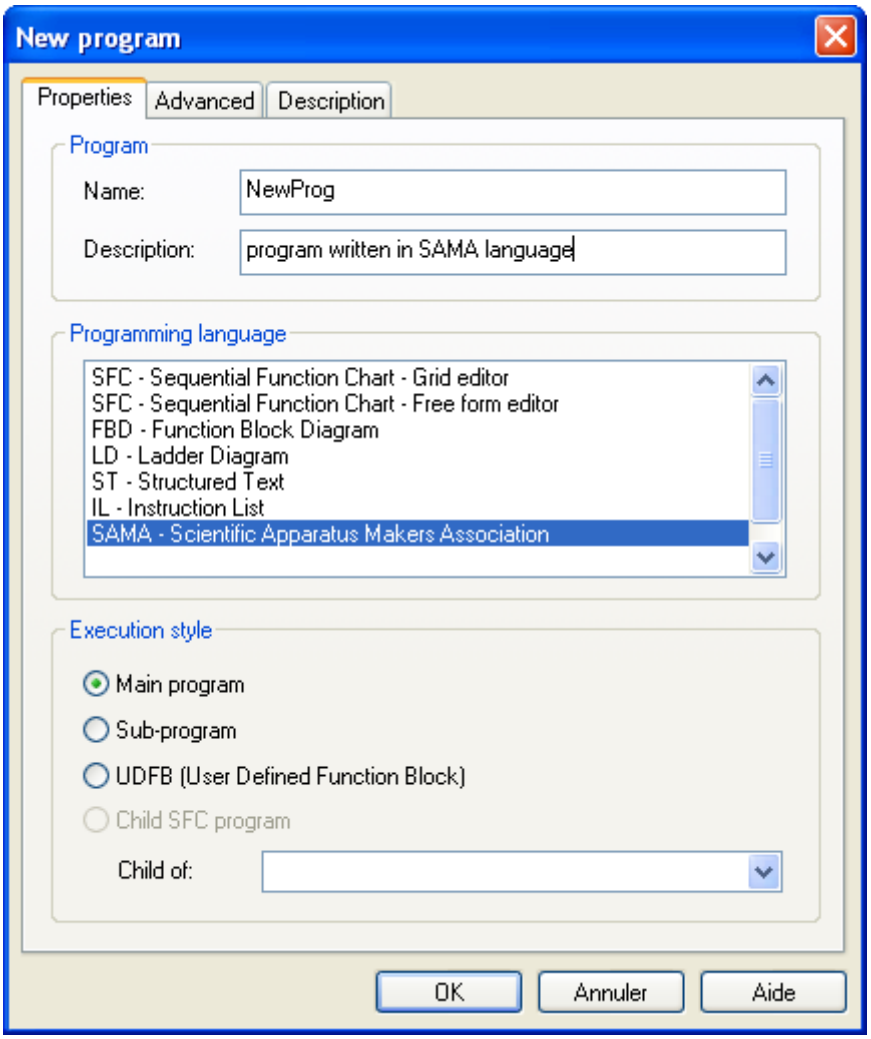
SAMA Language in STRATON – Tutorial – Draft

