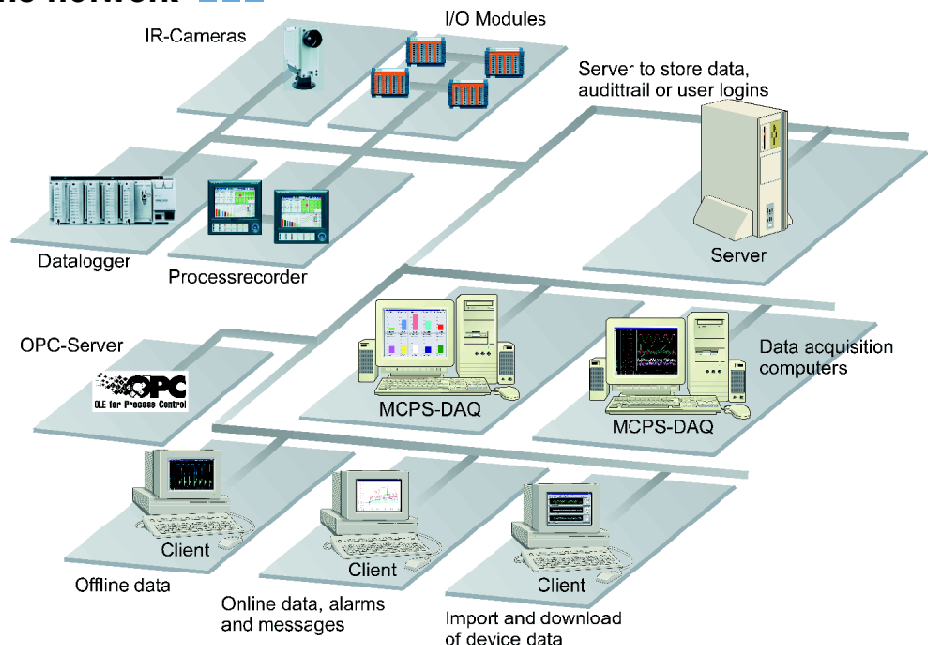
■ Data and alarm visualization in the network ■■■

Client/server concept:
 Data, alarms and device messages are displayed on the clients in realtime.

Clients can access several data servers at the same time

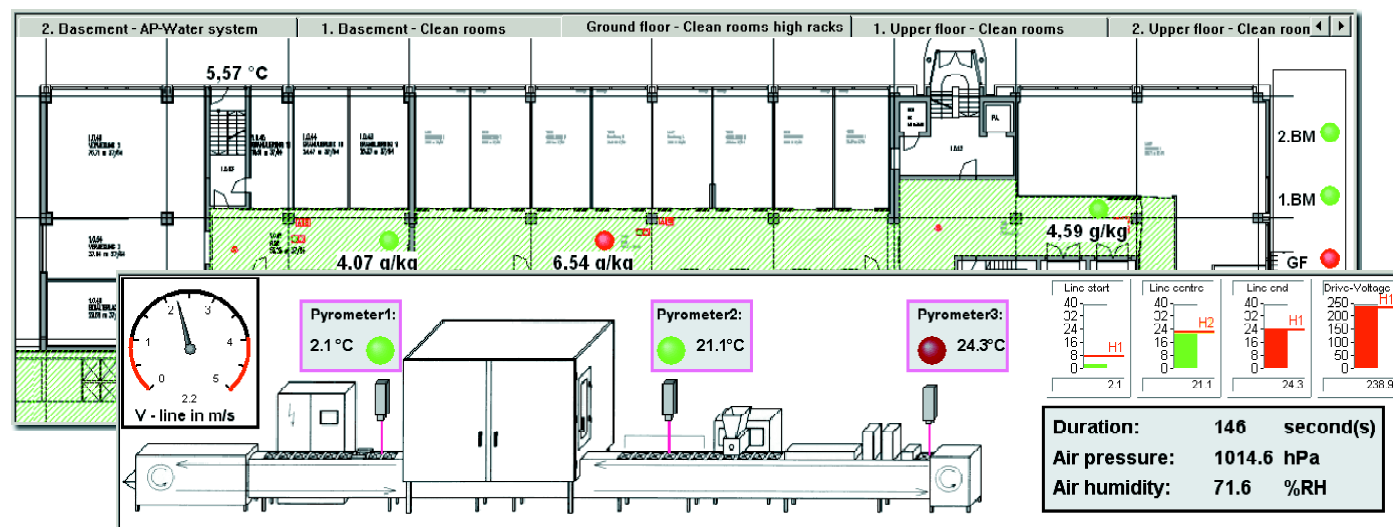
Clients can acknowledge the alarms of the measurement computers.

Centralized administration of users and audittrail for all servers and clients.



■ Process monitoring ■■■

To simplify the monitoring of processes MCPS provides an independent status window to display additional items like bitmaps, custom texts or leds. The elements can be grouped to different pages, which the user can select during the measurement. Even several projects can use the process monitoring window at the same time.



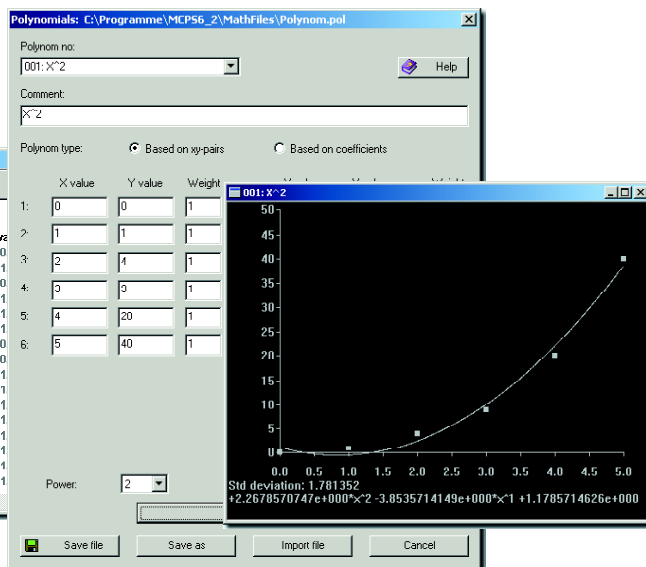
■ Mathematics ■■■

Statistical functions (min, max, mean, MKT, deviation)
Mathematical channels for offline and online computations
Moving averages, totals, logical operations...
Polynomial regressions for linearizations

WATER PURIFICATION: Statistic

Time range: 30.10.2006 11:00:01 - 06.11.2006 10:58:55; Counts: 10077

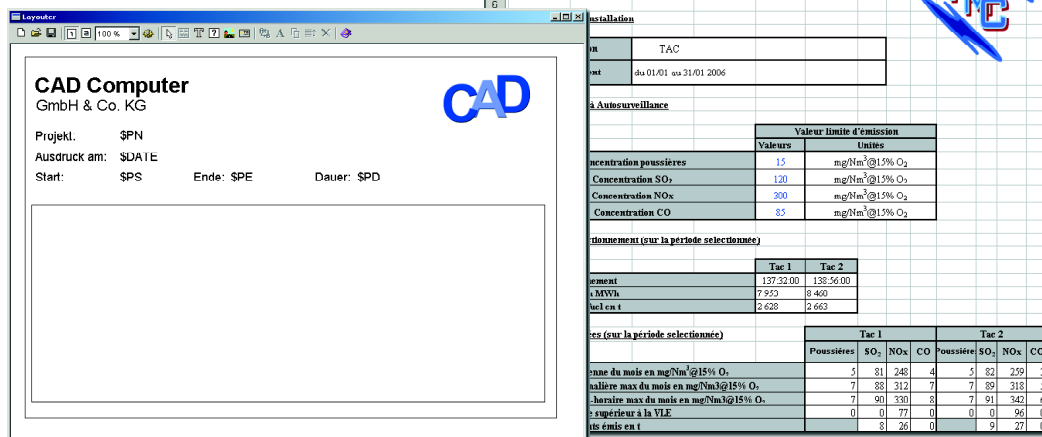
#	Tag	Comment	Minimum value / time	Mean value	Maximum value / time
001	QIRSA 8010-196	TOC-Messung	2.0000 04.11.2006 23:01:01	4.3683	7.0000 30.10
002	QIRSA 8013-202	Loop IV	0.6200 04.11.2006 23:01:01	0.7915	0.9200 05.11
003	QIRSA 8014-202	Loop III	0.6700 04.11.2006 23:09:01	0.8598	1.2100 31.10
004	QIRSA 8015-202	Loop I	0.3900 04.11.2006 23:01:01	0.5597	0.9600 06.11
005	QIRSA 8016-202	Loop II	0.7000 04.11.2006 23:03:01	0.8523	0.9700 05.11
006	QIRSA 8017-202	Loop VI	0.3900 04.11.2006 23:01:01	1.1007	1.2300 05.11
007	QIRSA 8012-198	Erzeuger 1	0.0500 30.10.2006 14:17:01	0.0591	0.1100 30.10
008	TIRA 8011-130	Temperature Loop V	75.2000 04.11.2006 23:18:01	96.0376	101.2000 31.10
009	TICRA 8013-130	Temperature Loop IV	47.9000 04.11.2006 23:20:01	64.0266	74.4000 06.11
010	TICRA 8014-130	Temperature Loop III	53.5000 04.11.2006 23:20:01	65.8313	76.3000 06.11
011	TIRA 8015-130	Temperature Loop I	20.7000 04.11.2006 23:32:01	27.5425	78.0000 06.11
012	TICRA 8016-130	Temperature Loop II	55.9000 04.11.2006 23:09:01	64.8523	75.2000 06.11
013	TICRA 8017-130	Temperature Loop VI	56.3000 04.11.2006 23:09:01	65.9523	78.6000 06.11
014	QIRSA 8112-198	P2	0.0400 30.10.2006 22:28:01	0.0501	0.0700 02.11
015	QIRSA 8010-202	Loop 7	0.0100 04.11.2006 23:15:01	0.9005	1.0000 02.11
016	TIRA 8018-132	Temperature Loop 7	56.9000 04.11.2006 23:19:01	77.1981	81.0000 05.11



■ Protocols and reports ■■■

Graphic and numeric printouts in user defined layouts with legends, bitmaps and comments. Many control codes for automated printouts.

Extensive reports in Excel with customer scripts



■ Batch applications ■■■

Control window to easily watch running batches and related alarm conditions.

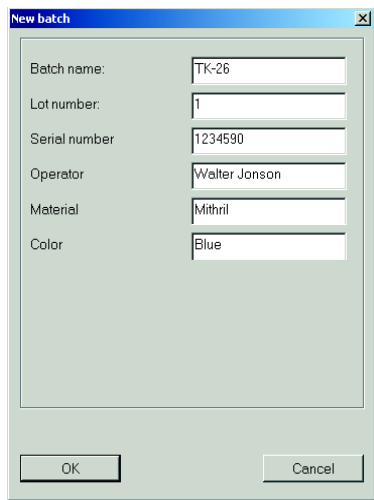
Input capability of batch related information like serial number, material, operator, color or anything else.

Display of the batch information in the control window.

Saving of batch values in a specific and easy to handle data base, which can also be accessed by clients.

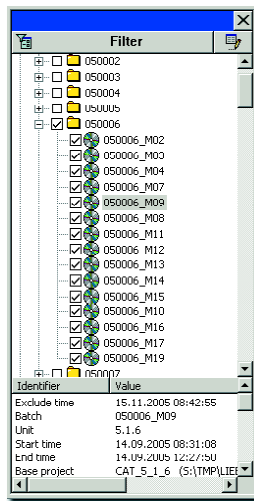
Powerful filter functions to find certain batches.

