

Fremtidens Standards

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SESUM

Automation • Projektledelse • Netværking

Fremtidens platform?

Fremtidens automations- og produktionsplatforme:
ERP, MES, DCS, SCADA og PLC er under forandring.

Deltag i de tre workshops:

- 1) Hvad er fremtidens platforme?
- 2) Hvad er fremtidens standarder?
- 3) Hvem er fremtidens automationstekniker?

februar 2014

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Agenda

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1. Hvad driver Standarder
2. Standards ISA-88
3. Modulær programmering / Power Programming

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OEM Business Drivers for Standardization

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- Lower total cost to design, develop, and deliver
- Global competition / Faster time to market
- Machine performance/price and differentiation
- Quality and consistency of design
 - Compliance to international standards minimizes customization due to customer specifications
 - Engineers can focus on issues in machine design versus how to comply with standards

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End User Business Drivers for Standardization

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- Reduce costs of training, spares, support contracts, maintenance, etc.
- Reduce cost to redeploy assets
- Improve integration of plant information/assets with manufacturing and enterprise information systems
- Increase operations flexibility with programming standards
- Reduce startup time for machine/line installation and commissioning
- Reduce variation of machines purchased from multiple vendors
- Increase in sustainable manufacturing processes

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End Users are Leveraging Standards

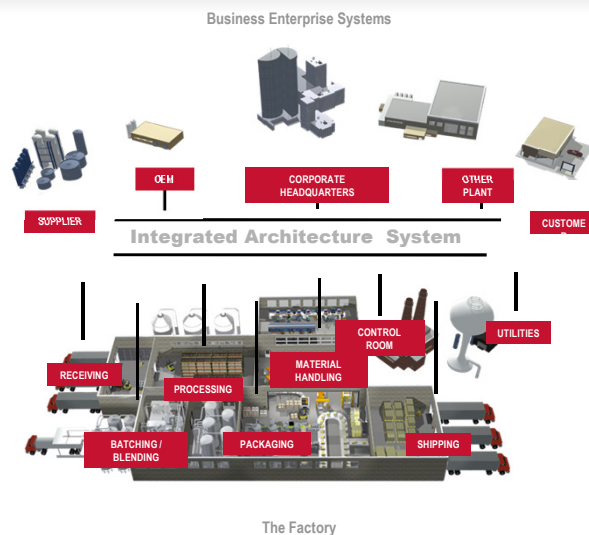
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- Significant End User membership in ISA-88, Make2Pack, OMAC working groups...
- Desire to reference standards with widest possible market adoption
 - Cost to maintain their own standards is prohibitive
 - Standards extend the multi-discipline architecture benefits from the technology layer to the application layer
- Expect industry standards guidelines / compliance from controls suppliers
- Desire common "look & feel" from OEMs and System Integrators

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One Architecture for Plant Wide Control & Information

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- Improves productivity & reduces costs
- Integrates control, networking, visualization & information technologies
- Addresses full range of control & information needs
- Extends performance gains across your enterprise
- Provides unparalleled functionality, flexibility & scalability

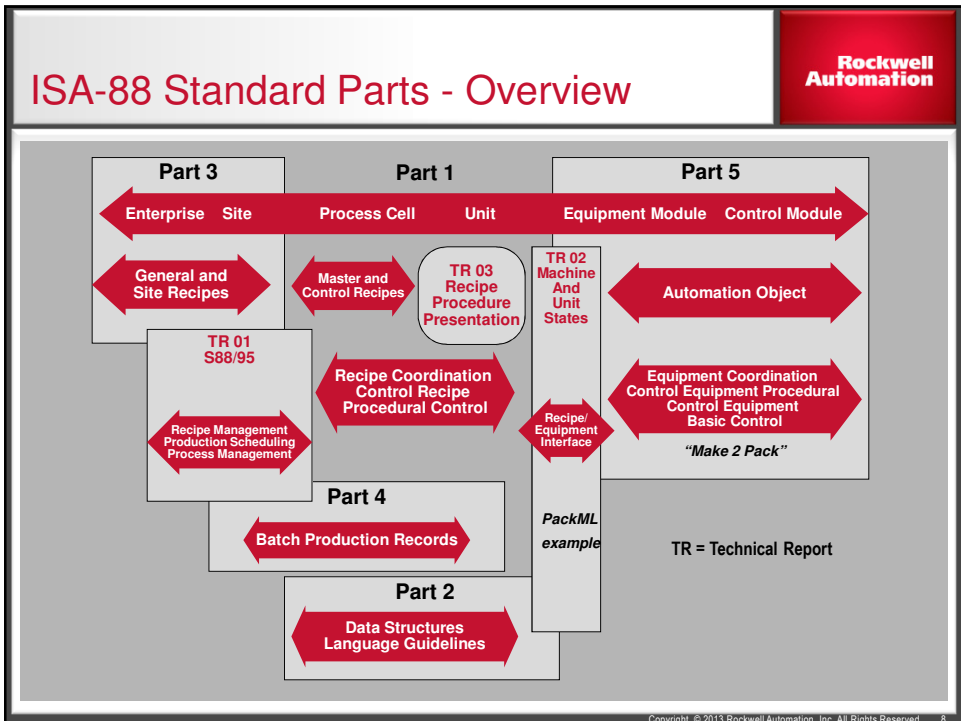
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S88 Modular Concepts

