Process Solutions

Honeywell

Experion HMI

The Experion® PKS human machine interface (HMI) optimizes your process operator's situation awareness and responsiveness. With over 30 years of experience in process control and HMI technology, Honeywell continues to incorporate innovative and efficient features into its flagship HMI, minimizing implementation costs and providing unsurpassed clarity to operators during abnormal situations. Experion® PKS – The Knowledge to Make it Possible.

Key Benefits

- The Experion HMI incorporates features developed from extensive consideration of human factors by the Abnormal Situation Management Consortium

- It includes a comprehensive set of built-in system displays and industry leading standard functionality that minimize implementation costs and reduce startup times.

- Advanced alarm management capabilities are incorporated including alarm tracker, alarm suppression and alarm shelving, minimizing the impact of alarm flood situations.

- Advanced trending is available with integrated events and drag/drop trend configuration, providing instantaneous access to historical data and events.

- An intuitive engineering environment is provided with object based HMIWeb display builder, enabling faster project execution.

Process Control System HMI Features

The challenge for each process control system operator is to operate the plant or process safely, reliably and effectively. The HMI needs to guide the operator with this task. Each process or plant has unique challenges, and the HMI therefore also needs to offer flexible deployment options with minimum cost of ownership. The Experion PKS HMI meets these challenges in a number of ways:

- A choice of HMI types, offering direct or highly efficient cached access to process controllers, meeting high performance and high availability needs

- Enables cost effectively scaling to large numbers of users and extended topologies with a single common user interface

- Secure out of the box configuration where access levels can be based on either the user or the HMI, with the ability to change user with no loss of view of the process

Experion Station –the most flexible options for your HMI

Experion Station is the HMI component of an Experion system supporting operations, monitoring, maintenance, and engineering functions.
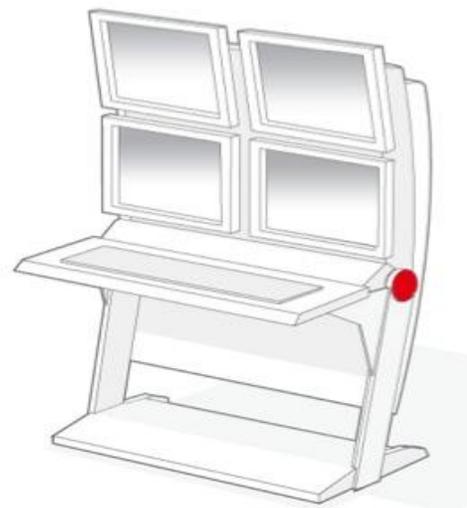
Figure 1 – Quad Screen ICON Station

Different types of Experion Station are available to satisfy a broad range of needs.

Console Station provides independent and high performance direct access to process controllers, and is ideal for demanding 24/7 control room operations. Console based alarm acknowledgement, audible annunciation and scope of control of process equipment are all supported. A group of Console Stations behave as a single logical entity.

Flex Station uses cached access to controller data. This real-time caching mechanism is highly efficient and supports deployment of large numbers of stations on widely distributed systems.

Remote access over Honeywell's One Wireless is supported with *Mobile Station*, a fully functional Flex Station on a hardened tablet PC, and *Experion Mobile* Access, providing faceplates, alarm lists and trends on a handheld device.

Remote Access is also supported via Windows Remote Desktop Services with the *Remote Engineering & Station Server*. This enables engineering and troubleshooting from remote locations including low bandwidth connections.

All Experion Station types have the same effective operator interface. A mix of Experion Station types can be implemented in a single system to provide the most appropriate, site-specific solution possible.

Experion Station is available in ICON console furniture with single, dual and quad monitors. The operator work surface and keyboard height can be adjusted electronically. There is the option of a data input panel, a trackball and dedicated operator keyboard specifically designed for 24/7 control room use.

Experion Station is also available with an identical dedicated operator keyboard for desktop use.

SafeView provides the operator with a predictable, repeatable and safe interface to the processor or plant in the Microsoft ® Windows environment. The Safeview workspaces control the category of displays and applications that can be used in anyscreen region, ensuring that the operator has a constant view of the critical parts of the process.

Effective Operator Interface Design

Out-of-the-box the Experion HMI offers an advanced framework for navigation and monitoring purposes. A toolbar with icons is provided for silencing and acknowledging alarms, invoking displays, groups and trends and other frequent operator actions. A message zone is used to provide feedback to the user, and a status bar provides key information such as active alarms, system faults and other information that is important to the operator.

Operators can receive feedback and confirming actions through Operator Callouts. When required, these appear on the display attached to the object with the problem with which the operator is interacting. This ensures the operator is aware of actions that can't be completed because acknowledgement is needed or if the equipment status is incorrect, such as a value being entered being out of range.
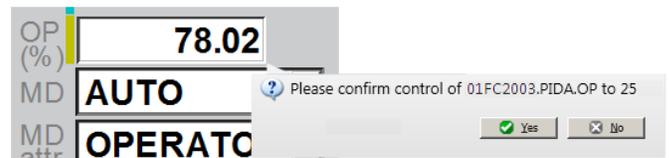
Figure 2 - Experion Operator Callout

The Experion HMI incorporates features developed from extensive consideration of human factors by the Abnormal Situation Management consortium. Operators' situational awareness is optimized, fatigue minimized and quick identification and response to abnormal situations promoted. These features are available both in standard system displays and user built displays where the HMIWeb Solution Pack library is used, and includes:

- Use of bright colors exclusively for alarms and process data; equipment and flow lines use shades of the background color. This draws the operator's focus is drawn to the process data and alarms.

- Animation that is used exclusively to bring process-critical or safety-related information to the foreground, and to the attention of operators.

- Tabbed navigation with indication of active alarms

- Selecting an object invokes a predefined set of associated displays, trends and faceplates to allow the operator to immediately get a complete view of what is occurring

- Advanced shapes for temperature, pressure, level and flow analog values and controllers. These shapes show the current value relative to normal range and alarm limits for use on overview displays. Operators can quickly and intuitively detect and address abnormal process conditions.
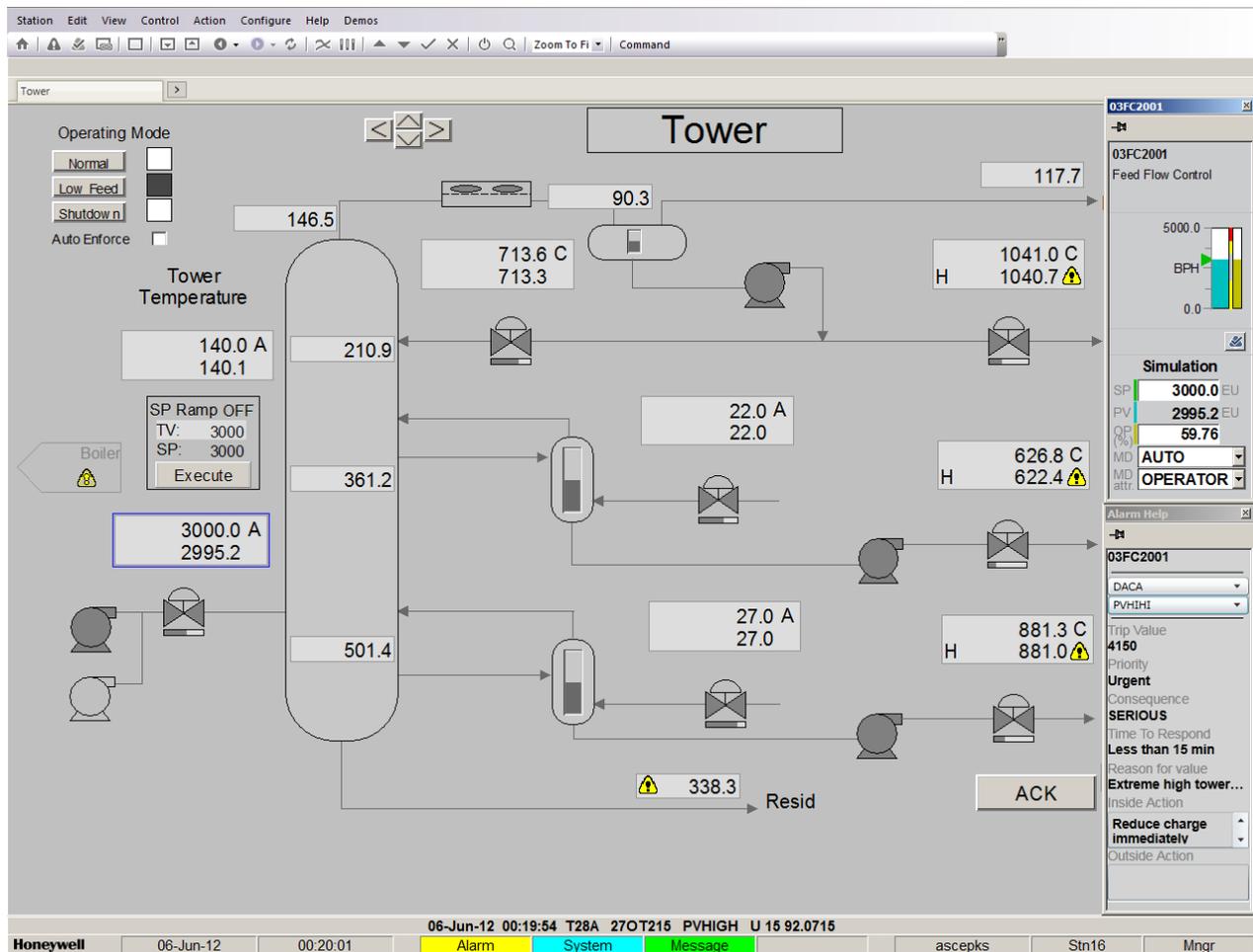
Figure 2 –User Display Built using the HMIWeb Solution Pack Library

Innovative Alarm Management Features

Effective management of alarms, particularly in alarm flood situations, is a key aspect of operator effectiveness.

Alarm Tracker is the next generation alarm interface - a step change improvement from the tabular alarm summary. All current alarms are shown in a single window in tracks, sorted by process unit. Alarms scroll from right to left over time and relationships between alarms across all process units can be easily identified. Clusters of alarms can be selected for more detailed analysis. Alarm Tracker dramatically reduces the time needed to diagnose and resolve process upsets.

Dynamic Alarm Suppression provides a very easy to implement method of suppressing alarms based on preconfigured rules. It is fully integrated with the Experion Alarm Summary with a tab showing suppressed and suppressing alarms.

Figure 3 - Alarm Tracker

Alarm Shelving enables operators to immediately temporarily remove problem alarms from their view so they don't impact other critical activities they are performing. Alarm Shelving is fully integrated with the Experion Alarm Summary. Alarms can be shelved from a right click menu. A list of shelved alarms can be seen by selecting a different view.

