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# Danfoss PLUS+1 GUIDE Software

## Release Notes

### Risk Reduction

This file contains important supplementary and late-breaking information that may not appear in the main product documentation. We recommend that you read this file in its entirety.

Fixes to known issues in the tool will only be made in the latest version; previous versions will not be patched. Known issues that remain in the release are described in the section Important Advisory - Potential User Issues.

It is recommended to always use the latest released version to benefit from the latest improvements. If another version than the latest released version is used, carefully read the What Is Fixed sections for all later releases to understand what known risks that exists and need to be addressed.

For more details on risk reduction, see chapter Risk Reduction in PLUS+1 GUIDE User Manual.

### Product License

#### Existing Users

After installing PLUS+1 GUIDE/Service Tool, your License Key is automatically activated in this version if your maintenance date covers the release date of this version.

#### New Users

The PLUS+1 software tool chain includes PLUS+1 GUIDE and PLUS+1 Service Tool. This powerful tool chain allows for the rapid development of mobile machine applications. A free Express license is available for all users. Professional developers will benefit from our Professional version that enables additional tools and libraries to speed up the software development process. Add-on modules are also available for the Professional version for an annual subscription fee so you can tailor the tool chain to meet your needs and only pay for the additional features you choose.

#### Professional License

PLUS+1 GUIDE and Service Tool Professional License can be ordered through your local Danfoss sales representative. After purchase, you will be sent an email with a Product Key that will allow you to activate a License Key. Please follow the instructions under Help in the License Manager.

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## Free Trial License

A free, time limited, trial license of PLUS+1 GUIDE and Service Tool Professional can be obtained using an automated sequence from the License Manager dialog. This license will allow you to try all features of PLUS+1 GUIDE and Service Tool (including add-ons). Projects created with a trial license will be tagged with a trial label and the use licensed content will disable save, edit, and compile rights when opened with an Express license.

## Free Express License

A free Express license will also be issued when you request a free Trial license using the automated sequence from the License Manager dialog. This license provides basic functionality for developing PLUS+1 GUIDE and Service Tool applications using the latest release. Express licenses are valid for one year and users can request one Express license with each major release of PLUS+1 GUIDE and Service Tool.

## GUIDE Add-Ons License (FuncSafety)

This is an Add-On license for GUIDE

- It has SAP number 11179525, GUIDE ADDONS LICENSE
- It enables
  - Version Control Support
  - Test Tool
  - Compare SCS
  - Dependency View
  - SIL2 Compilation
  - Traceability Properties
  - Static Analyzer

## Integration: Simulink S-Function Add-On License (SimModel)

This is an Add-On license for GUIDE

- It has SAP number 11179531, GUIDE ADDON LICENSE\_SIMULINK
- It enables
  - GUIDE-to-Simulink

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## Service Tool Add-Ons License (ST\_Pro)

This is an Add-On license for Service Tool

- It has SAP number 11179527, GUIDE ADDONS ST\_Pro
- It enables
  - CAN Xplorer design functionality
  - Scripting Toolbox design functionality

## License Support

For general license related question, send an email to:

[plus1license@danfoss.com](mailto:plus1license@danfoss.com)

Support for technical PLUS+1 License related issues can be obtained by sending an email to:

[plus+1helpdesk@danfoss.com](mailto:plus+1helpdesk@danfoss.com)

## System requirements

	Service Tool Minimum	GUIDE Minimum	GUIDE/Service Tool Recommended
CPU*	1.5 GHz, 32-bit (x86), 1 core, 2008 or later		3.0 GHz, 64-bit (x64), 4 cores, 2012 or later
OS**	32-bit Windows 7		64-bit Windows 7/8.1/10
UAC	Local Administrator Access		
RAM	1 GB		3 GB
HD	>1 GB Free, HDD		>2 GB Free, SSD
Resolution	1024 x 768		1920 x 1080
Email	For license registration		
PDF	Any recent standards compliant pdf reader		
Web	Any recent standards compliant web browser (for HTML based F1 help)		
XML	MSXML 4.0 Service Pack 2 (Microsoft XML Core Services)		
.Net	N/A	Version 4 (Full) is needed for PLC code support in GUIDE	

\* The CPU should be intended for at least laptop use. Processors designed for netbooks, tablets or similar are not recommended.

\*\* In a future version, support for Windows 8.1 and the 32 bit version of Windows 7 will be removed. Support for 64 bit Windows 7 and 10 will remain.

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## Version 10.0.8

10.0.8 (March 2018)

### Added to potential user issues

[P100004409]      **Information:** There is an issue related to C code for DP200 HWDs. See potential user issues for more information. (P1DPx00000664)

### What is Fixed

[P100004366]      A constant string in graphical GUIDE code that contained a character outside of ASCII that was immediately followed by a digit or 'A'-'F' would result in an incorrect string.

[P100004381]      A zero length string signal connected to a text in Vector-Based Screen Editor would cause the text to be rendered incorrectly.

[P100004417]      Routing while clicking a link could cause GUIDE to hang.

[P100004424]      Some characters in Windows user account could cause compilation error.

[P100004287]      In Vector-Based Screen Editor, View and Delete Unused Library Items did not check if the files to be deleted were used by other library items.

[P100004311]      Opaque parts of images with alpha channel may have been rendered semi-transparently.

[P100004325]      The user license was sometimes not correctly imported from a previous version.

[P100004337]      An error message was shown when opening GUIDE if a new SDL file was installed by a later GUIDE version.

[P100004343]      STRINGS used as VAR\_IN\_OUT variables did not convert correctly to C code, leading to compile errors.

[P100004344]      It was not possible to search for POU calls in screen definitions.

[P100004352]      Type check of signals connected to data values of text lists inside widgets did not work.

[P100004360]      Order of CAN messages was not imported correctly when importing test definition from Excel file.

[P100004411]      When adding multiple images without alpha channel, an image format using alpha channel was chosen although it looked like an image format without alpha channel was chosen.

[P100004427]      In Vector-Based Screen Editor, it was not possible to use the constant value of a string input on a POU call.

[P100004349]      Image lists in nested widgets could get a size of 64x64 in the compiled application.

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- [P100004382] When debugging in C code generated from a CCP, the file would scroll to line 1 after each debug step.
  - [P100004392] Compile Changed did not recognize POU changes in some cases if C code was used.

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## Important Advisory—Potential User Issues

### • Components

- The CAN components are always processed on each loop. This is true even when the CAN components are placed in a module and that module is not called by the main loop.  
Workaround: Only use CAN components in modules that are always active each loop, such as the main module, or modules called with constant true from the main module.
- Components without output types (e.g. Hardware Input) cannot be directly connected to a class instance. This will generate a compile error.  
Workaround: Use a retype connection in between.
- A compile error may be generated when an autotyped constant is connected directly to an object page.  
Recommendation: Use a Typed constant.
- When connecting the bus output from any one of the following components: “Call Method Of Externally Defined Class”, “Call POU”, “Show Screen”, “Write aplog” and “Module Bus Input” to the input bus of the “Module Bus Output” component, only the signals that are actually connected in that module will be available in the module bus. (P100002771).  
Workaround: Use a dedicated bus for module connections. Do not connect it to other buses.
- The “Module Bus Input” and “Module Bus Output” components do not support bus-in-bus.  
Workaround: Use one module bus for each sub bus.

### • File Formats

- Due to new features affecting the SCS format, GUIDE version 6.1 and earlier will not open SCS files saved with GUIDE version 7.0 and later.  
Recommendation: Always back up project files before opening them in a new version of the tool.
- Images imported to a SCS file in GUIDE version 7.1 or later will not be shown when opened in GUIDE version 7.0 or earlier. This is due to the image handling being updated to support debugger symbols in the SCS view. This has no effect on the generated code.
- Due to new features affecting the P1X format, GUIDE version 8.1 and earlier will not open P1X files saved with GUIDE version 9.0 and later.  
Recommendation: Always back up project files before opening them in a new version of the tool.
- Due to new features affecting the SRD format, GUIDE version 9.0 and earlier will not open projects containing Vector-Based Screen Editor Screen and Application Log Repository saved with GUIDE version 9.1 and later.  
Recommendation: Always back up project files before opening them in a new version of the tool.

### • OS and other environment considerations

- Defects in old TI compilers (3.0.9 and 4.1.3) that are not restricted to a single component and cannot be resolved in the code generator have been identified. [P100003895]  
The HWD files listed below and earlier versions are affected by this.  
MC012-010/012/016/019-0 ver:10103714v170 (SYS:10103651v170)

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MC024-01A ver:70022426v100 (SYS:10107789v230)  
MC024-010/012-0 ver:10101528v210 (SYS:10101267v230)  
MC024-011/014-0 ver:10108137v100 (SYS:10108127v230)  
MC024-020/022-0 ver:10102117v180 (SYS:10102115v200)  
MC024-021/024-0 ver:10106608v120 (SYS:10106599v200)  
MC038-010/012-0 ver:10108175v140 (SYS:10107294v110)  
MC050-010-0 ver:10101674v230 (SYS:10101468v240)  
MC050-020/022-0 ver:10102569v210 (SYS:10102372v200)  
MC050-055/05B ver:70022427v130 (SYS:10107715v120)  
MC088-015/012-0 ver:10108098v160 (SYS:10108068v140)  
MC088-315-0 ver:10107943v130 (SYS:10107792v140)

Recommendation: Update any of these HWD files that you might be using to the latest versions. Since the 9.0 release these compilers are deprecated, which means that they will not be maintained to fix potential defects in the code generation or be verified as part of the GUIDE development. However, it will still be possible to compile using any of the listed HWD files.

In a later release, the support for these compilers will be completely removed and the listed HWD files will then become unusable.

- A defect in an external C compiler (GCC 4.1) related to the use of too many function arguments has been identified. (P100004409) (P1DPx00000664)

When too many function arguments are used, incorrect machine code is generated by the C compiler.

GUIDE graphical code is not affected by this issue, but PLC code, CCP code and C code are all in scope.

All current DP200 HWDs are affected by this.

The current understanding of this defect is that it should not affect code that is limited to a maximum of 4 arguments, each of which can fit into a register.

Recommendation: Do not use more than four 32-bit arguments in functions for PLC code, CCP code and C code.

- Running GUIDE on Windows 7 in compatibility mode for Windows XP may cause unhandled exceptions in the program and is not recommended. Running GUIDE in compatibility mode had the benefit of speeding up compiles when using one of the old TI compilers (5.2.5 and older). Extremely long compile times is no longer an issue when using newer TI compilers.

Recommendation: Use HWD files that support TI compilers newer than version 5.2.5.

- SCS files placed in the Desktop folder might not be available in the import SCS dialog.

Workaround: The “My Documents” folder is preferred.

- If you are experiencing problems accessing network locations, then please refer to this website: [http://technet.microsoft.com/en-us/library/ee844140\(WS.10\).aspx](http://technet.microsoft.com/en-us/library/ee844140(WS.10).aspx)

Preferred workaround: If possible, keep your PLUS+1 related files in a source control system, and only check them out into folders that are physically located on your PC.

