Rockwell Automation

Innovation & Technology Forum

CL16 - Studio 5000 Logix Designer®: Advanced Lab

Lab Overview

Explore the Studio 5000® Design Environment

- Learn about new usability enhancements that are available within Studio 5000 Logix Designer®
- Learn how to improve efficiency using modular programming
- Learn about new features that enhance modular programming within Studio 5000 Logix Designer®
- Hands-On experience with version 31 of Studio 5000 Logix Designer®

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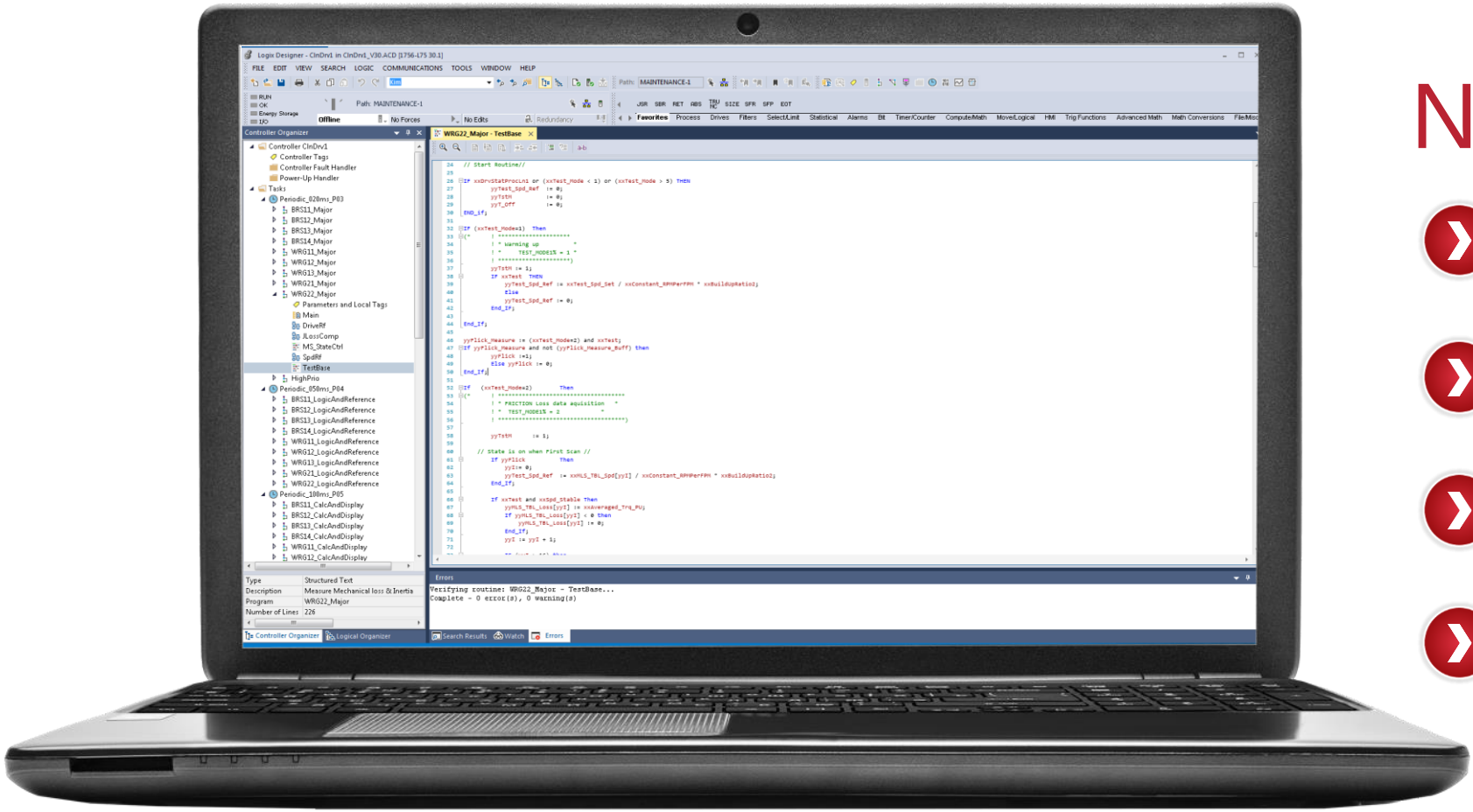
Studio 5000 Logix Designer®

What's New?



NEW RELEASE

- Common look and feel across all Studio 5000® applications
- Improved workflows for multi-monitors, tabbed views, quick navigation
- Modernization of programming language editors
- Clearly convey state and identification of errors

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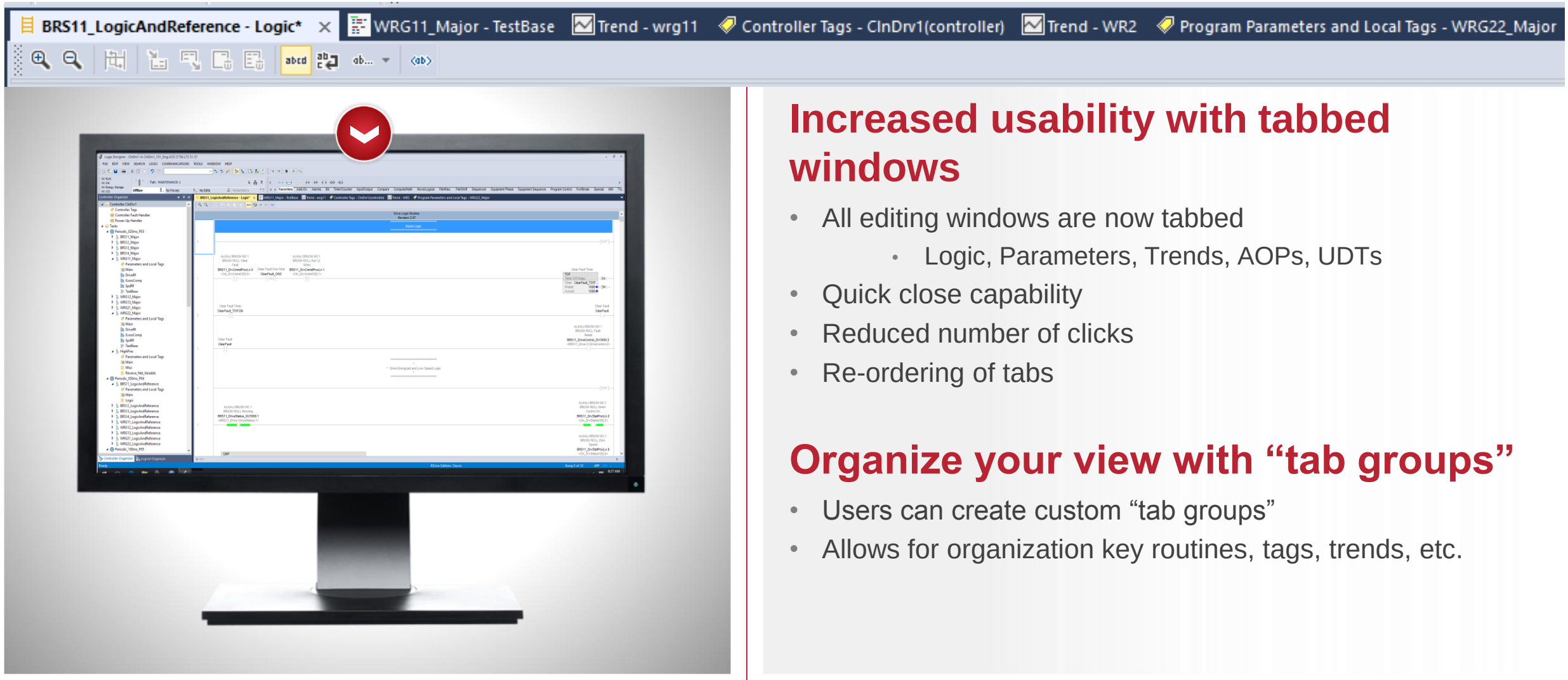
Modernized User Interface

