Successful SCADA specifying and implementation for Water and Waste Water Projects

Speaker:
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Presenter

- **Bob Reinhart**, founder and Director of Engineering of Controls Link, Inc. leads Controls Link’s organizational development and revitalization teams, providing clients with superior leadership during project phases, including hiring professional and technical staff, implementing budget reductions, writing business plans, and installing effective management information systems since July 1990.

- With a strong knowledge of engineering, Mr. Reinhart brings experience in project management, contract engineering, and controls system engineering and has spent more than 16 years directing and developing Controls Link into a leading engineering firm in the United States.

- Bob Reinhart holds a MBA from Cleveland State University and a B.S. in Chemical and Nuclear Engineering from the University of Pittsburgh.

- Please contact Bob Reinhart at bob.reinhart@controlslink.com with inquiries.
Is This Presentation For You?
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Presentation Outline

• Budget and Schedule a main goal
• Requirements Engineering
• Successful Project Plan
• Architecture Design –not Brand names
• Improved Chance for Success on Project Quality too
• Front End Loading
• More Meaningful Specifications
• CSIA and a QMR(Quality Management Report)
What Do REQ Cost?

Projects that meet Schedule, Budget and Requirements hover around 30%

The Standish Report Summary
REQ Analysis – Indicators

- Imperatives
- Continuances
- Directives
- Options
- Weak Phrases

Causes uncertainty & leaves room for interpretations
- Adequate
- As a minimum
- As applicable
- Easy
- As appropriate
- Be able to
- Be Capable
- But not limited to
- Capability of (or to)
- Effective
- If Practical
- Normal
- Provide for
- Timely

The deadly TBD…
Successful Project Plan: 30/60/90 at the very least is all I need.
Modern Day Architecture

Ethernet network?
How many PC’s and where?
Communicating how?
I/O – The fallacy of specifying and costing based on I/O count alone.
The Common Things Need to Specify on a Integration Job

- Signal Types
- Signal Direction
- Transmitter Ranges
- Conduit Type
- Wire Type
- Communication Network
- Communication Network addresses/nodes
- Minimum Spare I/O
- PLC/RTU hardware
- Firmware Version
The Common Things Need to Specify on a Integration Job (continued)

- Control Strategy
- Performance Criteria
- What FAT/SAT forms look like
Service Companies that we don’t tell what brand name to use:
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Having a Quality Integrator Helps

- GENERAL MANAGEMENT – Includes the topics of Strategic Management, Organizational Structure, Facilities and Equipment, Computer Systems Management, and Corporate Risk Management
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- MARKETING, BUSINESS DEVELOPMENT, & SALES MANAGEMENT
Having a Quality Integrator Helps (continued)


Having a Quality Integrator Helps (continued)

- **SYSTEM DEVELOPMENT LIFECYCLE** – Includes the topics of Internal Kickoff, Requirements, Design, Development, Unit/Module & Integration Testing, Factory Acceptance Testing, System Shipping, Installation, Commissioning and Site Acceptance Testing.

- **SUPPORTING ACTIVITIES** – Includes the topics of Process Development and Maintenance, Standards and Templates, Project Methodologies, Procurement Management, Risk Management, Configuration Management, and Reuse Management.
Having a Quality Integrator Helps (continued)

• QUALITY ASSURANCE MANAGEMENT – Includes the topics of Continuous Measurable Improvement, Client Satisfaction Measurement, Client Service, and Project Quality Assurance.
Example of a good Integrator’s Report

Quality Management Report

DATE: April 11, 2012
FILE NAME: 1121-QMR-101111

CLIENT: Client
PROJECT: Engineering Simulation Project
CLI PROJECT #: 1121
FROM: Jack Reinhart
PHONE #: 412-749-1199

1.0 Tasks completed during this period:

- A project kick off meeting was held on Monday, September 26, 2011 at client’s office. Meeting Minutes were taken and transmitted.

Controls Link:

- Generated Preliminary Functional Specification (30%) complete.
- Reviewed interlocking drawings, identifying signals 114, 116, 118 and switch 135.
- Generated colored legend document.
- Generated colored graphic screen documents.
- Generated SIM Panel PB logic document.
- Generated SIM Track logic document.
- Generated System Identification document.
Summary

• Success of SCADA implementation is about 90 percent about project process and 10% about the equipment if measured against importance of meeting budget and schedule.
• Upfront Project Requirements save money and time and reputation.
• Many SCADA platforms can talk to each other.
• Specifying a certified CSIA integrator assures that project processes are in place.
Questions & Contact Info

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