Alternative workaround: If your IT policies allow it, then modify the UAC setting to its minimum value.

- It is advisable to complete all GUIDE processes before locking or hibernating your computer.

Workaround: Close GUIDE before leaving the computer.

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- If the Windows PATH environment variable contains paths to folders that contain executables with names that conflict with names of standard Windows commands, such as “echo”, compilation might fail without any clear error message. (For example, a standard MinGW installation might add a folder containing an incompatible binary named echo.exe to the PATH.) (P100003153)  
Workaround: Temporarily, or permanently, remove such folders from the Windows PATH. (Alternatively, rename or remove the incompatible executable files from those folders.)
  - The tool only supports the setting "100%" in "Display / Make text and other items larger or smaller".

- **License**

- Using GUIDE without a license is no longer supported since version 9.1.  
Recommendation: Use the license manager to request a free Trial/Express license.

- **Version independent user data**

- From version 7.0, version independent user data is saved in different folders than previously. This means that changes made to version independent user data in version 7.0 and later will not take effect in version 6.1 and earlier, and changes made to version independent user data in version 6.1 and earlier will not affect version 7.0 and later. User data will only be copied from the previous locations during the very first installation of any 7.0 or later version. This affects Diagnostic Data (PLG), Hardware (HWD), Library (SDL) and Font (P1F) files, and also “MyBlocks” files.

- **Installation**

- The user must exit GUIDE to install/uninstall other GUIDE versions.  
Recommendation: Close all open programs before installing the tool.
- PLUS+1 GUIDE is only intended to work with one single user account.  
Workaround: The same user account should be used both for installation and usage of the tool.

- **Project handling / Compilation**

- GUIDE cannot handle non-Latin characters in project folder names.  
Workaround: Use characters 'a'-'z' in paths.
- UNC paths are not supported as project folders.  
Workaround: Use paths with mapped drive letters instead.
- Spacing in file names:  
Some issues have been found in projects where file names have double spaces.  
Single spaces in file names are not known to cause any problems, except when they are placed first or last in the name (affects some HWDs).  
Workaround: Only use single spaces in file names, and avoid leading and trailing spaces.
- In projects using several modules and objects, the Compile changed command can end with a failure due to the order in which the files are compiled. [P100001612]  
Workaround: Use Compile All if this happens.



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- When working with projects that contain a high number of files, or files with very long file names, and the sum of the lengths of the file names of these files exceeds thirty thousand characters it is possible that the C linker fails to link the project. (P100002678)  
Workaround: remove or shorten the names of the project files until the total length of file names are well under thirty thousand characters.
  - Obsolete components errors, such as for example: **\*\*\* ERROR 362 \*\*\*** [chpargu1] COMPONENT: {Receive CAN with Filter}, VERSION: {101} IS OBSOLETE, can sometimes occur when starting from an old SCS template or project file and dragging in a block of code using a newer version of that same component. [P100003291]  
Workaround: Remove the code, or block of code that gives the error, then add the latest version of that component by dragging it in from the Component tree. Doing this will update the SCS file to use the latest version of the component the next time you drag in the same block of code.
  - The P1P file format is designed to work with project files with names consisting of Latin1 characters. If a GUIDE project (P1X) contains files with other Unicode file names, then packing to P1P will not be possible. In older versions of GUIDE, there was a risk that such files could be packed into a P1P regardless, which could then lead to file name corruption and a P1P file that was not possible to open [P100003516]. Such P1P files can now be unpacked, and corrupted file names will be renamed to the closest possible valid file name. This means that the project must then be manually updated to re-establish the project file references.
  - In some cases, for example after a “Save Project As” operation, it might happen that page names are temporarily not displayed correctly: Instead of the actual page name, the placeholder text “PAGENAME” is displayed.  
Workaround: Make any change of the SCS (for example move something) and save the SCS. The correct page names should now be visible again.
  - Compiling in network folders is possible as long as the path is mapped to a drive letter, and the network connection is 100% reliable. If the network connection is not 100% reliable, compilation will probably fail, or at least be significantly slowed down.  
Workaround: Preferably compile projects in paths that are local to your PC.
  - Compiling in folders which are synced to network locations or other backup mechanisms is not recommended because it might interfere with the compilation process, and will usually slow it down significantly as well.  
Workaround: Preferably compile projects in paths that are not synced or interfered with by other programs.
  - If there is any error message displayed during the compilation, there will normally not be any output file generated. In some cases where the compilation has been interrupted by an external exception it can happen that the error is not detected. This can happen when performing a Compile Changed.  
Workaround: If there is any error reported during compilation, you should restart GUIDE and delete any remaining LHX file that might exist in the project folder.

#### • **Screen Editors and Application Log**

- In the text editor, strings longer than 509 characters in Classic Screen Editor and Application Log may not compile.

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- Compatibility issues involving display projects using non-Roman fonts created in GUIDE version 3.0 may occur. It is strongly advised that the user make a backup of these files before using GUIDE 7.0 or later and contact the PLUS+1 GUIDE Help Desk for further information before proceeding.
  - In the Vector Based Screen Editor, when transparency has been selected by clicking on a specific pixel in an image, and that image is then scaled, it is possible that the transparent color will change. Furthermore, it is also possible when the image is scaled to a smaller size that the selected pixel position will end up outside the image.  
Workaround: use images where the transparency data is part of the file format (such as .png) instead.
  - In the Vector Based Screen Editor, some Unicode characters will be displayed correctly in the preview, but will then only be displayed as squares on display hardware.
  - In the Vector Based Screen Editor, using copy+paste on screen definitions only works within a single project, not from one project to the next.
  - Ligatures are not supported in the screen editors.
  - In the classic screen editor, characters of fonts having a large horizontal extension may not be correctly displayed on the display unit.
  - In the Vector Based Screen Editor, the ScaleSize property does not work as intended for text components.
  - In both screen editors, texts and lines might not be displayed correctly when zoomed.
  - In the Vector Based Screen Editor, search and replace for some screen library items becomes ambiguous if there are items in the same folder that matches case-insensitively. Search operations will work correctly in this case, but the search result hyperlinks may not target the correct screen library item. When replacing, it will only be possible to replace one of the matching items and which of the items that will be replaced is not guaranteed. The items affected by this are Image Definition Description, Image List Description, Text Definition Description, and Text List Description.
  - When importing screen definitions containing POU calls, included POUs will be imported even if they already exist in the project.

- **Test Tool**

- To ensure that referenced pages will have identical test interfaces, there has been a change made to the test definition interface in GUIDE 9.0. Test definitions created in GUIDE 8.1 or earlier might need to be updated to cope with this change. [P100003817]
- The interface for Non-volatile Memory Dynamic components have been modified in GUIDE 7.2, suffix #IN and #OUT have been added to the NV name. Test definitions created in GUIDE 7.1 or earlier need to be updated to cope with this change. [P100003392]
- All signals passed through the interface will be of variable type. This means that components that require constant type on an input need to have the constant set from within the tested page.
- Structural test coverage is not measured by the Test Tool. But for the graphical code in PLUS+1 GUIDE statements coverage is implicitly covered within one module.

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- It might not be possible to generate test code for projects that are already on the edge of running out of memory when compiling.

Workaround: Split the project into smaller modules.

- **PLC Code Editor**

- Double-width Unicode characters used in comments in the PLC Code Editor can be displayed in a way such that they appeared to be clipped.

Workaround: Place a number of whitespace characters after comments that are displayed as clipped, until they are displayed correctly

- The auto-routing of graphical code in FBD/LD/SFC code will not work properly if any of the components have been rotated or mirrored.

In general it is not recommended to rotate any components since they are designed to fit in to the flow of the diagram, and any rotation will make the code harder to understand for other developers.

Solution: Do not rotate or mirror any components.

- **Hyperlinks**

- If a dialog is open in PLUS+1 GUIDE while a plus+1 hyperlink is followed, an error message is shown stating that the dialog must be closed before the command (i.e. following the hyperlink) can be performed. This error message may appear beneath the dialog. Workaround: Move the dialog, close the error message, close the dialog and then follow the hyperlink again.

- **Static Analyzer**

- If Static Analyzer reports: **\*\*\* ERROR 401 \*\*\* [STATICANALYZER] LOADING DLL {vizzanalyzer-libinterop.dll} FAILED.** This indicates that runtime components are missing.

Workaround: Run `../Misc/vcredist_x86.exe` to install Visual C++ redistributable package.

- **Search**

- When searching in a file structure containing projects saved with a newer version of PLUS+1 GUIDE, the correct number of search hits may not be found for those projects.

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## Product Information on the Web

For technical support, visit the Danfoss support pages:

[powersolutions.danfoss.com/Products/MobileElectronics/PLUS1Guide/PLUS1GuideSupport/index.htm](http://powersolutions.danfoss.com/Products/MobileElectronics/PLUS1Guide/PLUS1GuideSupport/index.htm)

Telephone support:

North America: 1.888.50PLUS1 (+1-888-507-5871)

Europe: +46 476-569 06

Email support: [plus+1helpdesk@danfoss.com](mailto:plus+1helpdesk@danfoss.com)

PLUS+1 Forum: <http://www.plus1forum.danfoss.com/index.php>

Please report all suggested enhancements and great ideas to:

PLUS+1 Help desk

Please report all defects to:

PLUS+1 Help desk

Many thanks for all of your support.

The System Development Tools Team.

## Disclaimer

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## Previous Release Notes

Release notes dating back to 2.0.3 follow:

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## Version 10.0

10.0.7 (November 2017)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

[F00409] **Feature:** String data type

The PLC STRING data type is now available for a limited number of GUIDE components:

- Multi-character constant
- Simple Checkpoint
- Call POU
- Retype (to and from array of U8)
- Switches
- Module In/Out
- Predefine type

Note that strings in GUIDE use utf-8 encoding. (PLC code in GUIDE supports both STRING and WSTRING data types, where WSTRING uses utf-16 encoding.)

The debugger tool supports debugging of applications with STRING and WSTRING data types.

[F00408] **Feature Extension:** VBSE Widgets Update 1

- Text definitions can have data values of type STRING (full unicode).
- Constant data values of type STRING are supported.
- Improved error check has been added for Vector-Based Screen Editor.

[F00410] **Feature Extension:** Command line mode for GUIDE part 2.

Additional commands have been added, and some limitations removed.

Use /? parameter to list available parameters.

[F00411] **Feature Extension:** Vector-Based Screen Editor Enhanced Image Management

- It is now possible to add multiple images in a single operation.
- The Edit Image dialog has been improved, now it is possible to view images of indefinite size.
- Images larger than the image size limitation of the HWD are now allowed in a project. When added to the Design Area, they will be scaled down.
- The size of SVG images can be edited in the Edit Image dialog.