Tabbed Windows



Increased usability with tabbed windows

- All editing windows are now tabbed
  - Logic, Parameters, Trends, AOPs, UDTs
- Quick close capability
- Reduced number of clicks
- Re-ordering of tabs

Organize your view with “tab groups”

- Users can create custom “tab groups”
- Allows for organization key routines, tags, trends, etc.

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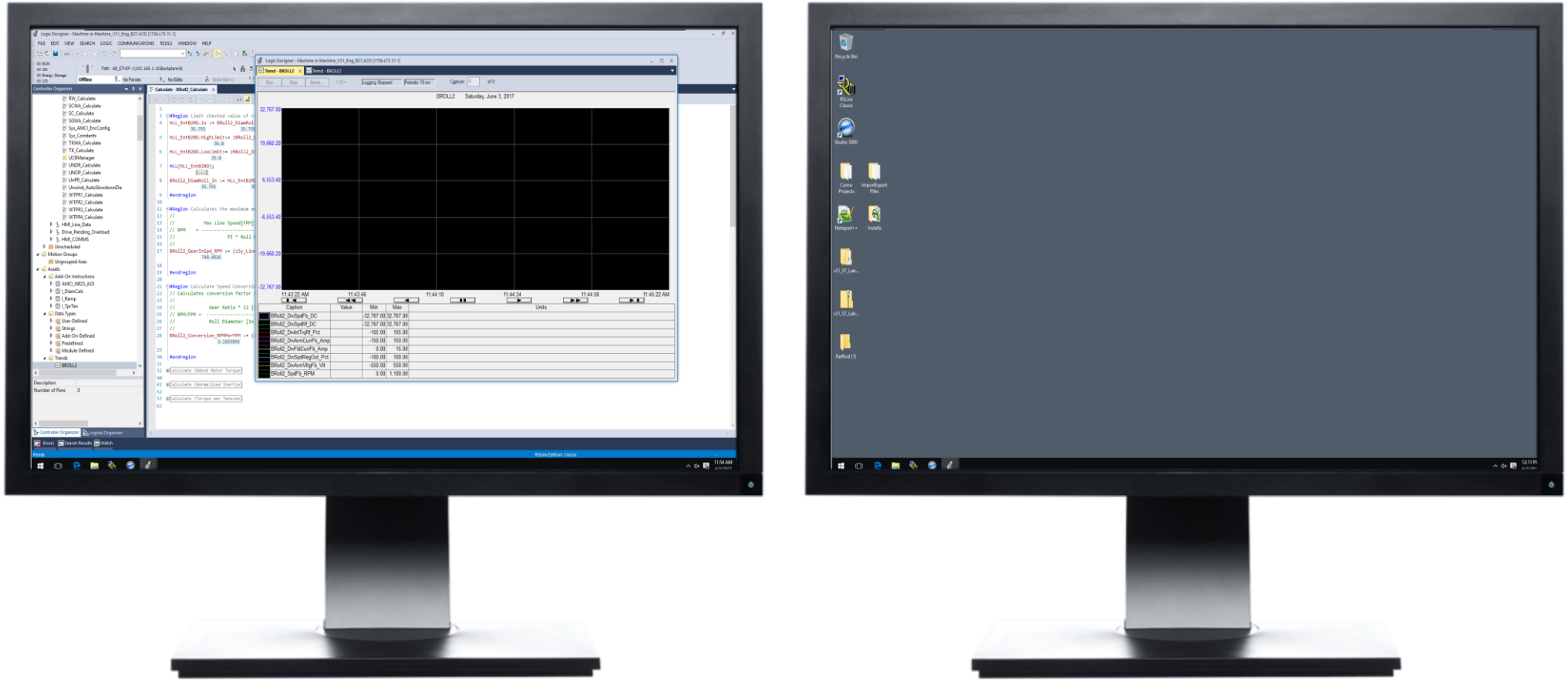
Multi-Monitor Support



