OPUS AGWS6 Advanced Graphic Workstation

OPUS SOFTWARE presents **AGWS6**, the sixth generation of Advanced Graphic Workstation software. **AGWS6** provides a sophisticated graphical interface to **PC6-SQL** for the display and analysis of real-time text and graphical information.

Connectivity

Both integrated and external workstations are supported. The integrated workstation resides on the **PC6-SQL** computer system and communicates via an internal link. External workstations communicate with the **PC6-SQL** system via various forms of asynchronous link, including local and wide area networks, wired or wireless links.

AGWS6 Workstation

The workstation software is supplied free issue, the number of users on a system being controlled solely by the **PC6-SQL** licensing. **PC6-SQL** supports multiple users, accessing the system either directly or through one or more workstation servers. Multiple workstation servers can be installed to support a practically unlimited number of users without any appreciable degradation of system performance.
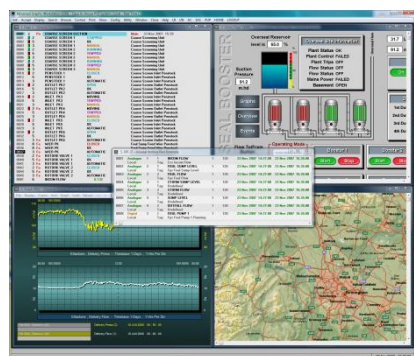

Workstation with Multiple Windows Displayed

User Defined Setup

Connections with multiple named sites can be established using pre-configured 'User Defined Setup' files. These files define all operational parameters for the connecting link, any required privilege levels and directory paths (unique paths for the
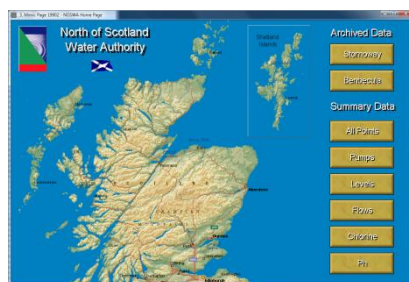
site's mimic, map, graph and template specification files etc.).
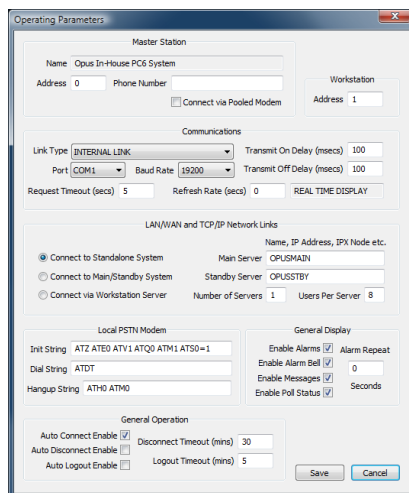
Workstation Operating Parameters

Mimic Pages

Mimics are typically used to customise the operator interface or depict plant information in a graphic, or schematic form. **AGWS6** mimics can also be treated as templates allowing the same page to be re-used for different sites or plant areas.
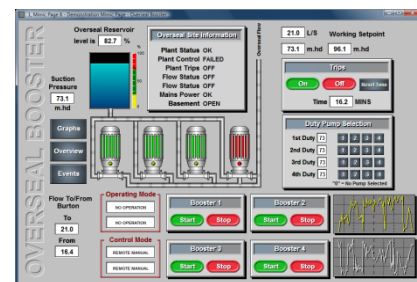

Mimic Page

Mimic pages consist of a background superimposed with static, marker, control and live data items. The background can be rendered using either a solid colour, one of the various graduated fills (18 off), or using a specified image (e.g. an associated map, plan or photograph of the plant).

Various static items can be inserted onto a page including text, frames (2D or 3D shapes), titled boxes, pipes, tanks, cutout overlays, bitmap images

and icons. Pipes, text frames and bitmaps can be animated.


Mimic Page

Markers can be inserted onto a page and provide operator interaction using simple mouse clicks. These markers, or mouse hot spots can be inserted using either hidden points, hidden boxes, or visible mouse buttons. The mouse cursor automatically changes to a pointing hand symbol whenever the cursor rolls over a marker.
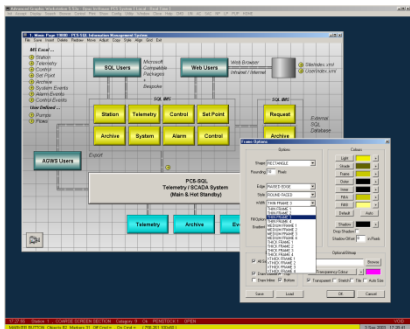

Mimic Page

Separate commands can be associated with a marker's active and latched states. These commands can be used to provide links to Microsoft compatible packages (MS Access, MS Excel, Media Player etc.), to activate utility or user programs (e.g. Visual Basic control applications), to display other mimic or map pages, to display other directory or summary information, to display graph data, in fact to perform any desired display or control action.