[F00412] **Feature Extension:** Vector-Based Screen Editor Widgets Catch-up

- It is now possible to stretch images in an image list to match the exact size of the image list.
- Return values and error outputs from POU calls can now be used inside a screen definition.
- When multiple screen objects are selected, common layout properties can now be edited in the inspector.
- Line objects can now be handled by the layout manager.

[F00415] **Feature Extension:** SVG image rendering in Vector-Based Screen Editor is improved.

[F00416] **Feature Extension:** The Compare SCS feature is now available worldwide.

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- [F00420] **Feature Extension:** Improved PLC interface editing. Comments are now saved in the PLC interface. It is possible to disable automatic formatting of the PLC interface code. (W00461) (P100004156)
- [F00421] **Feature Extension:** Enter (E) on Components.  
It is now possible to use Enter on the following GUIDE components to jump to their definition: Call POU, Show Screen, Write Applog and Call Module.  
In FBD/LD code, enter on a BOX component will jump to the specified POU.  
In SFC code, enter on an Action or Transition will jump to the specified Action or Transition.
- [W00295] **Feature Extension:** The chapter structure of the GUIDE manual has been improved.
- [F00426] **For evaluation:** Added initial support for ARM-GCC compiler 5.4.1 for DM430E.
- [F00393] **Information:** Traceability property dialog update  
When a traceability property is added or edited, the ID field must be set to a value that would be valid for use in a hyperlink.
- [M00120] **Information:** Two compilers that were never used by any released HWD files have been removed from the GUIDE setup.
- [M00122] **Information:** Modified handling of PLUS+1 libraries to improve start up time. Particularly noticeable for PLUS+1 Compare SCS and Module Viewer.

### What is Fixed

- [P100004108] The insertion point of images in rotated displays was off by one pixel.
- [P100004149] In some situation, PLUS+1 GUIDE would freeze if a new PLC file was added from within Vector-Based Screen Editor.
- [P100004164] In the PLC grid editor, it was possible to write type names in a way so that they were saved using the wrong case to the PLCopenXML file.
- [P100004167] Error message 671 (unconnected Show Screen Show input/Write Applog Enable input) now has a correct hyperlink if it occurs at top level.
- [P100004195] Using the context menu to install additional HWDs into GUIDE did not work correctly.
- [P100004214] Under some circumstances, disabled text lists in Vector-Based Screen Editor would result in a compile error.
- [P100004254] C code POU error links pointing into generated C code files did not always show the current contents of generated C code files.
- [P100004255] After ending a debugging session, open POU interface code would sometimes remain in read-only state.
- [P100004263] Including a temporary GUIDE-generated header file from a user-defined header file is not supported, but in some cases it was not detected by the tool. That is now fixed.

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- [P100004264] When closing the last tab in the PLC/C editor, an error message was sometimes displayed.
- [P100004277] Test Code generation becomes really slow when the project contains more than 100 pages with tests.
- [P100004280] Depending on the local regional settings in Windows, in some cases dates were stored in invalid formats into PLCopenXML files.
- [P100003297] User manual lacks sufficient details on Oscillator component regarding how it is impacted by the loop time.
- [P100003604] Some page properties incorrectly accepted unicode text outside Latin-1 when editing, but that was never saved.
- [P100003949] Commas in TestID causes compile error when generating test code.
- [P100004129] Repeat-until is now supported in S-Functions generated from PLUS+1 GUIDE.
- [P100004130] When adding many ports at the same time to a page, they could in some cases be stacked on top of each other in the Page Interface Editor.
- [P100004137] When an image in a widget definition is replaced, the layout manager will update all widget instances correctly.
- [P100004143] When making C header files available via the Create New C code Entry Point dialog, in some cases header files would be duplicated in the available list.
- [P100004147] In Vector-Based Screen Editor, autoresize of text objects ending with a data value did not work for some fonts.
- [P100004146] Multiple copied screen objects were not pasted in the correct z order.
- [P100004155] In Vector-Based Screen Editor, Flexible Width/Height did not work when there were no objects in the left/top and central alignment zones.
- [P100004157] It was not possible to debug a project that had a checkpoint connected to an array signal, and located in a module other than the main module.
- [P100004165] Warnings and errors indicating PLC interface variables would sometimes point to the wrong line of the interface when clicked.
- [P100004171] The align commands in Vector-Based Screen Editor now align lines at their edges.
- [P100004172] Texts inside widgets did not always display the translation of the default language.
- [P100004179] Sub buses turned up in the query dialog for the Call POU component.
- [P100004185] Some relevant new name suggestions were not offered automatically in the connect to bus dialog.
- [P100004122] No error indication when trying to add expired Add-On licenses (which is not locked to a parent license).



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- [P100004210] Due to a defect in Vector-Based Screen Editor, .png images with transparency would sometimes become black on the display.
- [P100004211] The user manual has been updated on layout management properties Flexible Width and Flexible Height in Vector-Based Screen Editor.
- [P100004212] The GUIDE data type groups descriptions have been updated in the manual.
- [P100004225] In Vector-Based Screen Editor, white color in monochrome images ended up as transparent on the display.
- [P100004232] Test Status file did not reflect test definitions being removed from SCS pages, so outdated results could remain in the report.
- [P100004234] Some context menu items that are not supported for projects based on old HWDs were not disabled for those projects.
- [P100004238] It was possible to add a CCP with the same name as the project.
- [P100004239] In Vector-Based Screen Editor, layout manager outputs did not have correct datatype.
- [P100004241] In Vector-Based Screen Editor, flexible width/height was not ignored for objects aligned to the center.
- [P100004244] In Vector-Based Screen Editor, padding was sometimes applied incorrectly to objects anchored in the center.
- [P100004249] In Vector-Based Screen Editor, ScaleSize could behave unexpectedly as the size of a scaled-down object approached zero.
- [P100004250] In Vector-Based Screen Editor, it was possible to set width and height of a screen object to a size smaller than one pixel.
- [P100004251] In Vector-Based Screen Editor, when the inspector was used for setting the size of an object having KeepAspect set, the aspect ratio was not preserved if an object was shrunk to a very small size and then enlarged.
- [P100004252] Add existing test definitions file did not support xlsx file format.
- [P100004261] Backspace did not work correctly sometimes directly after using arrow up/down keys in the PLC/C editor.
- [P100004265] Under some circumstances, several actions were undone at the same time in Classic Screen Editor.
- [P100004266] It was not possible to add a text containing just a data value to the layout pane in Classic Screen Editor.
- [P100004269] The right arrow key would ignore line-ending space characters.
- [P100004274] It was not possible to search a file structure when there was no project open.

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- [P100003670] In some situations, adding an output signal to an application log definition via the Write Applog query dialog would leave the signal without a data type even if it was connected to an output inside the application log definition.
- [P100003970] Disabled screen objects in Vector-Based Screen Editor had an inconsistent set of context menu items enabled.
- [P100003996] When a POU interface contains errors, in some cases too many error message dialogs were displayed.
- [P100004000] When changing licenses, it could appear like if GUIDE was not responding for several seconds.
- [P100004083] OS.ExecTimeOut setting was not used in the generated test code unless it was set within the page under test.
- [P100004132] When copying a page with a name ending with "131071", the name of the new page would be incorrect.
- [P100004133] The user manual did not state that automatic layout may cause a widget to become larger than the display.
- [P100004152] When PLUS+1 Update Center is set to start automatically when GUIDE or Service Tool is started, it could lock up a folder such as the project folder in a way so that it was not possible to delete that folder after GUIDE was terminated.
- [P100004153] PLC code warnings were not possible to disable in GUIDE 9.1.6.
- [P100004163] It was possible to add leading or trailing spaces in Application ID related fields.
- [P100004166] When editing test cases in Test Tool the functionality of the 'Enter' key was changed after an error message.
- [P100004203] How to Create and Execute a Test Case in the User Manual had an incorrect add on license reference.
- [P100004213] Fixed missing reference in the manual.
- [P100004227] When Vector-Based Screen Editor was open and a signal was added to a screen definition interface via the Show Screen query dialog, the new signal did not show up immediately in the signal selection comboboxes in the inspector.
- [P100004237] In Vector-Based Screen Editor, if a numeric format code with padding was changed to a non-numeric format code, the preview would not be correct.
- [P100004262] Ending a debug session while the PLC/C editor was open switched focus from the main GUIDE window to the PLC/C Editor window.

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## Version 9.1.7

9.1.7 (September 2017)

### What is Fixed

- [P100004142] Properties ScaleSize and ScalePosition were not implemented for widgets.
- [P100004159] It was not possible to build display projects containing texts with composite pairs.
- [P100004160] Projects containing certain combinations of ABS and RDIV Components did not compile in GUIDE 9.1.6.
- [P100004206] For some fonts, text location were sometimes different in Vector-Based Screen Editor compared to the display. Now it has been updated in Vector-Based Screen Editor.
- [P100004216] In Test Tool NV memory values was read from wrong address in 9.1.6.
- [P100004229] Installation check errors were not reported correctly.
- [P100004144] Screen definition property Preserve Layout incorrectly prevented screen definition instances from being resized when there were no objects using a layout manager.
- [P100004150] Importing test definition values greater than S32 max (2147483647) from an Excel file did not work in GUIDE 9.1.6.
- [P100004158] Bus hierarchy depth was sometimes not calculated correctly, resulting in incorrect interface signal names.
- [P100004192] Test case interface was incomplete when page interface contained more than 1024 signals.
- [P100004205] Test Definitions and Traceability Properties was not shown in Compare SCS.

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## Version 9.1

9.1.6 (May 2017)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

[F00330] **Feature:** PLUS+1 Update Center

PLUS+1 Update Center is included in the installation of PLUS+1 GUIDE. Its purpose is to keep the PLUS+1 toolchain up to date. PLUS+1 Update Center can be configured to start when the operating system starts, and it is also possible to configure PLUS+1 GUIDE to start PLUS+1 Update Center automatically. When started in these ways, the main window of PLUS+1 Update Center will be hidden. To open it, click on its icon in the system tray.

[F00357] **Feature:** VBSE Widgets

- It is possible to add a screen definition to another screen definition. A screen definition inside another screen definition is referred to as a widget.
- Text and image definitions can be passed to widgets.
- POU's can be called from within screen definitions.
- A new pre-defined color called Transparent can now be applied to screen definitions.
- Screen objects have got two additional touch outputs called LocalX and LocalY. These outputs represent the touch point in the coordinate space of the screen object.
- Screen objects can use a layout manager that automatically determines their position and size.
- It is possible to search for widgets and POU calls inside screen definitions.
- When multiple screen objects are selected, it is now possible to align and distribute the components.

[F00374] **Feature:** SFC (and IL) support in GUIDE

GUIDE now supports all 5 of the standard PLC languages.

[F00390] **Feature:** Command line mode for GUIDE.

Use /? parameter to list available parameters.

Example to compile a project from command line:

```
"C:\Program Files (x86)\Danfoss\PLUS1\9.1\PTools\Plus1_IDE.exe" -compile -headless Untitled.p1x
```

[F00399] **Feature:** HTML-based contextual help (opened in default web browser)

Accessible when pressing F1 in:

- Most windows and tabs
- Component tree
- Project Manager

This replaces the old CHM help (frozen since 7.1).

[W00034] **Feature Extension:** Option for zooming to frame.

In the zoom options it is now possible to select to zoom to fit graphical code, or to fit the drawing frame. This affects the behavior when entering pages, and when using the zoom Home functionality.

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- [F00386] **Feature Extension:** Show project and module to be searched in the search and replace dialog. Project and current module are displayed in the title bar of the search dialog.
- [F00387] **Feature Extension:** Warn when the size of text and other items is unsupported. When PLUS+1 GUIDE is started, a warning dialog will be displayed if the text size setting in the operating system is unsupported.
- [F00389] **Feature Extension:** Option to keep dockable window panels in GUIDE on the same level as the CAD area, or on top of it. There is now a setting in General Options section named “Display dockable window panels on top of CAD area (when docked)”.
- [F00392] **Feature Extension:** Allow texts with the same description in the same screen library folder. It is now possible to have two texts with the same description in the same screen library folder.
- [F00397] **Feature Extension:** The “Retype” component can now convert from U8Array[x] to TL. Recommendation is to use only U8 values that correspond to ASCII.
- [F00398] **Feature Extension:** The “Write Array to File” component now accepts any net with type TL for the file name (A4 input). Previously it only accepted TL from a constant.
- [W00267] **Feature Extension:** Test Tool panel layout is more consistent with GUIDE.
- [W00315] **Feature Extension:** Test case tree view is now kept expanded after running tests.
- [W00324] **Feature Extension:** Test results can be exported to CSV file.
- [W00399] **Feature Extension:** Improved capability to import test definition from Excel file.

### What is Fixed

- [P100004118] The rounded divide component had an issue on DP570/DP700 hardware when input A2 was a constant of type S32 and with value -2147483648.
- [P100004120] The add component had an issue on DP570/DP700 hardware when input A1 was a global variable from another SCS file, and it was of type S32 and with value 2147483647. Also, both input A2 and output X1 had to be of unsigned type.
- [P100003938] Content from a deleted module in an unsaved project might still have been present in the search result until the project was saved.
- [P100004002] There was no warning message when the addition of an image would overwrite an existing image in Vector-Based Screen Editor.
- [P100004003] It was not possible to save a change to the name of a group of global variables in a PLC open XML file.
- [P100004010] When using complex bus structures, in some cases members of sub-buses would not show up in the Show Screen query dialog.

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- [P100004019] When creating a new text list from a copy of a text list containing texts with connected entries, and re-arranging the new text list, an access violation would occur.
- [P100004023] Members in sub-buses of the buses connected to Show Screen or Write Aplog components did not appear in the Connect to Bus dialog.
- [P100004032] In version 9.0.7, the Connect To Bus dialog was never displayed in the Module Viewer.
- [P100004054] When a screen page containing references to missing screen library items is entered, a dialog is shown and the items with missing references are removed.
- [P100004068] When a screen page with missing screen port data is entered, a dialog is shown.
- [P100004069] The Connect To Bus dialog did not contain sub-buses of sub-buses connected to a Show Screen component.
- [P100004086] When editing a text in Classic Screen Editor, an error message will be shown if the text ends with an odd number of consecutive backslashes.
- [P100004090] A CCP containing header files can cause issues during compilation. It is not recommended to include header files in CCPs. A warning message during compilation has been added for CCPs containing header files.
- [P100004092] When compiling a GUIDE project with a CCP instance connected to multiple CCP methods, and where at least two output parameters in different methods had the same name, but different types, and neither being connected to anything in the graphical code, a compile error was given.
- [P100004097] A wire drawn backwards connected to a POU input signal would in some cases not retain its value from the previous loop. This could happen when the POU was placed close to the component driving the wire, and no other component used the wire before the driving component.
- [P100004114] A non-capped division that yields an overflow condition may generate a SIGFPE error when run in the debugger. When this happened, GUIDE did previously not display an informative error message, and it did not stop at the problematic instruction.
- [P100004123] A project with a SIL2 certified HWD file failed compilation if module call didn't have constant true set.
- [P100003708] When debugging two (or more) POUs where some variables had the same names, the value of the variable was only displayed in one of the POUs.
- [P100003988] No error message was shown when a module with the same file name as the project was added to the project.
- [P100003989] It was possible to add an existing PLCopenXML file with a file name that would conflict with the project name during compilation.
- [P100003991] In some cases, attempting to add a CCP to a project that already contained that CCP would overwrite the original CCP file.

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- [P100003992] It was possible to add C code files with upper case .C extension to a GUIDE project. This was a problem because upper case .C extension is used by some compilers to indicate a C++ file.
- [P100003986] Updated documentation regarding Components that have exceptions from the normal data flow model.
- [P100004005] When populating interface variables into PLC code, GUIDE did in some cases not find the appropriate type to use. That means that GUIDE handled such situations the same as when there is no type specified. (Note: If there is no type specified, then the type 'DINT' will be used as default.)
- [P100004006] Images in Structured Text Guidelines document was only showing a frame as a placeholder for the image and not the actual image.
- [P100004011] When re-ordering screen objects by dragging them in Vector-Based Screen Editor, the Screen Manager did not scroll automatically.
- [P100004018] Drag-and-drop from auto-popup on Function Block Libraries did not work for sub-blocks in a library that is structured with hierarchies of Function Blocks.
- [P100004048] Status of Static Analysis was not displayed in the Error/Warning/Hint tab when all warnings and hints was filtered out.
- [P100004055] In some cases, compile warnings were not visible in the Errors Tab.
- [P100004082] The link in error message 671 was incorrect. (Error message 671 is generated when the SHOW input of a Show Screen component or the ENABLE input of a Write Appllog component is unconnected.)
- [P100004093] The "Connect to Bus" dialog displayed incorrect type for CCP method array output parameters.
- [P100004094] In some cases the error reporting related to failed compilation of PLC, C-in-GUIDE and CCP\_GENERIC was in need of improvements.
- [P100004071] License request failed for 'Get Trial / Express' in License Manager when entering long texts in user registration fields.
- [P100004103] On some computers, clicking on the Error/Warning links after a compile had no effect.
- [P100004107] Error links leading into locked pages placed an error marker on the wrong page.
- [P100004111] Dragging a local VAR CONSTANT into an FBD/LD POU would generate an outVariable element.
- [P100004112] It was not possible to compile a PLUS+1 GUIDE project where the Screen and Application Log Repository had been deleted.
- [P100004117] The search result window is now cleared whenever the currently active project is changed unless the scope of the search was set to "PLUS+1 GUIDE projects in file structure".

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- [P100004124] Some shortcut keys did not work correctly while the Error/Warning/Hint tab had focus.
- [P100004127] It was not possible to set the value of C code variables in GUIDE when debugging.
- [P100003580] The manual did not specify what happens on division by zero in GUIDE code.
- [P100003966] It was not possible to use the Alt+F4 command to close GUIDE when the CAD area had focus.
- [P100004009] In some cases ST breakpoints were displayed in editing mode.
- [P100004021] In some cases the error information tab was not updated correctly after a compile changed.
- [P100004049] There was no warning for unreachable C code in strict mode.
- [P100004067] Mouse wheel scroll in the search result list did not work correctly after clicking a row in the list.
- [P100004077] Alt+F4 did in some cases work inconsistently in Module Viewer and Compare SCS.
- [P100004078] The screen library tree displayed in the text and image list dialogs was not sorted in the same way as the screen library tree in the main Vector-Based Screen Editor window.
- [P100004079] Fixed the naming of PLUS+1 Service Tool when referred to from PLUS+1 GUIDE.
- [P100004088] Fixed documentation issue for "Call Method of Externally Defined Class".
- [P100004098] When compiling a project with unsaved changes, the title bar caption of GUIDE could become temporarily cleared on Win7/Classic Theme.
- [P100004113] In some situations it was not possible to remove signals from test definitions.



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## Version 9.0

9.0.7 (October 2016)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- [F00333] **Feature:** Non-modal Vector Based Screen Editor with tabs  
Vector Based Screen Editor is now non-modal. Screen and application log definitions open in tabs, allowing multiple definitions to be open simultaneously.
- [F00349] **Feature:** C Editor in GUIDE
- Add and edit .c/.h files directly in a GUIDE project
  - PLC POU's can now be written in C language
  - Syntax highlighting
  - Auto-completion
  - Parameter hints
  - Search in C POU's and .c/.h files
  - Debugger support
- [F00364] **Feature:** Vector Based Screen Editor Search/Replace
- Search for Vector-Based Screen Editor library definitions, objects, and screen/application log definitions has been added.
  - Naming of Vector-Based Screen Editor screen/application log objects has been added.
  - A replace tab has been added in the search dialog.
  - Replace operations have been added for Vector-Based Screen Editor.
- [F00289] **Feature Extension:** Application Log
- Documentation on Application Log 2 has been added to the user manual.
  - It is now possible to save Application Log 2 contents to USB stick in a faster way using the application log editor interface (requires HWD support). (This feature was released for evaluation in version 7.1.)
- [F00355] **Feature Extension:** Search
- Search indexing of PLUS+1 GUIDE projects in file structures has been optimized.
- [F00363] **Feature Extension:** Search Feature Extension 2
- Buttons to expand/collapse all in search item tree have been added.
  - Search item tree remembers its state.
  - Search result can be exported to .csv.
  - Search results are sorted into tabs.
  - Namespace can be included when searching for namespace components.
  - The search dialog can be shown in two views; vertical and horizontal.
  - Search for PLC data types and constants has been added.
  - Test definition search has been moved into its own top level category; it is possible to search for test definitions in lists.
  - Show project file time in search result.
  - It is possible to search for page properties Page View Access and PageID.

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[F00369] **Feature Extension:** The Module Viewer and the Compare SCS tools are now implemented as standalone executables. This reduces the memory usage of PLUS+1 GUIDE.

**Module Viewer:**

SCS files can now be associated with the Module Viewer by setting the appropriate association option in GUIDE.

**Compare SCS:**

It is now easy to integrate Compare SCS as a diff tool in various version control systems. The necessary command line arguments are described in the manual.

[F00371] **Feature Extension:** The check for conflicting file names that is performed when a file is added to a PLUS+1 project has been improved.

[F00373] **Feature Extension:** License model updates

- A license with an active maintenance period is now required. Existing pre-8.1 users will receive updated license keys via email.

- Perpetual Add-On licenses are no longer supported.

- A delete icon is now displayed for each license in the License Manager.

[W00087] **Feature Extension:** GUIDE will now provide a button to access the Project View when opening a project with read-only project files.

(Requires add-on license 'FuncSafety')

[W00096] **Feature Extension:** In GUIDE options, it is now possible to select how to close a project. There are 3 alternatives:

1) Ask if project should be packed

2) Remove temporary files, but don't pack

3) Just close (*default*)

It is also possible to select specific additional files and folders for deletion when deleting temporary files. (W00366)

This setting is also applied to the old project location when performing a Save As operation.