Organize your view **the way that you like** in a productive manner

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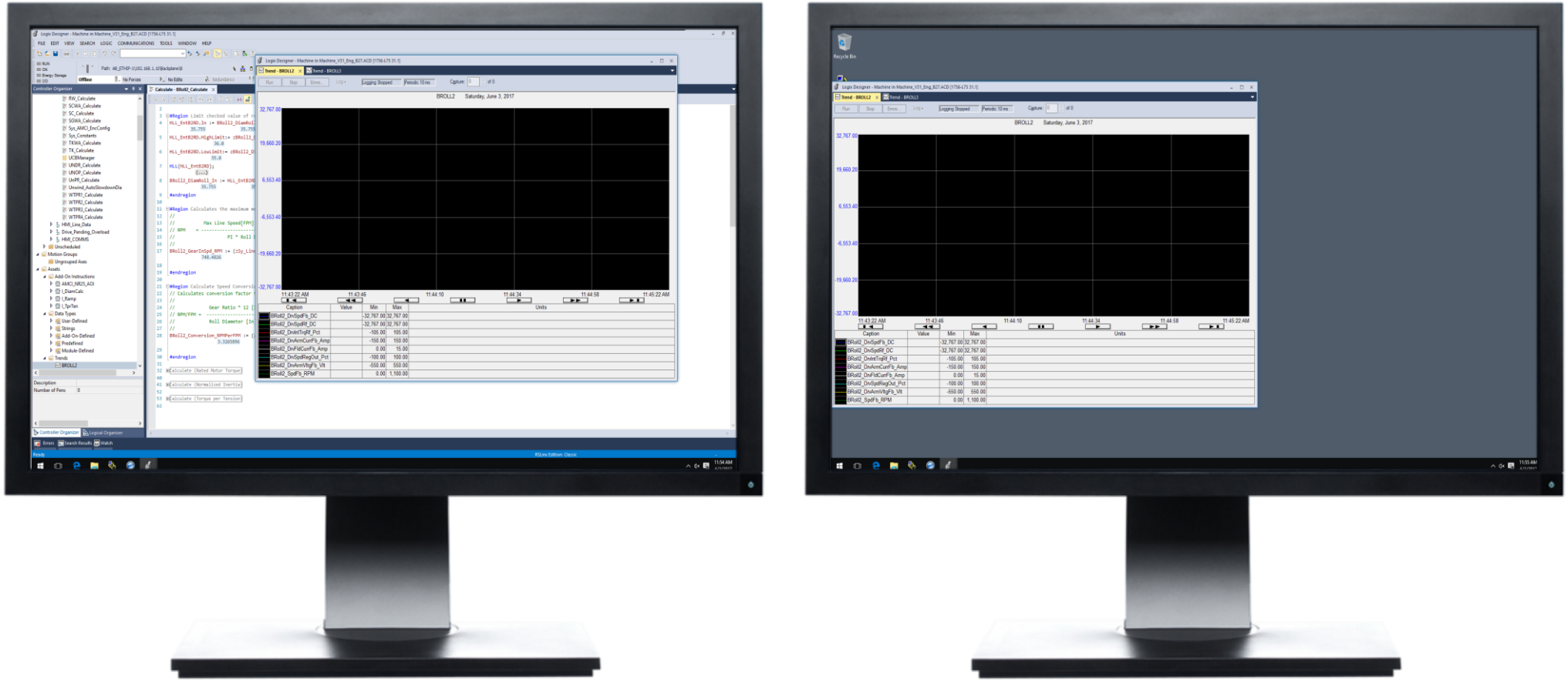

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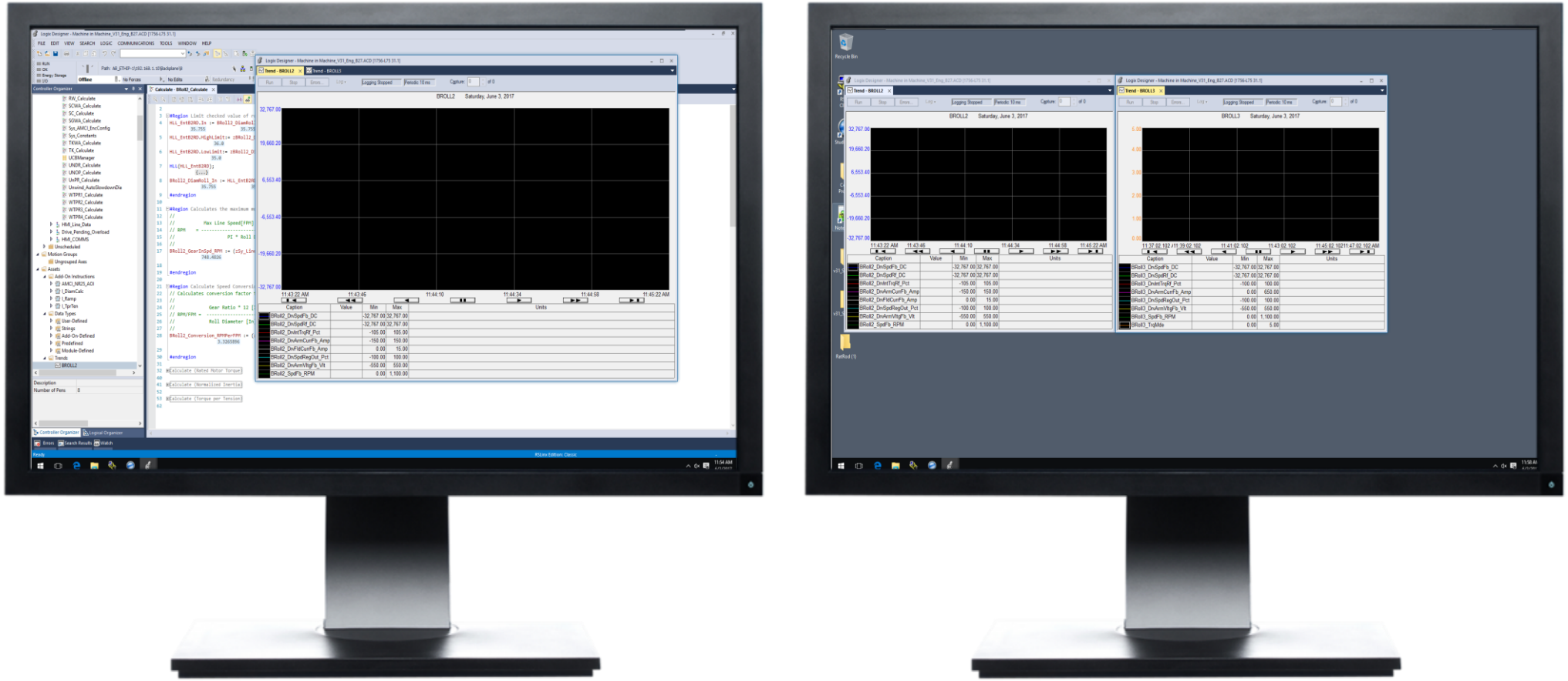