User prompts can be associated with mimic markers, appearing as text messages at the bottom of the display and if desired, announced verbally by the workstation.
An extensive variety of mouse buttons are provided in the workstation's object library.
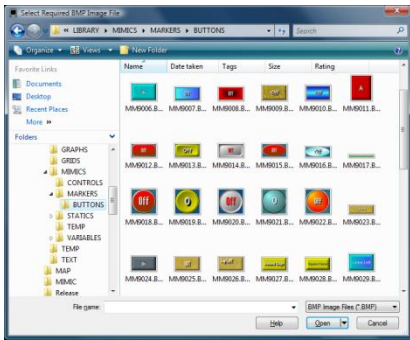
Mimic Object Library

Live data items are used to represent the system's telemetry data, current mode of operation (e.g. a data acquisition channel's modem or polling state) and alarm status (presence of unacknowledged alarms). Live data can be presented in a wide variety of forms including descriptive text phrases, analogue and totalised values, bit-mapped colour coded symbols (of any complexity or size), regular and irregular fills, gauges, sliders, pipes and graph plots. Animations can be used to depict plant operation or motion, illustrate conditional flow along pipes etc., thereby bringing your mimic pages to life.

Mimic Editor

Our integrated object orientated mimic editor includes many tools enabling you to quickly create sophisticated mimic pages. Objects can be placed precisely using different sized 'snap to' grids, and our alignment options ensure your mimics look neat and professional.

Favourite object styles can be named and stored within the library; these styles can be easily applied to other objects to add consistency to your displays. An extensive library of mimic objects such as pumps, tanks and

Mimic Object Library

pipes is supplied to simplify mimic creation. You can also append your own objects, or object groups, into the library to be used over and over again. Objects extracted from the library may be pasted using their original size or resized as appropriate.

Map Pages
Map pages have the same functionality and capability as mimics but are intended to render geographical information, floor plans, maps and charts etc.

Map Page

Graph Display and Analysis
Professional looking graphs of point archive and time-stamped point archive data can be created quickly and easily in graph analysis mode. Individual graph specifications can be named and saved to disk. All graph specifications can be used as templates to load and display user specified archive data, usually in response to 'ad hoc' requests by the operator. Graph templates can also be inserted on mimic and map pages, allowing numerous sources of data to be selected with a simple click of the mouse. A selection of graph templates is provided as standard.
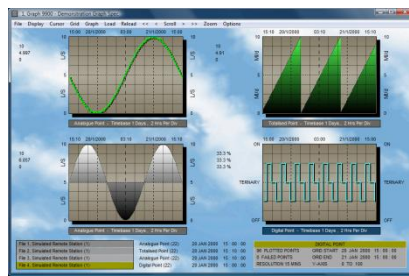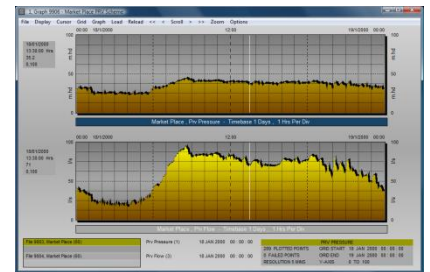

Graph Display

Up to four graphs may be plotted in a single graph specification, either superimposed in one or two grids, or displayed individually in separate grid areas.
Various graph formats, line styles, fill options, bitmap and gradient fills are available including segmented colours to depict alarm boundaries. Various markers can be used to identify the sampled data points. Alarm limits may be selected from the configured database or specified manually. The alarm limits may be plotted on the grid, rendered on the graph, or a mixture of both.
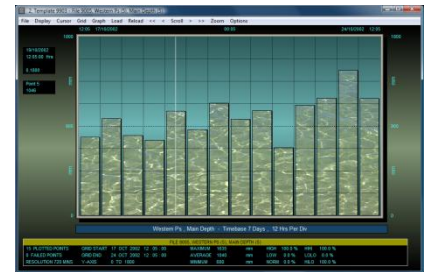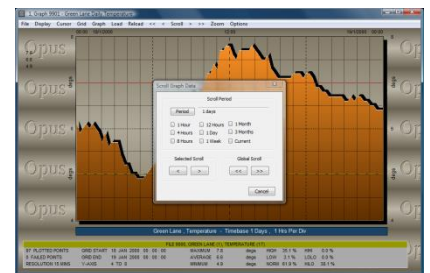

