IndustrialIT for cpmPlus
Collaborative Production Management

cpmPlus Smart Client
The seamless information display for System 800xA
Information is a key asset for all businesses. The problem is that many businesses are looking at data, not information. To achieve a sustainable competitive advantage, it must be possible to identify and react quickly to issues when they arise. Reducing the time to decision and action requires the timely collection of data, transformation to information, and distribution to the right people in a timely fashion.

The cpmPlus Smart Client utilizes the extended automation capabilities of System 800xA technology to provide intelligent data access and viewing functions to assist all levels of personnel in making quick, informed decisions, taking the appropriate action, and thereby improving performance. Smart Client provides a true browser-based thin client that seamlessly retrieves data from System 800xA and connected third-party systems.

Smart Client is comprised of a core system that includes Graphics, Trends and SPC. There are a number extensions that are designed with user friendliness, flexibility and accessibility in mind, including:

- Desktop Clients
- Excel® Interface Clients
- Alarms and Events
Lowering your total cost of ownership while bringing business value to your desktop

- Ensure accurate information by using the common context established in the 800xA information model
- Eliminate duplicate engineering by using the existing data definitions
- Simplified display configuration that requires no programming
- No additional costs based on tag count

- Displays are available anywhere where you can connect to the network using a standard Internet browser
- Reduce training costs by presenting information in familiar office format

Extending the power of System 800xA

cpmPlus Smart Client enhances the power of System 800xA by seamlessly integrating real-time and historical data in a simple, consistent user interface. The thin client displays contain the same high resolution data available in System 800xA Operator Workplace. By tightly integrating Smart Client with the automation system, the value of System 800xA is enhanced.

- Trend data is stored inside of System 800xA, eliminating the need to maintain separate databases for DCS and information systems.
- There is only one point of configuration for attributes of properties such as ranges or alarm limits. Any change in System 800xA is automatically updated on Smart Client server, creating a true single point of engineering.
- Using the log and security features of the 800xA, data are held and protected in a secure data environment, enhancing and simplifying system security.
- Using the security and reliability features of System 800xA, data is held and protected in a secure data environment, enhancing and simplifying system security.
cpmPlus Smart Client

Turning the desktop into Production Information Portals

cpmPlus Smart Client allows users to immediately start accessing information. Using Smart Client, information from System 800xA or connected third-party data sources is readily available on users’ PCs and can be easily customized to allow access to the precise data they need to make better decisions.

**cpmPlus Smart Client Desktop**

Smart Client Desktop provides a role based user interface for the system. It lets a user create, monitor and manage production and process information on the desktop. The appropriate access rights are all that is needed to access any real-time or historical process information from one or more System 800xA networks.

Once launched, Smart Client Desktop accesses the Server, which manages the requests for real-time data.
Smart Client graphics
Building displays is easy, with no programming required. Using the System 800xA Property Browser and the Smart Client Graphics Palette, users select the information they want to add and drag it to a graphical element for display.

Total information access
Users can access all real-time and historical process information, key performance indicators as well as alarm and event information in easily customized displays.

Trending data points, including current and historical values, is as simple as right clicking the data point.

Real-time design
When designing or modifying screens, users see real-time process data, minimizing the time needed to design and verify screens. This also allows ad hoc display creation, to quickly analyze problems.

Users can select data using the powerful System 800xA Property Browser. This provides a common data structure between Smart Client and System 800xA. The 800xA Property Browser includes a drill down, search, filtering features to make finding data points efficient.

Drag and drop design
Once a data point is selected, adding it to a display is as easy as dragging and dropping it on the page. Display elements are selected from the Control Toolbox. Smart Client comes with a set of commonly used, preconfigured display elements. Additionally, it is possible to create custom designed elements. Any display elements can be easily placed using the drag and drop feature.

Once a display element is dropped into a screen it can be resized, aligned, grouped or ungrouped. While in design mode, users have full control over display properties such as shape, color and text.

System administration
Consistent with a true thin client design, all design information is stored on the server. Based on the user login, and the role assigned to the user, the latest version of the appropriate displays are served up to Smart Client. This eases system administration and maintenance functions like distribution and backups.

Access to applications, displays and data is dependent on user access rights as determined by System 800xA. This means there is no need for redundant security systems, with a single place to manage access.
Improving quality is not just gathering data or controlling loops. It’s also having flexible tools that enable people to find and fix abnormal situations quickly. Using Statistical Process Control (SPC) charts and trends, operators or engineers can swiftly discover the root cause of problems and make the necessary corrections to the process.
Statistical Process Control capabilities

SPC is a method of monitoring, controlling and improving a process by using statistical analysis. The Smart Client Trends and SPC function make creating charts and trends as simple as dragging an object to a trend and selecting the control chart you want to use.

SPC charts
- Distribution chart
- X-Y plot
- X range chart
- X sigma chart
- Moving average (EWMA) chart
- Moving average X moving average range chart
- Moving average X moving average sigma chart

Trending capabilities

Trends are easily configured, using the drag and drop capability. Any System 800xA data point can be selected and trended.