Customer made input mask



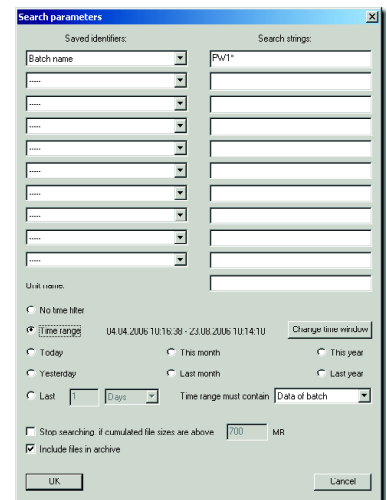
A dialog box titled "New batch" with input fields for Batch name (TK-26), Lot number (1), Serial number (1234590), Operator (Walter Jonson), Material (Mithril), and Color (Blue). It has OK and Cancel buttons at the bottom.

Database window with all batches



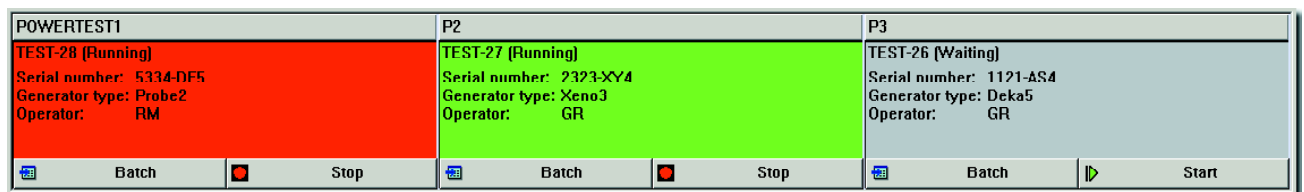
A dialog box titled "Filter" showing a list of batches with checkboxes. The list includes identifiers like 050002, 050003, 050004, 050005, 050006, 050007, 050008, 050009, 050010, 050011, 050012, 050013, 050014, 050015, 050016, 050017, 050018, 050019, and 050020. Below the list is a table with columns "Identifier" and "Value" showing details for a selected batch.

Filter to search batches



A dialog box titled "Search parameters" with fields for Saved identifiers, Search strings, and a section for Unit names. It includes radio buttons for "No time filter", "Time range", "Today", "Yesterday", "Last", "This month", "Last month", "This year", and "Last year". It also has a "Time range must contain" dropdown and a "Stop searching if cumulated file sizes are above" field.

Control window with status and batch information



A control window showing three batch status panels. The first panel (P1) shows "TEST-28 (Running)" with serial number 5334-DF5, generator type Probe2, and operator RM. The second panel (P2) shows "TEST-27 (Running)" with serial number 2323-XY4, generator type Xeno3, and operator GR. The third panel (P3) shows "TEST-26 (Waiting)" with serial number 1121-AS4, generator type Dekas5, and operator GR. Each panel has a "Batch" button and a "Stop" button.

■ Automated tests, script programming ■■■

MCPS can be controlled by script programs written in VisualBasicScript (VBScript). Over hundred functions are available to get the settings of the project configuration, to read and analyze offline data, to generate customized reports in MCPS or in Excel, to send specific commands to devices, to run complex test sequences, to create application related input masks and many more. These scripts are written in a simple text editor and can be created or modified even by the customer.