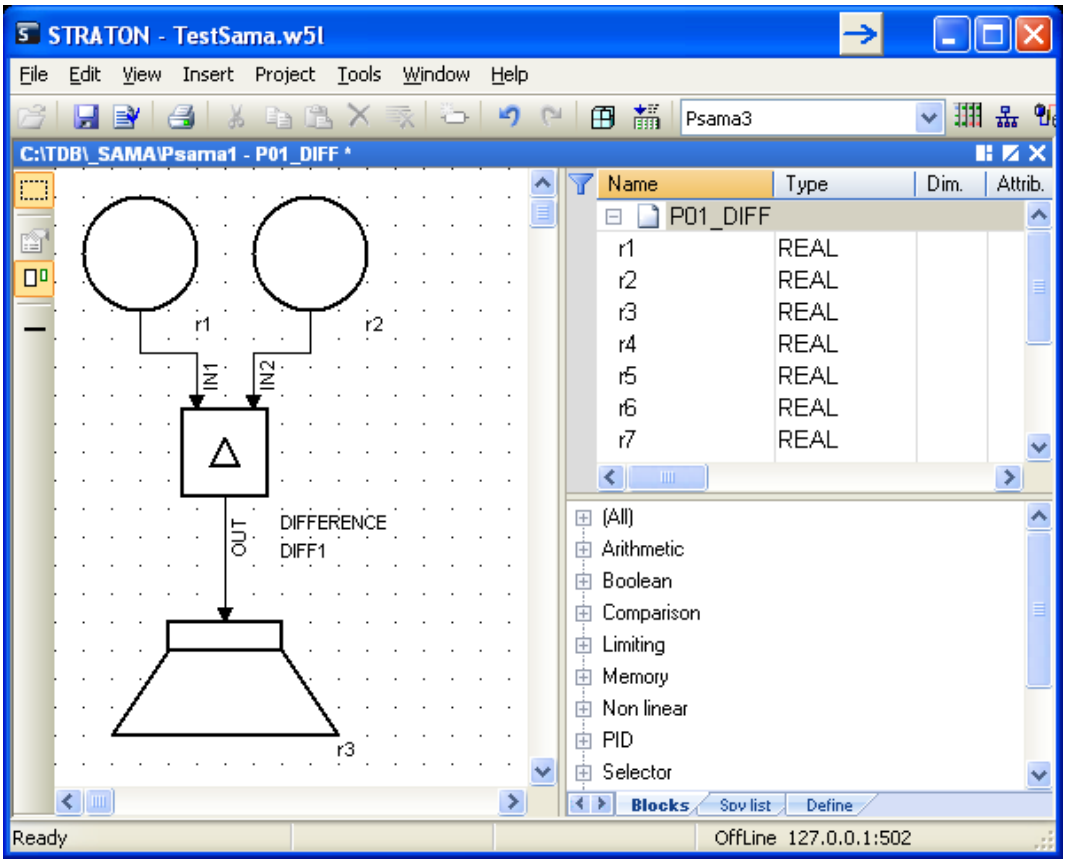
Creating POUs in SAMA language

The “SAMA” language is available from the POU creation box. SAMA is available for main programs, sub-programs and UDFBs.



The SAMA editor

The editor comes with a variable editor, like for other languages, and a list of blocks dedicated to SAMA diagrams:



The categories of the list of blocks group various functions. The special category “Symbol” groups the basic SAMA symbols (measuring, connector…). The category “(project)” contains the UDFBs of the project that can be used in SAMA (discussed further in this document).

To create a diagram, simply drag an drop functions or symbols from the list of blocks to the editing area. If you drag a variable from the variable editor, a “connector” symbol is created.

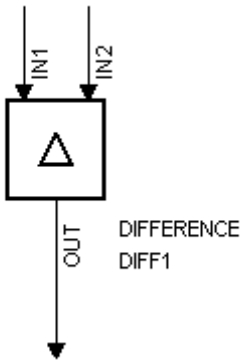
Use CTRL+G to show or hide the grid in the editing area. Use commands of the View menu or “CTRL + mouse wheel” to zoom the diagram.

Managing symbols

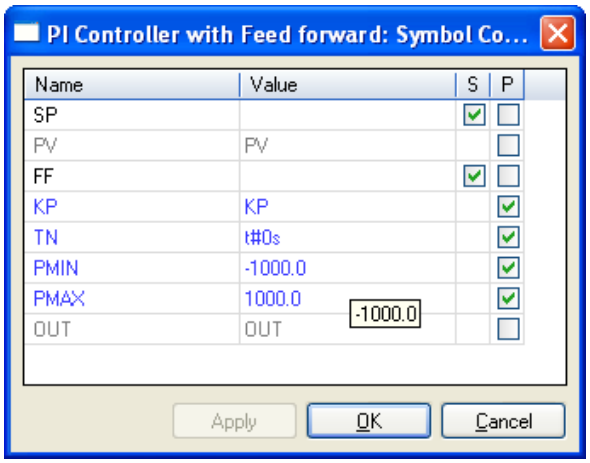
Double click on a SAMA Symbol (e.g. measuring) to select the associated variable.

Managing functions

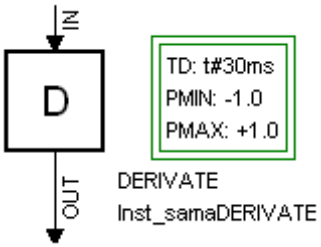
Name of input and output connection points is written outside the function drawing at the corresponding location. The type of function and the corresponding instance are written on the bottom/right side of the drawing:



Double click on the instance name (“DIFF1” in the previous example) to select another instance. Double click on the block to customize its input/output pins and set its parameters. The following box is open:

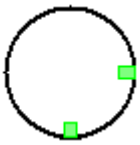


Uncheck the “S” option to hide an input. The “value” column must contain a valid constant value or variable name for all parameters and hidden inputs. The “P” check indicates that a preview of the parameter, input or outputs must be displayed in the diagram. The preview is a small box displayed close to the function. You can move it with the mouse.



Drawing links

Links are always drawn in the direction of the flow, from an output pin to an input. When the mouse is over a symbol or function, green square marks indicate available output points:



Clink on an output pin to start a new link. When dragging the line over another object, similar green marks indicate available input points.

Creating new SAMA symbols

Run the “Tools / SAMA Symbols” menu command to design new symbols to be used in SAMA diagrams. There must be no SAMA diagram open for editing when running this tool.

A symbol is described with:

- A name and description
- A size (in editor grid units)
- A kind of drawing
- A set of input and output connection pins

The Workbench offers a list of predefined drawing shapes currently used in SAMA. You can create new shapes, by adding vector drawings in **.EMF** format in the \SAMA folder where Workbench data is installed.

Using UDFBs in SAMA diagrams

Per default, UDFBs are not available in SAMA diagrams. If you want to enable a UDFB for SAMA, select the UDFB in the Workspace and run the “Parameters” command of the contextual menu. Then press the “SAMA…” button. Here you can choose a kind of drawing for the UDFB, and set the position of its input and output parameters: