

Features and Benefits

■ Personalized workplaces for focused information access

Workplace layouts are adjusted and optimized to users' preferences and needs with individualized menus, toolbar contents and display locations. Operator, Maintenance, Engineering, and Management personnel are at ease and perform their functions efficiently. Windows management functions such as safe areas, pinning and stacking priorities minimize operation errors.

■ Intuitive and flexible navigation for fast information access

Quick access with familiar web browser tools to displays and information is provided. Favorite places, history lists, short cuts and hot buttons provide navigation through a process production facility quickly and accurately. Use of the right mouse button provides access to additional details.

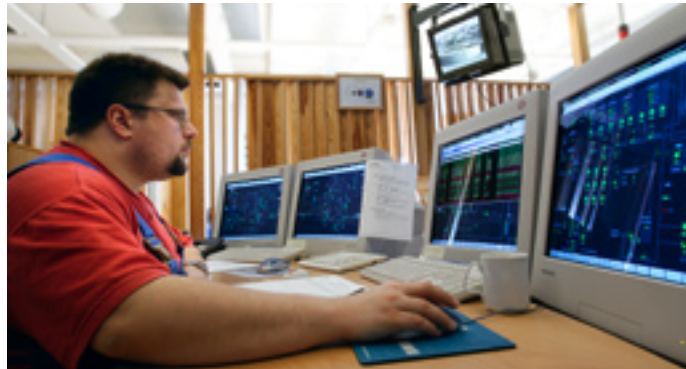
■ Integrated data for informed decision-making

ABB extends your automation reach by integrating information from a wide range of ABB applications, other automation systems and business systems into the 800xA system on common displays. This single window provides users a much broader view of the facility from which to make more informed decisions.

■ Comprehensive operator functionality for reliable control

System 800xA Process Portal provides a complete set of operator functions that include realistic process graphics with standard faceplates, superior trending capabilities, intelligent alarm and event handling, production reporting and remote messaging.

Reducing time to decision and action



The Industrial IT 800xA Operations capability is provided by the industry's most comprehensive operations software for automation; Industrial IT 800xA Process Portal. This intuitive and easy-to-use system interface gives direct access to relevant information facilitating timely and accurate decisions. Extensive user functionality is provided to make the most informed and prompt control decisions.

800xA Process Portal system interface extends beyond the realm of process control to provide rapid and consistent access to smart field devices, asset optimization tools, information management systems, safety systems, Manufacturing Execution System (MES) applications, and beyond. It is the Portal for notification, analysis, and action related to all events and information related to squeezing higher productivity from manufacturing assets.

This extended operations environment supplies an operator portal to the process, a maintenance view to asset conditions and work processes, an engineering view to process performance and engineering tools, and a management view to overall productivity Key Performance Indicators (KPIs).

Process Portal provides accurate and timely information that is critical for making the right decisions. Reducing the time it takes to make time-critical actions improves the bottom line. Efficient use of both manpower and production resources increases overall plant productivity.