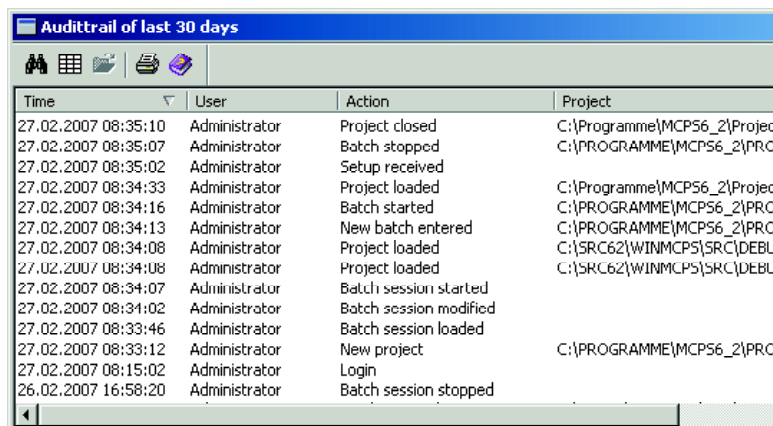
■ Conforms to 21 CFR Part 11 ■■■

Protection of GxP related data and configuration files

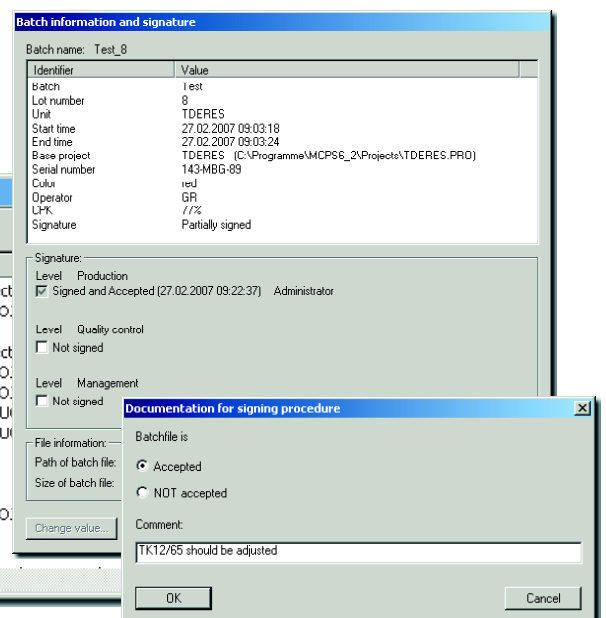
Extensive user administration for clients and servers

Audittrail (logging of all user actions)

Signing of batch files (3 levels with comment)



