

■ AsAlarm - INTERACTIVE ANALYSIS OF ALARM EVENTS

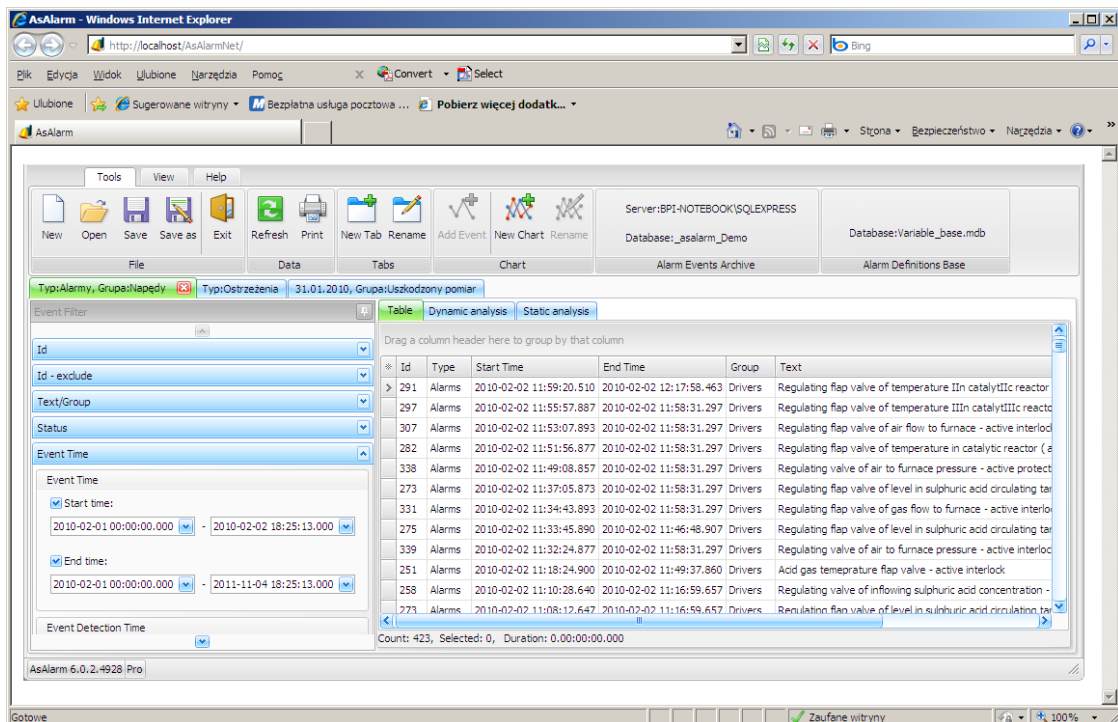
AsAlarm is an application providing tools for in-depth analysis of alarms generated by the monitored site and of other data relating to alarm system operation, in accordance with the EEMUA (The Engineering Equipment and Materials Users Association) guideline No 191. Alarm information management is implemented with the use of:

- historical event table,
- graphs of selected alarm events,
- analytical section for calculating various statistics.

AsAlarm allows viewing of the following statistical information calculated based on alarm event log analysis:

- event occurrence distribution (number, percentage),
- event duration,
- average time to acknowledge,
- number of terminated alarms,
- number of acknowledged alarms,
- identification of most frequently occurring events,
- identification of the longest events.

AsAlarm uses an archived alarm event log stored in the SQL database. Two versions of the application are available: run locally (desktop version) and Web-based.





■ **AsReport - REPORTING BASED ON MICROSOFT REPORTING SERVICES**

Microsoft® SQL Server™ 2008 Reporting Services is a complete platform designed to meet a wide range of expectations in the field of enterprise-wide reporting. With Reporting Services, which is a component of SQL Server 2008, you can: create reports based on a variety of data sources, manage reporting environment involving the planning of generated reports, manage report subscriptions and control access rights, as well as provide users with reports in the appropriate format and in a convenient way (automatic report delivery based on e-mail subscription or embedding of reports in the business applications and portals).

Version 6 of the **asix** package introduces a new reporting system using MS Reporting Services to create reports based on the process values archive, data from the variables definition database and archive alarm event log.

