Overview

The following examples are displays that ABB/Totalflow has used on various SCADA projects. They will provide the base for the new applications, and may be modified to meet the user’s requirements.

Map overview

The example Map Overview Display has a treeview on the left side of the screen. Both the map and the treeview can be used for navigation to other displays in the system, depending on the users needs at the time he/she is using the system. In this example, the customer has divided the system into two main categories – Compressor stations and Fields/PODs. The Compressor stations are further divided into Recip Compressors and Screw Compressors. Although it is not shown in this example, the Compressor Stations consist of compressors, Fuel Meters, Inlet Meters, Outlet Meters, PLCs, and other types of devices which may be at the compressor site. The Hierarchical grouping for the treeview is arbitrary and can be changed to meet the user’s needs.

Note: Alarms are shown at the bottom of the screen. The alarms are defined during the System Engineering Phase of the project.
Overview or Summary display

The Overview Display summarizes a group of wells such as a POD, Field, Pumper’s route, Compressor Site, facility, or lease. Overview displays are available which are similar to the display shown above. The header section contains summary information for the display. This Summary Display will be customized to meet Customer requirements.

Data Point Identification:
- Name of Device.
- Total CFlow – The total current day’s gas volume in Mscfd and water volume bpd for all devices.
- Oxygen – The amount of oxygen in ppm for all devices.
- Total YFlow – The total of yesterday’s gas volume in Mscfd and water volume bpd for all devices.
- Discharge – The discharge pressure for the station.
- Inlet Meter ID
- Inlet Meter Oxygen – Amount of oxygen measured in the inlet meter.
- Inlet Meter C Header – Current inlet pressure to the station.
- This is a table of all devices in the system. The device name can be clicked to bring up its template. The values may have a shaded background to indicate that the value is outside of a normal range.
- Notepad – A user can record information about the meter’s operation or notes to other users.
Well site display with button for drill down wellhead control

There are two well site displays shown on this page and the next. The first is an example for a conventional site. This example display is of a well site which has a Symcom pump and controller.

The Water production is displayed as is the EFM information. The button, “Wellhead Control”, brings up a screen where the pump parameters can be changed – see the screen display below.

Note that the treeview navigation scheme is carried onto this screen. This makes it easy for the user to get TO anyplace in the system FROM anyplace in the system. Note the summary information in the header of this display. Above this is a set of three tabs that can be used to navigate among the functionality of this display (“Map”, Graphic Templates”, and Trend”).

Wellhead Control display

This screen / template indicate detailed pump information. Parameters can be changed from this screen and commands (e.g., setpoints) sent to the site if the user has the appropriate privileges.

An interesting and useful feature of the screen is the Notepad in the lower right part of the screen. Operators and other users can write notes to each other in this area – for instance “Down till Monday for Repair”, or “Waiting on a part for the VFD”. This data goes into the database and can be used for reports or other uses. Some customers use the notepad information as a well log and produce reports with only log information for their wells.
Well site display with wellhead control on the same display

The wellhead meter view is loaded and displays gas, water and motor status, setpoints, and parameters. Measurements are organized by Water, Gas, and UMC22 to make it easier to read. This is an alternative to having a separate screen for the Wellhead Control features.
Typical compressor overview display

The following display is a complex display allowing the user to specify various filter groups or other search criteria. It can also be designed to allow the user to specify time spans. These customizations can be saved and reused as desired. A display such as this one requires more extensive design than the Overview Display shown earlier. If required, it can be quoted following the System Engineering Phase of the project.

Compressor station application

This display provides monitoring for a Compressor Station Application. It also shows some of the strengths of the SCADAvantage™ design.

The grid in the upper center of the screen provides data on compressors at the station. This display can be configured for each user to summarize the compressor data required for efficient monitoring and control of the compressor station.

The tree view on the left side of the screen provides navigation and alarm monitoring just as on the other screens. The alarm log is also located on the bottom of the screen.
Alternate compressor station application

This is a complex display, but it provides a summary or overview of the compressor station operation.

In general flow, the upper left of the display shows station wide information. In the upper center are the inlet meters (none shown on this screen capture). The compressors are in the middle, and outlet meters at the bottom.

This display will show up to 12 compressors at a compressor station. Although there is only room for 6 compressors at one time, the others can be scrolled onto the screen from the left or right. Two of the compressors show data on their face. These compressors have PLCs attached, the others do not.

Colored buttons provide control for various aspects of the station. The STOP button, for instance, allows the station to be shut down remotely in case of a serious alarm condition. Individual compressors can be stopped as needed. This screen does not support compressor startup, but that can be added depending on customer requirements.

This design provides information on Inlets, compressor operation, and outlets, breaking down both the inlet and outlet data by producer. The screen also provides buttons that bring up displays of comparative information between subscribed, and design capacity, and comparisons with actual throughput.
Trend display

The display below is a typical SCADA\textsuperscript{TM} Trend display. It is often useful to define a default trend for a screen or for a subset of the data on the screen. For those screens, a "default trend" button is used so the user can click on the button and have a predefined trend displayed.

Note: The scales on left and right for each trend – Yellow scale for Yellow trend, etc.
ABB Inc.
Upstream Oil & Gas
Process Automation
Toll-free: +1 800 442 3097
Quotes: totalflow.inquiry@us.abb.com
Orders: totalflow.order@us.abb.com
Training: totalflow.training@us.abb.com
Support: totalflowsupport@us.abb.com

Upstream Oil & Gas
Main Office
7051 Industrial Boulevard
Bartlesville, OK 74006
Ph: +1 918 338 4888

Upstream Oil & Gas
California Office
4300 Stine Road, Suite 405-407
Bakersfield, CA 93313
Ph: +1 661 833 2030

Upstream Oil & Gas
Kansas Office
2705 Centennial Boulevard
Liberal, KS 67901
Ph: +1 620 626 4350

Upstream Oil & Gas
Texas Offices
3700 West Sam Houston
Parkway South, Suite 600
Houston, TX 77042
Ph: +1 713 587 8000

3900 South County Road 1290
Odessa, TX 79765
Ph: +1 432 563 5144

150 Eagle Ford Road
Pleasanton, TX 78064
Ph: +1 830 569 8062

www.abb.com/upstream

Note
We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB.

Copyright © 2016 ABB Inc.
All rights reserved