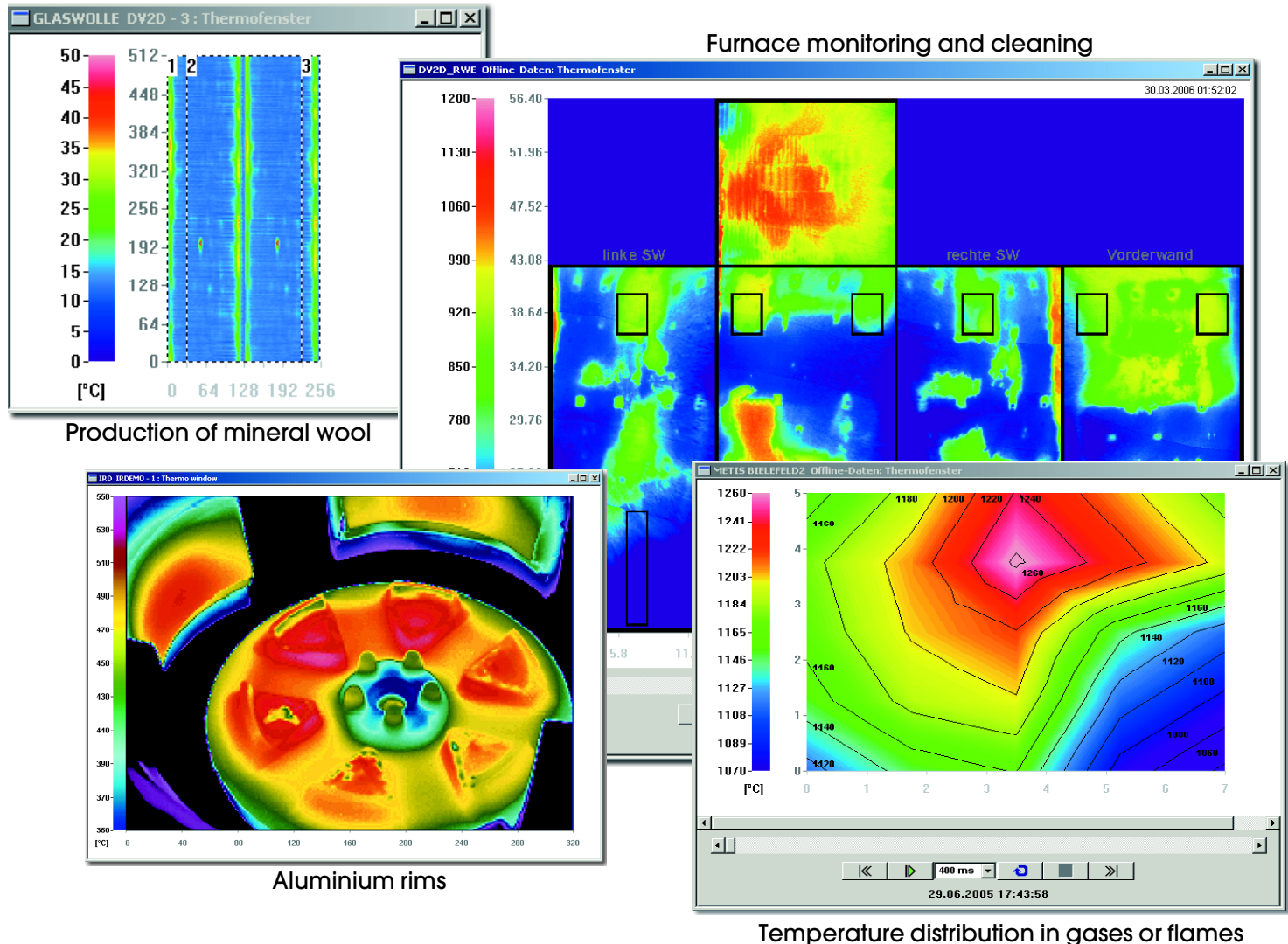
A window titled "Audittrail of last 30 days" showing a table of user actions. The table has columns for Time, User, Action, and Project. The actions include Project closed, Batch stopped, Setup received, Project loaded, Batch started, New batch entered, Project loaded, Batch session loaded, Batch session started, Batch session modified, Batch session loaded, New project, Login, and Batch session stopped.



A dialog box titled "Batch information and signature" showing details for a batch named "Test_8". It includes a table with Identifier and Value for Batch, Lot number, Unit, Start time, End time, Base project, Serial number, Color, Operator, Unit, and Signature. Below the table is a section for "Signature" with a "Level" dropdown and a "Signed and Accepted" checkbox. It also has a "Level" dropdown for "Quality control" and "Management". A "Documentation for signing procedure" dialog box is open, showing a "Batchfile is" field and a "Comment" field.

■ Thermography ■■■

MCPS supports different types of infrared cameras to display, save and analyze temperature data as profiles (line camera) or 2D images. Zones or regions of interest (rectangles or lines) can be defined to compute minimum, maximum or average value of specific parts of the image. These results can be used as regular data channels in the project configuration, text and trend display or statistics and export. Several color scheme can be used, user defined bitmaps can be laid over the thermographical image and image rotation/flipping is available.



■ System requirements ■■■

Operating system: Windows 2000, Windows 2003, XP
 Pentium-PC 1.2 GHz, 128MB free RAM,
 Super-VGA-card with 1024x768 resolution or more,
 CD-Rom drive, Mouse,
 Optional (dependent on instrument):
 Serial interface with FIFO buffer.
 GPIB Interface: National Instruments
 Ethernet-Interface: TCP/IP support.

More information are available on our Demo-CD or
 on the internet: <http://www.mcps.de>

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 respective companies.

■ Available languages ■■■

The software MCPS, the installation manual and the
 online help is available in both German and English.
 The software language can be selected during instal-
 lation.

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