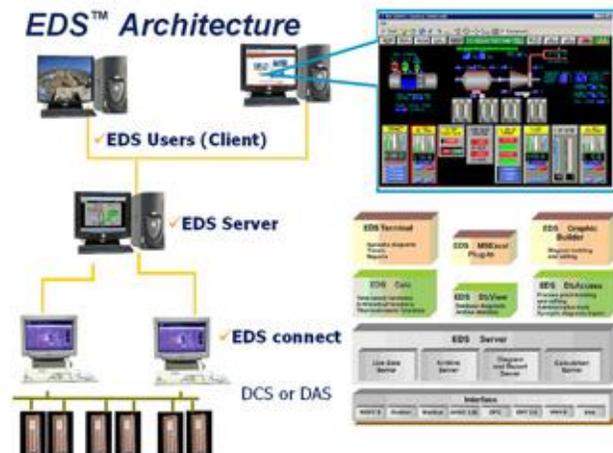


## Features

- Comprehensive package for remote visualization of process graphics, trends, and alarms
- Integrated view of multiple systems and sites at authorized desktop computers
- Display of custom-built diagrams or regeneration of Ovation™ and WDPF™ WEStation graphics
- Reporting system with execution scheduler and layout/calculation builder
- Data gathering from multiple process control systems to a centralized data server for local storage and forwarding to the EDS desktop environment
- Scalable up to 200,000 process points



Accurate, up-to-date process information for plant operators, technicians, engineers, supervisors, managers or executives is essential for optimal plant operation. The ability to monitor a plant's processes from anywhere within the corporate or municipal structure provides additional flexibility for more efficient troubleshooting, improved individual site operations, and enhanced evaluation of activities at multiple site locations.

Emerson offers the EDS™, a comprehensive system for collecting and processing plant data that allows viewing of current and past process information from anywhere within a corporate structure. EDS information is gathered from control systems, as well as the entire enterprise or multiple sources into one place and is presented in near real time data, process and read-only control diagrams, alarm lists, trends, and reports. This capability provides remote users a high fidelity representation of what the operator sees in the control room.

A key feature of the EDS that sets it apart from other control system integration products is its ability to import and convert original control system process graphics for viewing at the EDS terminal client application. Ovation or WDPF control systems provides all users with a

consistent view of the plant process and eliminates the expense of recreating these displays in other formats. For Ovation systems, EDS launches the control builder's viewer for signal diagrams, giving remote users access to troubleshooting and diagnostic information. Sensor and point information fields are supported in point information function as well.

## Control System Integration

EDS manages the distribution of process values, alarms and displays to users running the EDS terminal client application suite at their desktop computer. The EDS also acts as a data integration platform that provides process information to SmartProcess™ plant optimization and performance software applications.

The EDS architecture supports interfacing with one or more control systems, with one EDS server typically located at each plant site. The client application provides the ability to select between the individual servers in order to focus on process activity from each unique system. In addition, site EDS servers can propagate their data to a higher level EDS server, thus providing multi-site integration support. Using the EDS in an IT network architecture in the third or DMZ



## EDS Terminal Application Suite

The EDS terminal application suite is a set of process visualization tools for presenting dedicated data server process information and graphics to end-user desktops located throughout the corporate wide area network.

The EDS terminal consists of the:

- EDS toolbar
- Process diagram display
- Data replay
- Process diagram - graphics builder
- Point list - point information
- Control logic viewer
- Events list
- Report editor
- Report monitor
- Trends
- Message log
- Workspace (profile) editor

These applications work together in a secure, well-organized environment to provide a number of ease-of-use features, including:

- Drag and drop of process values between applications
- Menu-based navigation between EDS terminal applications from the chosen process point value
- Selection of graphics, trends, and reports from user-filterable lists
- Display layout and organization profiles for each user
- Automatic database and graphics updates

The EDS Client supports Windows, Linux, and Solaris operating systems.

### EDS Toolbar

Once the user has logged in with a unique ID and password, and has connected to an EDS server, the EDS terminal toolbar appears, providing direct access to the EDS applications. During the login process, the terminal environment is automatically updated with the latest point database and process graphics available from the EDS data server. The toolbar, collapsible to a single minimized icon, contains a

small status indicator which shows that communication with the server has been established.