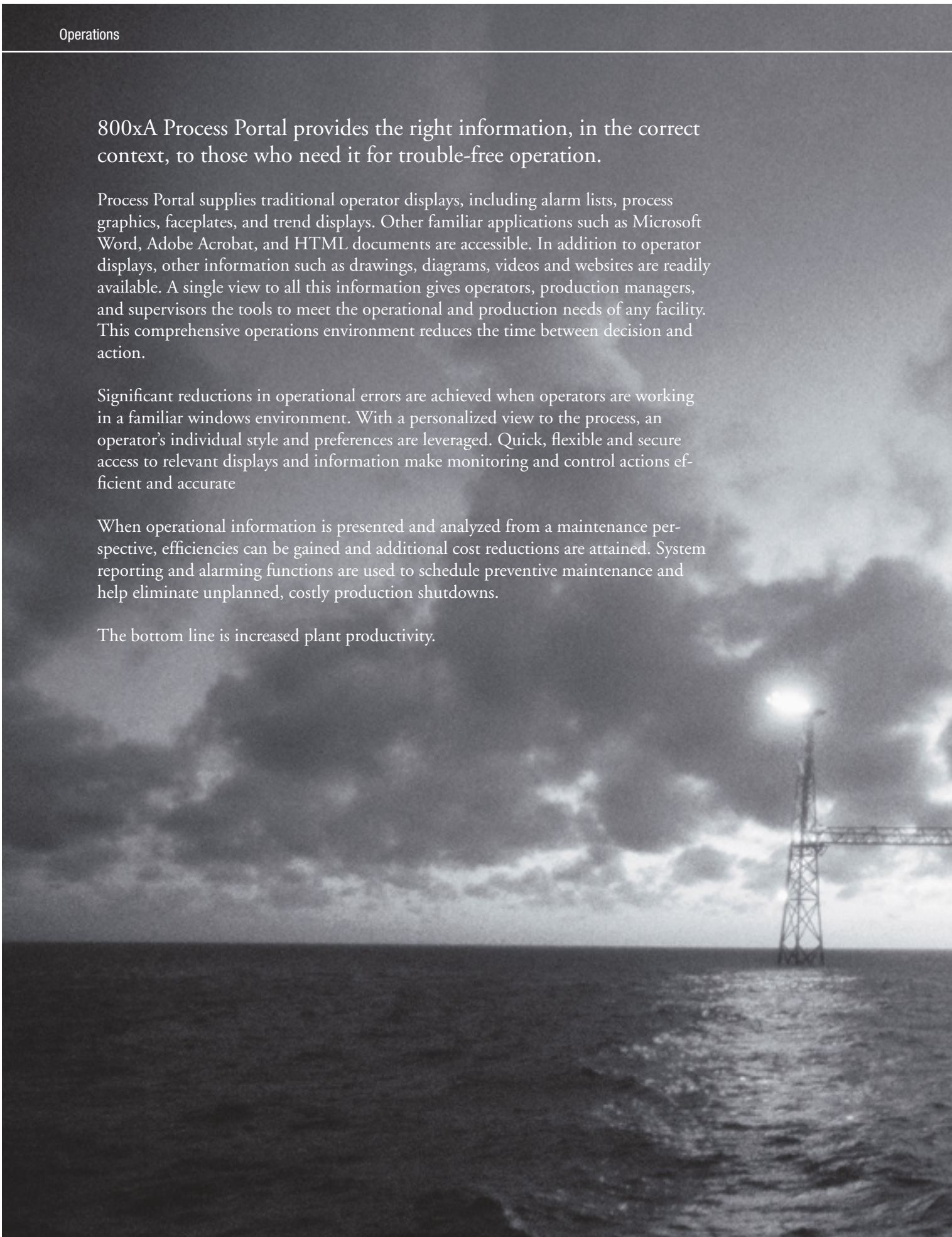
800xA Process Portal provides the right information, in the correct context, to those who need it for trouble-free operation.

Process Portal supplies traditional operator displays, including alarm lists, process graphics, faceplates, and trend displays. Other familiar applications such as Microsoft Word, Adobe Acrobat, and HTML documents are accessible. In addition to operator displays, other information such as drawings, diagrams, videos and websites are readily available. A single view to all this information gives operators, production managers, and supervisors the tools to meet the operational and production needs of any facility. This comprehensive operations environment reduces the time between decision and action.

Significant reductions in operational errors are achieved when operators are working in a familiar windows environment. With a personalized view to the process, an operator's individual style and preferences are leveraged. Quick, flexible and secure access to relevant displays and information make monitoring and control actions efficient and accurate.

When operational information is presented and analyzed from a maintenance perspective, efficiencies can be gained and additional cost reductions are attained. System reporting and alarming functions are used to schedule preventive maintenance and help eliminate unplanned, costly production shutdowns.

The bottom line is increased plant productivity.





