Software Management for OEM Systems

Background

In 2012, Avid Solutions was contacted by a major supplier of OEM systems for single-use pharmaceutical processes. They already had an OEM system for the European Union market built on the Siemens control platform but needed one built on Allen Bradley PLCs for the North American market. Avid was given the job of building the software to mirror the functionality of the EU system with some additional improvements. For every system, the OEM is maintaining the functional specification and the hardware design while Avid maintains the software, design documentation, and test documentation.

Application

There are five standard system types supported for the OEM. Should the standard not include an instrument or function needed by an end user, Avid customizes the software to meet those needs. Additionally, we have delivered the software for several one-off custom systems in both single-use and stainless-steel systems. All systems are fully contained and allow the user to:

- View alarms, events, and historical data
- Manually control valves and pumps
- Write a phase using an intuitive graphical interface
- Run phases
- Run reports
- Use Windows-based security groups for user management

In addition to the base features offered by the OEM, some clients request to have the system integrated into their plant system. While the level of integration varies by customer, most include one or more of the following elements: setting customer network addresses, assimilating the skid into an Active Directory domain, and integrating into a plant-wide batch control system.

The key to Avid's ability to deliver the volume of standard and custom systems lies in our standardized code base. The systems all utilize the same class-base template for lower level functions such as IO mapping and control modules. The higher-level functions (from equipment modules to the recipe editor) all follow a consistent design pattern which enable development and troubleshooting efforts.

Results

Since delivering the first standard system for the OEM, we have expanded into designing and maintaining five standard system types, developing multiple custom variations of each, and creating several modified custom single use and stainless-steel systems. In addition, the OEM now includes Avid in their sales process to provide the insights we've gained through experience to design the best possible system for their clients.

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