Organize your view **the way that you like** in a productive manner

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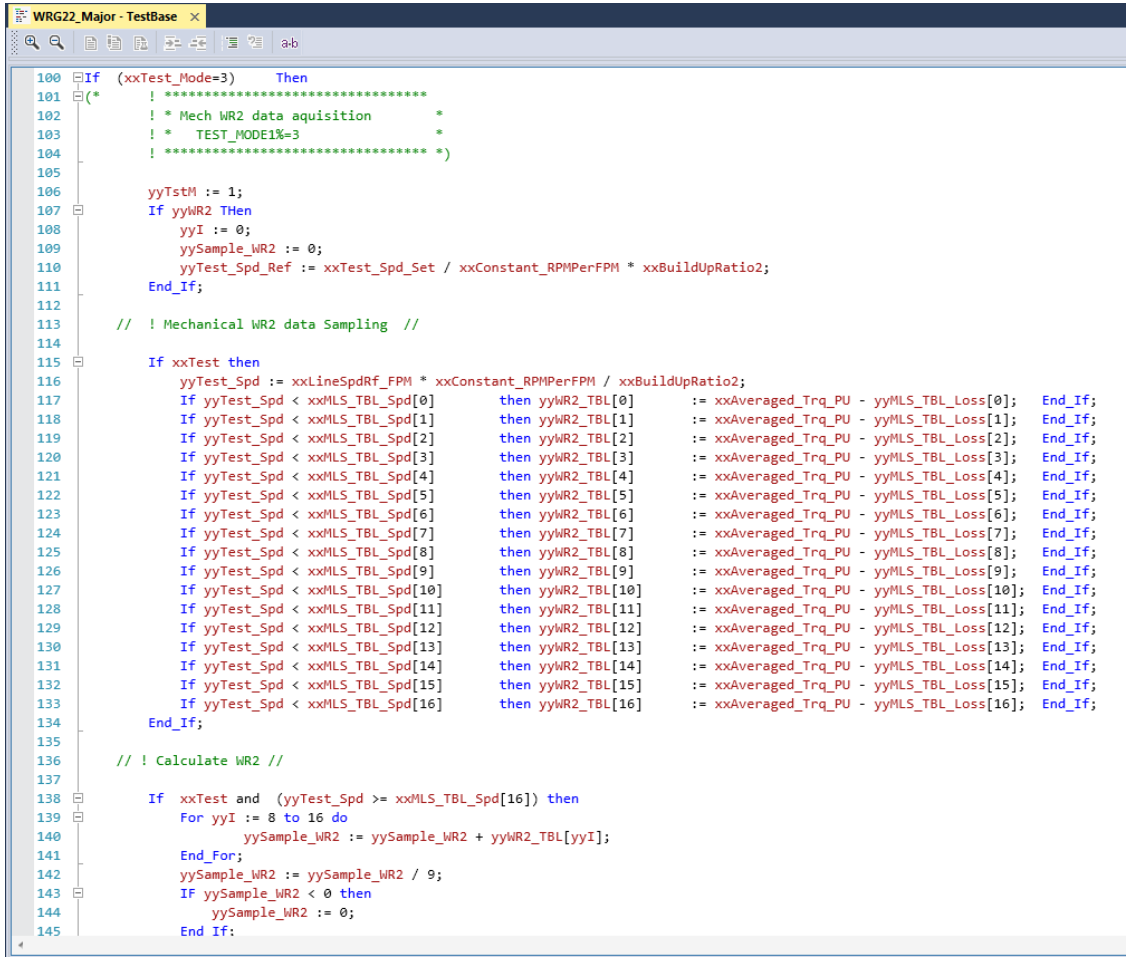
Editor Improvements

Structured Text

Overview

A modernized structured text editor packed with features for productive programming and editing

- Line numbers and bookmarks
- Descriptive tool tips and syntax highlighting
- Multi-line select and mouse scrolling
- Change and verify bars
- Collapsible code segments
- Inline value monitoring
- Code snippets and smart indent capabilities



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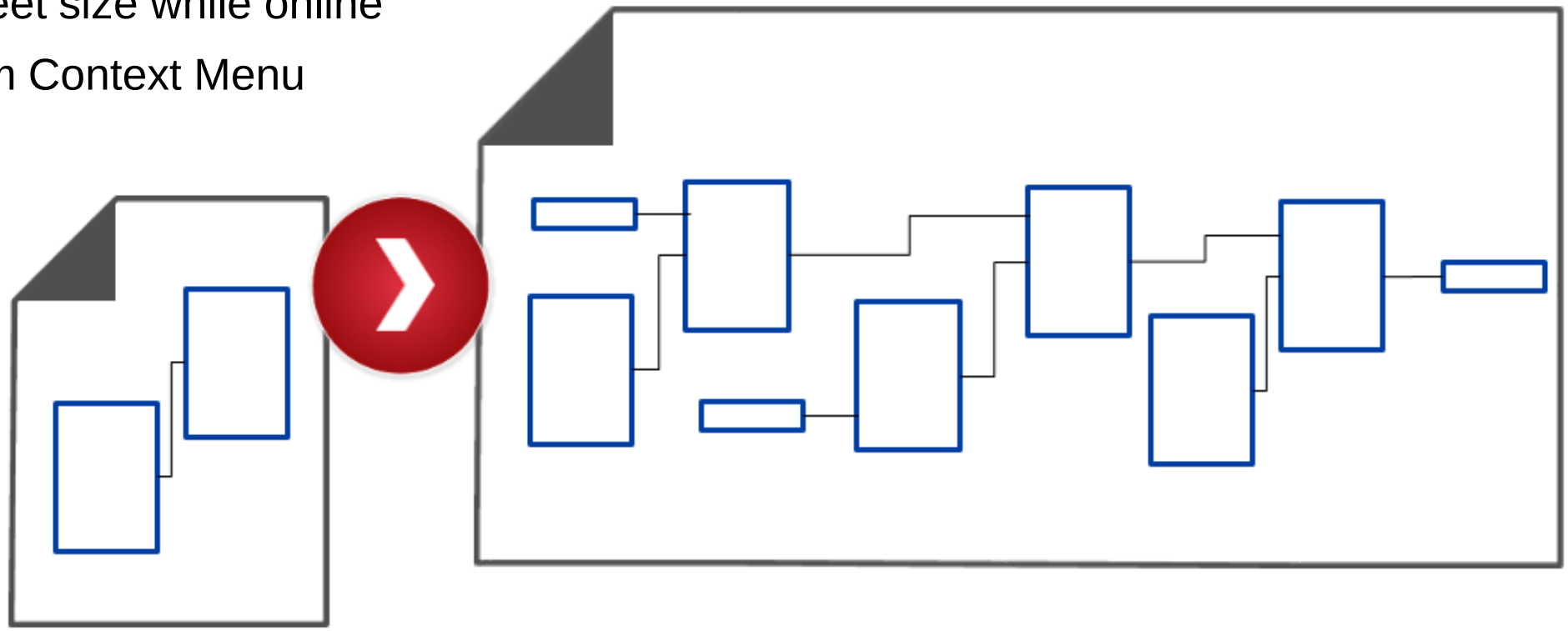
Editor Improvements

Function Block

Improvements to Function Block editor for increased usability

- Default sheet size changed to 11x17 landscape (V30)
- Ability to change sheet size while online
- Forcing I/O tags from Context Menu