When working with version control systems, it is recommended to use either option 3 or option 2.

[F00372] **Feature Extension:** Test Tool editor has been updated to better support working with larger test cases. This includes adding step number on all test rows, support inserting test step in existing test case and extending the header so signal names are available while scrolling through test steps.

[F00382] **Feature Extension:** It is now supported to use Windows clipboard to copy/paste Service Tool screens (pfx/lfx files) from a function block library in GUIDE to a Service Tool design (P1D file).

[F00383] **Feature Extension:** Visual C++ redistributable package is now installed together with GUIDE if it is not already installed on the computer. These runtime components are required to be able to run Static Analysis.

(The installer is also available in ../Misc/vcredist\_x86.exe if these runtime components should have been uninstalled after the GUIDE installation)

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[F00357] **For evaluation:** VBSE Widgets

It is possible to add a screen definition to another screen definition. (This functionality is not fully implemented in PLUS+1 GUIDE 9.0.)

[F00267] **Information:** The Service Tool now supports reading Unicode Application Log data from PLUS+1 ECUs.

### What is Fixed

[P100003922] When calculating the last element to delete by adding the length of the sub-array to delete to the starting position, there was an error in AR\_DELETE which could cause an overflow in this calculation if both values were positive and none of them had datatype U32. This resulted in a shift rather than delete.

This applied only to MC hardware with TI compiler.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003923] For a denominator of type S32, a value of -2147483648, and where the numerator was of a signed type and global storage, and the output type was unsigned, there was an error in AF\_DIV\_B which could cause the boundary output to be come set.

This applied only to DP250 hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003924] AF\_ADD\_B could become stuck at an output value of 4294967295 when one of the inputs was a constant U32 with value 4294967295, and the other input was a negative value, and the output type was unsigned.

This applied only to DP250 hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003781] In some cases, Classic Screen Editor would generate an access violation if constant data values of texts were edited, languages were switched and the same constant data values were edited again.

[P100003796] When a search hit link to an unpacked project was followed, any unsaved changes made to that project would not be found in a subsequent file structure search.

[P100003817] It was possible to get different test definition interfaces for two referenced pages. That made it impossible to complete all tests successfully.

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- [P100003824] When a .p1x file does not have the same name as its containing .p1p, the .p1x file will not be renamed if it would result in a file name conflict in the project.
- [P100003825] Changing pages in a large SCS file with thousands of pages could slow down after some time, and the time to change from one page to another would take noticeably longer time.
- [P100003830] SVG rendering has been improved in Vector-Based Screen Editor.
- [P100003857] Basic CAN receive components did not work correctly in Test Tool. The first basic Can receive component in execution order consumed all messages independent of ID.
- [P100003863] Static Analysis could fail for large SCS files without notifying the user.
- [P100003871] The Add-On license part number descriptions have been updated.
- [P100003880] Deleting a screen library definition used in multiple screen definitions would cause a compile error.
- [P100003902] A chapter about touch display functionality in Vector-Based Screen Editor has been added to the user manual.
- [P100003916] A Zero component connected to an output would cause a compile error for Simulink S-Functions and tested pages.
- [P100003936] A new module would not appear in the search result list until the project was saved.
- [P100003938] Content from a deleted module might still have been present in the search result until the project was saved.
- [P100003946] Vector-Based Screen Editor did not detect modifications of its repository file from outside PLUS+1 GUIDE.
- [P100003947] In most cases, searching for module input components did not work.
- [P100003952] Array VAR\_IN\_OUT variables in FUNCTION POU's that were called directly from GUIDE code did not work as intended. The output array was filled with zeroes.
- [P100003958] Software under test was unable to receive more than 999 CAN messages in the Test Tool without reset.
- [P100003967] In some cases the SCS was not marked as modified after changes were made in the Page Interface Editor. This could lead to such changes not being saved if the SCS was closed immediately afterwards.
- [P100003975] When adding an existing SCS file with a name containing certain characters, an invalid Module Name property would be generated.
- [P100003985] After cancelling a search in scopes "Current project" or "Current module", subsequent searches may have failed.
- [P100003514] There was an unclear error message displayed when attempting to compile a project without any HWD

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- [P100003630] The result view in test tool was not updated correctly if a test case was selected again after deselecting all test cases.
- [P100003675] Test cases with long array lengths was not handled correctly.
- [P100003680] When adding, removing or changing name on test cases tied to a referenced page from within the Test Tool, not all referenced pages are always updated.
- [P100003686] In some cases renaming a test case from within the test manager triggered generate test code once or multiple times.
- [P100003704] Zooming in GUIDE could in some situations stop working when the zoom step option was set to a value below 16%.
- [P100003722] In some cases, an error in the used HWD would lead to an incorrect generated LHX file. The LHX file was not possible to download with the PLUS+1 Service Tool. Now this is fixed so that no LHX file is generated.
- [P100003724] Cancelling compilation while generating test code could make test tool become non-modal.
- [P100003729] When a bus was connected to a sub bus of itself, there could be some inconsistencies in what wires would be available in that bus. Such buses will now only contain their own signals, and not those of the sub bus.
- [P100003735] Test tool displayed "Item not found" when trying to edit a test case on a page where the number of interface signals exceeded the limit.
- [P100003748] In some cases Static Analyzer did not report all issues found.
- [P100003753] Static Analyzer did not calculate output pins on a page correctly.
- [P100003768] The manual contained a table with incorrect details for the Data flip-flop. The text description of the component was correct however.
- [P100003773] Switching between executed and not executed test cases on a page was sometimes not possible.
- [P100003780] It was not possible to have interface signal of data type Array of Bool in a test definition .
- [P100003810] Right click to show needed license for a library item did not work for all library versions.
- [P100003811] Disabled library items was not grayed out in the category view.
- [P100003812] Modifying the size of an application log definition without pressing enter and then exiting VBSE could cause an incorrect error message "Invalid index." to appear.
- [P100003820] By manually editing and importing a test definition XML file it was possible to end up with duplicate test cases.
- [P100003821] Fixed NV handling issue in CCPs.

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- [P100003828] Connect to bus did not always suggest the origin name of a routed wire (when available) as default.
- [P100003838] In some cases, hidden translations were lost when using classic screen editor.
- [P100003840] All but the first error link to projects with a dot in the path were incorrect.
- [P100003855] When compiling certain large projects, the compile window could temporarily become grayed out and stop responding for a while.
- [P100003861] Input blocks for GUIDE to Simulink S-Functions were not generated.
- [P100003881] Compile changed did not work when a font was modified.
- [P100003839] “Get Trial/Express” button in License Manager disabled if Trial/Express licenses were installed in the previous version.
- [P100003843] The previous license is not removed when pasting a trial license after rehost.
- [P100003850] Missing buttons in register license dialog when using a DPI setting above 100% (96 pixels per inch) in Windows.
- [P100003854] All modules were compiled even when Compile Changed was run.
- [P100003875] The size was not retained when an application log definition was exported.
- [P100003882] When two screen definitions containing library items with the same name were imported, the contents of the imported screen definitions were inconsistent.
- [P100003884] It was not possible to import a renamed .esd file to Vector Based Screen Editor.
- [P100003888] In some cases GUIDE could become unresponsive for a few seconds after clicking Cancel in the License Manager dialog.
- [P100003892] In some cases, it was possible to edit code while debugging and doing so would lead to unclear error messages.
- [P100003913] Under some circumstances, VBSE output signals used as inputs in the same screen definition would not work.
- [P100003915] Screen editor options have been clarified and moved into the main branch in the PLUS+1 GUIDE Options menu.
- [P100003918] Removing a test definition xml-file outside of GUIDE causes the project to reference to a non-existing file. It was not possible to remove this reference from the project.
- [P100003929] In some cases after adding a CCP to a project, the contents of the CCP was not immediately visible in the Project Manager tree.
- [P100003939] When debugging, the indicator icon that points out the current component was sometimes not cleared correctly in specific pages.
- [P100003953] The Default Layout menu did not restore the debugging tool window correctly in Debug mode.

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- [P100003980] In a new project that still did not have any associated HWD, it was possible to perform "Delete Page Properties" by using the context menu on the TOP page when in Page Navigator. That would then lead to an error message.
- [P100003117] The error message that is shown when a binary array file is too large has been improved to indicate file name, size and available space.
- [P100003395] Improved description of how Array constant from file works in the manual.
- [P100003426] Fixed example for Find Array component in the manual.
- [P100003500] An empty SCS file could be reported as old when closing Test Tool.
- [P100003545] Scroll with mouse wheel did not work when editing List type test case.
- [P100003659] Switching between right/left handed mouse settings in the Windows Control Panel while GUIDE was running would cause some mouse commands to stop working in the GUIDE drawing area until GUIDE was restarted.
- [P100003723] Duplicate warning code 463 was shown in Error/Warning/Hint Messages tab.
- [P100003673] Application Log 2 is now covered by the user manual.
- [P100003725] Some compile related buttons were enabled in the toolbar while debugging
- [P100003739] Newly added test cases with a subset of the interface selected could still use full interface at the very first run.
- [P100003754] Static Analyzer included elements within Classic Screen Editor in the calculation.
- [P100003755] Compare SCS could sometimes indicate a difference in page properties when there were none.
- [P100003758] In some cases the F1-help window would be hidden under the GUIDE window.
- [P100003765] The label on links in Error/Warning/Hint Messages tab contained too many page path delimiters.
- [P100003769] It was possible to edit the drawing of an incomplete project without HWD added.
- [P100003777] Added description of naming rules for module names to the manual.
- [P100003779] In some cases a temporary project file remained on disk after packing to P1P.
- [P100003801] Incorrect file filter when browsing for 4.x license files during license registration.
- [P100003847] In the Classic Screen Editor; a text item would be added to a text list if it was dragged from the screen library, hovered over the list, and then dropped outside the list.
- [P100003862] When a Simulink S-Function was generated and there were several hundreds of input signals, the input block was not generated correctly.
- [P100003876] When performing a compile changed, errors and warnings from a previous build step could remain in the errors and warnings tab.

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- [P100003906] The manual contained an incorrect image regarding LHX files.
  - [P100003911] Application ID was not fully described in the manual.
  - [P100003917] Compare SCS did not start with correct root node if triggered from Page Navigator tree view.
  - [P100003928] The About dialog of PLUS+1 GUIDE will no longer pop under if a hyperlink is followed while the dialog is open.
  - [P100003948] User manual was missing information on how to show page properties on top view.
  - [P100003971] In Vector-Based Screen Editor, connections were not shown correctly in the Screen Manager when multiple connections were made at once.
  - [P100003972] In the Show Screen and Write Applog component query dialogs, button OK was enabled even though there was no change to apply.
  - [P100003973] The line breaks in the warning dialog shown when a non-unicode project is opened has been adjusted.
  - [P100003981] When using classic theme in Win7, some File Save dialogs did show incorrect warnings about file names already existing on disk. This happened when an existing file was selected, and then used as a base for creating a new file name.