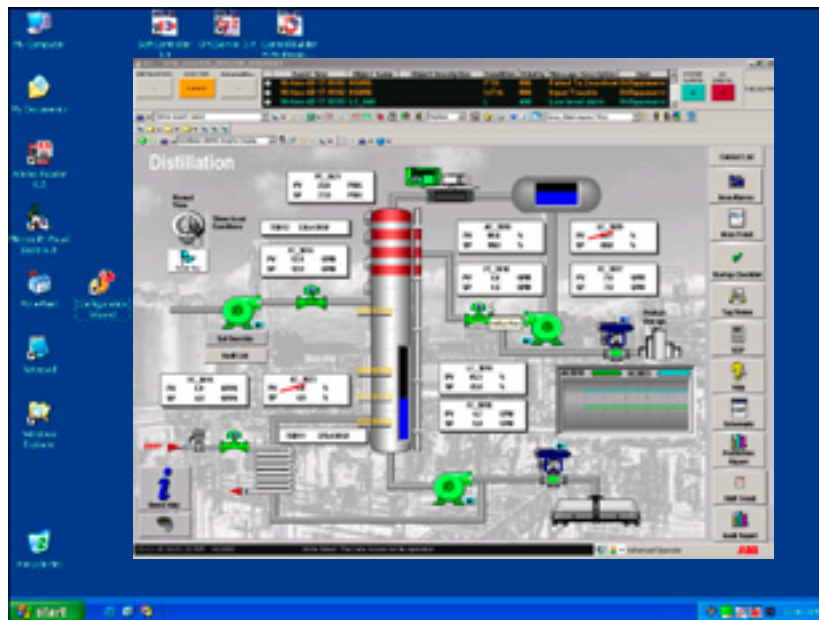
Personalized workplaces for focused information access

Plant personnel are at ease and perform their control functions efficiently while working in the familiar Windows 2000 or XP environment. This reduces training time considerably. Menus, buttons and navigation are familiar from the start and users feel comfortable with the Windows environment.

Process Portal's consistent interface makes operation even easier by reducing the time it takes to locate information. The interface has the same basic look and feel, regardless of the user's job function. Process operators, maintenance technicians, and engineers all feel right at home using Process Portal.

By eliminating extraneous selections and information, focus is directed solely to the available tasks and data needed for the current job function. The risk for human errors is reduced, thereby increasing uptime and reducing unplanned stoppages.

Operator workplace in Windows mode.



Personalized user environment

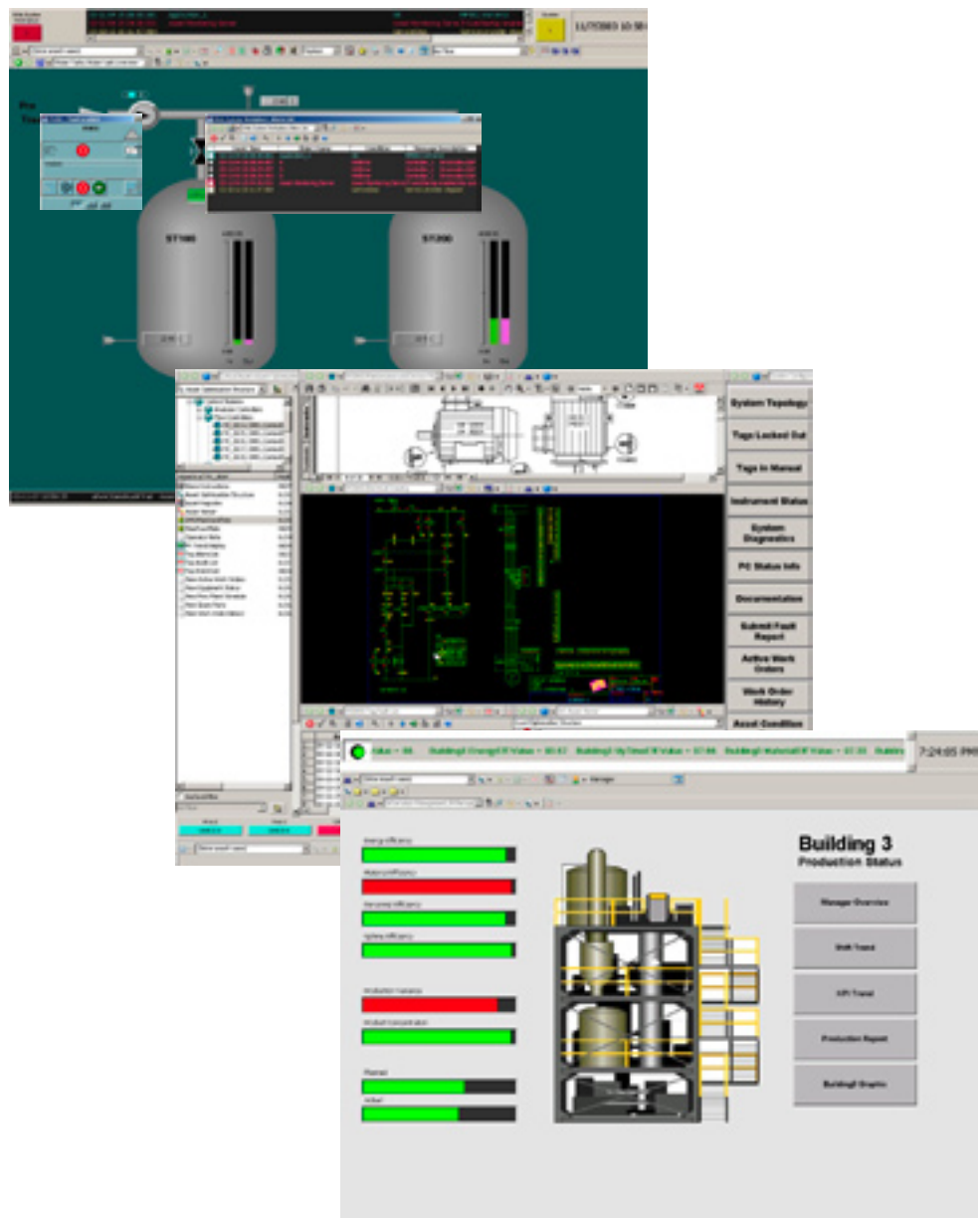
Process Portal provides a workplace environment for viewing and using process, system and enterprise data. With an easy-to-configure layout, an engineer can personalize views to fit the specific need. Many familiar Microsoft features are inherent to the Windows-based 800xA operator interface. For example "Tool tips" clarify symbols and expand text descriptions. As part of personalization, users have the option to prioritize what information should be presented on top. For example, faceplates could be specified as always visible on top of a trend display, or alarms could always be displayed on top of everything else.