Graph Display

Graph plots may be scrolled forward and backward in time by either the default timescale or by a user specified period. A graph cursor is available to examine the plotted data and zoom options are provided to assist your data analysis.
Useful statistics are presented for the plotted data including the minimum, average and maximum values, and the percentage of sampled data in the various alarm categories (high-high, high, normal, low and low-low).

Graph Display

Graph specifications may be configured to depict static data or to refresh automatically displaying current data. A graph's load specification gives you full control over the load period, synchronisation, time offset, data resolution and sampling function (i.e. whether to extract minimum, maximum, average or integrated totals). Footnotes may
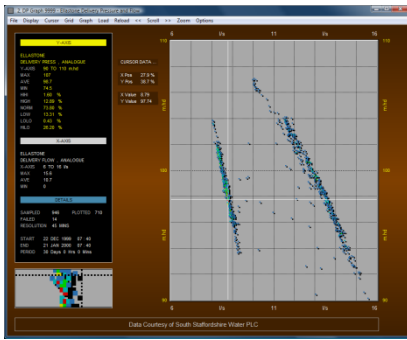

Graph Display

be added to each graph specification or provided by the operator to add useful comments. Favourite grid and graph styles can be named and stored within the library; these styles can be easily applied to other graph specifications to add consistency to your workstation.
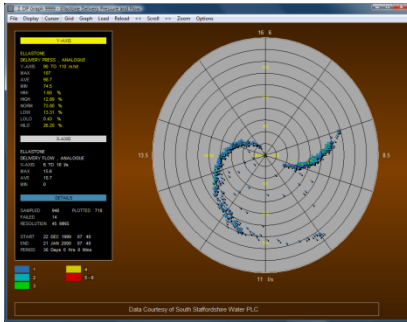
Dual Parameter Graphs
Two point archives may be plotted against each other as a dual-parameter graph providing a graphical representation of the relationship between the archives' data.

Dual Parameter Graph Display

Data may be plotted in either a linear or radial form using either the conventional plotting formats or various scatter plot options.

Dual Parameter Graph Display

Real Time Trace

Each workstation can trace up to 16 telemetry points at resolutions ranging from 1 to 60 seconds. The data is presented in a form similar to normal graph analysis mode. Up to four traced plots can be displayed in a single window and updated in real-time.
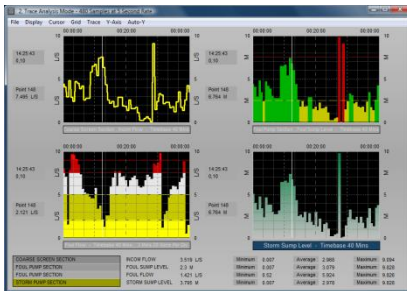

Trace Display

Operator Shortcuts

Double-clicking on any displayed point archive or time-stamped point archive provides a useful shortcut to view the archive's data in summary or graphical form. Double-clicking on any mimic page, map page, graph specification or dual-parameter graph specification listed in an index (directory) or browse window displays the selected item. Clicking on any telemetry point displayed on a summary, mimic page or map page displays a dialog identifying the point and providing a list of useful shortcuts including a link to any additional information files associated with the stations and points.
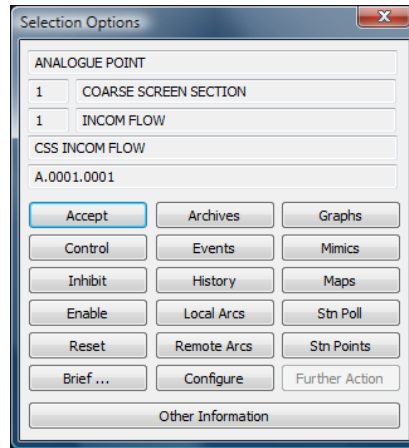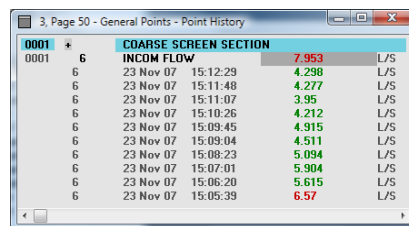