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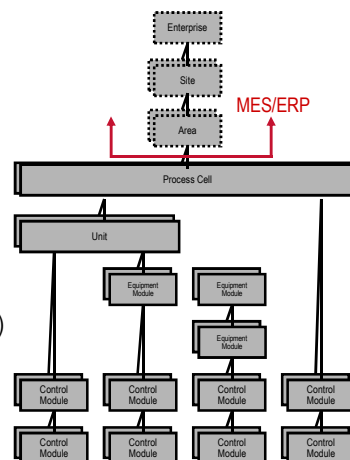
- Four core concepts define how the modularity of an application is created:
 - Hierarchy of control
 - Separation of procedural and equipment control
 - Recipe-based and equipment-based control
 - Procedural interface model

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Hierarchy of Control

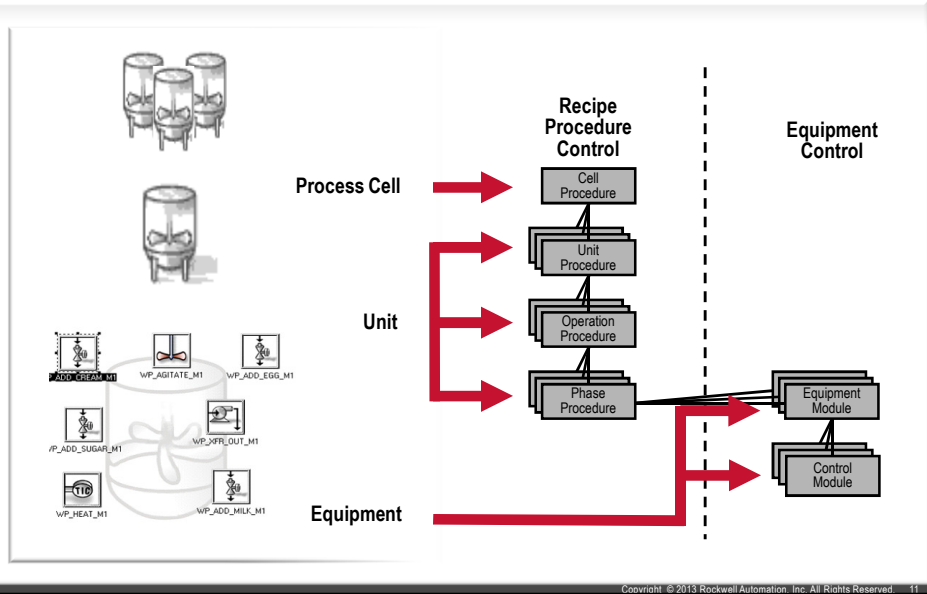
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- Multiple layers in a process are built up to form ever larger blocks of control
- Hierarchy starts at the bottom with Control Modules that directly control physical devices and extends in concept all the way to the Enterprise Level
 - Control Modules are grouped to form Equipment modules (machine sections)
 - Equipment Modules are grouped to form Units (complete machines)
 - Units are grouped to form Process Cells (work cells)
 - Cells are grouped to form Manufacturing Areas
 - Etc., etc. all the way up to an Enterprise

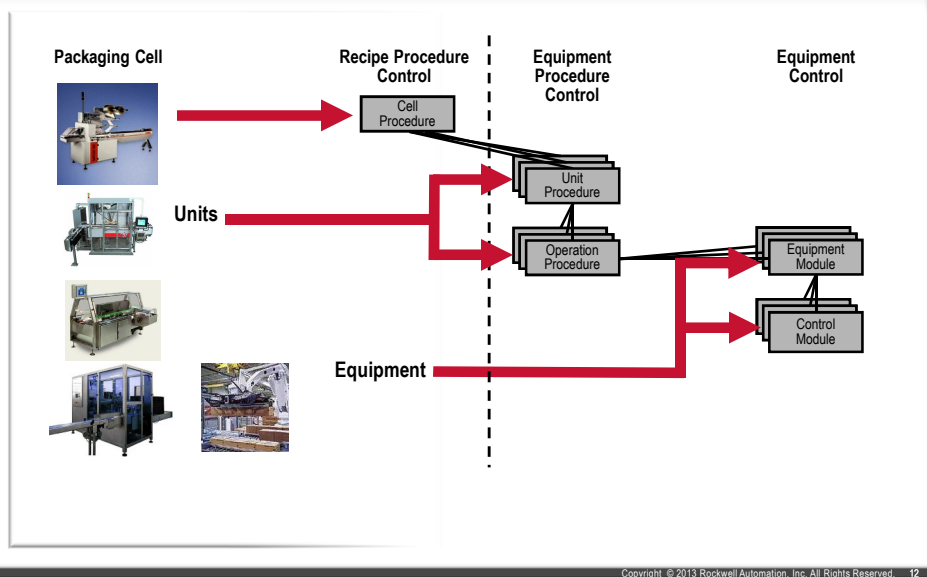


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S88 Implementation Example: Flexible Batch Processing



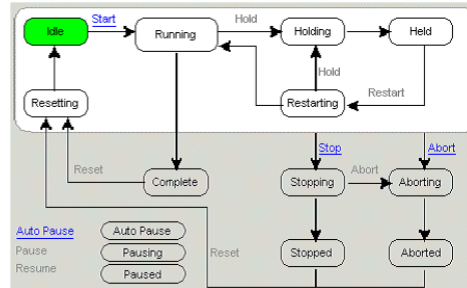
S88 Implementation Example: Packaging



Procedural Interface Model

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- Mechanism to cross from the remote Recipe Procedures to the local Equipment Procedures
- Provides a standard and consistent method to interface a remote procedure to a local procedure



PhaseManager is the RSLogix5000 representation of the ISA-88 procedural interface model

Specification Review & Standards Recommendations

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- Specification review and input by industry technology consultants, local account teams, and other subject matter experts on an ongoing basis
- Valuable standards recommendations for hardware components, network infrastructure planning, and application programming.



The most proactive way for Rockwell Automation to help you manage controls & automation investments

Accelerator Toolkits & Newsletter

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- Accelerator Toolkits help speed development and deployment of systems
 - Easy-to-use system design, programming, and diagnostic tools
- OEM “What Matters” e-newsletter provides insight on key issues
 - Latest trends and topics
 - New products, services, and tools

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Other Standardization Resources Available

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- Rockwell Automation Technical Content Library for OEMs
 - Leverage content via Global OEM Technical Consultants
 - Content follows industry ISA-88 standards and Foundations of Modular Programming guidelines
- Modular Programming training programs for OEMs & End Users
 - Understand the value of modular programming standards and the basic concepts involved

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Modular Programming Benefits

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- Design efficiencies
 - Reusability
 - Reduced engineering time
- Scalability
- Simplified troubleshooting
- Reduced training costs
- Reduced warranty costs
- Quality and consistency of design



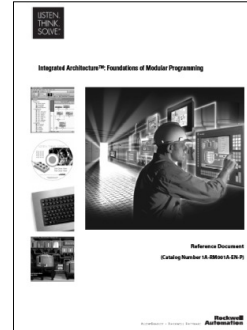
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Modular Programming



- Faster and easier development of application software
- Faster and easier testing of application software
- More reliable application software
- Improved maintenance and operation of application software
- Improved interoperability with other equipment and systems

Save time and money in application development



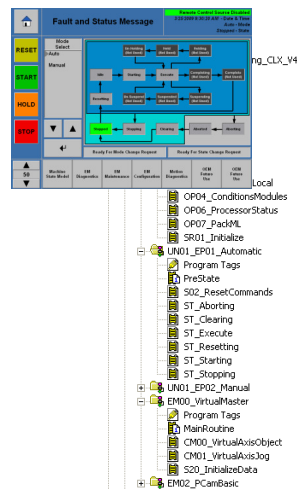
Foundations of Modular Programming Guidelines (FOMP)

Modular Programming Guidelines follow ISA-88 standards

Power Programming



- Methodology for implementing Modular Programming concepts in RSLogix5000 and FactoryTalk View programming environments
- Developed using ISA-88 standards and Foundations of Modular Programming as a basis
- Supports use of any state model for machine sequencing
- Recommended state models
 - Discrete machine applications - PackML V3.0
 - Process applications – Logix controller with embedded PhaseManager



Customer Value of Standards & Reusable Modular Programming Guidelines Use

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Level 1 - Fundamental Value

- Reduced System Engineering Time, Reduced start-up time

Level 2 - Enterprise Value

- Strong engineering standards across multiple plants...reduced total cost of ownership
- Reduced training, personnel and support costs...improved quality of deployments

Level 3 - Optimization

- Application modules which are improved / refined and shared as best practices...internally and across companies

Up-front savings
Libraries of developed code (e.g. AOI's and Faceplates)

Ongoing savings
Reduced ongoing learning curve which produces consistency and quality of design

Future savings
Leverage standards across multiple parties including 3rd party content

Greatest value when Multiple Levels are linked


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OEM Success with Power Programming

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Fabrima – Brazil

- Packaging OEM using RA Power Programming
- Development reduced from 38 to 20 days



	Typical Programming Time	Using Power Programming
Writing Functional spec	3 Days	10
Structuring Application	5 Days	7
Writing the code	20 Days	5
Start up / Debug	10 Days	4

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THINK.
SOLVE.

Thank You.



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