Safe areas on the screen ensure that important information is never hidden. The areas can display information on alarms, links to different aspects or vital buttons.

Process Portal provides configurable options that allow various personnel to personalize the environment to suit their needs depending upon their function - senior or junior operator, engineer, maintenance technician, and managing supervisor or system administrator. Personalization options include:

- Screen layout
 - Application bar with alarm information
 - Graphics display area to display process and production information
 - Status area with operator messages
- Information presented on context sensitive menus
 - Different information for different user groups and/or users
- Recognition for granting Security Access Rights
 - Depends on who the user is, what the user accesses, and from where.

Personalized workplaces for different user's needs. Examples of Operator, Maintenance and Management Workplaces.



The security level can be customized individually. Operator 1 may be allowed to control only Process Area A; whereas Operator 2 is restricted to Process Area B. Operators can be restricted from editing graphics and engineers can be kept from controlling the plant.

The full picture with multiple monitors

Up to four monitors can be controlled from one PC. There are several advantages to using more than one monitor: With decreasing plant personnel, fewer operators mean fewer operator stations. This makes having all information visible at the same time a key requirement. Multiple monitors allow applications to be moved from one monitor to another or be displayed simultaneously on several monitors. The operator can anchor frequently used displays on particular monitors and use one monitor for the main interface. One monitor can be used for process displays, another for faceplates and another for alarms, etc. Alternatively, a monitor can be designated for an application, or a display can cover two monitors in full screen mode. Applications can be moved from one monitor to another or be displayed simultaneously on more than one monitor.

Multiple monitors provide users with more viewing space for better placement and location of important information.

Standards that lower the costs

Control system investments are protected with Process Portal. The system is future safe, since evolution was built into the system from the initial design. Regular software updates will keep the system current. Process Portal is a sound basis for lifecycle management, easy to learn, maintain and expand. These elements add up to an effective foundation for continuous productivity improvement.

