GUITU

Programming environment

EXERTUS

GUITU

- For Windows
- For workgroups
- Full system design and programming for multi controller system
- Graphical GUI design
- Similar to IEC61131-3 FBD
- Online debugging over CAN
- Extensive built-in help
- CANopen & J1939

GUITU was originally created for being development tool for graphical user interfaces. Later on it was expanded to be also I/O controller programming tool.

It is a workgroup tool allowing multiple programmers to work parallel on the same project. CAN communication between controllers is created seamlessly on the background without need for intervention from the programmers.

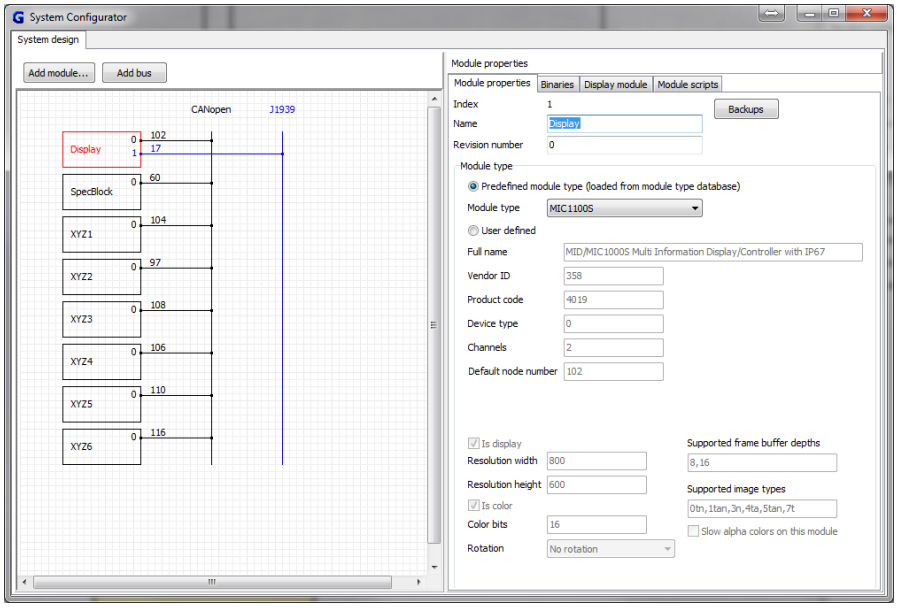
GUITU offers wide range of functions for use in projects from Arithmetic to NMT operations. There are also storage and alarm function available.

Debugging allows watches for variables in both numeric and graphical format for variables and of course breakpoints. Also information about time spent in each script and memory usage is available.

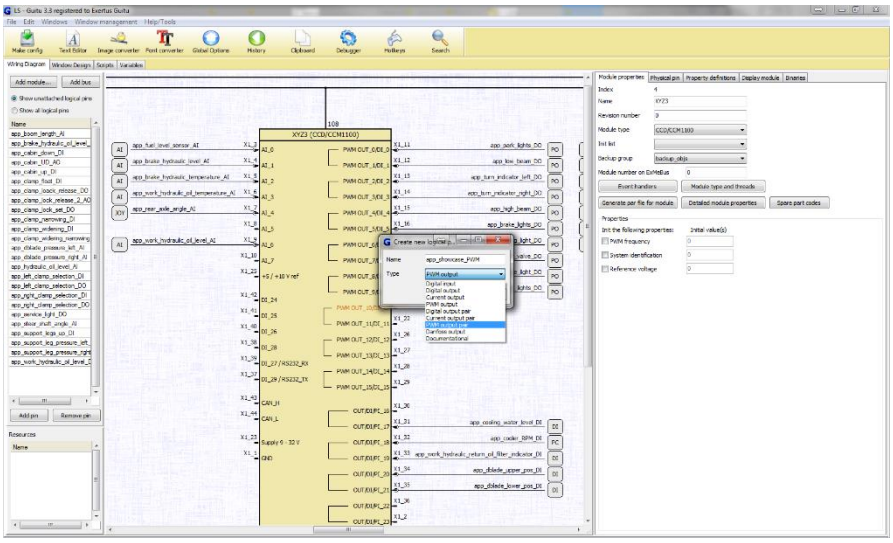
GUITU has built-in support for multiple languages and fonts.

