



Application Code Manager (ACM)

Studio 5000® Application Code Manager

Engineering design tool:

- Rapid application development
- Leverages library content (provided or custom)
- Facilitates continuous reuse of IP / enforces standards

Auto content generation for:

- Logix Designer application
- FactoryTalk® View
- FactoryTalk Alarms and Events
- FactoryTalk Historian



Studio 5000® Application Code Manager

Maximize reuse and quickly build projects

DESIGN

- Library Designer is integrated into Logix Designer application
- Flexible library authoring, structuring reusable content the way you want

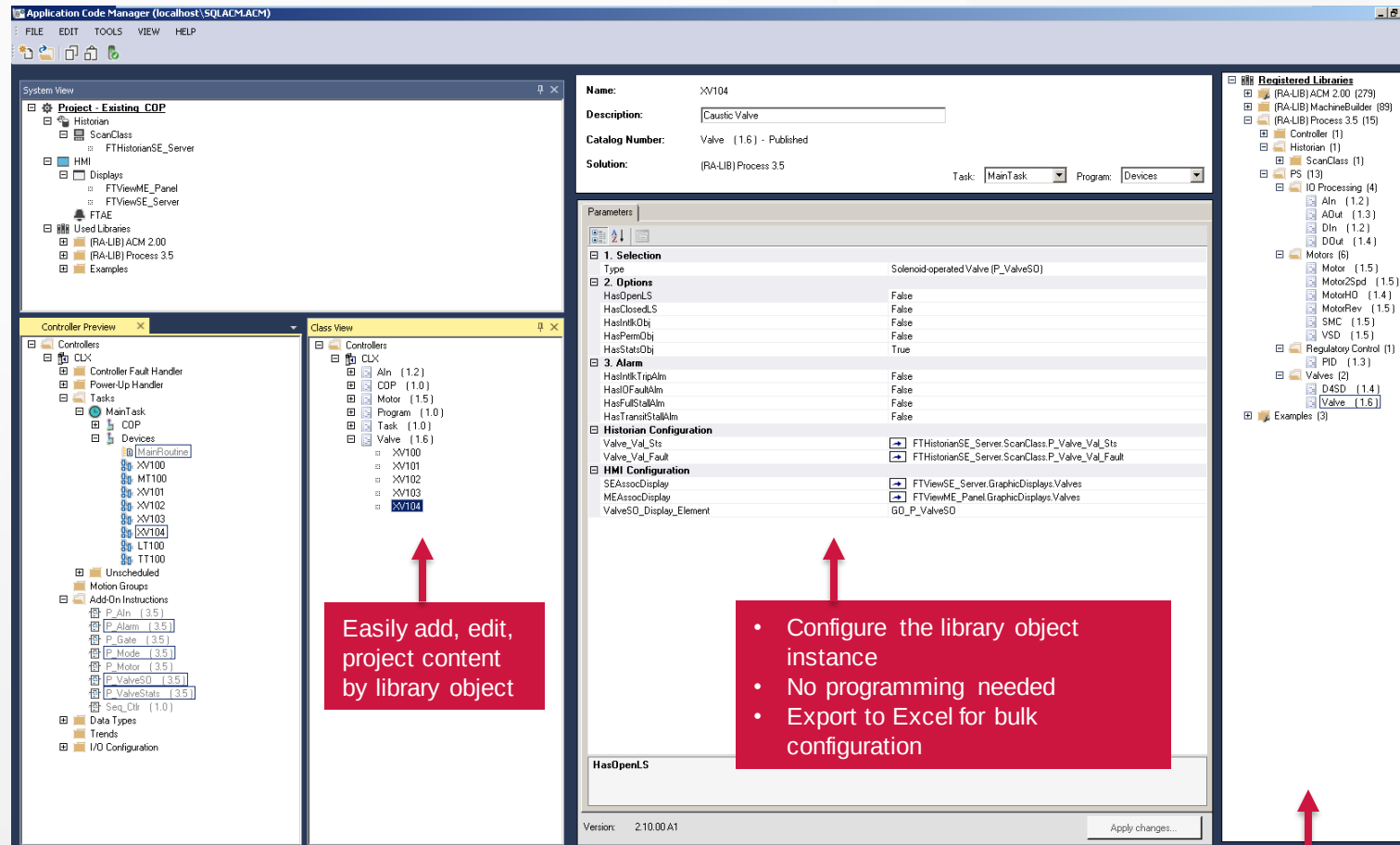
PUBLISH

- Combine control, visualization, historical and alarm management into one library object
- Centralized repository for easy access and version management

BUILD

- Easily generate your standardized application code
- Bulk configure projects
- Leverage Rockwell Automation libraries (Machine Builder)

Studio 5000® Application Code Manager



Easily add, edit, project content by library object

- Configure the library object instance
- No programming needed
- Export to Excel for bulk configuration

Leverage Rockwell Automation libraries for easy project creation, or create your own

BUILD APPLICATIONS

- Easily generate your standardized application code in bulk to configure projects
- Users don't need to understand the library object dependency structure; the tool manages the dependencies per the librarian's rules
- Out-of-the-box integration enables simple and fast bulk deployment of the Library of Process Objects and Machine Builder Library