- Standard trend functions:
  - Change time scope and zoom
  - Multiple rulers
  - Data filter for low pass and moving or subgroup average
  - Value markers and display attributes
- Advance trend functions
  - Configurable trend information area
  - Data filter for value within or out of range
  - Numeric display of trend data in table format
  - Setting of targets and off spec limits
  - Integrated statistic functions such as min, max, mean, standard deviation
  - Time shift of trend curve
- Drag and drop of trend data into Microsoft Excel
- Export and import of data to and from dataset files.
- Integrated SPC analysis.
Smart Client Alarms and Events provides access to all System 800xA events, including system events such as node or network up or down, process events such as a property going in and out of an alarm state or an operator action such as a set-point change. The Alarm and Event analysis can be used to find and eliminate the cause of a production disturbance by analyzing a sequence of events. It also improves the operator work environment by finding and eliminating unnecessary operator actions or analyzing the frequency of an occurrence of events.

**Alarm and Event capabilities**

- Tightly integrated with System 800xA event message server.
- Predefined event views for process event, system event and operator log.
- Display of Top Alarms
- Combined event list to show a list of alarm, events and operator orders
- Millions of alarms, events and operator orders are stored on-line.
- Configurable event view based on a user defined filter on properties such as time, priority, object name or message
Creating personalized live report in the Microsoft Excel environment.

The cpmPlus Smart Client Excel® Interface, extends System 800xA into the Microsoft® Office® environment. Users can drag and drop data from the 800xA system into Microsoft Excel.

Using this application, personalized ad hoc reports can be created with live process data. Microsoft Excel functions such as calculations, charting, etc. can be used to transform or analyze the process data.

**Smart Client Excel Interface Capabilities**

- Values, real-time or historical, can be read once, or continuously updated
- Start or stop live update
- Save and call up previously configured spreadsheets
The 800xA Extended Automation Advantages

Harnessing the extended automation capabilities of System 800xA.

Designed to respond to our customers’ need to get more out of their existing assets, System 800xA extended the reach of the traditional automation system beyond process control. It enables enterprise wide information availability, browsing, and navigation in a unified way so that information residing in an integrated environment can be configurable for various user categories, such as operators, engineers, maintenance and management personnel.

Smart Client harnesses the extended automation capabilities of System 800xA technology to provide a true thin client environment optimized for the display of manufacturing information.

System wide administration

Security settings, user authority definitions, status monitoring and back up functions are system-wide and integral to the 800xA system. No additional client log-on is required because system security is integrated with Windows security.

System 800xA Information Manager (800xA IM) is ABB’s optional long-term history application. While the System 800xA can keep all data for short periods of time, ABB’s System 800xA IM extends the period of time that data can be saved.

Transparent Data Integration

System 800xA tightly integrates process data and historical data in one place, making it seamlessly available to System 800xA and Smart Client users.

Information is more than process data

Alarm and event messages are also collected and stored, along with process data. This simplifies data management and reduces the total cost of ownership by creating a single repository for all process and production data in a safe, secure and integrated environment.

When data integrity is important.

Architecture

For information to be viewed, analyzed and acted upon, its source has to be reliable and secure. System 800xA provides secure storage configurations for standard or specialty data structures. Users can be confident that their decisions are based on reliable information.

• Security setting, user authority definitions, status monitoring and back-up functions are system-wide functions integral to System 800xA.

• Consolidated data storage functions collect data from multiple history servers and store it in a single location. This provides a common repository for viewing and reporting of multi-system information.

• Data archiving functions support copying data to archive media for extended data storage and security.

• High data availability is achieved using fault tolerant and distributed configurations. A RAID 5 configuration insures high system reliability and availability.

• A single point of engineering for system maintenance ensures that there is no risk of inconsistencies between multiple databases and no need to duplicate engineering effort. Changes to properties made in the control system databases, such as ranges, alarm limits are automatically reproduced throughout System 800xA.
SMART CLIENT IS A CORE COMPONENT OF ABB’S COLLABORATIVE PRODUCTION MANAGEMENT SUITE OF APPLICATIONS, cmPLUS. AS PART OF THE INDUSTRIAL IT FAMILY, cmPLUS PROVIDES PROCESS AND PRODUCTION MANAGEMENT, ADVANCED OPTIMIZATION FOR THE PROCESS INDUSTRIES, CONNECTIVITY TO OTHER SHOP FLOOR SYSTEMS AND A BRIDGE TO ENTERPRISE SYSTEMS. THE CAPABILITIES OF cmPLUS HELP COMPANIES REALIZE THE POTENTIAL OF TRANSPARENCY OF INFORMATION, NOT JUST AT THE MANUFACTURING LEVEL, BUT AS A KEY COMPONENT OF THE OVERALL SUPPLY CHAIN.