

Automation Master Planning & Developing Effective Automation Standards for your Facilities

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KEYWORDS:

Standards, Specifications, Contract Administration, Master Planning, Capital Projects, Construction, Automation, DCS, SCADA, PLC, RTU, System Integration, Standards, Maintenance, Installation, Long term Planning

ABSTRACT:

From an owner's perspective, selecting automation technology for any process or plant represents a myriad of choices. These choices range from large-scale choices such as selecting the automation platform (i.e., whether to use a DCS, a collection of PLCs/RTUs, vendor package control systems, or a combination thereof) to tiny details such as what color should be used to represent a pump running in "local mode" on a computer screen in the control room. When these choices are made on a project to project basis or left up to system integrators involved with individual projects, the end result can often be a wide range of incompatible and inconsistent technologies that get installed over time. This is not preferable as it can lead to higher long-term maintenance and training costs, as well as ongoing/recurring issues with integration complexity, usability and user interface consistency.

This paper will discuss the benefits of automation master planning from the perspective of a facility owner. Automation Master Planning, also referred to as SCADA Master Planning in some industries, is the process of working with facility stakeholders to determine both short and long term automation goals. These goals are captured in the form of a "living document" called an Automation Master Plan, which is then used to guide the use of automation technology for all of the owner's facilities.

The role of developing "facility automation standards" to support the Automation Master Plan will also be discussed. Facility automation standards are different from published industry standards, as they are written for the sole purpose of reflecting owner's specific needs and preferences. They are typically developed in house, reference external standards as needed, and provide specific guidance on exactly how automation is to be implemented in all of the owner's facilities. Facility standards can be very hardware/software specific or they can be performance based – their content and format depends entirely on the individual facility owner's preferences. At a minimum they typically consist of standardized specification documents, code libraries, and sample programs, as well as drawing and document templates. In the paper, guidance will be provided on how to set up a facility automation standards program in conjunction with automation master planning, and how successfully apply facility automation standards to the capital projects workflow. The paper concludes with case studies of several municipal water/wastewater utilities that have successfully implemented their own facility automation standards in conjunction with automation master plans.

ABOUT THE AUTHOR:

Graham Nasby, P.Eng., PMP is a licensed professional engineer who has worked in various industries ranging from IT and software development to pharmaceuticals and semiconductor manufacturing. He currently designs automated control and monitoring systems for the municipal water/wastewater sector at Eramosa Engineering Inc. He is also contributing member of the ISA18 "Alarm Management" standards committee and director-elect of the ISA's Water/Wastewater Industry Division. In 2011, his article "SCADA Standardization" won the ISA's Keith Otto prize for best article of the year in ISA *InTech* magazine. In that same year, Graham was also named as part of Control Engineering Magazine's annual "Leaders Under 40, Class of 2011" awards program. He is the general symposium chair for the 2012 and 2013 ISA Water/Wastewater and Automatic Controls Symposium. Contact: graham.nasby@eramosa.com