Figure 3: The EDS terminal toolbar is panel of icons that enables access to the individual application components via log in security settings



Figure 4: The EDS terminal toolbar for operations and I&C engineering

### Process Diagram Display

The EDS process diagram display provides a list of available Ovation and/or WDPF process graphic replicas. The list of graphics is filterable based on selection of the source control system. Graphics can be previewed in this window before launching the desired selection into one of four available diagram display windows.



Figure 5: The EDS diagram display system supports up to 4 graphic windows.

Each diagram display window shows a selected graphic with live, dynamic updates of its process values, presented in numeric or graphical form. It also supports scaling of a resized process graphic and navigation controls to go backward and forward in a chain of previously displayed graphics.

A right mouse-click on a graphic's active area, for example a displayed process value, initiates a pop-up menu which launches an EDS trend or point information application for the associated process point. Additionally, Ovation logic or control builder signal diagrams can be displayed from this menu. Off-page connectors within these diagrams provide an additional method of display navigation.

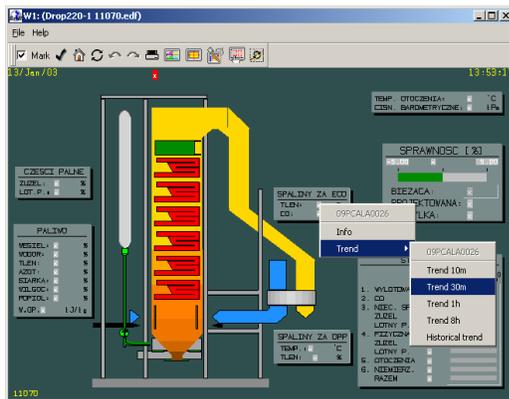


Figure 6: Navigation to point information or trends is available via a pop-up menu selection

### Data Replay Plug-in

The EDS data replay plug-in displays historical values on operator graphics. Available replay functions include play, pause, step back, step forward and replay speed. Data is stored with date and time stamps for quickly accessing and replaying the historical data.

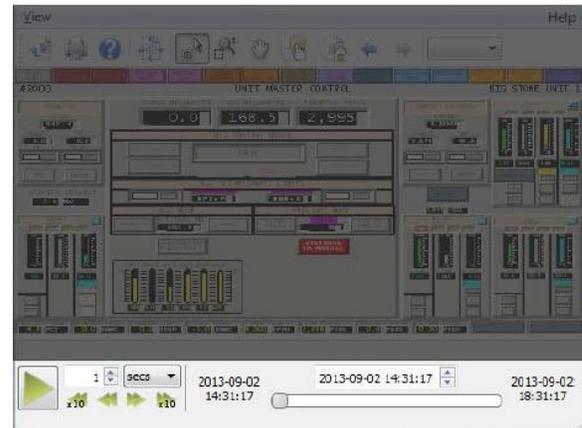


Figure 7: Data replay plug-in

### Process Diagram Builder

Designated users can be supplied with a version of the EDS terminal that includes additional tools within the process diagram display window for graphics creation and editing; including functions for drawing element creation, cut / copy / paste, and item group/ungroup.

The diagram builder's drawing functions allow construction of graphic elements made of lines, arcs, rectangles, and ellipses. Process point elements produce place holders for numeric values to be displayed during run-time. Bars and trends represent process values visually as charts within the process graphic.

Process graphics can also be created by using the EDS graphics source language. This language is based on the WDPF graphics language with syntax that is similar to the C application programming language.

## Trends

The EDS terminal can trend current and past data for up to sixteen selectable process points. Trend assignments can be made by dragging and dropping points from process graphics or other EDS terminal applications into the trending diagram. Points can be saved to trend groups for easy and quick initiation at a later time.

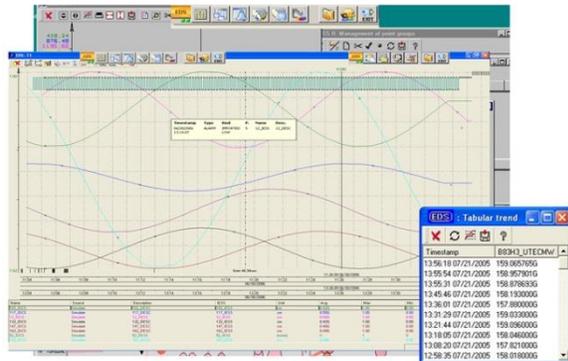


Figure 8: The EDS Terminal Trend displays up to 16 process variables.

The EDS trend window can be launched from any process graphic the EDS point list, or the EDS trend group window. Special features allow for changing the trends time and value ranges, and viewing process values at the time indicated by the cursor.

