Gefran Software

Gefran Software Applications

- Climatic chambers
- Autoclaves
- Plastics dryers
- Washing machines
- Packaging
- Laboratory Extruder

Characteristics

- Development of multiplatform solutions
- Programming according to IEC61131-3 standard
- IEC61131-3 programming languages (LD, ST, IL, SFC, FBD)
- OnLine Debugging
- Configurability of all Gefran catalogue devices
- Integrated solution for Gefran GCube Fit and Compact platform

Profile

GF_Project LX is an integrated development environment (IDE) for real time control applications of Gefran devices automation, control, Drive and Sensor families.
GF_Project LX includes all the tools useful for the configuration of different type of Automation project and for other project phase like commissioning, software maintenance, service and integration.

GF_Project LX can:

- Develop automation solutions by protecting the investment allocated to configuration of the application and reducing time to market
- Create applications for complete control of machines and plants and for configuration of graphic interface
- Develop multiplatform solution
- Cut learning time, provide guided development and eliminate configuration errors by exploiting graphic configuration
- Thanks to various types of graphic interfaces, the programmer is given the best and most effective tools to develop an automation project. This provides you with a "visual" and "plug-and-play" approach, thanks to which project configuration is completely graphic and guided.

Gefran Automation DNA

GF_Project LX is composed of integrated software modules with specific functions that provide easy and intuitive configuration of different type of automation projects.

» Project manager

» Operator Interface

» HW architecture

» Diagnostic

» Control

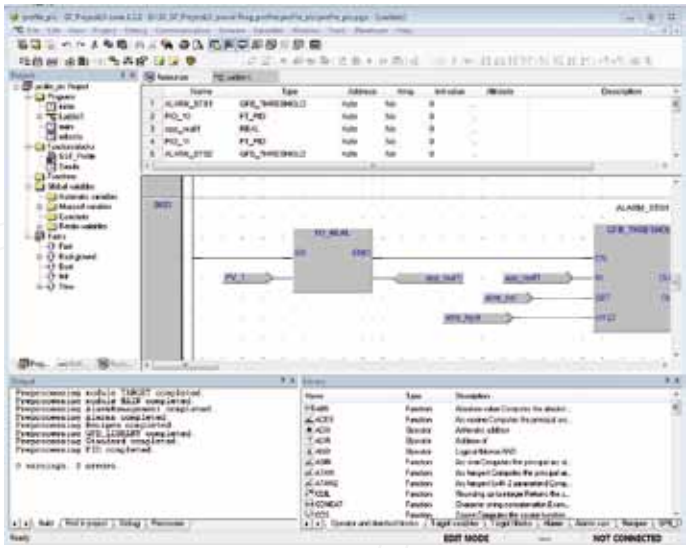
» Connectivity

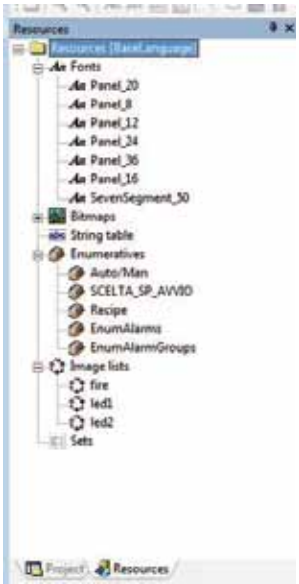
» Code Library

» Project manager

System oriented view of all project structure allow to manage each single and dedicated application module.
This give to the engineer a clear and efficient configuration approach

- Easy configuration based on mouse "click"
- Common interface
- Project view structure components
- Find in project