Point Select Shortcuts Dialog

Point Histories

All telemetry points have a history associated with them; a real-time summary or graph of this history can be displayed with a simple click of the mouse.
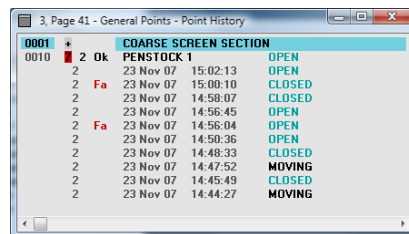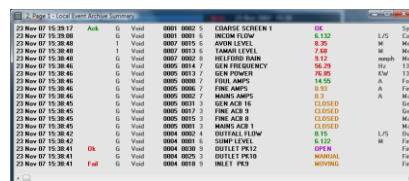

Point History (Digital Point)


Point History (Analogue Point)

Event Archiving

The extensive event archive can be queried to filter the data to specific points and time periods of interest. Data from the current event archive can be displayed in real-time at the workstation, the latest events scrolling onto the screen.

Event Archive

Data Summaries

A wide range of station and point summary displays are available. A real-time summary can be restricted to display the stations and points of interest by selecting one of over 20 summary types and specifying the required search criteria.
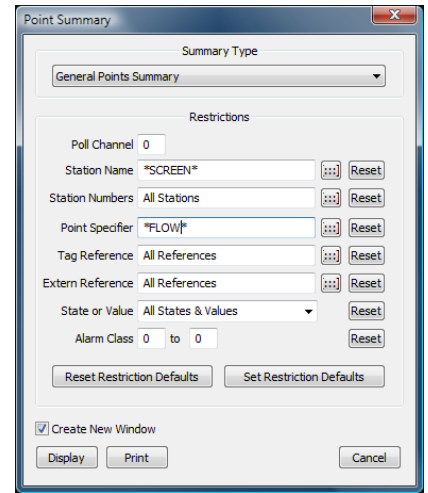
Summary Restrictions Dialogue


Remote Station Summary

Data Directories

The system's relational database lends itself to providing directories of information. Directories list database records of one specific type such as point identifiers, tag references, external references etc. Optional search restrictions can be used to filter the resulting directory. Special directories are provided to list all configured mimic pages, map pages, graph specifications and dual-parameter graph specifications.

Browse Information

Numerous browse options are provided to search the system and list all related information from the **PC6-SQL** database and **AGWS6** libraries. Individual items can be selected directly from a browse dialog. Browsing is used extensively in mimic/map editing, database reconfiguration as well as in the general operation of the workstation.

Search Functions
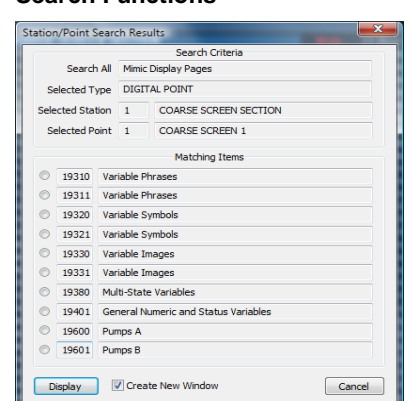
Search Dialogue

Any displayed telemetry point can be identified with the mouse cursor and the workstation's search options used to display a list of all associated archive files, graph specifications, mimic pages and map pages.

Touch Screen
The workstation can be configured to operate in a touch screen mode. In this mode numeric and alphanumeric dialogs are used to request operator input.

Help Facilities
Extensive help is available in the form of an on-line reference library. In addition you can create text files containing site-specific information for display on the workstation.
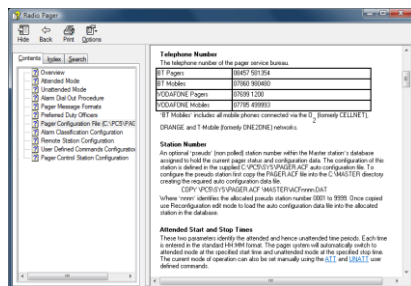
Help Library

Alarm Display and Management
Outstanding alarms are highlighted on all data summaries, mimic and map page displays. The workstation displays the highest priority alarm in a dedicated window area and can be configured to vocally annunciate alarms. Numerous summary commands are provided with which to query the system and display both acknowledged and unacknowledged alarm data.
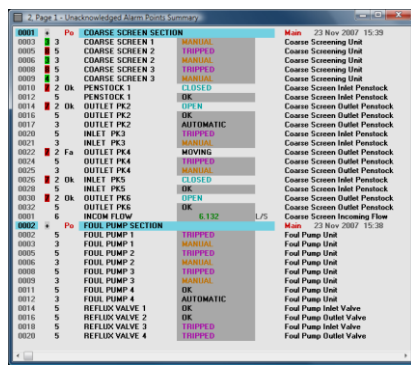
Unacknowledged Alarms

Optional search restrictions can be used to filter the resulting real-time summaries.
Alarms may be configured with a delayed annunciation, to be displayed only after a pre-configured persistence time interval.
The workstation can also be configured to repeat alarm annunciation after a predetermined interval.