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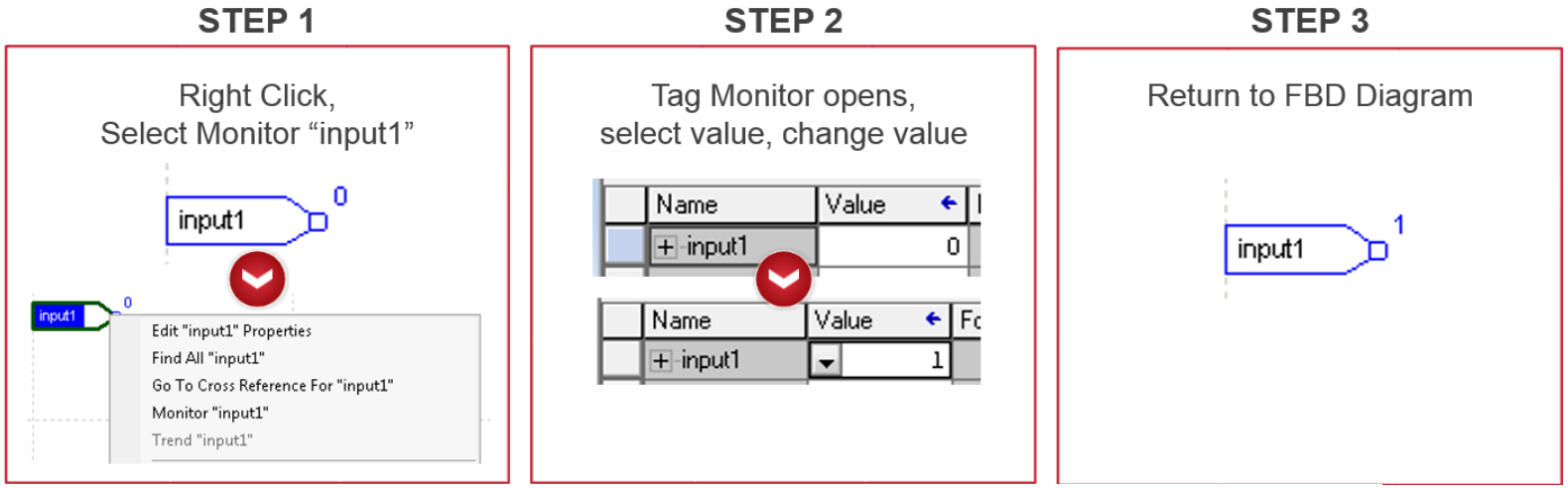
Editor Improvements

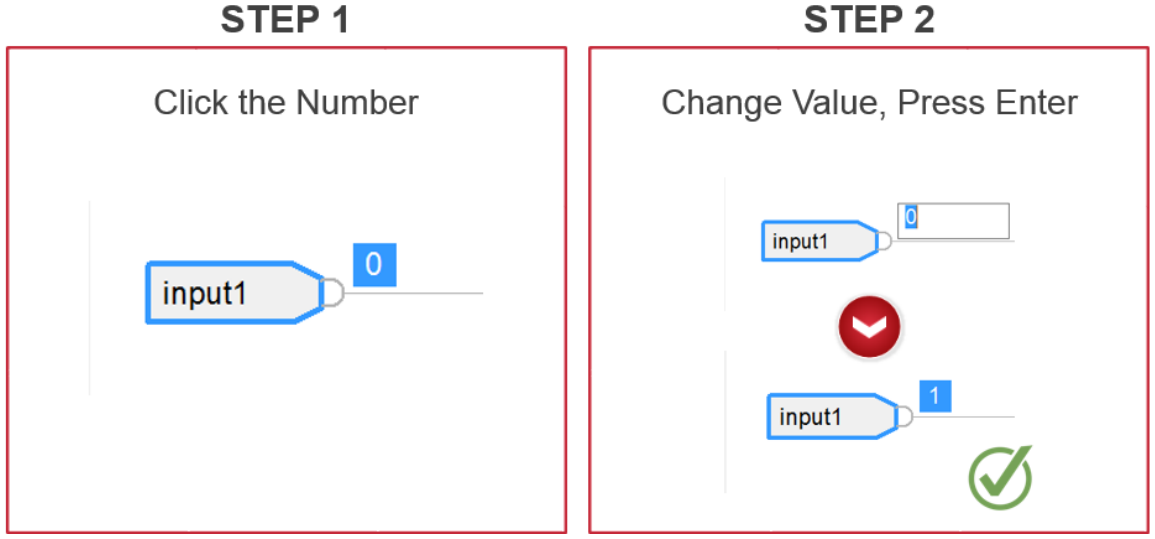
Function Block

Change Input Value Workflow

Before



After



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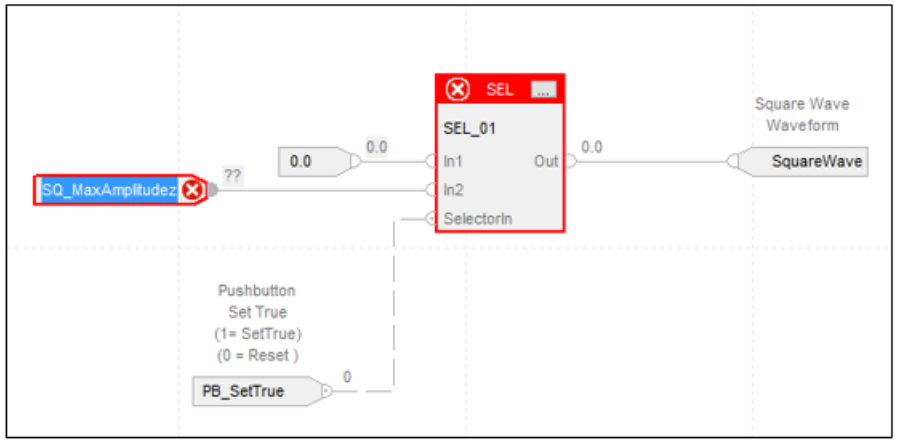
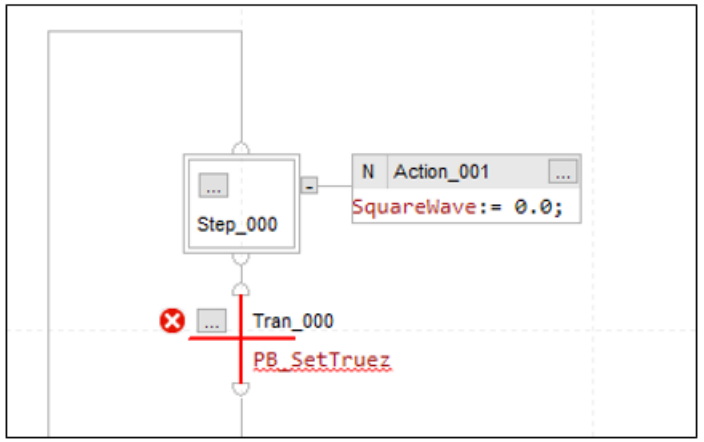
Editor Improvements