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## Version 8.1.2

8.1.2 (August 2016)

### What is Fixed

[P100003860] Test Tool outputs with data type U32 and value outside S32 range was treated as a negative value in test.

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## Version 8.1

8.1.1 (May 2016)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

[F00348] **Feature:** Enhanced License Model

- A free Express license can be obtained using an automated sequence from the License Manager dialog. This license provides basic functionality for developing PLUS+1 GUIDE and Service Tool applications using the latest release.
- Full license has been renamed to Professional.
- Debugger tool is now included in Professional license.
- It is now possible to copy and paste the body of a license email in the License Manager to add multiple license keys in one operation.

[F00362] **Feature Extension:** Option for HWD to control the part number.

The HWD can now override the Target part number during compilation of LHX files.

### What is Fixed

[P100003789] GUIDE failed to start when user name contained Unicode characters.

[P100003727] Opening a P1P file in GUIDE would fail to rename the file to ~P1P when it was locked by another program. The P1P was still unpacked however, leading to a situation where the P1P and P1X for the same project existed at the same time in the same folder. Now the project is not opened when the P1P is locked by another program.

[P100003744] In some cases where the C compilation of PLC code failed, no error message was visible in the Compile Messages window.

[P100003750] It was not possible to search PLC interfaces in unedited POU's in projects created in previous versions.

[P100003752] Links to IEC61131 global variables and data types were not clickable.

[P100003767] It was not possible to compile projects containing page names with non-ASCII characters.

[P100003774] Error messages were not displayed correctly and their links did not work for projects located in folders with latin non-ASCII characters in their names.

[P100003793] Some error messages were not displayed correctly and their links did not work for modules with spaces in their names.

[P100003505] The GUIDE debugger could hang if the value "38" was written to a variable of U8 or S8 type.

[P100003708] In some cases when debugging two POU's with the same parameter names, switching to the inactive POU could temporarily display the value from the active POU.

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- [P100003731]      Structured Text POUs were marked as modified when debugging into them.
  - [P100003751]      PLC2C errors and warnings were translated incorrectly into PLUS+1 links.
  - [P100003725]      Static Analysis and SIL2 compilation was enabled during debug session.

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## Version 8.0

8.0.5 (February 2016)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- [F00197] **Feature:** GUIDE support for IEC61131 Graphical Languages FBD and LD  
The following operations are now supported for FBD/LD code:
- PLCOpenXML file format Import
  - Create/Modify/Save
  - Compile
  - Debug (Add-On license required for Debug: 'FuncSafety')
  - Search (Also improved for ST code)
  - Filtering of Code Blocks (Also for ST code)
- [F00163] **Feature:** Static analysis of graphical code in PLUS+1 GUIDE (Add-On license required: 'FuncSafety').  
Adds further analysis to the toolset including report on:
- Dead code, components that don't drive an external signal (directly or indirectly)
  - Crowded page, based on user defined threshold
  - High page level, based on user defined threshold
  - Unexpected number of hardware connectors on page, based on user defined range
  - High number of input/output pins to/from page, based on user defined thresholds
  - Low reuse, based on user defined threshold
- Independent of add-on license it also provides the user with option to select/deselect which compiler warnings to show.
- [F00227] **Feature:** Improvements to the library tab in PLUS+1 GUIDE making it possible to have a folder structure within a library, to filter the view based on keywords making it easier to find blocks.  
**Limitations:**  
This feature requires new libraries to take advantage of the new functionalities.
- [F00273] **Feature:** A trial license allowing you to run a fully functioning PLUS+1 GUIDE and PLUS+1 Service Tool for a period of up to 90 days can be requested from the License Manager.
- [F00336] **Feature Extension:** Added support for TI C compiler 6.4.9.
- [F00337] **Feature Extension:** The PLUS+1 Tools now officially support Windows 10.
- [F00339] **Feature Extension:** Search
- It is now possible to search for test definitions among page properties.
  - The search dialog has been updated.
- [F00340] **Feature Extension:** Allow Generate Compiler Error components inside object pages
- Components Generate Compiler Error on Type , Generate Compiler Error on Not Constant, and Generate Compiler Error on Range are now allowed inside object pages.

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## What is Fixed

- [P100003688] Under some circumstances, entering a page quickly after saving a project would cause PLUS+1 GUIDE to freeze.
- [P100003587] The error message given when compiling a GUIDE project that includes an invalid CCP was not clear, and has been improved.
- [P100003591] In some cases when adding a new test case, there was an error "Index out of bounds".
- [P100003595] Compile change would generate an error message if all text objects were removed from a vector based screen editor application after the last successful build.
- [P100003632] Autoresize text in Vector Based Screen Editor was not working correctly for some fonts.
- [P100003695] When a Vector Based Screen Editor object is copied from one screen definition and pasted into another screen definition, signal connections will not be copied.
- [P100003012] When generating a Simulink S-Function without inputs in the interface, no convenience model was generated.
- [P100003505] The GUIDE debugger could hang if the value "38" was written to a variable of U8 type.
- [P100003509] Monochrome images of svg or png format used in image lists would sometimes become all transparent.
- [P100003514] Attempting to compile an empty project where no HWD was added did lead to an access violation error.
- [P100003520] Code folding controls disappeared in PLC interface on Save.
- [P100003584] In some cases the search button was enabled although it should have been disabled; this would have lead to PLUS+1 GUIDE becoming unresponsive.
- [P100003608] Under some circumstances there was an empty line at the top of the list in the Select Screen Area dialog.
- [P100003614] It was possible to compile a project containing larger images than allowed by the target system.
- [P100003618] Generation of Simulink S-Functions would fail if the project contained application log definitions.
- [P100003627] Error message links targeted the first occurrence for all occurrences when checkpoints with namespace inside object pages had the same name.
- [P100003633] There was an unmotivated difference in screen and application log definition popup menu items between different locations in PLUS+1 GUIDE.
- [P100003635] When a screen definition was renamed in the screen editor, the change was not immediately reflected in the project manager and the Show Screen component query dialog.

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- [P100003645] Error message "CADINT Engine busy" was shown when a page was renamed via the inspector after it had been entered.
- [P100003656] Negative coordinates in hyperlinks were always truncated to zero, and consequently pointing to the wrong location.
- [P100003658] An incorrect error message was shown when invoking unused shortcuts on some Vector Based Screen Editor tree view items.
- [P100003660] It was previously possible to edit the name attribute of the project node into an incorrect value.
- [P100003689] After deleting an application log area, it was not possible to inspect the properties of other application log areas by clicking them.
- [P100003691] It was not possible to debug applications containing ADR3 signals inside structs.
- [P100003697] It was not possible to debug vector based screen editor applications containing video inputs.
- [P100003707] Default values of user defined alias types were not displayed correctly.
- [P100003713] It was not possible to move objects between screen library folders in any of the screen editors when Sort was set.
- [P100003208] Step to next difference in Compare SCS did not work if the next difference was within a page with view disabled.
- [P100003486] Monochrome images of svg or png format would sometimes become all transparent.
- [P100003518] In the Test Tool there was sometimes a mismatch in header width and the width of the rest of the column.
- [P100003532] When clicking in the edit field of a list type test case the list of available test cases did not show up.
- [P100003550] Error message 403 (object port not connected) has been improved for Show Screen/Write Applog components.
- [P100003553] Color descriptions (e.g. clGray) were not accepted as color constant values in vector based screen editor.
- [P100003569] The texts above the screen/application log definitions tree in the Show Screen/Write Applog component query dialogs was incorrect.
- [P100003586] The Pan with Hand settings were not always applied properly in Module Viewer when no project was opened.
- [P100003628] Structured Text Guidelines from installation was using an older version of the document than the one available on the website.
- [P100003661] Using the Windows Taskbar to switch between GUIDE main window and GUIDE Help Contents window was not possible while the GUIDE PLC editor window was open.

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- [P100003663] The warning displayed when changing data type of a signal in a screen/application log definition was incorrect.
  - [P100003668] In some cases the "New name suggestions" section in the Connect To Bus dialog did not show all suggestions that should have been shown.
  - [P100003669] After exporting Application Log Definitions, the message being shown indicated that Screen Definitions had been exported.
  - [P100003672] An error message has been added to make it easier to understand when a Show Screen or Write Applog component has an unconnected input pin.
  - [P100003687] Some PLC names could be renamed to start with a leading digit, which would lead to compilation issues. Now this is prevented at rename.

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## Version 7.2.10

7.2.10 (December 2015)

### What is Fixed

- [P100003521] When used with input nets of mixed signs, AF\_MIN\_B could select the wrong value when A1 was a U16 of value 65535, and A2 was an S8 or S16 and the nets were module nets. This could also lead to the overflow output X2 being set incorrectly. This applied only to MC0xx-0xx hardware.  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003552] Under some circumstances, using undo and save at the same time would cause GUIDE to hang or the drawing to become corrupt. (P100003558, P100003566)
- [P100003572] Code related to the SR latch has been optimized. Code related to variable scopes has also been optimized. This was done to work around a defect in the C compiler used by MC0xx-1xx HWDs.  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003576] When an application log area node was deleted in the application log manager inside an application log page, compilation would fail without a proper error message. Now compilation succeeds.
- [P100003516] P1P files containing files with invalid file names were not possible to unpack. Now such P1P files can be unpacked, and the invalid file names are renamed to the closest possible valid file name.
- [P100003522] It was not possible to disable the plus+1:// link association check on startup of GUIDE.
- [P100003534] It was not possible to search for project properties LHX Readme Type, Plugin Socket Name, Project Name, Target Part Number, Target Serial Number, and Test Status File Name. LHX Readme Type has been replaced with LHX Readme Parameters.
- [P100003536] Performing a Query in the Module viewer on components connected to buses could sometimes trigger an error message.
- [P100003540] A regression in GUIDE 7.2.9 from the fix of P100003418 made it not possible to compile a project using the Configurable Module Connection in a normal way.
- [P100003542] In some cases, the most recently saved changes to certain project files were not always exported over to the new project location after performing a Save As to a new folder



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- location. Instead those saved changes only remained available in the previous project location.
- [P100003591] In some cases when adding a new test case, there was an error “Index out of bounds”.
- [P100003596] In some cases, the default font assigned to a text list in the classic screen editor was incorrect.
- [P100003607] An issue in GUIDE prevented a good error message from being displayed when CAN components had unconnected inputs.
- [P100003397] It is now possible to generate test code and Simulink S-Functions from pages having page interface signals originating from module buses.
- [P100003543] When more than one variable section of the same kind was present, only the variables in the first section were searchable.
- [P100003588] Certain projects using HWDs for older TI compilers 3.0.9 and 4.1.3 would only compile in GUIDE 7.2.9 when GUIDE 7.1 was also installed on the same PC.
- [P100003511] It is now possible to generate test code and Simulink S-Functions from pages having page interface signals with a name starting with a non-capital letter or an underscore.

For more detailed information about specific issues, please contact PLUS+1 Helpdesk.