Workstation Customisation
Each workstation's operating parameters can be tailored to suit an operator's individual requirements. User defined commands and function keys (Normal, Shifted, Control and Alternate) can be configured to produce a standardised or highly individual workstation. Window definition files can be used to store and recall complex displays consisting of multiple window areas.

Concert Operation and Messaging
Multiple workstation displays can be controlled via a single keyboard. A message exchange facility is also provided between operators and separate **PC6-SQL** sites. In addition a file transfer facility is provided between the workstation and its connected **PC6-SQL** system.

System Monitoring
Monitor utilities provide real-time statistical analysis of communications and software performance. The resulting statistical data can be displayed in summary form at the workstation along with the daily and monthly logs.
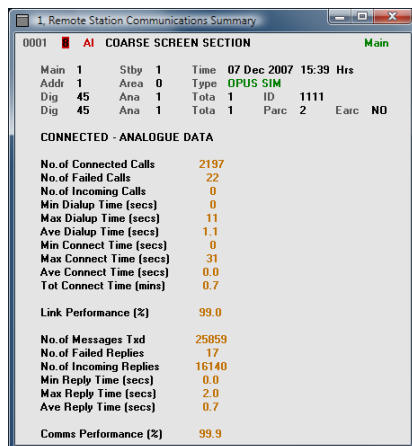
Remote Station Communications Summary

Other utilities are provided to monitor the communication ports, network links and certain system processes. All monitored data can be captured and automatically saved to disk for later scrutiny.
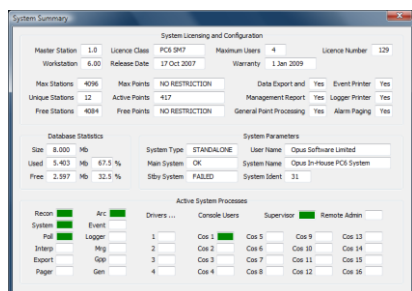

System Summary

System Security
System security for the workstation is afforded using privileged user accounts accessible by password entry. Area codes can be assigned to each user account, thus restricting the user's display to alarms and summaries relating to their area(s) of interest.
Privilege levels may be assigned to a range of operating procedures including individual point controls, alarm acceptance, database reconfiguration, mimic/map configuration, report generation and printout.
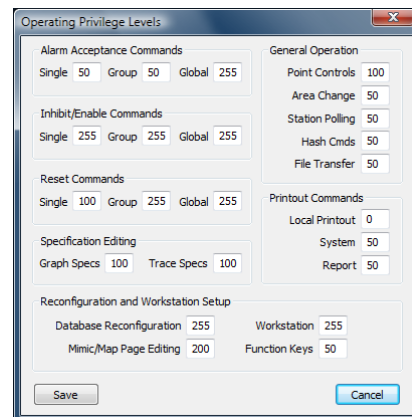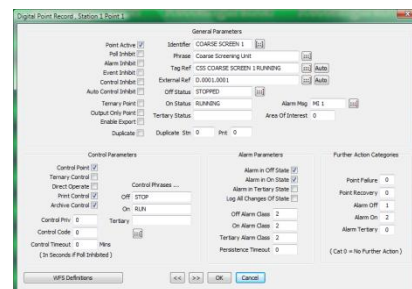

Workstation Privilege Levels

Automatic logout and disconnection is also a configured option. In certain applications the operator should not be allowed to exit the workstation or access the operating system, therefore the workstation can be configured to automatically run on power up and only exit on password entry.

Database Reconfiguration
The on-line reconfiguration process provides a privileged operator of the system with the ability to edit or examine any data relating to the configuration of the system. Database records can be copied to speed up the configuration of similar sites. Auto configuration files can also be saved and loaded to copy or import data.
To aid security a reconfiguration log file is created during each reconfiguration session including the time, account name and details of records modified.

Database Reconfiguration