The **asix** system is compatible with both Reporting Services offered by the free Microsoft SQL Server 2008 Express and the services made available in full MS SQL Server 2008. Extension of the **asix** system within the Reporting Services environment includes the following applications: Askom.Data.Host, AsReport, AsixConnect database run on Microsoft SQL Server and an independent archiver to store alarm events in Microsoft SQL database. In addition, as a consequence of its integration with Reporting Services, **asix 6** provides AsRapView module for viewing of reports (created in Reporting Services environment) in **asix** application.

Factory - hour report

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TeRaGo - Hour Report

Date	KW_A000	KW_A004	KW_A036
Time	[°C]	[°C]	[°C]
2009-01-01 00:00:00	140,00	190,00	-1,00
2009-01-01 00:05:00	40,00	90,00	-25,00
2009-01-01 00:10:00	60,00	10,00	-29,00
2009-01-01 00:15:00	160,00	110,00	-5,00
2009-01-01 00:20:00	140,00	190,00	19,00
2009-01-01 00:25:00	40,00	90,00	43,00
2009-01-01 00:30:00	60,00	10,00	67,00
2009-01-01 00:35:00	160,00	110,00	91,00
2009-01-01 00:40:00	140,00	190,00	83,00
2009-01-01 00:45:00	40,00	90,00	59,00
2009-01-01 00:50:00	60,00	10,00	35,00
2009-01-01 00:55:00	160,00	110,00	11,00
Sum	1 200,00	1 200,00	348,00
Average	100,00	100,00	25,00
Min	40,00	10,00	-25,00
Max	160,00	190,00	91,00

Name	Description	Unit	Channel	Address
KW_A000	Flue gases temperature before mister	°C	SINEC_KW	ED110.0
KW_A004	Sulphuric acid temperature	°C	SINEC_KW	ED110.4
KW_A036	Vapours temperature before furnace	°C	SINEC_KW	ED110.36

ASKOM sp. z o.o. - Gliwice Date of report creation: 2009-04-10 15:44:58

Coal Combustion Daily Report - 04-07-2010

Day	Coal Weight [t/h]					Coal Block [t/h]			Difference	Error
	WZa	WZb	W15	W6d	SUM	Block_4	Block_8	TOTAL		
0-1	0,00	152,70	194,00	0,00	346,70	0,00	194,00	346,70	0,00	0,00 %
1	0,00	133,50	128,00	0,00	261,50	0,00	128,00	261,50	0,00	0,00 %
2	0,00	94,50	78,00	199,00	371,50	32,70	199,00	371,50	-1,00	-0,09 %
3	0,00	369,30	554,00	151,00	1 074,30	27,70	617,00	1 073,30	-1,00	-0,09 %
4	0,00	262,90	346,00	251,00	859,90	0,00	597,00	860,00	0,10	0,01 %
5	0,00	0,00	0,00	78,00	78,00	0,00	0,00	78,00	0,00	0,00 %
6	0,00	69,50	0,00	150,00	219,50	0,00	113,00	219,50	0,00	0,00 %
7	0,00	333,40	-1,00	671,00	1 003,40	0,00	668,00	1 001,40	-2,00	-0,20 %
8	0,00	0,70	0,00	679,00	679,70	0,00	679,00	679,80	0,10	0,01 %
9	0,00	183,30	0,00	340,00	523,30	58,60	0,00	523,30	0,00	0,00 %
10	0,00	12,70	0,00	12,70	0,00	0,00	12,70	0,00	0,00	0,00 %
11	0,00	242,90	1,00	431,00	674,90	4,30	432,00	674,90	0,00	0,00 %
12	0,00	335,20	0,00	898,00	1 233,20	65,40	557,00	1 233,20	0,00	0,00 %
13	0,00	10,90	0,00	41,00	51,90	0,00	41,00	51,90	0,00	0,00 %
14	0,00	38,20	1,00	152,00	193,20	6,20	0,00	193,20	-0,80	-0,53 %
15	599,50	4,20	529,00	0,00	1 092,70	0,00	529,00	1 092,70	0,00	0,00 %
16	310,60	1,50	121,00	67,00	500,10	0,00	187,00	499,00	-1,10	-0,22 %
17	0,00	23,00	0,00	23,00	0,00	0,00	23,00	0,00	0,00	0,00 %
18	421,40	35,60	505,00	0,00	962,00	0,00	505,00	960,50	-1,50	-0,16 %
19	116,50	160,60	207,00	75,00	559,10	0,00	282,00	559,20	0,10	0,02 %
20	593,40	612,70	297,00	130,00	1 633,10	21,10	425,00	1 630,70	-2,40	-0,15 %
21	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00 %
22	0,00	0,00	50,00	187,00	237,00	0,00	145,00	237,00	0,00	0,00 %
23	66,70	487,40	544,00	0,00	1 098,10	0,00	544,00	1 098,10	0,00	0,00 %
Sum	2 180,90	3 564,70	3 554,00	4 348,00	13 647,60	6 797,10	6 842,00	13 639,10	-8,50	-0,06 %

