Description

Generally, ABB Totalflow Projects follow these steps:
- Kickoff meeting
- Engineering design
- System configuration
- Business object template development
- Display template development
- Application specification and design documentation and testing
- Factory Acceptance Test (FAT)
- Implement FAT requirements
- Install and train
- Commission
1. Kickoff meeting

SCADA\textsuperscript{vant}age projects will begin with the acceptance of the Purchase Order. Totalflow will confirm assignments of appropriate people to the project and the Project Manager will call a Kickoff Meeting consisting of the project team, the customer representative(s), and any other persons that the Project Manager or customer requests. The meeting may be via conference call. The Project Manager will review the specification, projected schedule, purchase order details, and additional requirements from the customer.

At this point, or anytime throughout the project that additional Customer requirements cause a significant change in the scope of the project, the project Manager will prepare a Change Order to describe the change. If approved by the customer, normally by an addition to the PO, it will be incorporated into the project. If the Change Order results in additional work, that work will be billed at the standard Totalflow rate for Development Engineering.

2. Engineering design

This step involves getting the configuration information for the devices. The specific information will be identified at the Kickoff meeting, but in general will consist of:

- Identify device addresses, data points, and any other information needed to configure the SCADA\textsuperscript{vant}age System.
- Communication configuration (baud rate, etc.)
- Preparing register maps or I/O information for each piece of equipment
- Finalizing the site locations (latitude and longitude)
- Verify the Template requirements, or update them based on new information
- Specify Alarms, parameters, etc.,
- Finalize Report formats
- Prepare or finalize a schedule
- The System Engineering is a major milestone. The remainder of the project will not be started until this step is complete.
3. System configuration

System Configuration will consist of:

- Specifying, acquiring, and setting up the PC. The customer can provide this PC, or ABB will acquire a suitable machine and provide it at cost plus 25%.
- Installing the software as needed including the SCADA Advantage system and the WinCCU software.
- Staging the system with appropriate test hardware. This may require that the customer provide a sample device(s).
- Configuring the system.

4. Business Object Templates (BOTs)

BOTs are comprehensive tools that automate adding new wells or other facilities to the system. They provide a one-step process to add the RTU to the communications tables, add the points in the real-time database, generate the new well displays, add the well to the map, add the well to the reports, etc.
5. Display template development

This step will consist of developing the display templates for the customer’s application.

**Grid display**
This Grid has been used to summarize data from fields of Flow Computers, compressors, or sub groups of either. If the number of columns exceeds the width of the area provided for the grid, it automatically provides scroll capabilities. The Notepad at the bottom of the screen is optional. Any summary information would be at the top of the display. This display will be finalized during the System Engineering Step.

An interesting and useful feature of the screen is the Notepad in the lower 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”. Information entered in the notepad can be stored to the database and used in reports, or for a site log.

**Trend display**
The user can also show a trend of the variables on the screen. Trend data can come from the standard SCADAvantage Database trend files, or from the trend files stored in the Totalflow devices. Both pre-specified trends and ad hoc trends are available. The following is a trend prepared from data in the SCADAvantage trend database. Trends from data stored in the Totalflow devices will have a similar format.

The user can request an immediate poll of the device, or take it off scan (e.g., if it is under repair). If no current data is available, the last known good data is displayed with a dash through the value to indicate that it is not current. Manual entries are shown in italics.

The sample trend shows another view of trended data.

Note the vertical dashed line near the center of the trend. This is the dipstick. The value of each of the variables on the trend at that moment in time is displayed in the box in the upper left corner of the page.
6. Specification and design / reports
If there are custom reports for the project, they will be developed in this step

7. Documentation and testing
Documentation will consist of User’s Documentation as needed for correct operation of the system, and System Administration Documentation for those who would modify or update the system. These custom manuals will be in addition to the extensive SCADAvantage manuals.

Testing will consist of verifying that each function described in these documents or additions works correctly.
8. Factory Acceptance Test (FAT)

The system will be staged at Totalflow’s factory in Bartlesville, OK. The Factory Acceptance Test will consist of verifying that each function of the system works correctly. The Project Manager will provide a list of these functions, and the customer will approve the list. The customer will be invited to witness the FAT either in person or remotely. In addition to correcting failures, the customer may request minor changes to the system to make it more useful. At the end of the FAT, each item on the list will have a check mark showing that it functioned correctly, or have a notation of a failure and what will be done to correct it.

9. Implement FAT requirements

Failures will be corrected and any minor changes will be implemented. Major changes will require a Change Order.
10. Install and train

The project manager will designate one or more team members to install the system at the customer's site. All functions and all the changes to the system will be demonstrated again.

The system users will be trained to operate the system as part of the installation.

11. Commission

When the installation is complete, the Project Manager will declare the project complete and commission the system.
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