For more information refer to the *Experion Alarm PIN.*

Advanced History and Trending

Experion HMI trend capabilities include integrated Events, zoom box, up to 32 parameters in a single trend, auto-scaling and drag and drop configuration. *Trend with Events* is a powerful tool for diagnosing process upsets. Events are represented by icons that are displayed along with process data with a fully synchronized event window.
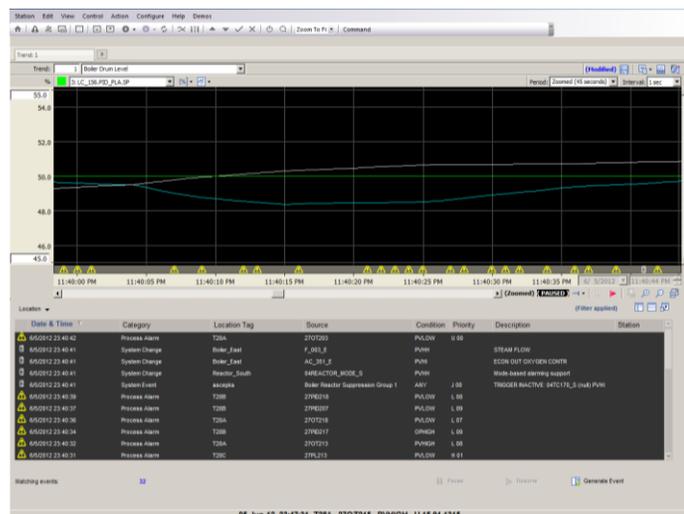
Figure 4 – Trend With Events

Trends can be preconfigured or created on the fly by operators by dragging and dropping parameters from system- and user-built displays.

A fully functional trend object is available for use in user displays.

Experion PKS has a fully functional advanced built-in historian. Very long term history storage is supported. History files can be easily archived on external media then restored and accessed transparently when needed. History is stored in a highly efficient format with pre-calculated aggregates. Retrieval and display of data is almost instantaneous even if the trend duration is months or years.

Includes a Comprehensive Set of Built in Displays

The Experion HMI includes a comprehensive set of built in displays. This includes the alarm summary, trend, system status, operating groups, point detail, faceplates, loop tuning and an extensive set of configuration and diagnostic displays.

The alarm summary has a navigation tree that shows all assets in a hierarchy with their current aggregated alarm state, and a single click shows all alarms.
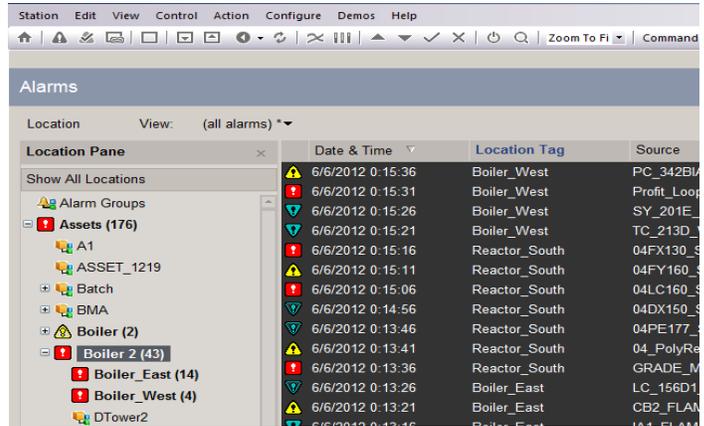
Figure 5 - Alarm Summary Asset Model

The comprehensive set of system displays reduces the amount of configuration required on an Experion system and minimizes the cost of ownership.
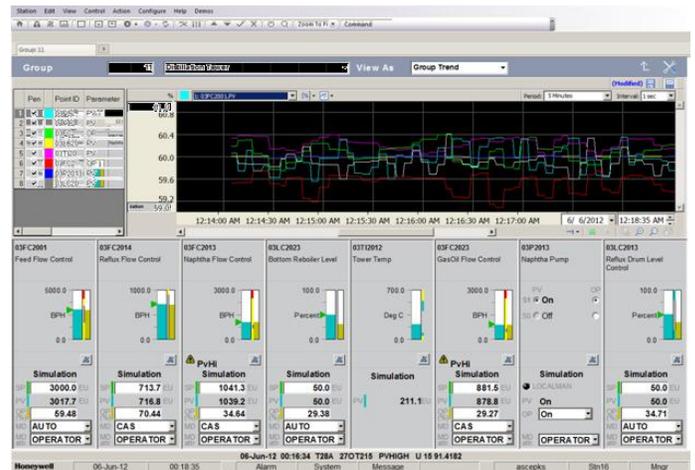

Figure 6 - Operating Group with Integrated Trend

Security Out of the Box

The Experion HMI offers the choice of setting the access level at either the station or the user, based on his/her account. With Station based security, the access level is set for the Station and applies to all users. This is ideal for locations occupied 24/7 such as a control room. User based security requires logging in with an account and allows changes to be tracked based on the user. This includes the use of Users and Groups from the Microsoft Operating System.