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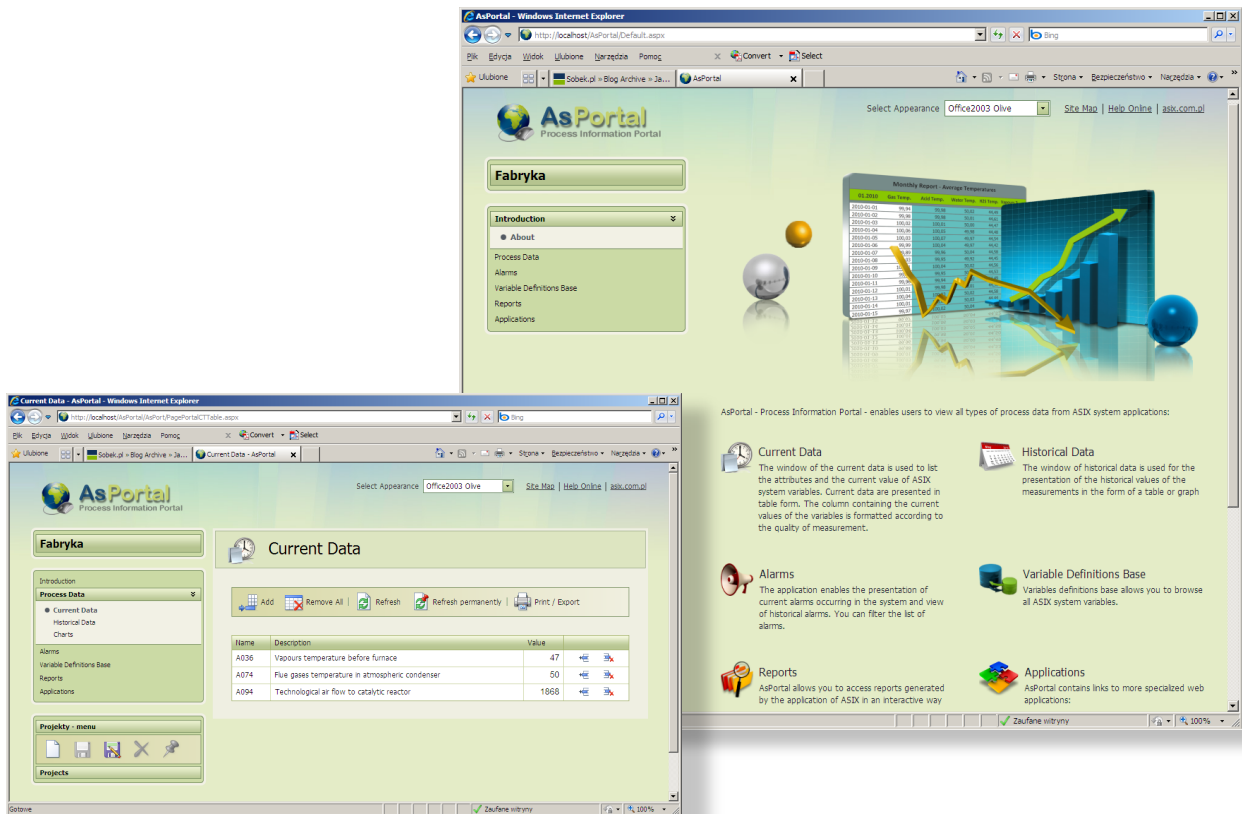
report creation: 04-14-2010 12:36:18 ASKOM

■ Alarm even logging in a MS SQL database

Version 6 of the **asix** Package introduces the possibility of logging alarm events in an SQL database (such logging is done in parallel with saving alarm events in the binary files archive). The SQL database stores both alarm definitions and alarm events - this data is used by AsAlarm applications and AsReport reporting environment.

