ISaGRAF 5 Concrete Automation Model

Performing Online Changes

You can modify a resource while it runs. This is sometimes necessary for chemical processes where any interruption may jeopardize production or safety. When performing online changes, you can choose to update a running resource at the time of download or at a later time. Note that sending custom files located in the *To Download* folder to a target is only available when performing a download operation; sending custom files is not possible when performing online changes.

Warning: Online changes should be used with care. **ISaGRAF** may not detect all possible conflicts generated by user-defined operations as a result of these online changes.

The initial values of variables are applied upon starting resources. Online changes do not start resources. The following tasks are available for various **ISaGRAF** versions when performing online changes:

ISaGRAF 4.X targets or later	Internal Variables	Adding, deleting, and relocating internal variables. Modifying the body of POUs.
ISaGRAF 5.10 targets or later	Bindings	To enable online changes for legacy bindings, set the *LegacyBindingDefault* property to 0 in the diamond.ini file. This file is installed at the following location: C:\Documents and Settings\All Users\Application Data\ISaGRAF\6.1\CAM ISaGRAF 5\5.3\Bin Adding, deleting, and editing. Creating and deleting bindings between variables. Changing the consumer error variable and consumption behavior of a binding. Changing the producing variable, consuming variable, or network for a binding creates a new one. Adjusting the update timeout period in the resource network parameters. The update timeout period is the maximum time during which the consumer can remain in the update state.
	I/O Variables	Wiring, unwiring, and swapping I/O variables whose data type (scalar type for arrays), length (string variables), dimension

		(arrays), and address remains unchanged. For these I/O variables, you can modify the direction (input or output only), scope, attribute (read, write, or free), retain flag, alias, and comment. When modifying the direction, I/O variables cannot change to or from the internal type. Note that modifying the I/O wiring causes the values of new and removed output I/O variables to be reinitialized.
	I/O Channels	Changing the wired variable as well as the reverse/direct, gain, offset, and conversion settings.
ISaGRAF 5.23 targets or later	Internal Variables	When renaming or changing the data type of internal variables, the Workbench creates new variables. Therefore, variables are initialized. Changing the alias, initial value, group, scope, direction, retain setting, address, and comment of variables. When changing the initial value of a read-only internal value, the Workbench reinitializes the variable. When changing the scope of a variable, the Workbench reinitializes the variable. Modifying the length of string variables. When decreasing the length, the contents of the string is truncated to the new length. Switching a variable attribute between the input and output attribute. You cannot switch variables between the internal and input/output attribute. Adding and removing elements in arrays for internal variables. For multi-dimensional arrays, you can only add elements to the first dimension. The Workbench initializes these new elements. Adding elements to other dimensions causes the Workbench to initialize a new array.
	Programs	Adding, deleting, renaming, and reordering (for execution within the programs section) programs. When renaming programs, the Workbench detects a CRC mismatch and updates the code on the target for the program and reinitializes all local variables. When renaming SFC programs, instance data and local variables are not preserved, i.e, elements are reset to their initial state. When planning to add programs (other than SFC) using online changes, you need to allocate a sufficient number of maximum

		extra POUs. When planning to add SFC programs using online changes, you need to allocate sufficient memory space for SFC programs. Adding, deleting, renaming steps and transitions as well as modifying the initial step or the flow between elements. When modifying SFC programs, instance data and local variables is preserved, i.e., elements are not reset to their initial state. Adding, deleting, and moving action blocks within steps of SFC programs. Action blocks within steps are executed in the order of appearance. You can also change the qualifier of an action block.
	Functions and Function Blocks	Adding, deleting, and moving function blocks. Adding and deleting function block instances. Renaming and modifying user-defined functions and function blocks. Adding, removing, and modifying the parameters of user-defined functions and function blocks. When modifying the parameters, instance data is not preserved. You need to recompile modified functions and function blocks called by other POUs as well as the calling POUs.

To perform an online change

You can perform online changes after building a project. Online changes are unavailable after cleaning projects, cleaning solutions, and rebuilding solutions.

• From the Solution Explorer, right-click the project for which to perform the online change, then choose **Online Change**.