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## Version 7.2

7.2.9 (September 2015)

### **New Features and Functionality (see the GUIDE User Manual for more detailed information)**

- [F00160] **Feature:** Traceability (A subset of this feature requires add-on license 'FuncSafety'. This is indicated by an asterisk (\*));
- Links to PLUS+1 GUIDE applications have been added; the chain icon in the compile toolbar can be used to get a link to the current page.
  - Pages have two new properties called Function Name and Function Version.
  - Pages have a new property containing traceability properties. When clicked, a dialog is opened. Each traceability property contains title, id and description. \*
  - It is now possible to export an architecture document of a PLUS+1 GUIDE application.
  - When entering a page, its properties are visible in the Inspector.
  - PLUS+1 Project file format has been updated to 005C.

- [F00161] **Feature:** Search;
- Search dialog can be opened using Ctrl+Shift+f.
  - Search dialog has been added in menu View.
  - Search options (Match case, Whole words only) have been implemented.
  - Search scope (Current Module/Current project/File structure) has been implemented.
  - Search for project properties has been implemented.
  - Search for component properties has been implemented.
  - Search for external references (e.g. checkpoints) has been implemented.
  - Search for page properties has been implemented.
  - Search for cad texts and ports has been implemented.
  - Search for structured text has been implemented.
  - Search for traceability properties has been implemented.

***Limitations:***

- When searching an unsaved POU, no search hits from the interface will be presented.

- [F00305] **Feature Extension:** Structured Text part 5;
- It is now possible to edit global variables and data types from within the Structured Text Editor in GUIDE
  - As an extension to the Structured Text standard, it is now possible to use constant variables as labels in case statements
  - Executable Structured Text code lines are now indicated with a blue dot in the left margin when debugging
  - Modified Structured Text code lines are now indicated with a yellow color in the left margin
  - When selecting or searching for a word in the Structured Text editor, other instances of the same word are marked with a similar color
  - Code folding for common Structured Text code elements is now implemented, and can also be activated from shortcut keys (no defaults)

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- A number of Structured Text editing options such as enhanced Home/End keys and smart Tabs have been implemented
  - Objects within configurations are now visible in the project manager tree
  - Improved autocompletion list and added function parameter hint
  - Updated support for PLCOpenXML file format
  - Added support for holding down Ctrl key and clicking on an identifier to jump to its definition
  - Color settings for code blocks
  - Added context menu on tabs to close multiple tabs at the same time, also middle mouse button closes tab
  - The interface part for POU's of other languages than Structured Text is now also visible in the GUI. Note however that the compiler still only supports Structured Text in this version.
  - Added setting for controlling the right margin help line. Default at 130 characters.
  - Data type code blocks can now be dragged into the implementation section, which will lead to automatic variable addition with unique names in the interface part.
- [F00304] **Feature Extension:** GUIDE can now use up to 4 GB of memory when used on supported 64-bit operating systems. The previous limit of 2 GB remains for supported 32-bit operating systems.
- [F00306] **Feature Extension:** The options dialog in GUIDE for setting Shortcuts has been restructured to make it easier to find different kinds of shortcuts.
- [F00307] **Feature Extension:** Vector Based Screen Editor has been updated:
- Layout pane scroll bars have been relocated in order to make them more accessible.
  - Zoom level and coordinates are now displayed in the status bar.
  - The query dialogs of components Show Screen and Write Aplog have been updated so that the selected screen/aplog definition, if any, is selected in the tree when the dialog is opened.
- [F00313] **Feature Extension:** Added sub category for programmable joysticks to Hardware tab. Also D1 and MP1 pumps as well as L/K, RDM and MP1 motors. Furthermore, Communication Devices category is added.
- [F00314] **Feature Extension:** Fine grained options to control the opening of previous project on startup of GUIDE have been added.
- [F00323] **Feature Extension:** Modified handling of test result to improve memory handling. Test result is now only including signals used in the test.
- [F00227] **For Evaluation:** Library tab improvement;
- Support for more advanced tree structures with folders, controlled from the Library.
  - Possible to include any type of files like manuals, diagnostic applications etc. in a Library.
  - Possible to include hyperlinks to web content in a Library.
  - Support for tags in Libraries so function blocks can be structured into categories.
  - A "Categories" node is added to sort function blocks based on tags.
  - Search for a string within the descriptions shown in the library tree.
  - Ability to filter the tree view so only blocks belonging to a specific category are shown.

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- Support saving library files with context menu.  
Known issue: SDL file name cannot be changed.

[F00290] **For Evaluation:** Option added for automatic generation of P1Ds from application on compile.  
Note that this P1D file is mainly intended as development support for application developers.  
This P1D will be listed as a “Project Output” file in the Project View window.

### What is Fixed

[P100003452] When the correct value should have been -1 or 1, AF\_DIV could incorrectly round down to 0 when A1 was a S16 or S32 typed net and A2 was a U16 or S16 typed module net. Both A1 and A2 had to be equal to exactly either -32768 or 65535 to trigger the problem. This applied only to MC0xx-0xx hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003453] When the output type from an AF\_ADD was U32 and A1 and A2 had different signs, one of them being S32 and having a value of 2147483647 and at least one of the inputs being a module net, the addition could get stuck on 2147483647.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003454] When used with input nets of mixed signs, AF\_MAX could select the wrong value when A1 was S8 or S16, and A2 was a U16 of value 65535 and its net was a module net. This applied only to MC0xx-0xx hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003455] When used with input nets of mixed signs, AF\_MIN could select the wrong value when A1 was S8 or S16, and A2 was a U16 of value 65535 and its net was a module net. This applied only to MC0xx-0xx hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.

[P100003483] When used with input nets of mixed signs, LC\_WINDOW could be incorrectly set when the difference between the inputs exceeded 2147483647. This applied only to DP6xx hardware.

Additional quality assurance features to this fix (and other fixes) are available to inspect

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- compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003461] It was not possible to import text from a comma separated csv file into the screen editor.
- [P100003503] On MC0xx-0xx hardware, when using LC\_EQUATE or LC\_COMPARE\_NE to compare a U16 constant with a value between 32738 and 65535 with an S16 variable of the same bit pattern as the constant, the result would indicate that they were equal. Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003463] File-type icons smaller than 16x16 pixels were not loaded correctly for display in the Hardware and Project tree views.
- [P100003180] The Loop Delay component did not work for the PORT type.
- [P100003183] Speed has been improved when changing default language in Classic Screen Editor.
- [P100003220] The Cut functionality in CAD removed more than delete would have for the same selection, and more than what could then be pasted.
- [P100003291] No error message was given when an obsolete version of the CAN Receive with filter was used in an application.
- [P100003305] Changing the main module file name to an invalid name did not trigger an error message, instead the name remained unchanged. Now an error message is displayed.
- [P100003338] An improved error message has been added for type mismatch between the CAD drawing and Vector Based Screen Editor/Application Log 2.
- [P100003341] Sometimes project files were locked when compiling projects containing application log pages.
- [P100003385] The image transparency/insertion point calculation did not take image list dimensions into consideration.
- [P100003392] When using Non-volatile Memory Dynamic components in Test tool they did not behave as in Service Tool.
- [P100003418] Depending on the component order, it was possible to connect output of Module input and Value connect components without receiving an error message.
- [P100003423] Buses connected to themselves could cause an error when generating test code.
- [P100003428] A Call POU component in a linked page would reuse the same POU instance variable. Now separate instance variables are created, one for each Call POU.
- [P100003436] Some error messages relating to Structured Text code indicated the wrong POU as containing the error.

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- [P100003437] Certain Structured Text variable names such as for example "FA\_Latch\_0" would cause the C compiler for MC0xx-0xx hardware to crash.
- [P100003184] It is no longer possible to generate a font from an already generated font in Classic Screen Editor.
- [P100003218] Font lists containing one element did not compile.
- [P100003238] Sometimes when removing an object in an SCS file there were some remainings left in an invisible layer. This affected zoom to home.
- [P100003248] A project with a Show Screen component connected with a Module Input component would not compile if the Module Input was located after the Show Screen component. That is now fixed.
- [P100003264] An error message without position information was shown when too many format codes were used in a text in the Screen Editor. Now a clickable error link is provided when more than 20 format codes are defined in a single text.
- [P100003275] Test definitions were not included in the comparison between SCS files.
- [P100003303] The debugger sometimes indicated the wrong current line in Structured Text code.
- [P100003319] Opening a new GUIDE project while the previous project was in the process of being packed to P1P format could result in a packing error.
- [P100003341] Sometimes project files were locked when compiling projects containing application log pages.
- [P100003348] In some rare cases, pasting a text into the name of a net in Vector Based Screen Editor would insert the text twice.
- [P100003372] Sys signals of array type are now supported for Test tool, GUIDE to Simulink and Debugger.
- [P100003374] It is now possible to generate test code for pages having page interface items starting with a number.
- [P100003384] There was a defect that made Compile Changed work as Compile All first time after an old project had been built using Compile All.
- [P100003389] The "Tests" folder in "Project Manager" tab was not removed when all included test definition XML files had been deleted.
- [P100003394] It is no longer possible to accidentally copy/paste objects on the layout pane while the Screen Library is active in the Vector Based Screen Editor.
- [P100003469] In non-formal calls of Structured Text POUs, it was previously not possible to include any output parameters. It is now optional whether output parameters are included in the call or not.

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- [P100003477] An error message was sometimes displayed after closing a project, deleting the entire project folder and then opening another project.
  - [P100003491] Opening projects with multiple CCP files could take a bit more time than necessary. The opening time has been optimized for such projects.
  - [P100003199] When opening a P1P file by double clicking it, CANKing could take focus instead of GUIDE.
  - [P100003208] In Compare SCS, if there was a hit within a disabled page it was not possible to use buttons to navigate to next occurrence. It got stuck at the disabled page. Now navigating between occurrences skip hits within disabled pages and move on to next occurrence.
  - [P100003211] When creating a troubleshooting file, the report was capped at 4 GB.
  - [P100003216] Constant values on text list variables were not shown correctly on the layout pane.
  - [P100003219] Hidden fonts were visible in the screen editor inspector but not in the component dialogs. Now they are visible in all these locations.
  - [P100003230] Sometimes "Test name already exists" was incorrectly reported.
  - [P100003398] For linked pages it was always required to generate new test code when restarting Test tool.
  - [P100003419] Test definition interface was not updated when signals connected outside the test page were splitted up into separate signals.
  - [P100003456] Test result view was not always rendered correctly, ending up in some cells overlapping each other.

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## VERSION 7.1.12

7.1.12 (June 2015)

### What is Fixed

- [P100003322] If the size of an application log definition is set to zero, compilation will fail with error 639.
- [P100003352] An error message has been added for the case when a component with an output signal is pasted into a screen definition and the output signal is already in use.
- [P100003353] An error message has been added for the case when an output signal is connected to more than one output in a screen definition.
- [P100003388] Video images in Vector Based Screen Editor did not compile.
- [P100003403] In some cases, corrupt text data source would cause texts of different languages to be mixed.
- [P100003446] In some cases, corrupt text data source would cause a compile error.