■ AsPortal - PROCESS INFORMATION PORTAL

New graphics, which changed the image of the AsPortal module will certainly encourage users to use this form of access to process data. A novelty is the ability to print and export tables and plots to files in a format selected by the user.

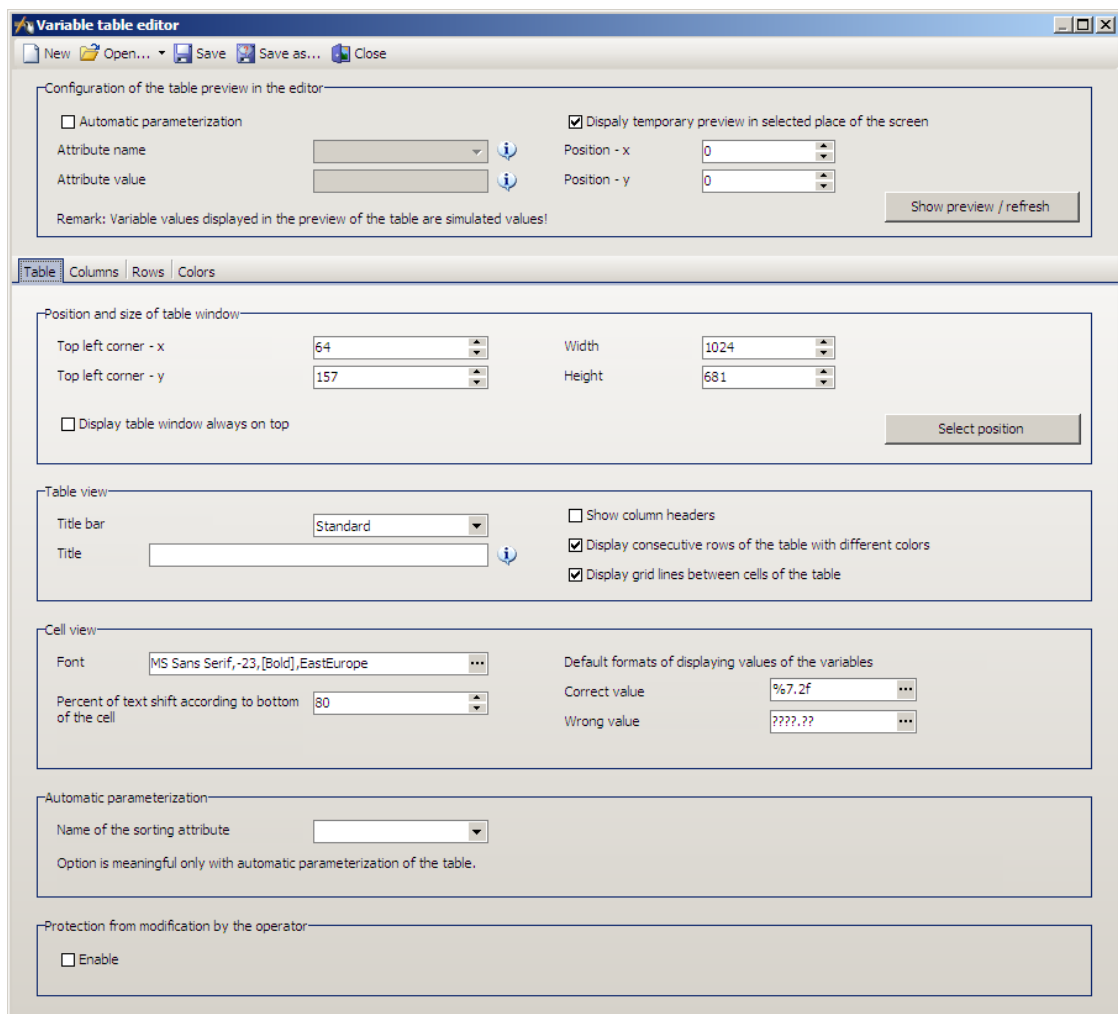


■ Table - PRESENTATION OF THE CURRENT VALUES OF PROCESS VARIABLES

A breakthrough in the functionality of the Table object is the ability to access the descriptions of status variables bits and the descriptions of their values.

Users probably will be glad to know that Table object editor is now available. What has so far been created manually in text files, can be now achieved using the convenient and intuitive editor that completely spares the designer the need to create table definitions. The editor interface has been designed in such a way to logically group together the various parameters defining the table on separate tabs.