Ease of operation at
pulp mill Södra Cell
Mörå Sweden

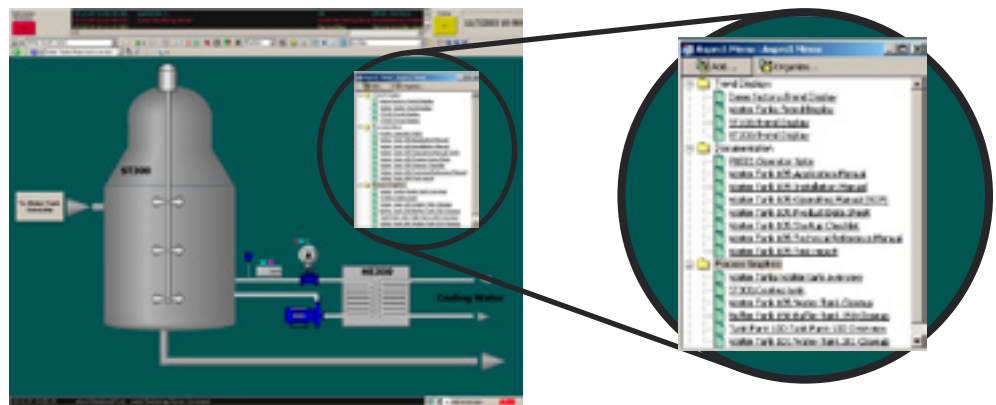


Intuitive and flexible navigation for fast information access

Users feel at ease from the start with Process Portal. It is based upon the Microsoft Internet Explorer browser. Just like in the browser, the user can click back and forward buttons, add personal favorites, and use the history panel, or even type in a web-address such as www.abb.com. Important information can be found quickly with one button navigation. Quick access to any display may be defined just like adding favorites in Internet Explorer.

These favorites are arranged in folders and subfolders according to individual preferences. The contents can be changed at any time during operation. Favorites are user specific and linked to the user login. When the Favorites bar is included on the workplace, the favorites are available on top of the workplace.

Favorites for easy information access.



To minimize interaction time in critical situations, default actions can be assigned. The default action becomes immediately visible when an object is clicked upon. As an example, the default action for a control object could be the corresponding faceplate.

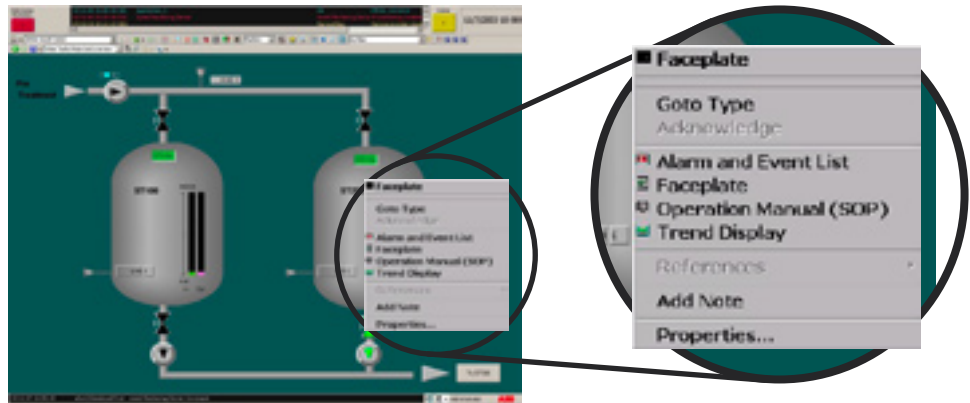
Consistent call-up with the right mouse button

The enabling technology for data access, storage, and management is ABB's patented Aspect Object framework. Aspect Objects relate all the plant data, or Aspects, to specific plant assets, the Objects. The headache of locating information spread between different people, locations, computers, and applications is over. Aspect Object technology presents the entire production facility and every component plus all associated information in the same easy-to-navigate fashion. This allows a single window environment to include smart field devices, asset optimization functions, information management, batch management, safety systems, and MES applications.

Context menus are used to make navigation to aspects extremely fast and easy. To get more information on any object, simply right-click on it. The context menu appears with selectable actions or display call-ups. This capability allows the user to concentrate on their job function, without being distracted by questions regarding how to reach specific data. Context menus ensure that the relevant information is always at the user's fingertips.

The context menu contents are based upon user login – an engineer would have access to one set of data, an operator to another, etc. A reference list of other graphics or displays where the same object is used is contained in the context menu. This feature makes it easy to navigate to further information. Context menus can also invoke the reference of another object, such as a URL. This way, third party applications can be integrated into the system.

Simply right-click on an object to access relevant information via the context menu.



A wide range of navigation tools

Users find information easily and quickly with a variety of navigation tools. Right-clicking any object shows a list of all displays that contain that object. Time is saved during both operation and the engineering phases.

A collection of tools in the application bar provides buttons and pull down menus for quick access to displays and information. Operators can look at previous displays using object and history lists, as well as backward and forward buttons.