Intuitive Engineering Environment

Configuration Studio is a single location that hosts all the Experion engineering tools in a single ordered location.
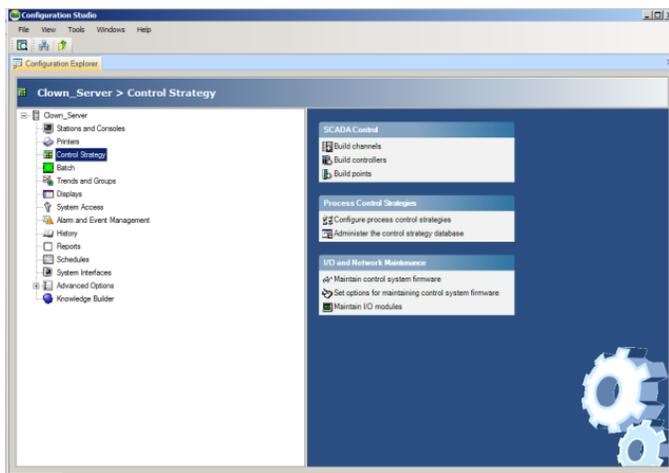

Figure 7 – Configuration Studio

Included in Configuration Studio is the HMIWeb Display Builder. This is the object orientated tool for building and maintaining Experion user displays. It includes an object browser to easily navigate and make changes, property window to enter and view parameters and a structured list of shapes. Shapes can be dragged and dropped to quickly engineer new displays and modify existing ones.
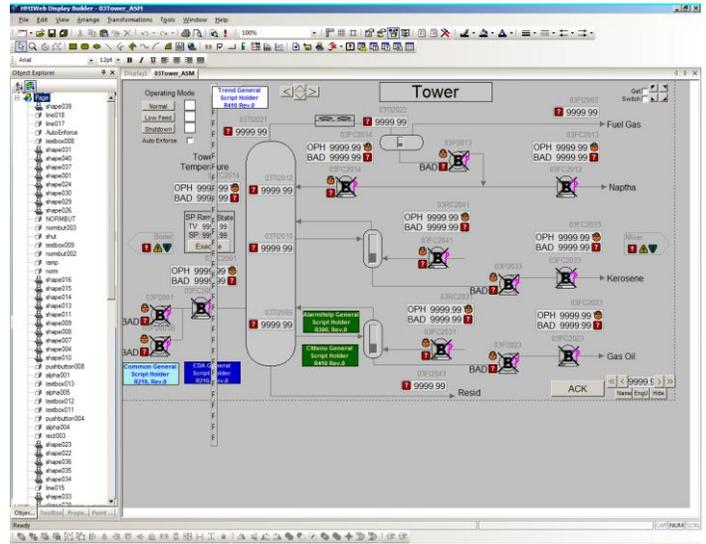

Figure 8 – HMIWeb Display Builder

For More Information
Learn more about how Honeywell's Experion HMI can improve project performance, visit our website www.honeywellprocess.com or contact your Honeywell account manager.

Honeywell Process Solutions
Honeywell
1250 West Sam Houston Parkway South
Houston, TX 77042

Honeywell House, Arlington Business Park
Bracknell, Berkshire, England RG12 1EB UK

Shanghai City Centre, 100 Junyi Road
Shanghai, China 20051

www.honeywellprocess.com

Honeywell