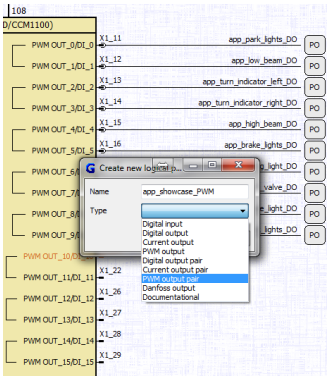
Wiring diagram

A project is started via adding controller(s) and other devices communicating over CAN to it.



The next step is to define the I/O interface.



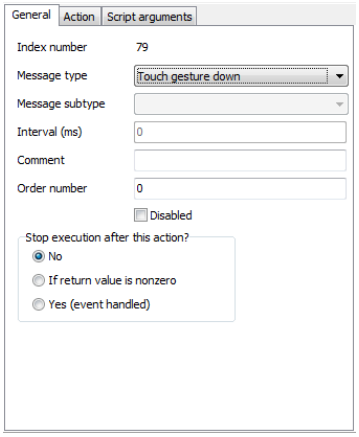


Only the allowed configuration options are shown.

Most of the I/O lines are software configurable allowing them to be used as digital input, digital output, PWM output etc. Cable & wire markings (or colours) can be keyed in and the result can be saved as image and used in machine's documentation.

Scripts

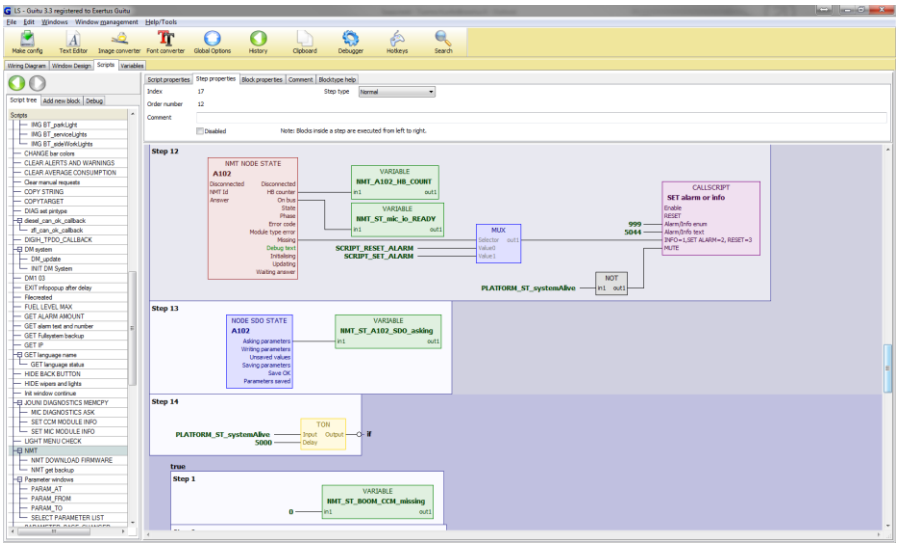
The programming language is similar to FBC in IEC61131-3. As default there are two scripts in newly created project: Startup and AtRunTime. The first one is, as the name suggests, only ran at start and the latter one is ran cyclically every 50ms (as default). The programmer is free to add scripts and he can decide which message type triggers their execution: time interval, key press/release, NMT event, gesture on touch screen etc.



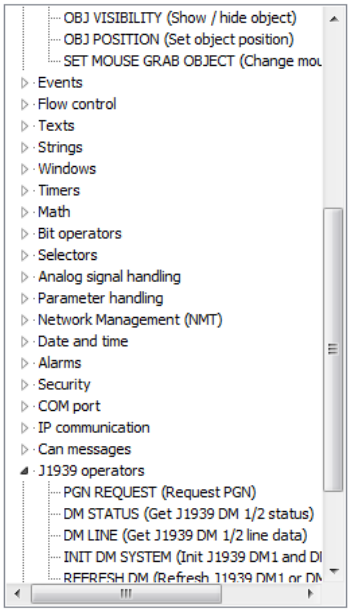
The selection window for message type for triggering scrip

Script flow and functions

The scripts are executed from top to down and left to right as usual and the program flow can be controlled with callscript, endscript, endstep, if, switch, while and goto statements. For the scripts there are over 200 functions available ranging from arithmetic to handling file system. Also, there are functions for network management and for requesting PGN and DM status. And much more.



Sample window for script editor.

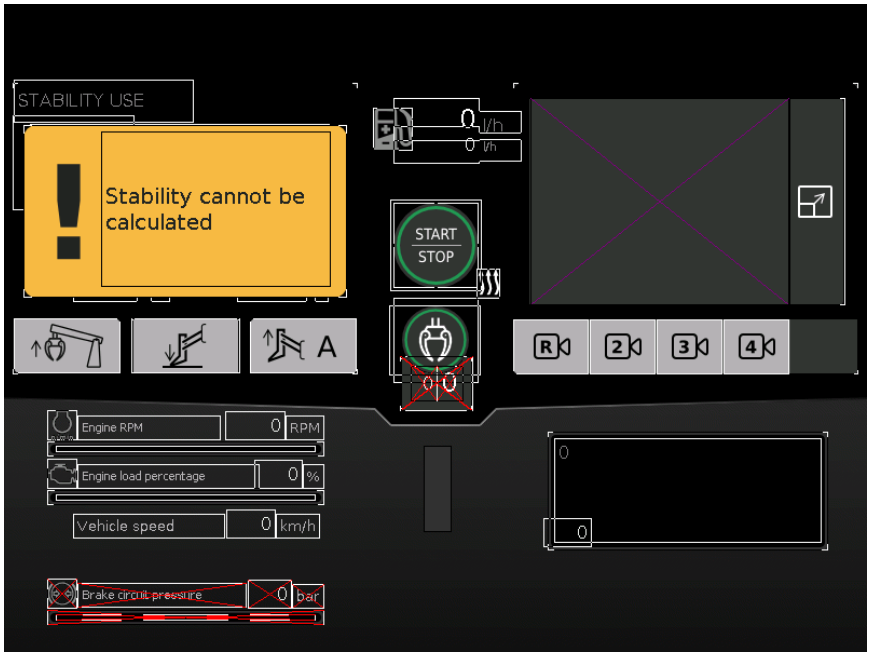


The selection window for the script functions.

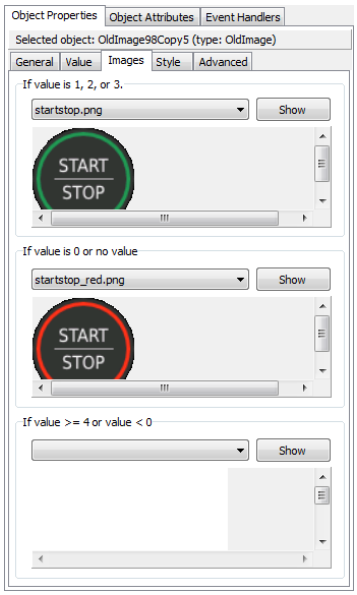
Window design

User interface is created with different objects such as images, buttons, labels and gauges (needle or bar type). They are set on layers defining which one is on top and their colours and even location can be can changed on the fly.

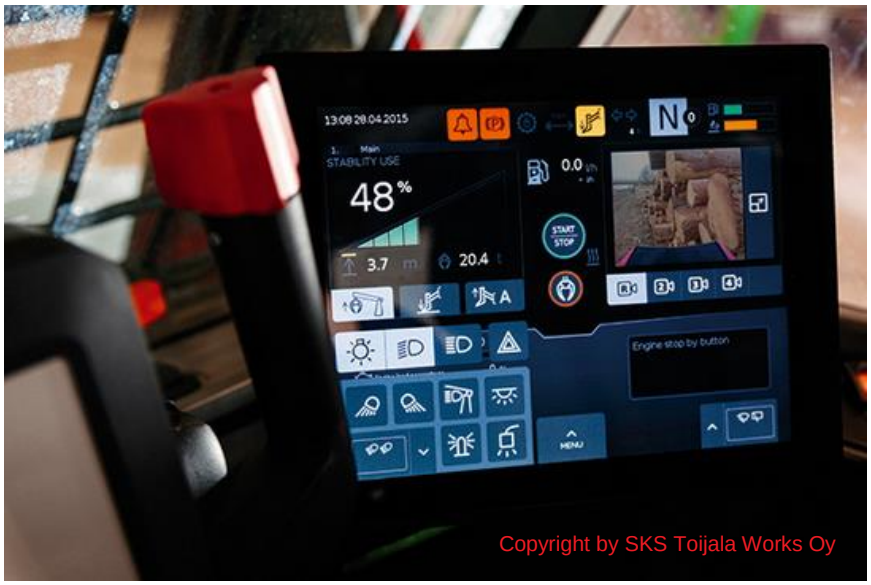
Programmer can create for instance sub-windows to create dynamic screens and pop-up windows to show for example alerts.



Sample ”window design”.



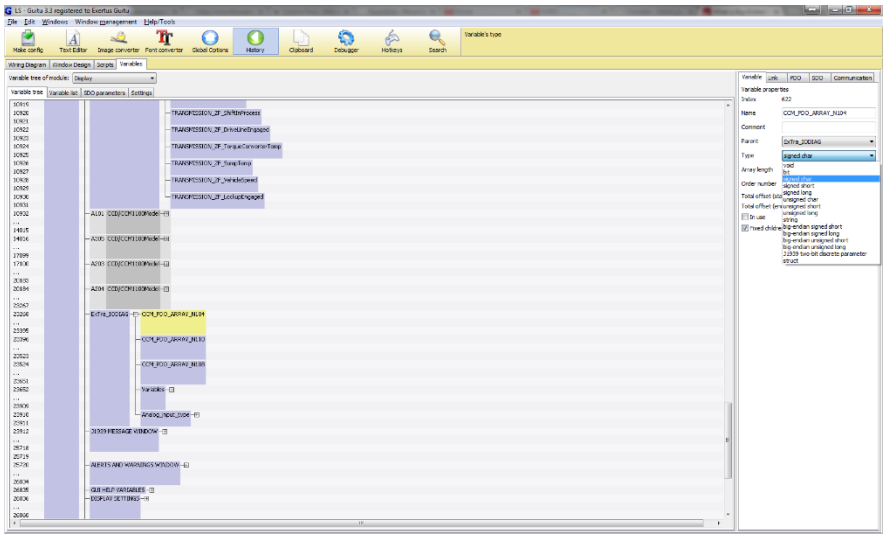
The active picture is selected based on variable value.



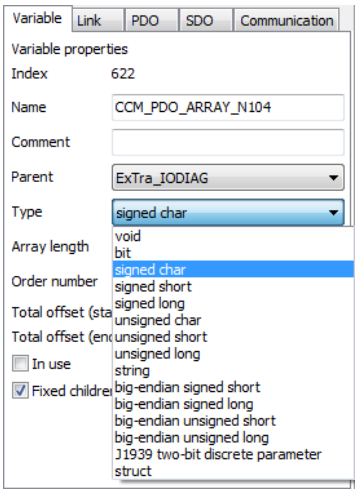
Sample “window design” in real life action. There are some sub windows visible that were not shown in the picture above.

Variables & CAN communication

The variables and arrays including CAN messages are defined in variable tree. Most of the CAN messages are created without user intervention, but if needed they can be added and modified manually.