Shortcuts (icons in the toolbar) can be defined for access to any aspect in the system. Shortcuts are typically used for common aspects such as graphic displays. In addition, shortcuts can also be defined to call up a standard operational procedure or a document.

Display shortcuts have the same advantages, but are placed in the display toolbar. The availability of these shortcuts will vary depending on the display on the screen.

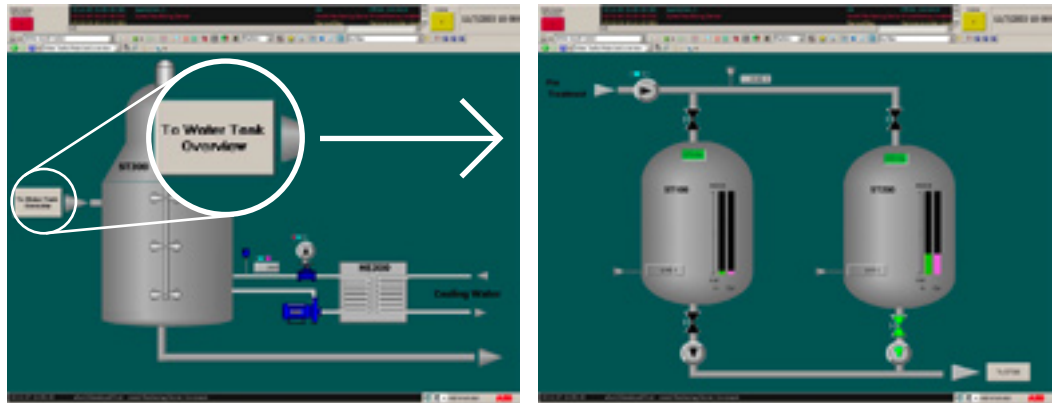
Aspect links can be placed on graphic displays. The typical use is for linking displays or retrieving information.

Hot key ability for mapping keystrokes or keystroke combinations is provided with Process Portal. A hot key will perform an action available to a selected object such as alarm acknowledgement, or a general action such as calling up a process graphic, or other information. Associated displays or a selected object or aspect can be called up quickly, using buttons that are enabled when the object or aspect is selected.

Easy access to previous displays using the history list.



Aspect links for easy display navigation. Aspect links can also be used for navigation to any kind of information, not only displays.



Object Browser allows quick access

The Object Browser provides access to objects similar to using Windows Explorer on a PC. The objects can represent valves, pumps or actual batches as well as higher level objects such as process units, consisting of combinations of hardware equipment and several signals. The process objects can be arranged in structures. From these structures the objects can be accessed from different organizational perspectives. For example, it is possible to browse the object information according to the logical process flow, their location in the plant or where they belong in the system network.

Integrated Search Engine

With built-in search tools anything can be found. Just type in a search phrase and Process Portal will find it. The tree structure may also be used to find functions, objects or aspects. The structure is similar to Windows Explorer, so it is easy to understand and use.

Easy access to information at
Södra Cell Mörrum Sweden.



Integrated data for informed decision-making

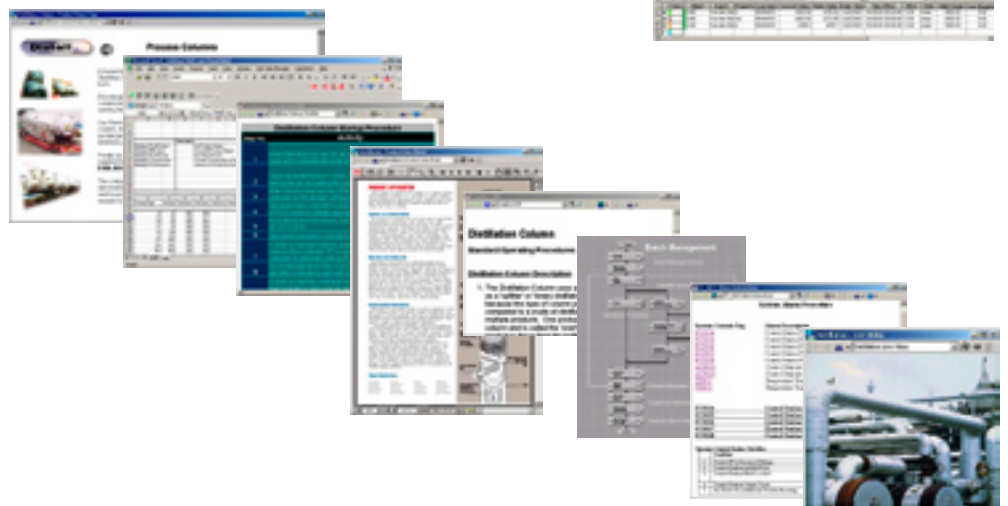
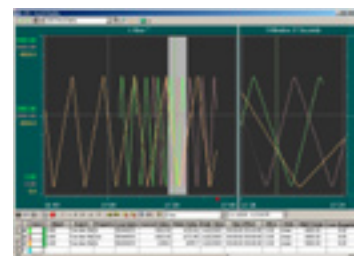
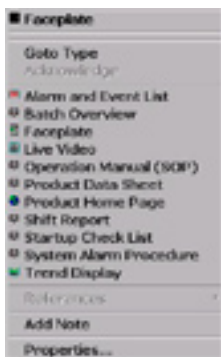
The 800xA Process Portal operations software provides a single interface to a tightly integrated extended automation application environment including the following system functions:

- Process and discrete logic control
- Asset optimization
- Information management
- Batch management
- Engineering
- Safety

All these functions can be run from the same operator interface giving a single window to plant information.

Furthermore, Process Portal can access a number of other applications through the context menu. Examples include:

- Microsoft Excel documents for spreadsheets, custom logs etc.
- Microsoft Word documents for operating and calibration procedures, data sheets, etc.
- AutoCAD drawings
- Control logic diagrams
- Maintenance Management System Software
- Live video
- Files in .pdf format for scanned, non-editable documents such as manuals
- Supplier websites



Examples of integrated data for an operator. The operator of course has access to information such as faceplate, alarms and trends, but in an integrated environment he can also access information such as live video, Standard Operating Procedures instructions, data sheets, web pages, startup checklist etc. All this information is directly accessible from the context menu for the selected object.

Information always within easy reach

There is no need to search multiple system interfaces for information in other systems or platforms. All data is easily retrieved from the 800xA user interface. The ease of navigation and information retrieval eliminates the stress factor. Users make better decisions, allowing the plant to run more efficiently and smoother.

Cut down on maintenance costs

Lower maintenance costs can be achieved through better control. Predicting problems is better than having to deal with them after they occur.

Process Portal provides complete access and control, at all times, for every single component in the plant.

But there is more – with 800xA Asset Optimization, CMMS (Computer Maintenance Management System) Integration and ERP application integration, asset availability can be further improved, at lower maintenance cost. Combining the maintenance and ERP information with other production and process control information provides all the data needed to streamline reactive maintenance, and reduce the cost threshold to execute preventive maintenance. Consolidating information from multiple sources helps prevent unplanned stoppages. For further details regarding Asset Optimization, please refer to the 800xA Asset Optimization Overview Document.

Example of integrated data for maintenance.



Based on Standards

Communications based on OPC (OLE for Process Control) and OLEDB, and OPC Client functionality are included with the operator interface. Data is retrievable from any OPC server to use and display in the user interface.

Standards based interoperability ensures that future applications can be integrated. This is true for both third party applications and current applications.

Comprehensive operator functionality for reliable control

Clear information through custom graphic displays

Process Portal includes a range of functions that make operations run smoothly and trouble-free. Based on open standards, new applications and products from ABB and third party suppliers can be incorporated. New functions can be added as the need arises without having to re-engineer existing functionality.

The graphical interface is based on ActiveX control technology that can represent a dynamic status indication such as a valve status of open or closed. This enables Process Portal to use graphics from third party suppliers with ActiveX components as well as ABB components. A library with more than 3,800 process control ActiveX components is included. Creating an accurate pictorial representation of the process in graphics is easy using this extensive library. The components are also used to provide user control access for different actions, such as starting a pump sequence or lowering the setpoint of a flow controller. Hyperlinks to other graphics and objects can be defined within graphics.

Graphics are created within the integrated 800xA Engineering environment. The graphics editor incorporates value-added configuration tools such as the Expression Builder and the Element Browser. The Expression Builder places commonly used expressions into fields for dynamic evaluation. The Element Browser provides a selection of all valid devices and attributes for a chosen device for use in the expression.