Table Editor fully supports the designer in both the creation of binary value tables - in which the variable bits can be displayed in subsequent columns within a single row, or diagnostic table of the drive status word - where the bit values of one variable are presented in the subsequent table rows. Interesting is also the possibility of executing operator actions, which are called from the table level - from separate table fields based on the definitions stored in variable definitions database.

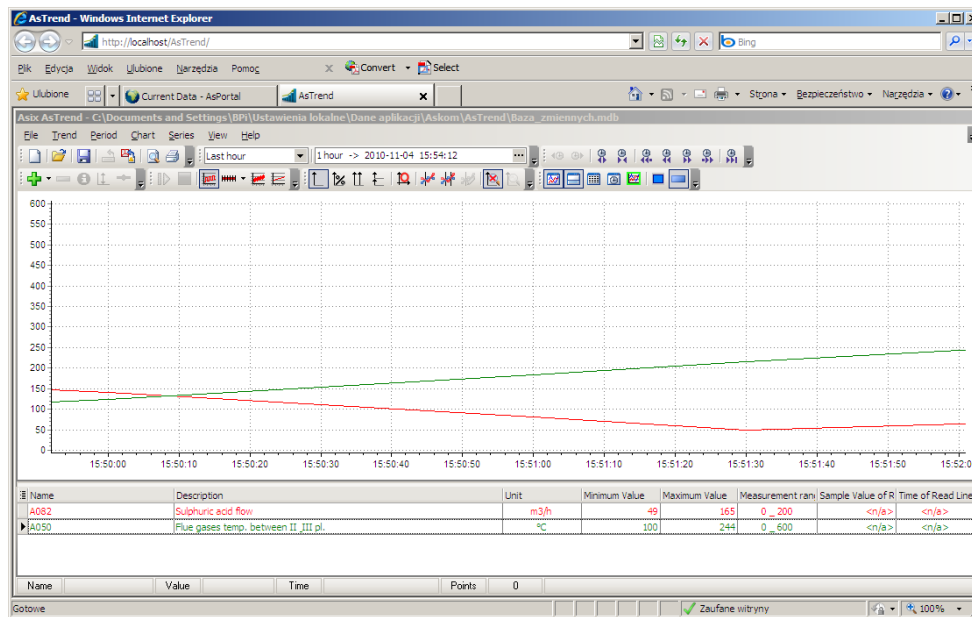


■ Upgrades to AsTrend application

The upgrades to AsTrend application involve a number of changes aimed at improving the application. An absolute novelty is, in addition to Windows-based version of the application, providing the user with fully functional equivalent web-based version of AsTrend running in the browser. Brief overview of upgrades to AsTrend application:

- **Web-based AsTrend application**

gives access to the web-based application through a web browser under asix4Internet license.



- **Working with the table of historical data**

AsTrend application now features a new mode that allows viewing of historical data in tabular form.

- **Changes in XY charts**

Plotting XY charts with multiple OY axes has been added.

- **Data Aggregation**

Added ability to calculate aggregates for all types of **asix** variable data - previously aggregates were calculated only for the uniform data.

- **Displaying reference waveforms**

The *Reference waveforms* in series options enables you to run a trend model window (one or two). The addition of two reference waveforms allows for a ribbon diagram, which is useful in assessing the evolution of the variable values under analysis in terms of exceeding the maximum and minimum values.

- **Displaying the uniform data**

A button for displaying the data reading interval dialogue box has been added to *Uniform data* command on the tool bar.

- **Adding aggregated variables**

The *Series* menu now features an option to add an aggregated variable. This command allows you to add an **asix** variable and to define its aggregate.

- **Saving the default trend parameters**

Save as default check box has been added to trend options editor. These options will always be used when creating a new trend.

- **Embedding a table in the trend chart**

Currently, the table (the tool for displaying the measured data points forming the curves shown in the chart in AsTrend application) can be 'docked' in the trend window, fitting the table in the chart area so that table of variable values is displayed instead of the chart. Table then obscures the chart area, however, the user can switch between the chart/table views using the tabs *Chart / Table*, which appear above the legend when embedding the table.

- **'Integral' - a new option of aggregate value format**

A new option *Show integral as time* has been added among value format series parameters, which can display the value of 'integral' aggregate as time in the format: *d h:mm:ss*.

- **Converting 'integral' and 'gradient' aggregates**

A new *Measurement period* option has been added to series parameters, which is used to convert the 'integral' and 'gradient' aggregates. The option is initialized when adding a variable based on the value of *Unit* attribute.

- **Historical Data Table Mode**

AsTrend has been enriched in a new operation mode enabling data view in a table form.

- **Other novelties**

- possibility of adding to a trend empty series; they can be used as separators in the trend legend as well as in historical data table;

- new calculated attributes: *Sample Time of Read Line 1*, *Sample Time of Read Line 2*, *Sample Quality of Read Line 1*, *Sample Quality of Read Line 2*. Now *Sample Time of Read Line 1/2* attributes contain time of read line instead of time of sample indicated by read line.

■ Novelties in synoptic mask design

- **Synoptic masks scaling mechanism**

Far-reaching changes in the synoptic masks scaling mechanism will certainly prove to be invaluable when mapping complex technological systems. Thanks to solutions based on the use of so-called detail masks and references to selected fragments of any other synoptic mask, the new scaling mechanism allows unrestricted navigation of mapped technology at any level of detail required by the user.

- **HINT - a new class of objects**

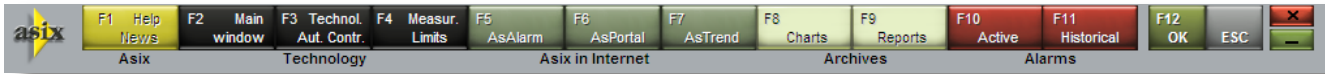
When this object is used on the mask, a hint is displayed for all dynamic objects (with a declared variable name). The range of information is specified in the definition of the HINT object. These are generally variable attributes declared in the same manner as in the legend area format in the CHART object.

- **Operator notes are assigned to specific locations on the synoptic mask.**

Operator Notepad is a new functionality of AsAudit application, which allows operators to draw up 'handwritten' text notes that can be attributed to any location on the application synoptic mask. The concept of a *segment* is linked to notes, which, in this case, is an element uniquely identifying a note or a group of notes.. Thanks to the segment, it is possible to link a note to a specific location on the synoptic mask. The segments are defined in the AsAudit Configurator, while notes are created in the AsAudit Console. Segmented notes can be viewed using the AsAudit Browser, and an appropriate operator action is required to retrieve notes created for a particular segment from the synoptic mask level.

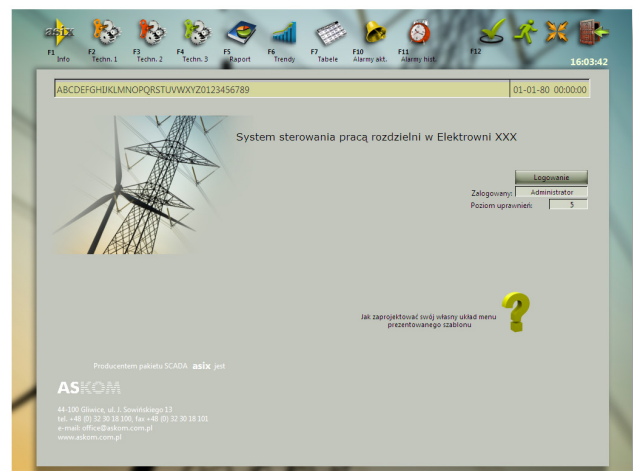
- BUTTON object modified**

The BUTTON object now allows simultaneously declaring both image and text to be displayed over the image. This significantly simplifies the design and naming of the visually impressive buttons on technological masks.



- New application templates for the application wizard**

Application Wizard is available from the Architect. It features two application templates, incorporating graphic elements to allow for the design of aesthetic visual masks.



- Possibility of scaling PICTURE/PICTURES objects**

Data archiving upgrades

- New replicated archive**

Replicated Archive applies to servers, where Asmen current data module has no physical channels for data archived within a given resource, while another archive is available on the network, which can be used to retrieve historical data. Aspad archive data module does not read current data from Asmen for the replicated archive, but instead it continuously retrieves historical data from another server storing data from the physical channels, saving it in its own archive. Proxy servers are a typical application of such a solution.

The replicated archive eliminates inconvenience typical of other types of archives:

- No filling of missing archive data, resulting from a momentary loss of the connection with the computer providing data
- too frequent reading of current data, when the cycle is shorter than the archiving cycle,
- data redundancy, which occurs when applying an archive with synchronising option.