Standard Indication of Errors





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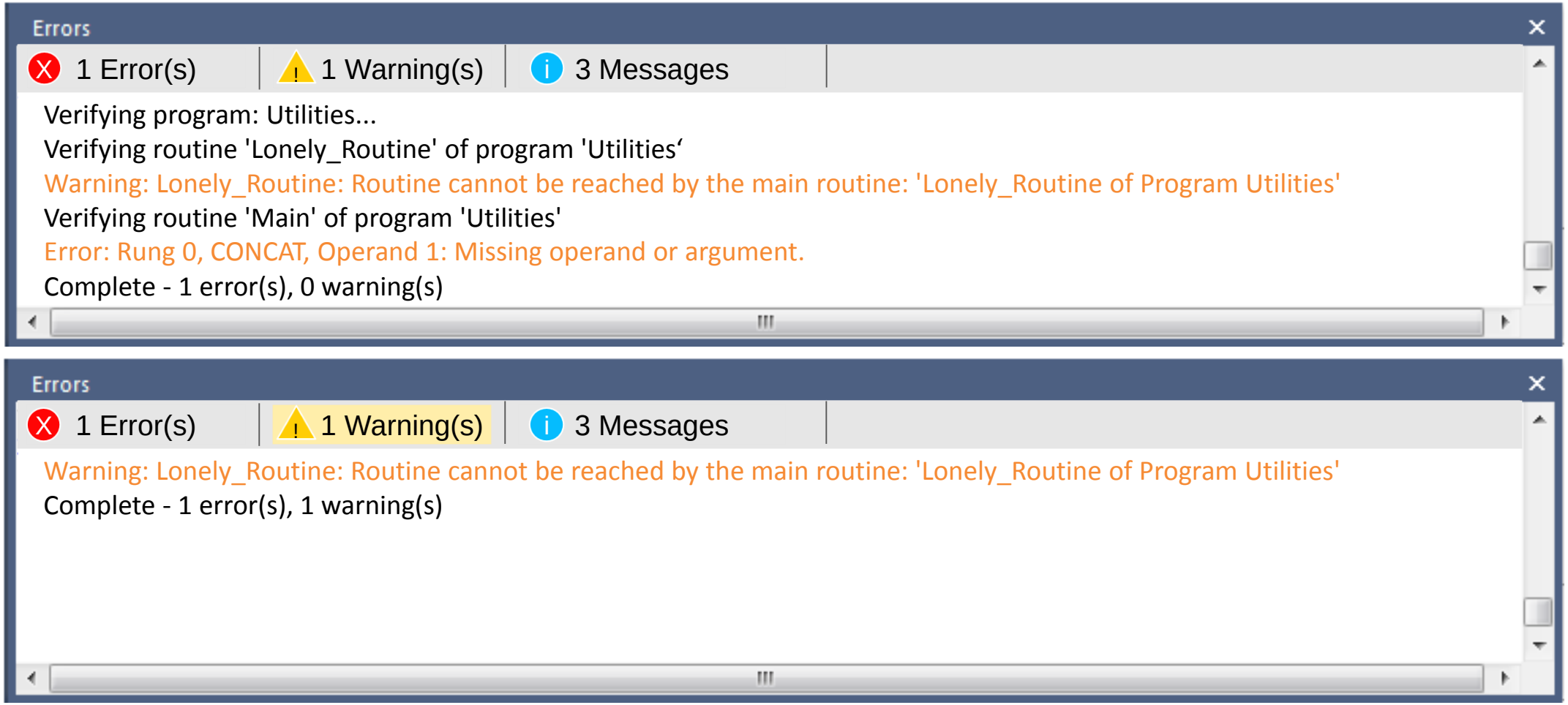
Logix Designer Error Window

New Message Filtering Capabilities



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Studio 5000 Logix Designer®

User Interface Refresh and Usability Enhancements

- In the lab we will review the following Usability Enhancements from v28 and greater:
  - Delete a Program without having to Unschedule
  - Automatically Insert a Header in a Structured Text Routine
  - Detect a Lonely Routine with Verify
  - New On-Line Power Rail Display
  - V31 Enhancements

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Program Parameters

What are they?

- “Argument that is exposed for external access by a program”
  - Program tags now accessible outside of the program
- Feature introduced in V24
- Types
  - Input
  - Output
  - InOut
  - Public
- Conceptually similar to Add-On Instructions
- Key Benefits
  - Online editable
  - Direct linking between Programs
  - Enhances modularity of Programs

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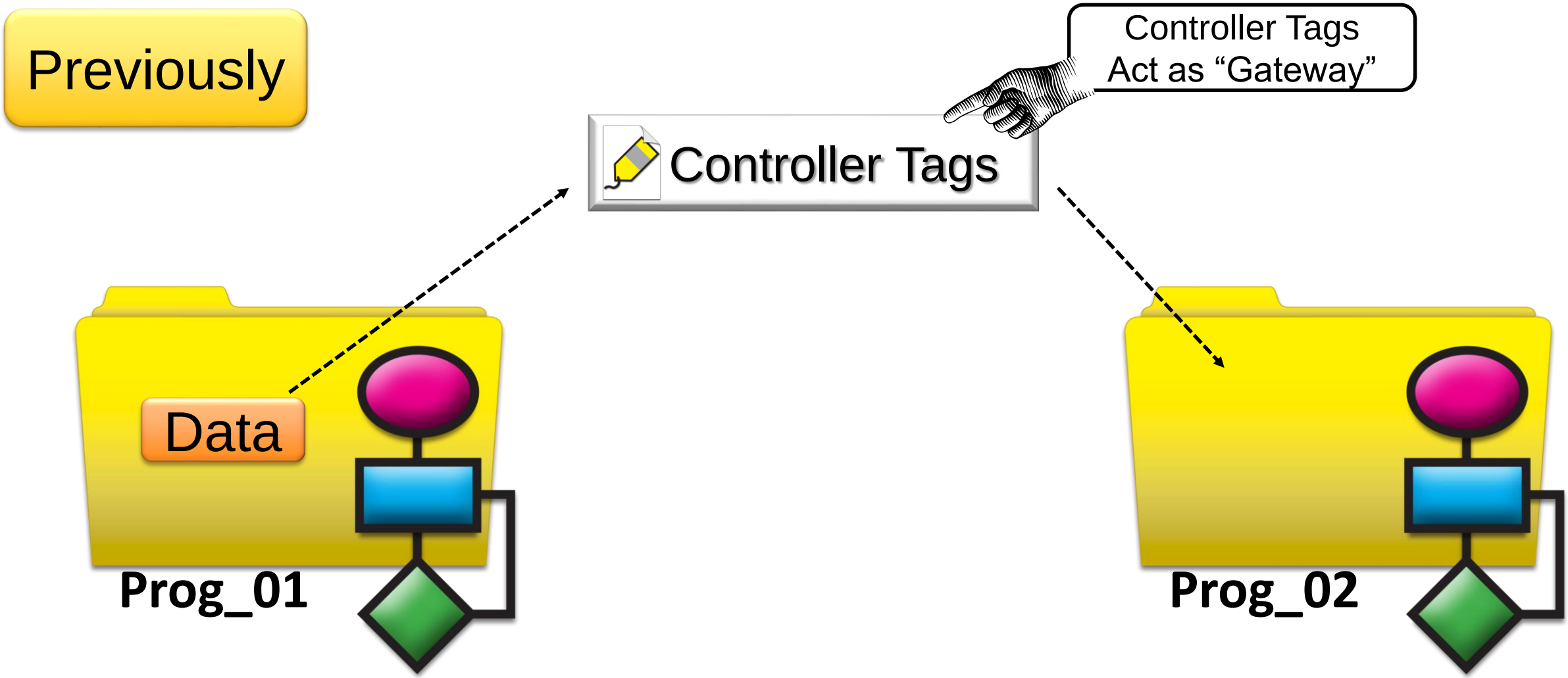
Program Parameters

Program to Program Communications – Before



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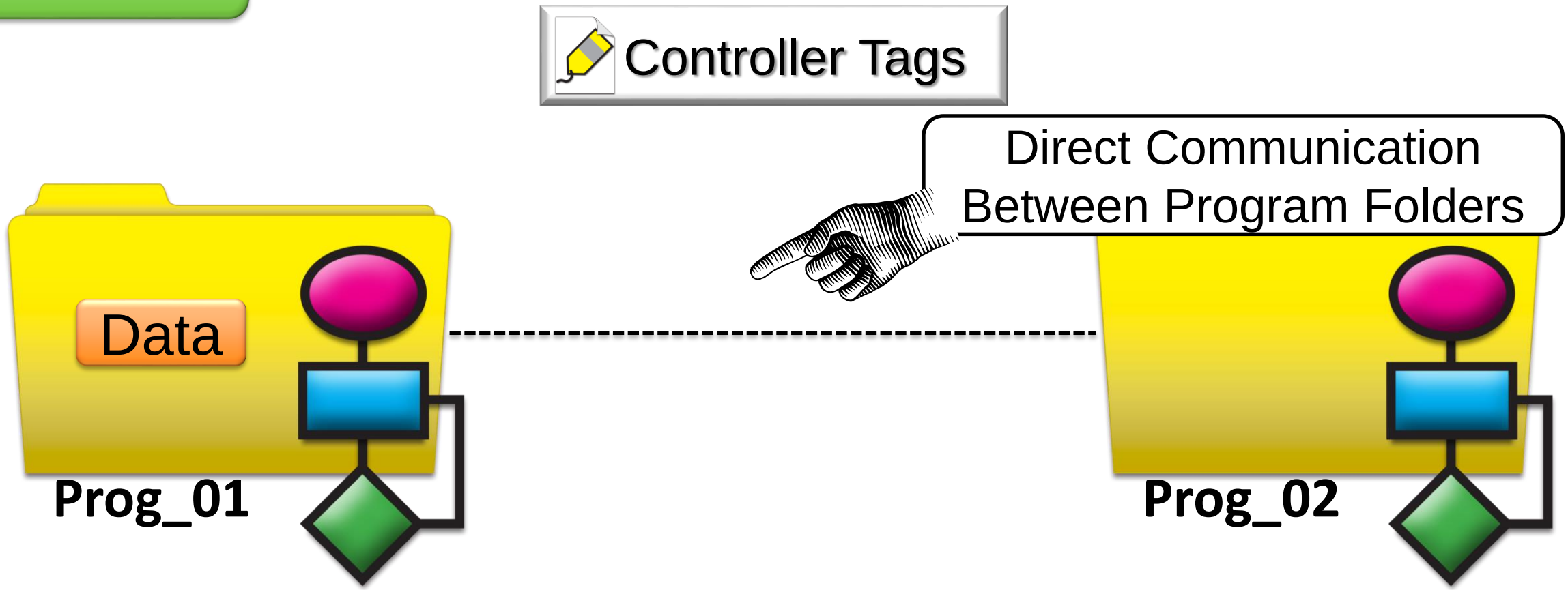
Program Parameters