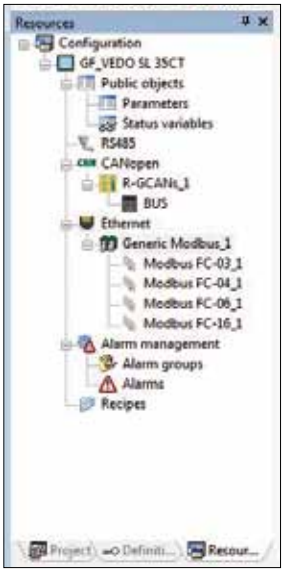


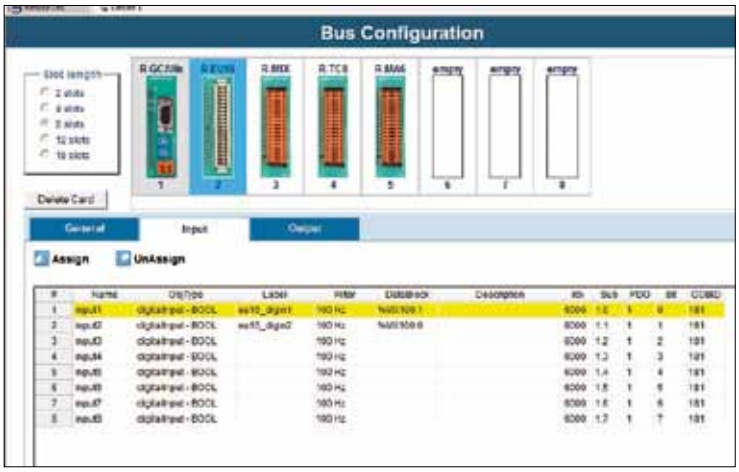


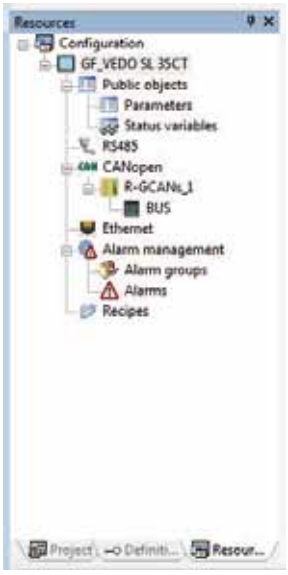
» HW architecture

All the automation device inserted on hardware architecture need a dedicate parametrization and application variable configuration. This module allows to define the general system architecture and all the required configuration.

- Gefran automation devices catalog ready to use
- Hardware architecture with graphic tree visualization
- Configuration of system resource device
- Configuration I/O variables
- Modbus TCP-RTU and CANopen third party devices integration
- HMI data connectivity configuration (Modbus TCP – RTU)



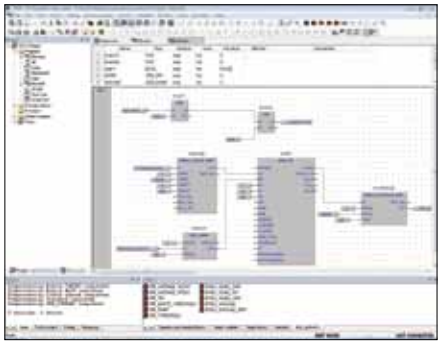


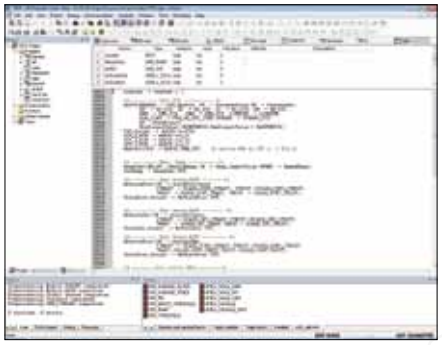


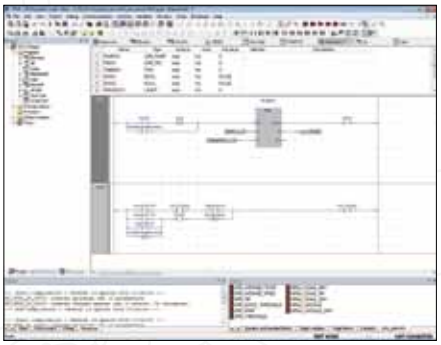
» Control

This module manages all the required configuration in order to perform project control. The right language and interface for every application gives an enhanced instrument for any specific application requirement

- Standard IEC61131-3
- Text languages
  - IL (instruction List)
  - ST (Structured Text)
- Graphic languages
  - LD (Ladder Diagram)
  - FBD (Function Block Diagram)
  - SFC (Sequencial Function Chart)
- Dedicated editor for each different language allow comprehensive functions and interface
- SFC configuration with all languages
- Any combination of langauges in project programs, Function Block and Function
- Library management with version feature
- Custom library management with password cripting option, can be implemented in any IEC61131-3 lanuages
- Import/export for program and FB
- Project variable divided into global and local
- Project variables parametrization
- Multitasking execution with 5 different task level
- System and specific application use FB library
- Powerful find in project
- Cleare compilation messages
- Program PC simulator







» Code Library

Gefran Function block library gives all the Gefran know how on industrial application.
Dedicated FB (Function Block) and F (Function) library for specific functionality allow to the user an easy software integration reducing development and debug time

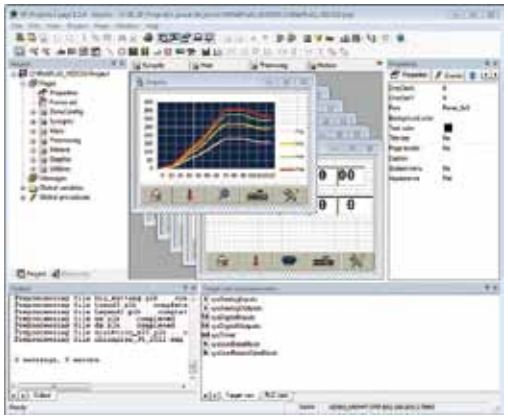
Gefran standard library GFB_Library include :

- Input / Output variable engineer unit conversion
- Variable scaling
- Threshold alarm
- Ramp generator
- Average filter
- Step generator
- Base heat/cool PID controller
- Advance PID controller (auto tuning, self-tuning, soft start, manual mode, PWM output)

» Operator Interface

This integrated module provides a series of instruments to meet all the different operator interface needs requests for an effective usability

- Easy “drag and drop” configuration
- Clear pages structure view
- Multilanguage runtime selection
- Realtime visualization of process data status
- Gefran standard widget library
- Graphic widget alignment and common resize function
- Custom page template library
- Image library and custom image import function
- Design time page zoom (+ / -)
- Snap to grid option
- Script functionality for global and page local events



Additional Operator Interface configuration
In addition to the main software components, a series of additional configurations can be used to define the specific functions.

» Alarms

An integrated machine alarms management allow an easy monitoring of critical application events.
For each alarm the user can configure a dedicated text message and the required acknowledge sequence.
Dedicated page template on graphic library allow an easy configuration on operator interface for real and historical alarms status interface

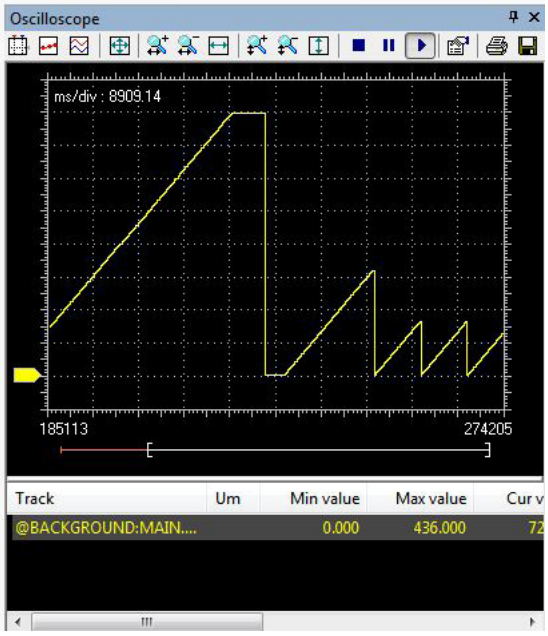
» Recipe

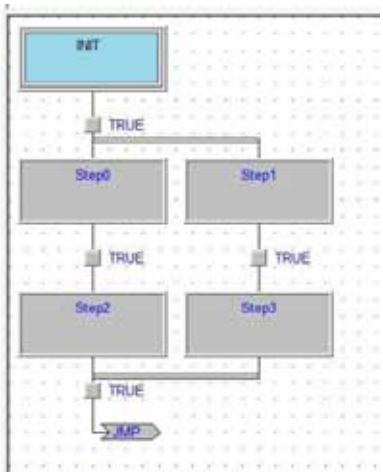
Recipes are defined as machine management of a data archive containing the setup of process values for various work procedures This simplifies production change or startup operations by safely and easily restoring previously saved process parameters.
A Recipe requires a fixed datastructure that is defined during configuration by an intuitive and dedicated parameterization module. Individual Recipes saved on the operator panel have a shared data structure but can contain different single values.

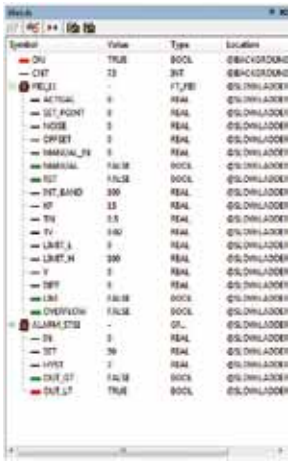
» Diagnostic

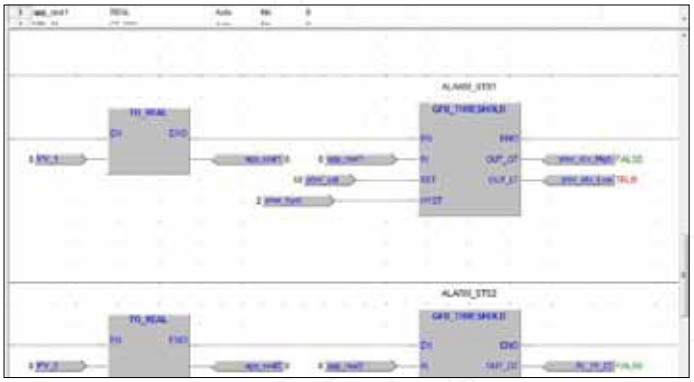
GF_Project LX diagnostic module provides a complete and effective list of useful and efficient tools for all the testing and diagnostics phases.

- System variables library
- Single task execution time monitoring
- Variable watch list panel with save on file option
- Variable graphic trace with variable data save on file
- Breackpoint
- Programmable trigger with variable trace and watch list
- Integrated pages and code simulation on PC









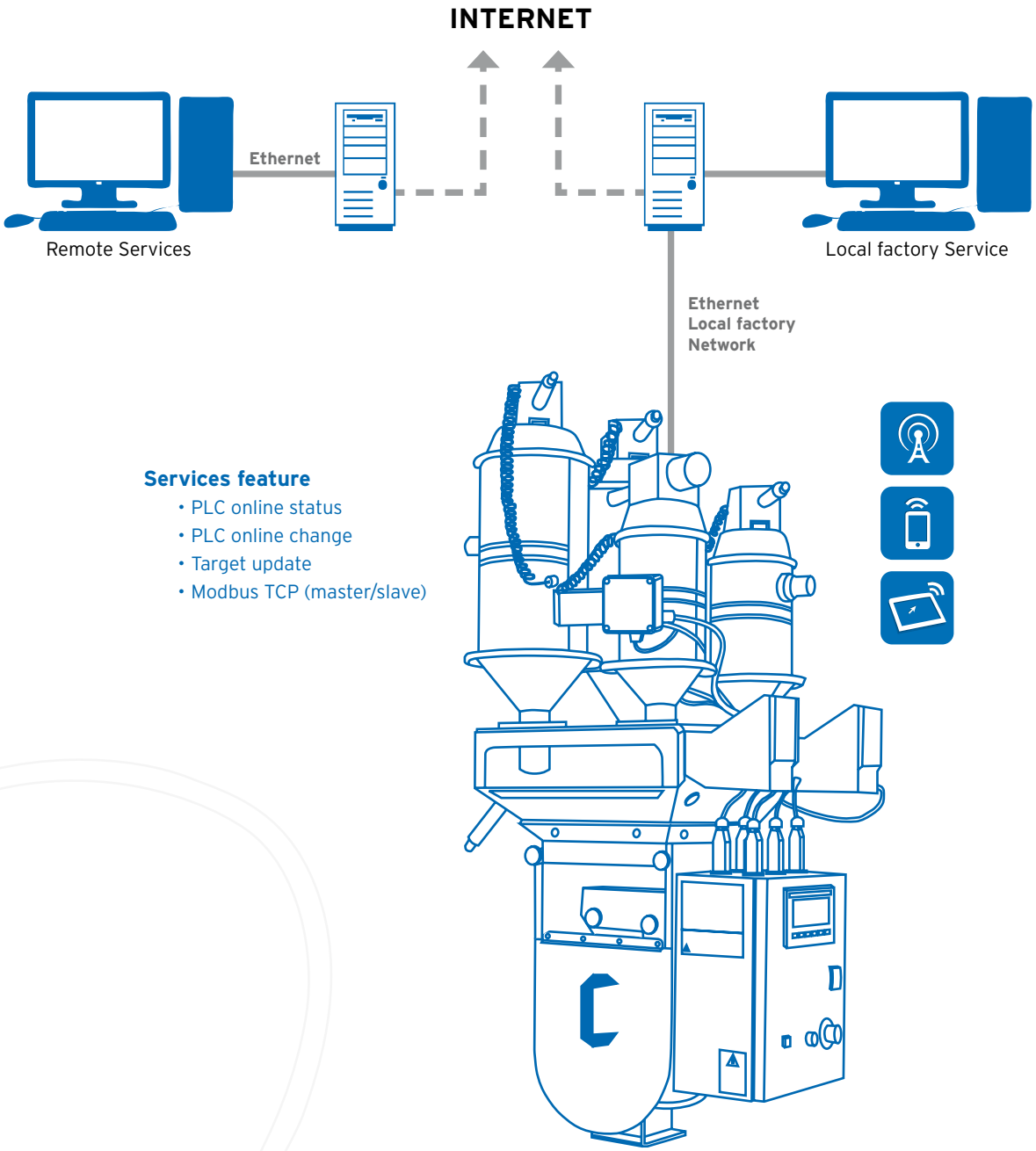
» Connectivity

The worldwide market creates new demands related to remote connectivity between factory plant and service office. Machine can be installed on different locations and the service point must be able to have a real online situation.
Remote maintenance and remote data collection can be an important option for customer and machine maker.
Different type and level of remote connection can be performed with Gefran automation system :

MODBUS TCP

PLC ONLINE

FTP SERVER



Services feature

- PLC online status
- PLC online change
- Target update
- Modbus TCP (master/slave)

Overview of general characteristics

Main functions	
Configurable number of variables	Up to 10000 *
Integrated Alarm Management	✓
Number of alarms	Typical 150 *
Integrated Recipe Management	✓
Number of recipe types	Typical 8 *
Number of variables per recipe type	Typical 100 *
USB support for recipe Export / Import	✓
Integrated Multi-lingual Management	✓
Selection of runtime language	✓
Number of languages	Typical 8 *
Number of texts for each language	Typical 200 *
Import / Export texts in CSV format	✓
UNICODE support	✓
Target FW update	✓
Ethernet target update (Application SW & FW)	✓
Remote connection	✓
Teleassistance	✓
Teleremoting	✓

***** HW Platform depending

Machine control (PLC)	
PLC Programming standard IEC61131-3	✓
Languages IEC61131 – text base	IL, ST
Languages IEC61131 – graphic base	LD, FBD, SFC
Bit DataType	BOOL, BYTE, WORD, DWORD
Signed Integer DataType	INT, DINT
Unsigned Integer DataType	UINT, UDINT
Floating DataType	REAL
Other DataType	STRING, ARRAY, STRUCTURE
Preset Variables	✓
Retentive Variables	✓
On-Line PLC	✓
On-Line change	✓
On-Line watch list	✓
HotDownload	✓
Breakpoints,	✓
Programmable trigger	✓
Configurable PLC Tasks	✓
INIT - Boot	✓
Fast, slow, background	✓
Configurable Function Block / Custom Function library	✓
Gefran FB Library	✓*
PC simulator	✓

***** HW Platform depending

Graphic interface configuration	
"Basic" Widgets (dataset, datavalue, panel..)	√
"Advanced" Widgets (trend, recipe, datalog..)	√
Events management	√
Events management on Widgets	√
Events management on page actions	√
Events configuration with script run	√
Supported image types	BMP, DIB, EMF, GIF, ICO, JPG
Image library	√
Template page library	√
Selectable Snap to grid	√
Object alignment	√
PC Executor pages	√

HW configuration	
Graphic configuration of system architecture	√
Target selection from Gefran catalogue	√
Instrumentation	√
Power Control	√
Motion	√
Automation, GCube Fit and Compact platform	√
Multi Fieldbus support	√
Modbus RTU Fieldbus support with Gefran devices	√
Integration of third-party devices in Modbus RTU	√ (via dedicated tool)
Modbus TCP Fieldbus support with Gefran devices	√
Integration of third-party devices in Modbus TCP	√ (via dedicated tool)
CANOpen Fieldbus support with Gefran devices	√
Integration of third-party devices in CANOpen	√ (via EDS import file)
Parameterisation of individual Fieldbuses	√

Technical Data

	Minimum	Recommended
Operating system	Windows: XP (SP2) / VISTA / 7 32bits	Windows 7 32/64bits
Processor	Pentium › 1Ghz	Intel Core i5 2.5Ghz
RAM	2 GB	4 GB
Hard disk space	At least 2 GB free	
Graphics	XGA (1024x768)	SXGA (1280x1024)
Internet Explorer	› 7.0	›= 9.0
Ethernet	1 port	
DVD	DVD reader	
USB		1 port
Doc. Reader	Adobe Reader ›= 9	

Order code

GF_PROJECT LX base

F055323	**GFPRJ-LX-SW-00**	The licence grants the use of all programming environment functions, limiting configuration for VEDO_SL series targets (automation platform GCube Fit and GCube Compact). GF_Project LX is the integrated programming environment for developing Gefran Automation solutions. It includes HW configuration, PLC programming based on IEC1131 language, and programming of HMI graphic interface pages. The licence grants the use of the programming environment on 1 development PC. The licence activates a 1-year software maintenance contract providing free update downloads and telephone service. The software is supplied on a self-installing CD.

GF_PROJECT LX option

999999201	**GFPRJ-LX-SS-00**	1-year software maintenance contract providing free update downloads and telephone service, linked to GFPRJ-LX-SW licence.

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