DESIGN LIBRARY OBJECTS

- Library Designer is integrated into Studio 5000 Logix Designer®
- Flexible library authoring – structuring reusable content the way you want it
- Allows the librarian to manage dependencies between library objects, easily share and manage common objects

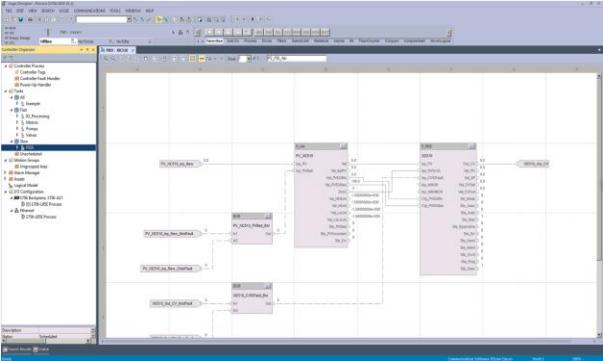
PUBLISH LIBRARY OBJECTS

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- Centralized repository for easy access and version management

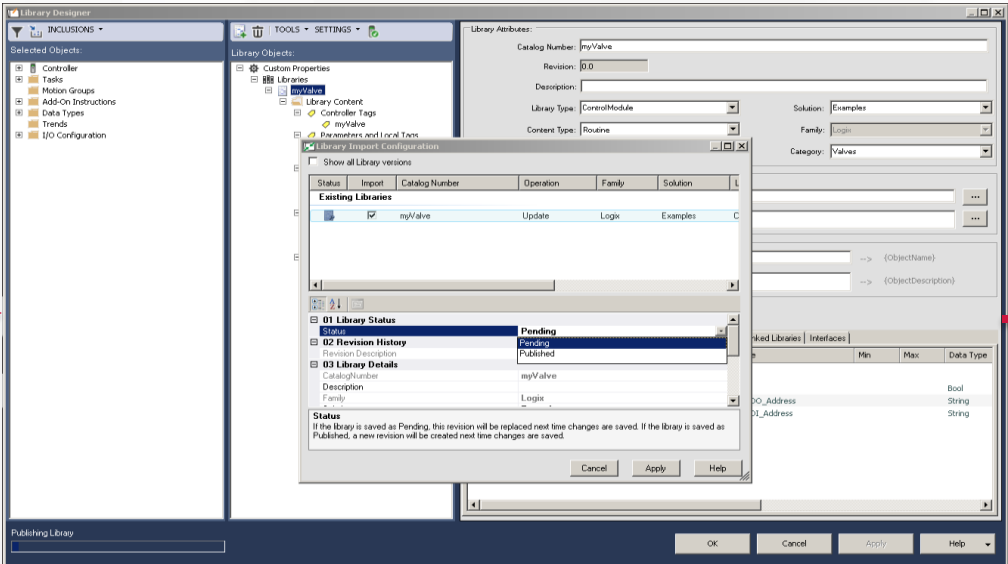
Create highly reusable library content

Step 1:
Create Content to be Libraries

Logix Designer



Step 2:
Group and Parametrize Library Content



Step 3:
Publish

Motor

Valve

P&ID

Labeling

Weighing

...



FactoryTalk® View

FactoryTalk® Historian

FactoryTalk®
Alarms & Events

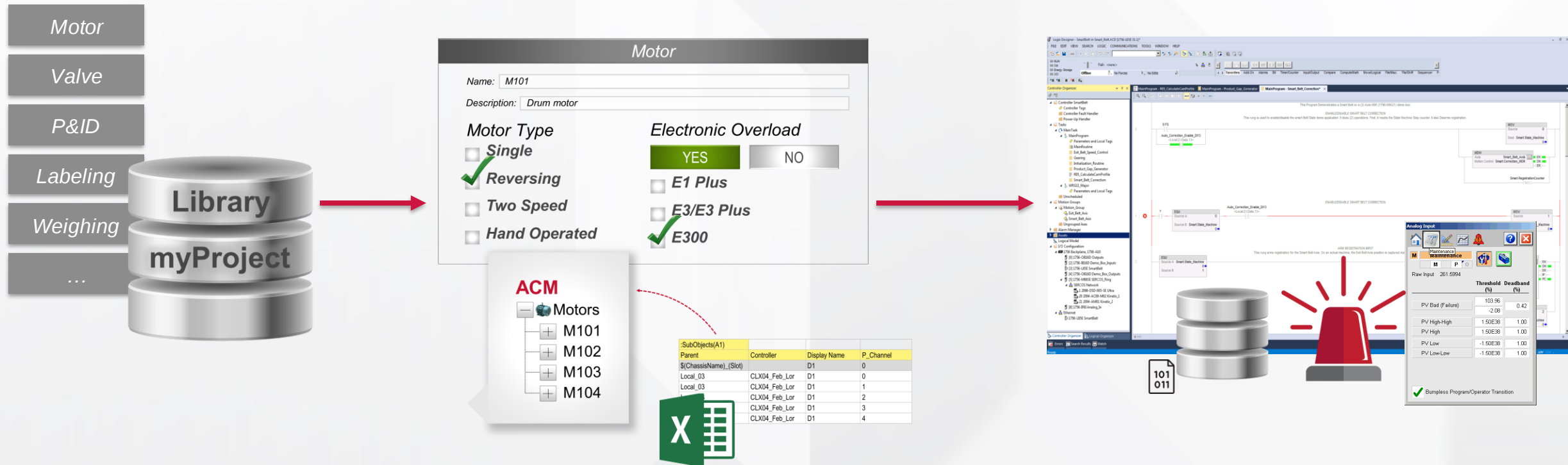
Easily deploy project content through configuration — no programming!