## Annotation Feature

The EDS annotation feature allows users to select a trend and add an annotation. The annotation provides an explanation for the occurrence. All information is then stored in historian for retrieval by any user.

## Control Logic Viewer

The EDS toolbar launches the control builder viewer for 'view only' displays of Ovation logic and control sheets. The viewer assists with process troubleshooting by permitting remote observation of the plant control configurations.

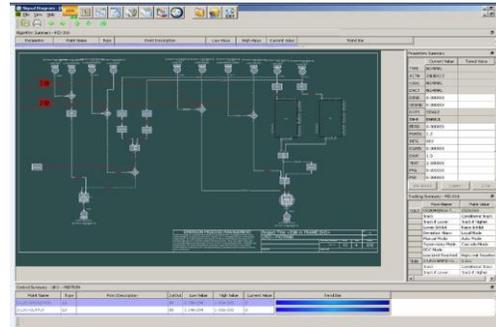


Figure 9: Control logic viewer

## Events List

The EDS events list application allows viewing of current and past occurrences of points alarmed within the EDS server and alarms replicated from Ovation and/or WDPF control systems. Switching from the current to a past view is accomplished by selecting the radio button on the event list window. The EDS events function supports eight levels of alarms, each with a unique user-configurable color; and provides event printing and exporting capability.

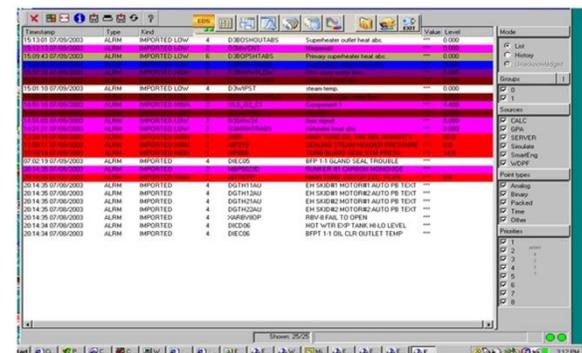


Figure 10: Events list

## EDS Report System

The EDS report system is a powerful tool to create and execute process data reports. The report system consists of two parts: the report editor and the report monitor.

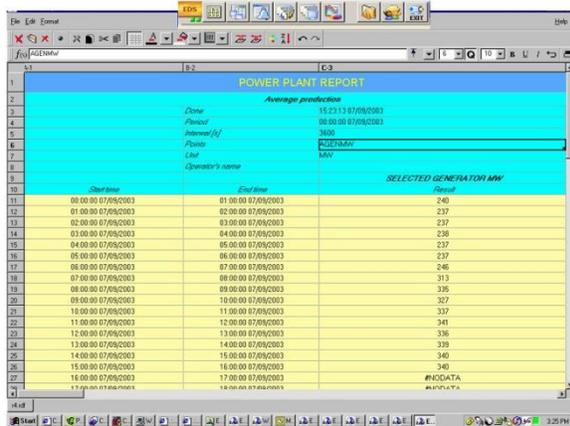


Figure 11: EDS reports are created using the spreadsheet-like report editor

The EDS report editor contains tools to define report layouts in a spreadsheet-like application window. The layout window is organized by a grid of cells where process values and mathematical expressions can be programmed, as well as special functions for process values, point attributes, and summary results.

The EDS report monitor schedules selectable reports for periodic execution (e.g. hourly, daily, weekly), assigns the report to run based on a process condition, or manually requests the report to output.

### Excel Plug-in

The EDS Excel plug-in feature allows users to import values directly from the EDS server into a Microsoft® Excel spreadsheet. Both live and archived data are included in the custom functions provided by the plug in. The point descriptions, value, and time samples are all available.

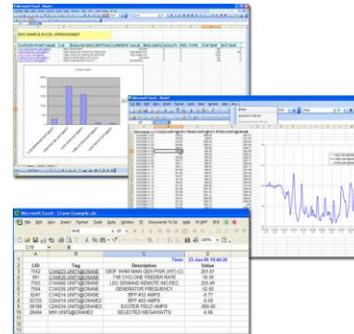


Figure 12: Excel plug-in

### Web Service

EDS data is also available in user-friendly customized portal (web application). It may be delivered as a customized portal or web service.



Figure 13: Web service portal

The customized portal is a fully engineered and integrated corporate portal with additional custom features such as web-based reporting systems, external database links, and O&M functions. These data management solutions are available on various operating systems.

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