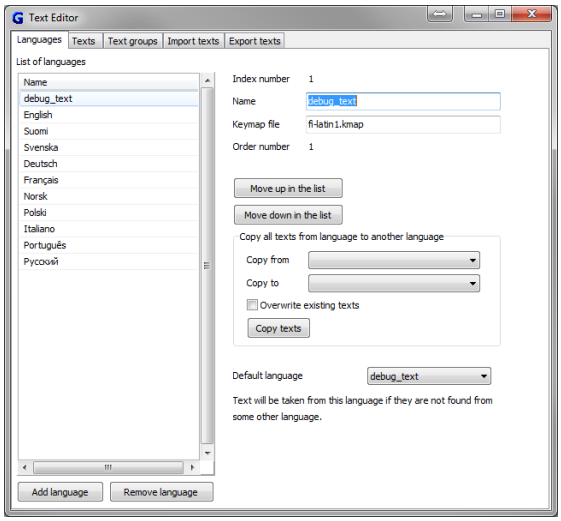
The variable tree.



The variable type selection.

Fonts and languages

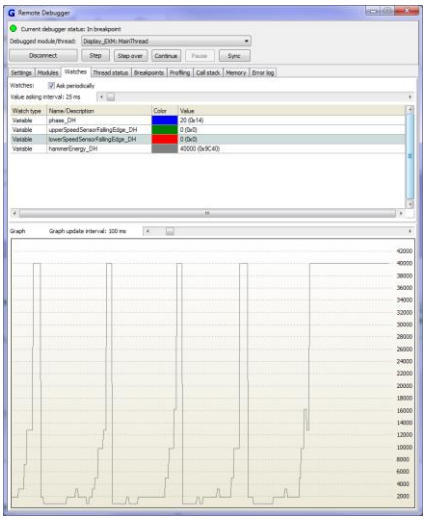
GUITU supports using multiple languages for user interface. The languages on the display can be changed on the fly through script function. The amount of used languages in one project is only limited via amount of memory in used in the selected display controller. As GUITU makes use of Windows fonts it is easy to add new ones.



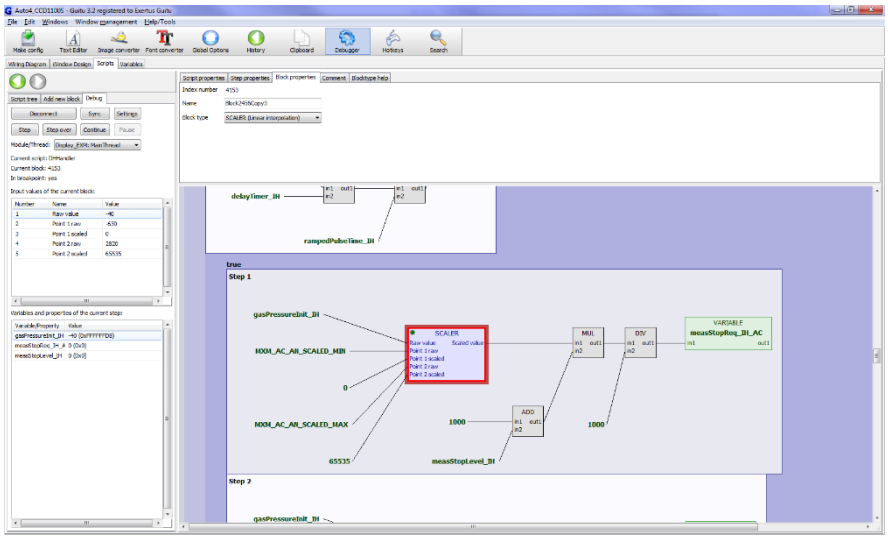
The text and language editor.

Debugger

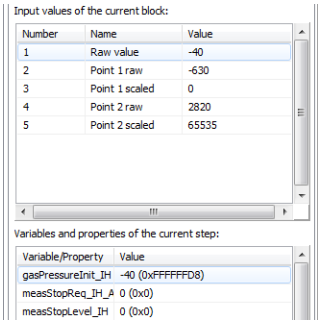
The debugger includes watches, breakpoints and the possibility to execute the scripts step by step while connected to system.



The status of the selected values is shown in both numeric and graphical format.



The script execution in breakpoint.



The input values for the function in breakpoint are shown together with the variable and property values.

Exertus reserves the right to change product details without prior notice.