Step 1: Create a Project

Step 2:

Select library object and configure via parameters; repeat or export/ import

Step 3: Generate



Library links / creating hierarchical objects

Overview

Allows the librarian to manage dependencies between library objects, easily share and manage common objects

Automatically creates library linked (children) content

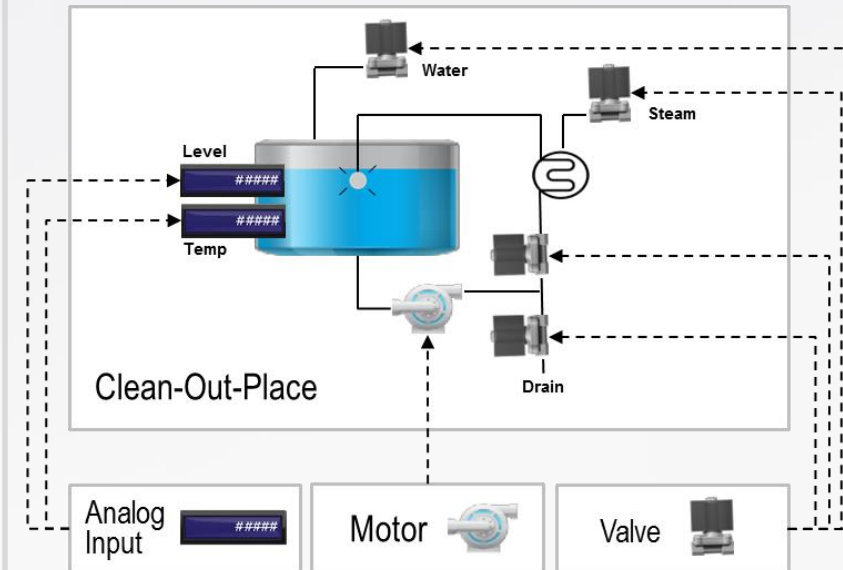
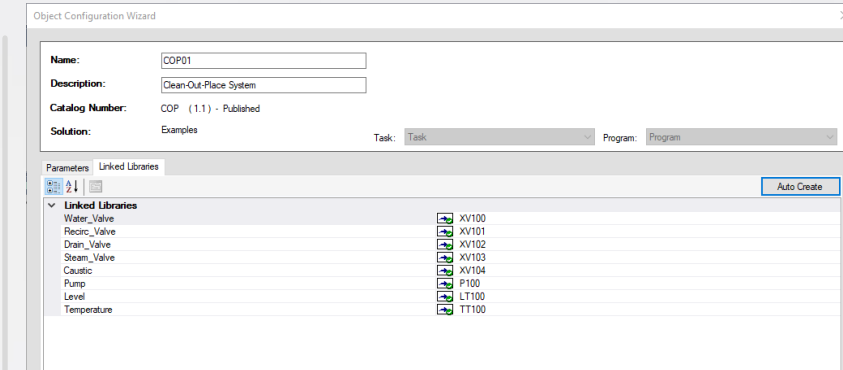
Parent object can pass parameters to child object, or vice versa

Set rules on which library object to use (i.e. version > 2.0, category, and so on.)

Conditionally include or exclude library link content based on user entered data

Benefits

User doesn't need to understand the library object dependency structure, they only configure the objects for use in their project; the tool manages the dependences per the librarian's rules



Command-line interface

Overview

Allow batch processing with calls to Studio 5000® Application Code Manager via an automation or command-line interface

Sample functions that ACM supports:

- Create projects, add controllers and library objects

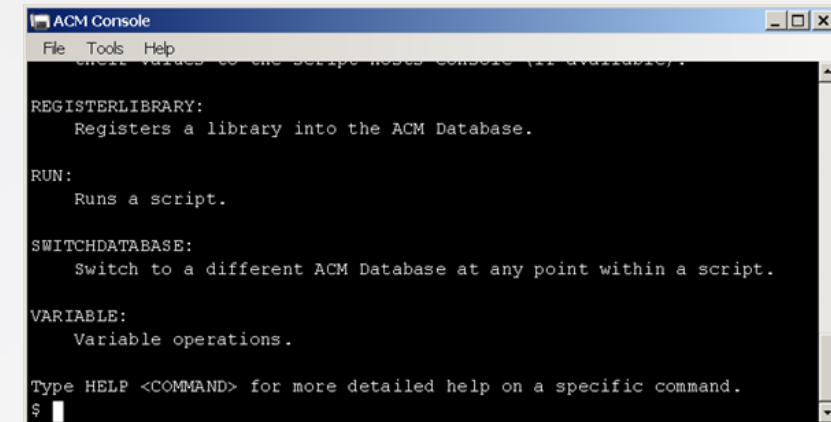
- Invoke IEM to import/export instance data to/from Excel file

- Invoke engine to generate required output (ACD, L5X and so on)

- Invoke a script

Benefits

Facilitates automated and semi-automated creation for faster project execution



```
ACM Console
File Tools Help
Send values to the script nodes console (if available).

REGISTERLIBRARY:
  Registers a library into the ACM Database.

RUN:
  Runs a script.

SWITCHDATABASE:
  Switch to a different ACM Database at any point within a script.

VARIABLE:
  Variable operations.

Type HELP <COMMAND> for more detailed help on a specific command.
$
```

Visual indication of updated content

Overview

Newer library content available

Easily see and update to a newer library object if available

Update a item or an entire project at a time

Easily create reports of object usage within a project or across all projects

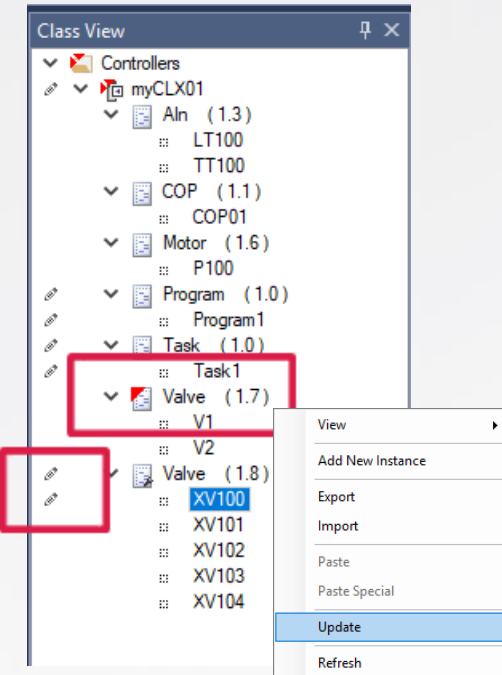
Project configuration change

Easily track what project content has change

Newer Version
Available ICON



Project Configuration
Change ICON



Logix tag-based alarm support

Overview

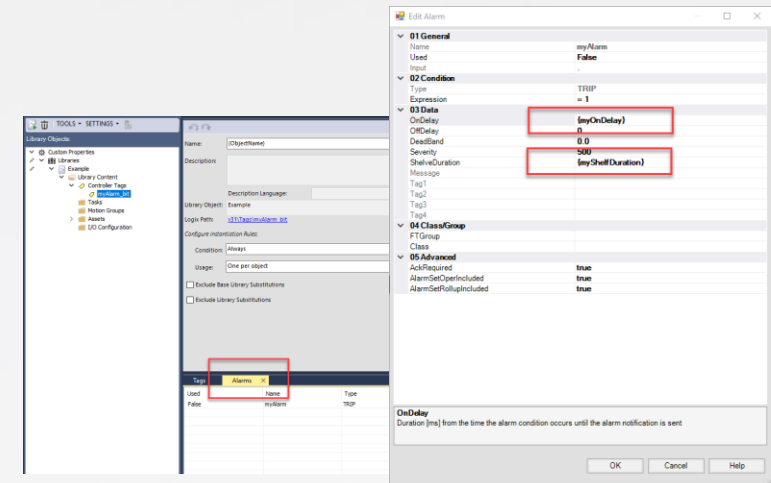
Create Logix tag-based alarms in Studio 5000® Application Code Manager

Leverage Studio 5000® Application Code Manager parameters to create highly reusable Alarm properties, controlling On Delay, Off Delay, Severity, Shelf Duration, Message, and so on.

Benefits

Alarm configuration controlled by Studio 5000® Application Code Manager, no need to fix after the fact – faster time to market

Improved consistency



Studio 5000® Application Code Manager

Licensing model

No-charge Lite Edition now available

No subscription required

Library Designer included for creating custom libraries

Use libraries provided by Rockwell Automation

Single controller and local database

Standard Edition available as subscription

Visit commerce.ra.rockwell.com





Machine Builder Library(MBL)

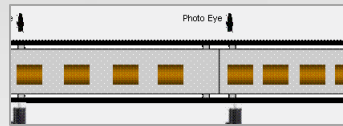
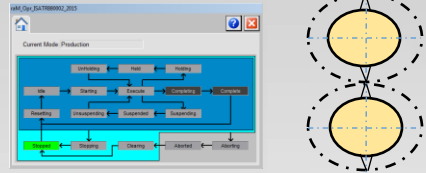
Machine Builder Libraries

Consistent Engineering Framework for Motion, Drives and Skid Applications

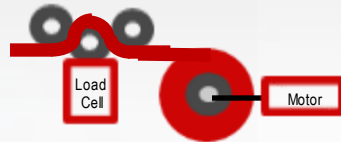
KEY FEATURES:

- Life-cycle managed
- Application-centric
- Flexible, granular & modular
- Best-in-class for performance
- Easy to integrate
- Tested and documented
- Designed in a modular way to maximize granularity
- Utilize standardized interfaces to assure interoperability

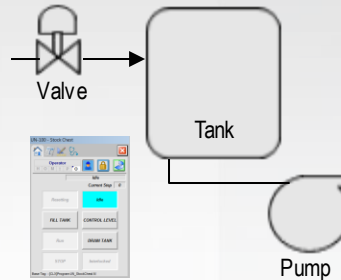
PACKAGING



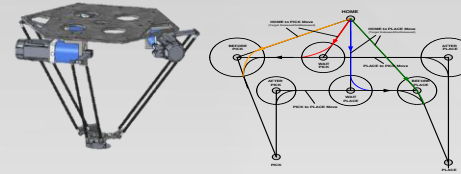
WEB



PROCESS SKID



ROBOTICS (CY22)



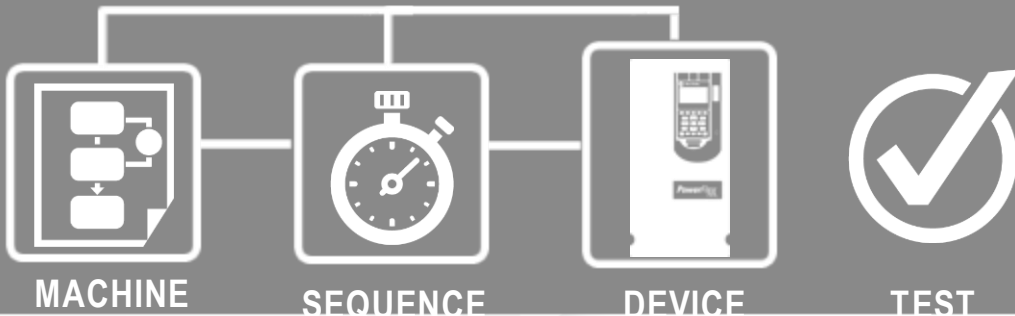
INDEPENDENT CART



DEVICE OBJECTS:

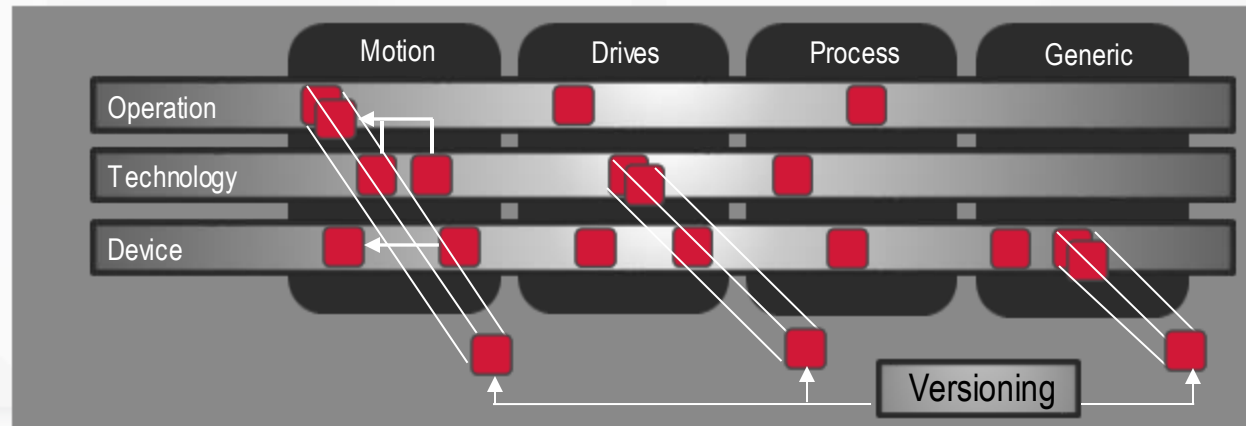
- CIP Drive Device Handlers
- Virtual Axis Device Handler
- Device Handler Methods
- Conveyor Control
- Valve Control
- Contactor Control
- Tower Light
- Module information-EtherNet/IP

DESIGNED TO COMBINE



FUNCTIONALITY

WEXDE



Versioning

Rockwell Automation

Machine Builder Libraries

Common Features

Abstraction – Same Interface for different Products

Automation Device Object



Logical Device Object



Common Interface

Virtualization – Test app code without Drive and Motor.



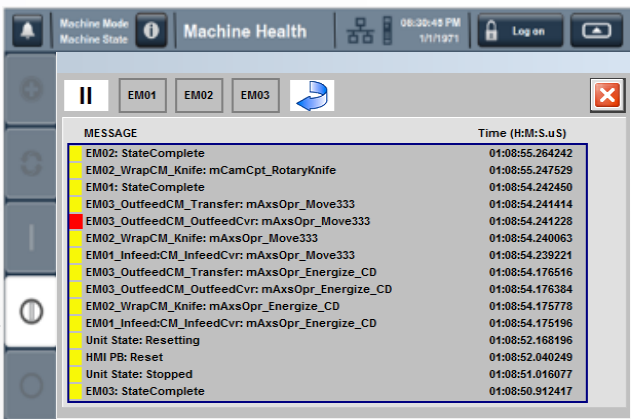
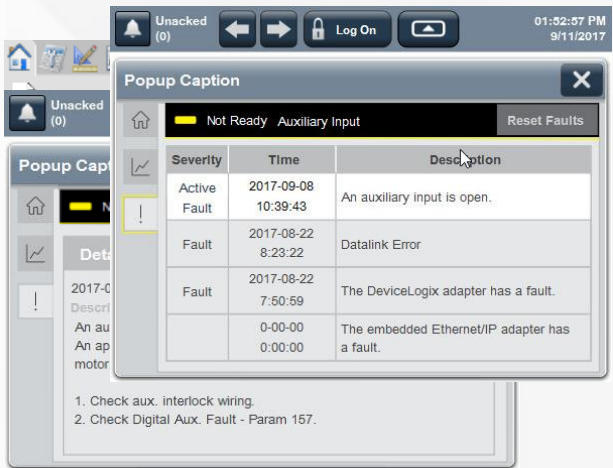
Virtualize / Physicalize Cmd/Sts

Speed Ref / Speed Feedback



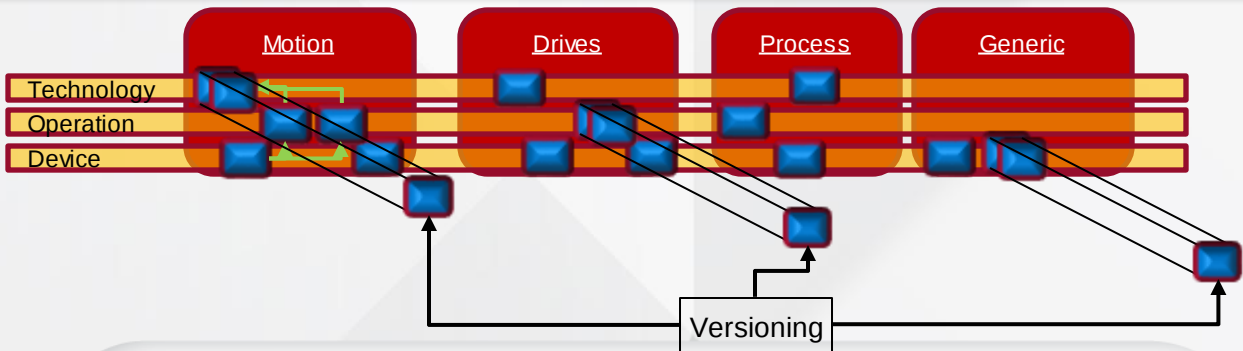
Embedded Log

Device Events



Machine Events

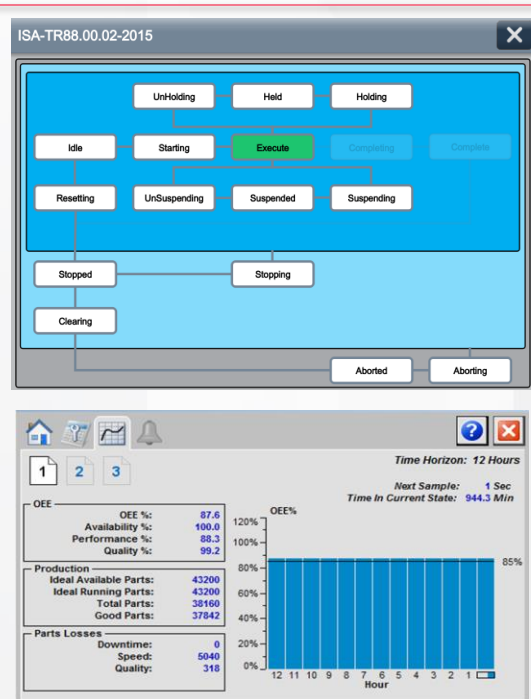
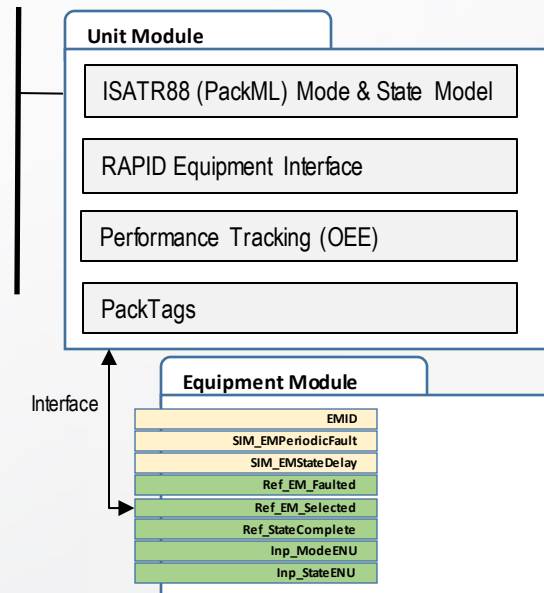
Classification Layers



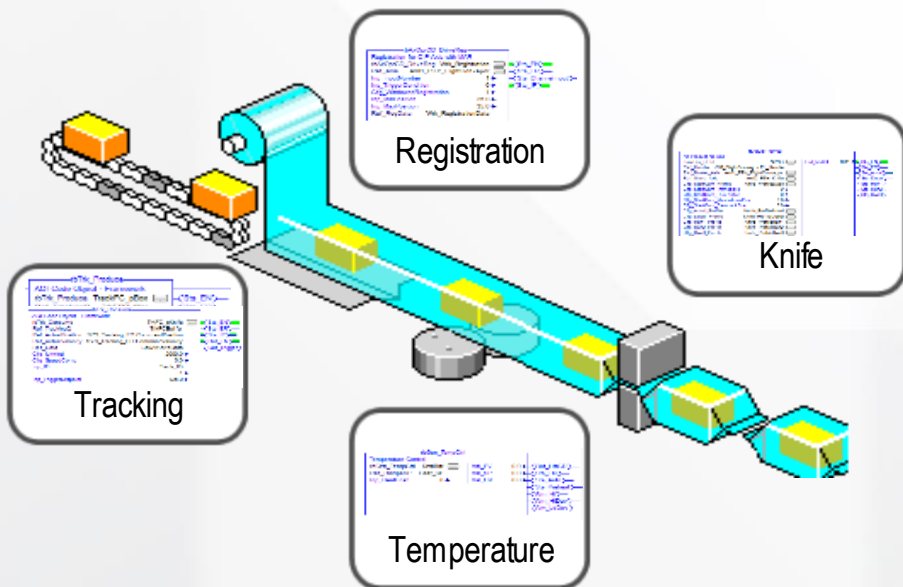
Multi-Disciplined

Machine Builder Libraries - Packaging

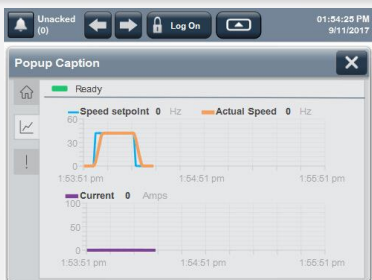
Equipment Frameworks



Packaging Instructions



Automation Device Objects



K5500



K5700



PF525



PF755

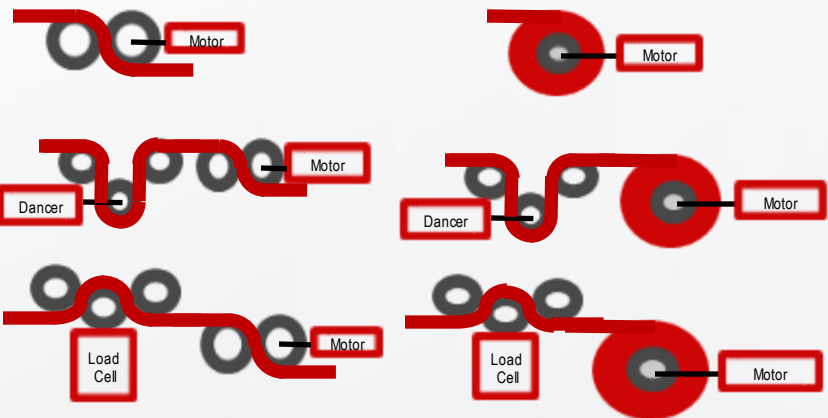


Machine Builder Libraries - Web Control

Tension Zones

Fixed Diameter

Variable Diameter

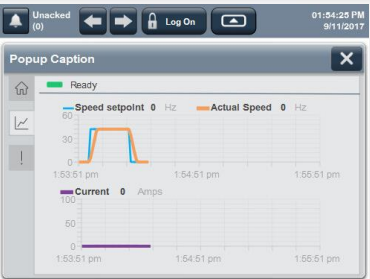


Function Blocks

Diameter Calculator	Speed Trim Dancer
Inertia Calculator	Speed Trim Load Cell
Inertia Compensation	Torque Trim Load Cell
Loss Compensation	
Speed Reference	
Taper Reference	
Tension Reference	
Torque Reference	

raM_Tec_Diameter_Spd		
Diameter Calculator - Speed Calculated		
raM_Tec_Diameter_Spd	??	Out_Dia ??
Inp_LineSpd	??	Sts_EN
Inp_MtrSpdFdbk	??	Sts_ER
Inp_CoreDia	??	Sts_IP
Cfg_CalcLoLim	??	
Cfg_CalcUpdRate	??	
Cfg_DiaChangeRate	??	
Cfg_DiaDirection	??	
Cfg_CoreDiaEmpty	??	
Cfg_CoreDiaFull	??	
Cfg_GearRatio	??	
Cmd_InitDia	??	

Automation Device Objects



K5500



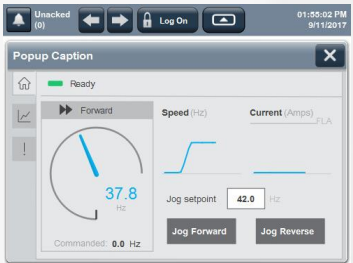
K5700



PF525

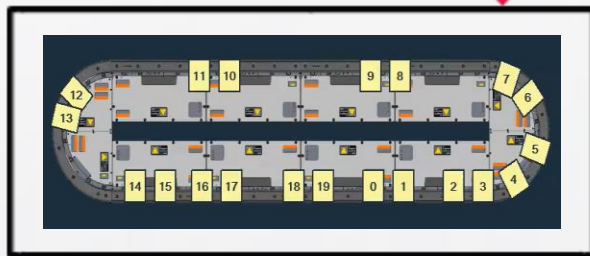
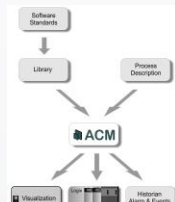
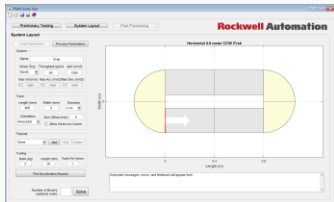


PF755



Independent Cart Technology Libraries

Advanced System Configuration Workflow



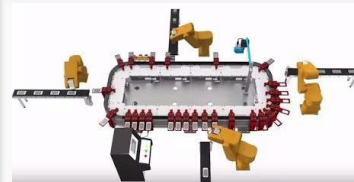
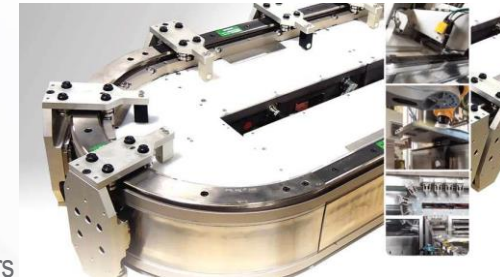
Core Features

- iTrak Automation Device Object
- Virtual / Physical Operation
- Operational / Diagnostic Logs
- Runtime Animation

Application / Domain content

Packaging features

- Collision prediction
- Slosh control
- Load sharing
- Inverse kinematics of coupled movers



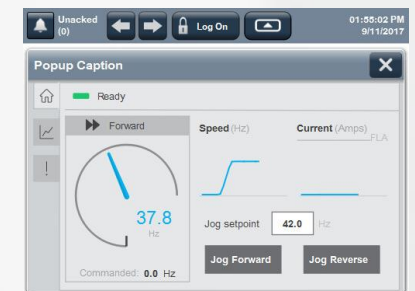
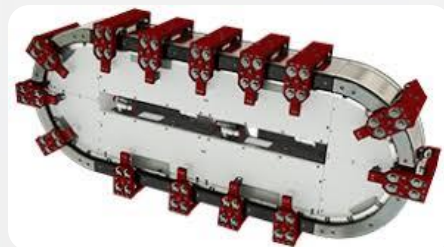
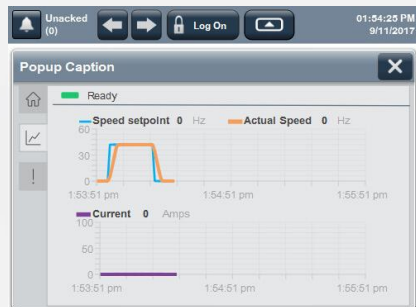
Assembly line features

- Robotics
- Tool center point offset
- Inverse kinematics



Industry independent features

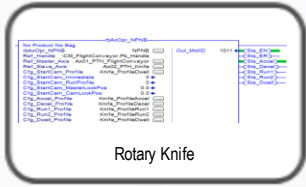
- Bearing failure prediction
- Homing sequences
- Zone management
- Animation



WEXOE

Rockwell Automation

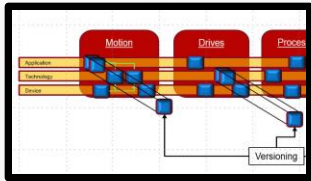
Value of Application Content



- Domain Content Value
 - Focused Content for Machine & Process Applications
 - Automation SW in the Domain Expert's Language



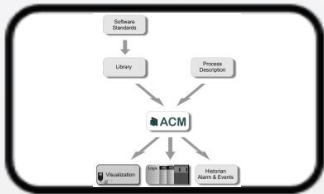
Application specific content
Faster Development



- Content Architecture
 - Objects, Faceplates, Abstraction, Virtualization
 - Rigid Interfaces between Content Layers



Ease of Integration and Testing
Flexible and Adaptable



- Tools / Versioning
 - Application Code Manager / Studio 5000
 - Automated Test / Versioning



Productivity (more / better)
Easy to Reuse and Manage

```
At 23:04:16.100 Energize from EM PowerON successful
At 23:04:16.134 Homing from EM PowerON successful
At 23:04:16.156 Manual from CM Reset successful
At 23:04:18.200 Cam Calculation from NPNB successful
At 23:04:19.500 Cam Sequencing from NPNB failed
At 23:04:18.800 Recovery from CM Reset successful
At 23:20:21.200
```

- Enabling Information
 - Rich Contextualized, Concentrated Data,
 - Data, Quality, Timestamps, Information Model,
 - Sequential Logs



Logix at the center
of Information