Program to Program Communications – After

NEW



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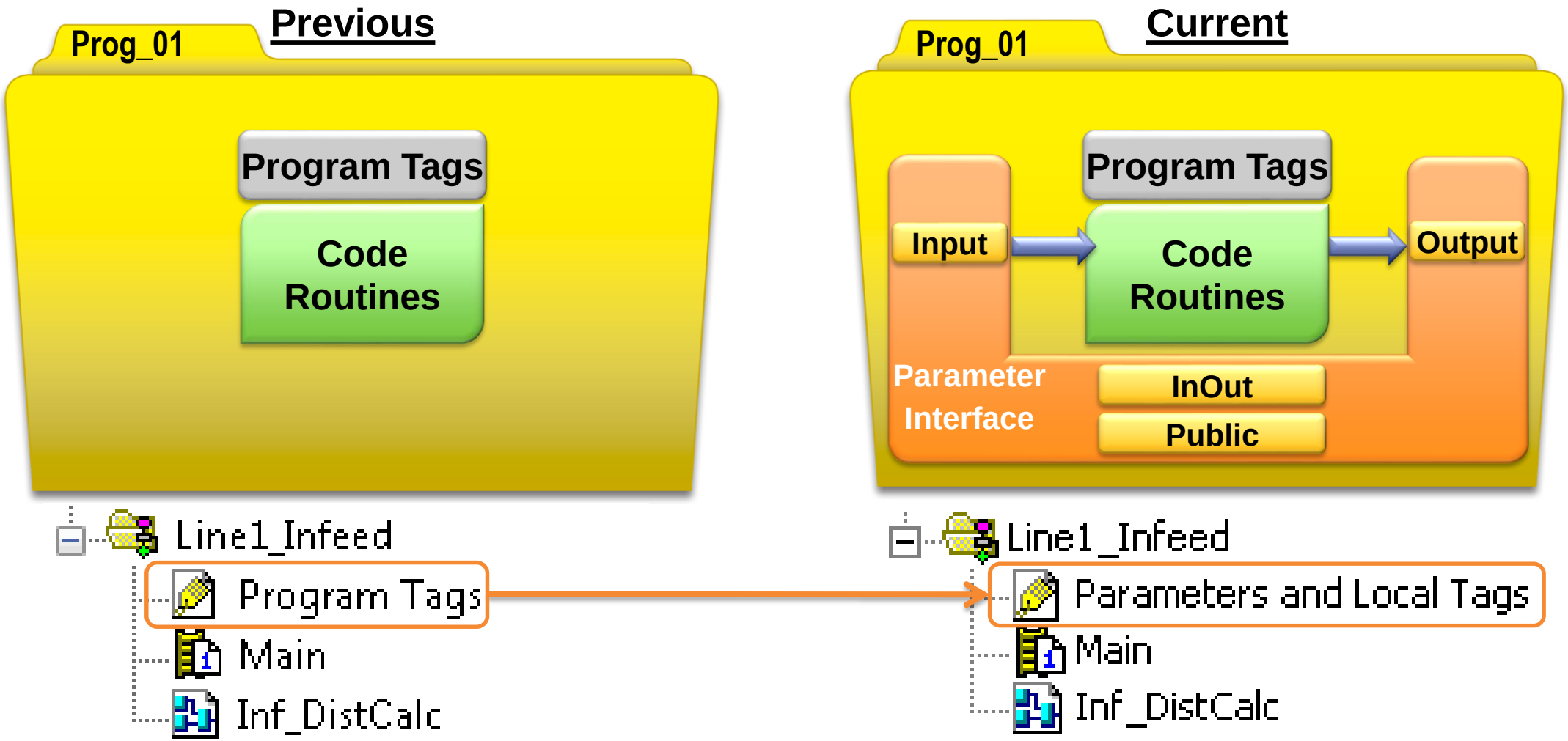
Program Parameters

The Composition of a Program (Before and After)



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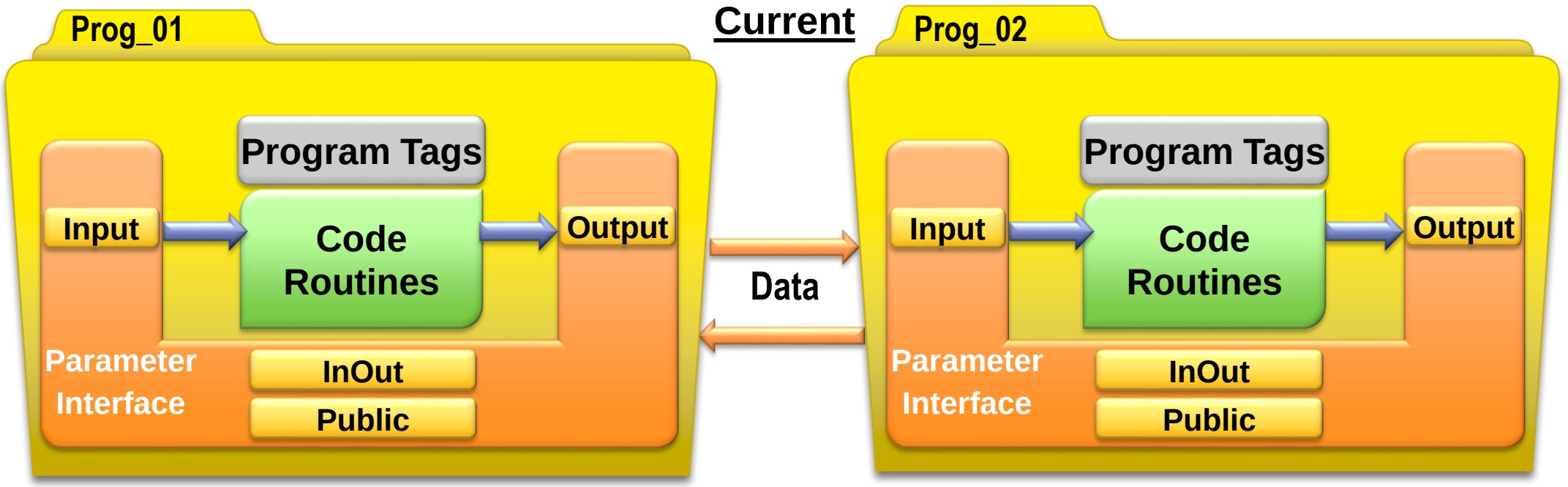
Program Parameters

Conceptual Block Diagram



Why Add a Parameter Interface?

- Better understanding of interaction between programs
- Allow direct communication between programs
- Introduce a larger modular object in Logix Designer

V24

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Advanced Topics Labs

- Lab 1 – Usability Enhancements
  - Preview of new features in V31.
  - Review of new usability enhances that are included in version 28 and greater
- Lab 2 - Logical Organizer
  - The Logical Organizer lets you organize your Logix application any way you would like without affecting the application execution
- Lab 3 - Compare and Merge Tool
  - Updated for compatibility with the new features of Studio 5000 Logix Designer®
- Lab 4 - Add-On Instruction Access to Module Object
  - New Logix feature to allow one Add-On Instruction to be accessing the module object
  - New GSV Module Object Path Attribute
- Lab 5 - Partial Import Online
  - A utility that allows the user to view/handle collisions, rename items and configure connections

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Advanced Topics Labs

- Lab 6 - Program Parameters
  - Code modules at the Program level linked together by clearly defined input and output parameters
- Lab 7 - Add-On Instructions (AOI)
  - Create AOI
  - Reusing an AOI
  - AOI signatures
- Lab 8 - Using an SD Card with a Logix Controller
  - Hands on example of reading and writing data to the SD Card from a Logix application
  - Have one of the instructors give you an SD Card before starting the lab.
- Lab 9 - Logix Controller Change Log
  - Examples of what is logged
  - How to read the log file on the SD card

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Pick and Choose Your Lab Sections

The Lab allows the users to run only the sections they are interested in.

Lab Sections can be run in any order.

- You can run any lab section you would like
  - You can skip lab sections (they do not build on each other)
- Estimated lab completion times are located in the Table of Contents
  - By using these estimated lab completion times, users can gauge how many of the labs they can complete for the allotted time available
- Maximize YOUR benefit
  - Recommend to skip labs that you are familiar with
  - If a lab is not interesting or applicable to you, skip it

There is not enough time in this session to complete all of the labs

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Thank you