- **Simplified synchronising declaration for MS SQL Archive**

When declaring the synchronization of MS SQL archive with other data archive, it is sufficient to specify the synchronization parameters (for the archive, whose data will be synchronized), only the SQL Server name from which to retrieve the data to be synchronized. The names of the two databases containing archives must be identical. Thus there is no need to declare an additional 'virtual' archive, with which data is to be synchronized.

- **Option to declare archiving condition in variable definition**

Starting with version 6.0.2 of the **asix** Package, variable archiving conditions can be entered in the Architect's definitions database editor, in the form of a conditional expressions in line with the condition definition syntax or expressions consistent with the argument condition syntax. Since most of the conditions have simple single-line form, this will allow avoiding creating an additional conditions file in many applications.

- **Additional aggregates**

List of available archive data aggregates has been extended with new items:

Total of Increases- the sum of positive changes since the last known value prior to origin, to the last value before the end of the sampling interval. For a binary variable, this will reflect the number of time switched on.

Total of Decreases- the sum of absolute negative changes since the last known value prior to origin, to the last value before the end of the sampling interval. For a binary variable, this will reflect the number of time switched off.

Last Known - the last known (good or uncertain) value before the origin of the sampling interval. Yields the last value, even if it occurred a long time ago.

Last- the last known (good or uncertain) value in the sampling interval excluding the end of the interval, to distinguish from the End aggregate, which includes the end of the interval.

Standard Deviation - time-weighted standard deviation of the sampling interval.

Root Mean Square - time-weighted rms of the sampling interval.

Last Known Average - time-weighted average of in the sampling interval. Last known value is inserted in place of corrupt or missing values.

Last Known Integral - integral in the sampling interval, with the time calculated in seconds. Last known value is inserted in place of corrupt or missing values.

■ New items in the list of communication drivers

- **Max1000.** Communication based on the so-called. "Network protocol" with the MAX 1000 camera management system by ULTRAK. The driver only carries out the camera switching and time synchronization functions (the driver provides time stamp). Communication takes place using the RS-232 serial interface.
- **NordicRF.** The exchange of data with Nordic ID RF 601 barcode scanner. Communication takes place using the RS-232 serial interface of the base station.
- **LZQM.** Exchange of data with LZQM electricity meters, produced by POZYTON Electronic Measuring Instruments Facility in Częstochowa. Communication takes place by means of a serial communication according to CLO standard.

- **Global.** CtGlobal driver is used to exchange data between the **asix** system application and a so-called swap file, which is a container for the driver's current variable parameters (name, status, value, timestamp). In an application run across multiple computers, the contents of the swap file can be synchronized between different computers. This way changes in variable values occurring on a single computer can be propagated to all other computers.
- **Srio.** The exchange of data with the SRIO 500M hub (ABB-produced), which provides communication between the host system and the devices connected to the SPA bus, such as protection relays and signalling devices. Communication with the hub is accomplished via RS232-compliant serial communication, data transport layer - based on the ANSI X3.28 protocol in full-duplex mode with the BCC checksum.
- **SNMP.** The driver can read and write objects values using SNMPv1 and SNMPv2c protocol- manage the various elements of telecommunications networks, such as routers, switches, computers and telephone exchanges. The driver performs its functions by using the SNMP Management API.

■ Other upgrades

- **asix on the system path**

Since the 6.0.2 version **asix** is not added to the operating system path. Thanks to that the *Asix Package Manager* allows to configure MS Windows environment for running any **asix** version installed on the computer (there is the possibility to have many **asix** versions installed on one computer, w.e.f. **asix 2**).

Internet applications from previous **asix** versions (since the 6.0.1 version back) need the **asix** to be added to the operating system path.

- **Changes in Architect**

Architect has been equipped with *Asix Package Manager* tool that allows user to configure the operating system for running any **asix** version installed on the computer (w.e.f **asix 2**).

The *Find a variable* command has been added to the variable selection window and variable preview window. In addition, the variable selection window has the option of storing the state of group tree.

- **OPC driver**

The new channel parameterization option: *Status item of channel* allows to declare a variable signalling the channel status (the information on failed or proper connection with a controller).

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Reliable Solutions of Automation Systems

44-100 Gliwice, POLAND
ul. Józefa Sowińskiego 13,
tel +48 32 3018100,
fax +48 32 3018101,

www.asix.com.pl, www.askom.com.pl