RAPID Line Integration

Integrated Line Control and Line Performance Solution

Challenges

High and Unpredictable Integration Costs
- Intellectual property management
- Duplication of effort

Extended Startup and Commissioning Times
- Data collection of multiple pieces of equipment

Custom Non-reusable Engineering
- Collection of code from multiple suppliers

Solutions
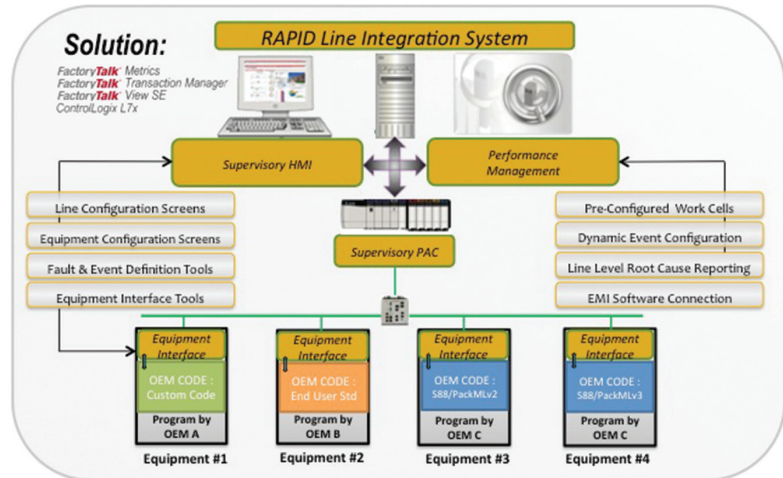
Simplified, Repeatable Integration
- Data collection and interlocking with physical manufacturing equipment
- Common equipment interface

Lower Integration Time and Cost
- Virtual server environment
- OEM equipment interface based on PackML/ISA-88 standards

Optimized Production
- Immediate access to real-time and historical data
- Integrated fault and event handling
- Web-based reporting services

Overview

Being a manufacturer in the consumer products industries comes with a number of challenges as companies try to meet the growing demands of customers and remain profitable in a largely low-margin industry. Amid these competitive challenges, businesses also must contend with internal and external forces, such as limited capital funding, high commodity prices, legacy facilities and equipment, increasing regulations, and aging workforces. One of their largest and least predictable expenditures associated with capital equipment projects is the cost to integrate equipment into a functional manufacturing system and establish performance and reporting analytics.
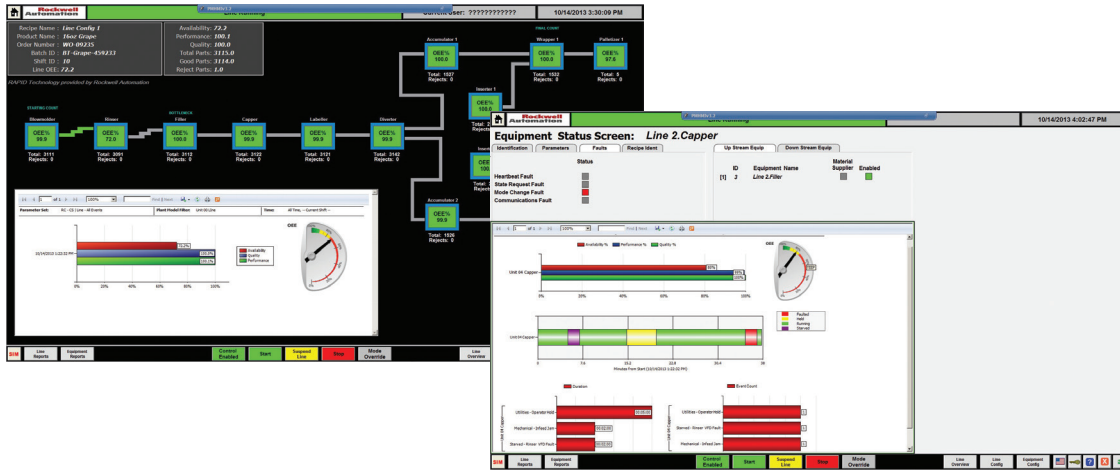
Traditional Line Integration

Many of today's solutions require custom engineering by multiple integrators causing duplication of effort and variability in time and costs. Additionally, intellectual property is typically distributed throughout various layers of equipment control and information systems and therefore is not transferable to other similar lines – causing additional costs for duplicate work on future lines.

RAPID Line Integration

The RAPID Line Integration solution from Rockwell Automation provides a flexible, repeatable approach to integrating manufacturing lines. Utilizing a common equipment interface, the system enables users to configure, control and analyze line performance from a standard operator station. By doing so, this approach can lower the total cost and time of deploying and optimizing manufacturing equipment.

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Simplified, Repeatable Integration

With RAPID Line Integration users can now coordinate and control the flow of materials through a discrete manufacturing line utilizing a common equipment interface and supervisory controller which includes:

- Simple, verifiable equipment interface implementation
- Configurable recipe driven line control topology and sequencing
- Line and equipment level reporting (ie; OEE, TEEP, MTTR, MTBF, etc.)
- Downtime reason root cause reporting

Lower Integration Time and Costs

One of the more difficult tasks associated with line integration is determining how to establish data collection and interlocking with the physical manufacturing equipment such as process skids and packaging machines.

RAPID Line Integration provides an Equipment Interface which allows the Original Equipment Builders (OEMs) to install the interface and verify its functionality prior to shipping the equipment. The RAPID Equipment Interface is based on PackML/ISA-88 standards making it widely understood by a broad base of OEMs, system integrators and manufacturers around the world.

The Equipment Interface includes:

- Logix Add-On Instruction (AOI) and data structures including an implementation guide and data mapping examples (Knowledgebase, article ID #66060)
- A standard PC-based verification tool for testing the equipment interface

With the use of virtual server technology, RAPID Line Integration can be setup and preconfigured in advance of on-site commissioning minimizing on-site commissioning time.

Optimized Production

RAPID Line Integration can be implemented faster than most traditional methods allowing most users to begin optimizing the line sooner with timely and accessible information including:

- Real-time and historical information available immediately on the plant floor human machine interface (HMI)
- Integrated fault and event handling enables detailed downtime and true root cause reporting
- Advanced analytics and custom reporting via web based reporting services

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