800xA Engineering supports the import of different graphic formats such as a photo or bitmap for use as a background picture. In this way, operators can easily recognize the process area. Data can be presented graphically or alphanumerically. All displays are available on every client in the system. The number of configurable graphic displays is only limited by the available hard disk space. For more information on 800xA's Process Visualization engineering features, please refer to the 800xA Engineering Overview.

Clear process overview



Faceplates for consistent and secure operation

Examples of minimal, normal and extended faceplates



Faceplates have three different appearances. The minimal view where the most important information occupies as little space as possible. The normal view shows more links and graphics. The extended view provides full access to tuning and adjustable parameters. The standard set of faceplates can be used as is or modified. It is very easy to customize the faceplates. This standardized faceplate framework reduces configuration time to a minimum.

Secure operation at EPCC (East Province Cement Company) in Saudi Arabia.



Alarm management for quick response to abnormal situations

Alarms and events are viewable and controllable via Alarm Lists, Alarm Bands, and Individual Alarm Bars with alarm notification via .wav or .mp3 files. Direct navigation from the context menu to any application related to the alarm provides a flexible and quick method for responding and taking appropriate actions. All alarms can easily be forwarded via SMS (Short Messaging Service) or e-mail.

The Individual Alarm Bar displays each alarm as a box, and can show the last one to ten alarms. Right-clicking the box opens a context menu containing Acknowledge and other aspects of the object. Any number of Alarm Bars may be configured in the system.

The Group Alarm Band presents a clear overview of the alarm situation in several process areas and units. Each box represents an area or unit. Digits in the boxes show the number of active alarms in the alarm list. An unlimited number of Group Alarm Bands are configurable in the system.

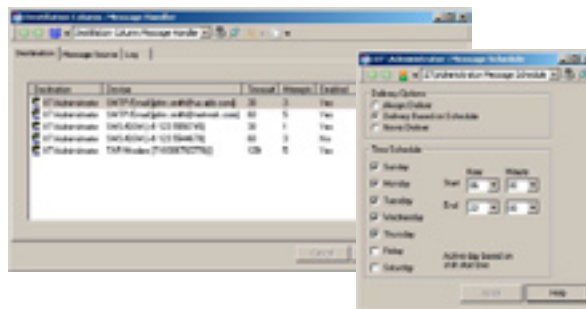
Clear overview of the alarm situation at EPCC (East Province Cement Company) in Saudi Arabia.



Messenger for fast notification of the right people

Messenger sends alarm and event information to devices like mobile phones, pagers and e-mail accounts. This way important information reaches people outside the control room. It is flexible, reliable and addresses several users. It takes user specific receive schedules into account and includes a fail over procedure if a notified user does not respond in time.

Receive process alarms or event information outside a control room with Messenger.



Analyze the process with trends

Trend displays are an important tool for analyzing the process. Process Portal provides an extensive set of trending features and functions.

Trend Displays present data seamlessly from both run-time and historical data. The time range is adjustable to any range without knowing the source of the data. With the time-offset function, a trace in real time can be compared to traces from yesterday, last week or last month. Using the zooming feature, all values for any time period are viewable in minute detail.

Exact values for any given time can be displayed, as well as minimum, maximum and mean values. A Ruler tool is applied to determine an exact value at a specific time. Powerful zooming features are available for scrutinizing any time period.

As a rule, values are trended against time. The trend display also supports X/Y plotting in applications where it is useful to trend two values against each other for determining the relationship between them.

Trend at EPCC (East Province Cement Company) in Saudi Arabia.



Fast and easy routines for reports

Process Portal uses Microsoft Windows 2000 or XP operating system. This makes it easy to integrate applications such as Microsoft Word, Internet Explorer, and Microsoft Excel. Scheduled and on-demand reports are readily produced in Excel and can be distributed over the company network.

Sequential Function Chart Viewer

Sequential function charts (SFCs) provide intuitive monitoring and control of a sequential order of actions, and the transitions that initiate the actions within a process.. Automation of a start-up or shutdown sequence is an example of the type of application that may be implemented with SFCs. The chart is controlled through a pre-engineered faceplate that supports all of the necessary operator information and actions.

Carlsberg Brewery in Fredericia, Denmark, has reduced their time to decision by using ABB's Process Portal.



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