For more detailed information about specific issues, please contact PLUS+1 Helpdesk.



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## VERSION 7.1.11

7.1.11 (April 2015)

### What is Fixed

- [P100003203] For some HWDs, the components Compare in Window and Compare with Hysteresis Middle as well as the following capped components: Add, Sub, Mul and Div could produce incorrect output in some cases where at least one of the connections was signed, at least one global (i.e. connected to a Checkpoint or similar) and the calculation would internally overflow an S32.  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003323] The components Compare with Hysteresis High and Compare with Hysteresis Low could in some cases get stuck on true or false output.  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003325] The component Compare in Window had an issue in some cases on one compiler when both A1 and A2 entries were of type U32.
- [P100003329] The components Compare with Hysteresis High and Compare with Hysteresis Low could in some cases produce incorrect output.  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003332] There was a defect in Scale and Scale Capped when  $0x1000000000000000 \leq (A1-A5)*(A3-A4) \leq 0x100000000FFFFFFFF$ .  
Additional quality assurance features to this fix (and other fixes) are available to inspect compiler hints where new PLUS+1 GUIDE revisions led to changes in the generated code. These hints shall be taken as input for assessment when the newest revision will not be used.
- [P100003240] In some cases, image lists in large screen definitions did not work.
- [P100003237] In some cases, it was not possible to compile text lists in applications where the HWD supports rotated displays.
- [P100003318] For some HWDs, a compile changed on a classic screen editor application would result in all images being recompiled if a module was modified in a way that did not affect any

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- screen page. This behavior is now changed so that no images are recompiled when compile changed is invoked and there are no screen editor changes.
- [P100003227] The names of module signals in module buses could not start with digits.
  - [P100003234] Projects compiled for MC0xx-0xx hardware used significantly more ROM memory in 7.1.10 due to different ordering of global variables.
  - [P100003236] Existing test definitions added in the Test Manager were not saved correctly.
  - [P100003246] It was possible to add characters to the description field in Test Tool which could lead to an invalid XML file. This has now been fixed so it is not possible to have invalid characters in the description field.
  - [P100003252] The Module Viewer menu action was disabled when no project was open in GUIDE.
  - [P100003284] On some computers compile could sometimes fail with a write access denied for a .ddt file. This handling has now been made more robust, but note that it will still be unable to succeed if the "Read-only" property is set for the .ddt file.
  - [P100003279] Custom initialization of Structured Text struct variables was not implemented in the compiler.
  - [P100003289] Initialization of Structured Text struct variables was displayed incorrectly in the GUI. The last field was not shown in the initialization.
  - [P100003366] In the debugger, NV parameters were sometimes incorrectly modified when other NV data was modified.
  - [P100003228] The signal list when connecting on a bus was not in alphabetical order.
  - [P100003229] For Test Tool the don't care character ('-') was not interpreted correctly in the graph.
  - [P100003283] Pages deleted from project was still present in the test status file. This is now fixed so pages not present in the project are removed from the test status file.
  - [P100003355] Structured Text coding guidelines are now included in the /Misc folder.
  - [P100003256] When using Query on a component to change it to another component in the same category and when the output type was an array type, the output type was not retained.
  - [P100003350] Updated chapter reference in SIL compilation message.

For more detailed information about specific issues, please contact PLUS+1 Helpdesk.

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## VERSION 7.1

7.1.10 (December 2014)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

[F00151] **Feature:** Debug Tool (Add-On license required: 'FuncSafety'\*).

***Improvements since the evaluation version in 7.0:***

- Repeat-Until now possible to debug through
- The Structured Text editor is now a non-modal window with tabs support
- Conditional Breakpoints, both in graphical code as well as in Structured Text code
- Data breakpoints (Watchpoints) that are triggered when a variable value changes
- New visual indication icons for showing debug status in graphical code
- Visual indication icons for showing Breakpoints and Current Line in Structured Text code
- Net values shown directly on the nets in graphical code
- POU variable values shown directly in the POU interface part as a grid

***Limitations:***

- The following components have no support; they cannot be part of a debugged application: App Log, the old NV components, Classic Screen editor.
- The following components have stubbed support; they can be part of a debugged application, but are replaced with empty implementations: CCPs, CAN RX/TX, Vector based Screen Editor, Read Aplog, Write file
- The following components have limited support; they can be part of a debugged application, but reduced functionality: NV components do not retain their values between debug sessions.
- In order to debug NV signals, their names can only contain letters and numbers.
- The HWD used in the project should be recent, it must at least support the Module Input component and the dynamic diagnostic format.
- Watches cannot currently be set on Structured Text variables.
- When debugging into SCS files that were saved using a previous file format, debug icons and net value texts can sometimes not be displayed correctly. The workaround for this is to save such SCS files using the current GUIDE version.
- Up to 4 data breakpoints can be used concurrently.

[F00262] **Feature Extension:** Vector Based Screen Editor.

***Improvements since the version in 7.0:***

- New text(list) property font list makes it possible to switch font in run-mode.
- It is possible to create orthogonally rotated screen definitions (requires support by HWD).
- It is possible to switch between screen definitions inside the vector based screen editor.
- Composite pairs (unicode) are supported.
- Several small improvements and adjustments to align with classic screen editor.

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**Defect fixes:**

- For some fonts, some characters were cut off. This has now been fixed.
- Text list font size was incorrectly presented as zero. This has now been fixed.

[F00263] **Feature Extension:** Test Tool (Add-On license required: 'FuncSafety'\*).

**Improvements since the version in 7.0:**

- Updated user interface, with more functionality built into the tool
- Support for test-driven development with ability to define tests without source code
- Ability to only use subset of page interface for page under test
- Ability to define don't care on signals for individual test steps
- Array types on the interface is fully supported
- The test report is more complete with the actual test data included
- 'OS.ExecTime' is always available in the interface to define the execution time
- 'Reset before run' is implemented to allow reset of all states before running a test
- Unused signals in the page interface of the block under test are culled

**Limitations:**

- The following components have stubbed support; they can be part of a debugged application, but are replaced with empty implementations: CCPs, Vector based Screen Editor, Read Ap-plog, Write file
- The HWD used in the project should be recent, it must at least support the Module Input component and the dynamic diagnostic format.
- Interface signals with leading digit is not supported.

[F00171] **Feature:** GUIDE Dependency view to show dependencies between components has been added (Patent Pending) (Add-On license required: 'FuncSafety'\*).

[F00141] **Feature Extension:** Clicking on a link to an Error or Warning now displays an icon next to the error position. The icon can be configured in the Options dialog. Navigating between multiple errors in the Error Messages using Ctrl+Up or Down arrow is now also possible. The coordinates in the error and warning messages have been scaled up by a factor of 10000.

[F00271] **Feature Extension:** File extensions of all generated files are now lower case by default.

[F00278] **Feature Extension:** For some Errors or Warnings the link to the error position has been complemented with a link that trigger View Logical Net for the net in the error position.

[F00279] **Feature Extension:** Segmented lines in the CAD area are now automatically cleaned up. As a consequence, the "Optimize Nets" action is now removed from the Tools menu.

[F00280] **Feature Extension:** The Mouse-Wheel Zoom-Step size is now user-configurable, and has been reduced by default. The zoom keyboard buttons (PageUp/PageDown by default) are also affected by this enhancement.

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- [F00281] **Feature Extension:** Pan using a “hand”-type mouse cursor is now enabled as an option activated from the Toolbar. The right mouse button is used for this action.
- [F00291] **Feature Extension:** It is now possible to manually force strict standard mode for compiling Structured Text code. This mode was previously only enabled when performing SIL-compilations. The strict mode is activated from the options menu.
- [F00294] **Feature Extension:** It is now possible to disable the bounding box that is displayed in the CAD drawing area around the used components of each page. This is done by changing an option in the General Settings of GUIDE.
- [F00289] **Feature Extension:** It is now possible to save application log contents to USB stick in a faster way using the application log editor interface (requires HWD support). This feature extension is released in evaluation mode.
- [Misc] **Information:** Various speed improvements in design mode have been implemented.

### What is Fixed

- [P100003215] Max Value Capped did not work when one input was constant below zero and the other input was unsigned. This defect affected T1 compiler 5.2.15 when Optimizer Settings was set to OFF.
- [P100002919] Image transparency setting modifications were not detected when compile change was run. This has now been fixed.
- [P100002873] When changing between licenses, the SIL compile functionality was not enabled correctly. This has now been fixed.
- [P100003107] Component Compare with Hysteresis High behaved incorrectly when inputs A1 and A3 where constant, input A2 was signed and the hysteresis interval started below zero and ended at or above zero. This has now been fixed.
- [P100003150] Image lists in the vector based screen editor did not handle rotation point offset correctly - all images were depicted as if the rotation point offset was at (0, 0) and the ActiveIndex constant affected the image list insertion point on the display. This has now been fixed.
- [P100002910] A Bidirectional Hardware Output signal could be connected to the same net as a Checkpoint. Since a Bidirectional Hardware Output signal drives the net backwards, this could lead to unpredictable results, including but not limited to the value read from the Checkpoint. This is now fixed by disallowing such connections.
- [P100003196] User defined transparency was not handled correctly in flipped images.
- [P100003185] A corrupt text data file where texts for some languages were missing resulted in an unhandled error. Now an error message is displayed instead.

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- [P100003172] When using constant, right angle rotation and rotation point offset on hardware images; touch was not properly detected. This is now fixed in GUIDE 7.1.
- [P100003034] Some old projects using the deprecated "3.0.9" C-compiler and certain math components would not compile since GUIDE version 5.0. This is now fixed in GUIDE 7.1.
- [P100003037] The compatibility-mode check failed when run on Windows 8.1 (not supported by GUIDE 7.0) due to Windows API changes. This led to a false positive compatibility-mode popup warning. This has now been fixed.
- [P100003038] Routing signals with names that would be invalid as C identifiers through Module Buses would lead to obscure error messages. The error messages are now improved.
- [P100003040] CCP documentation files were not directly available in the Project Manager. This has now been fixed.
- [P100003047] The context menu in the hardware tree was not always correct when activated from the keyboard (rather than from mouse-click). This has now been fixed.
- [P100002989] Whenever a port name in a bus connected to a legacy screen page contained a dot that was not a bus separator and the signal connected to that port was used inside the screen page, compilation was aborted with an un-descriptive error message. This has now been fixed so that error 188 will be raised in these cases.
- [P100003022] Font files with default charset resulted in a compile error since the charset was not known. Now the default charset of the system will be used.
- [P100003019] There was an error in the classic screen editor that caused data values to be un-editable in the inspector. This has now been fixed.
- [P100003032] There was an unused enable signal in application log 2 definitions. It has now been removed.
- [P100003028] A defect that resulted in an incorrect compile error has now been fixed.
- [P100003065] Boolean "true" values from GUIDE to calls of Structured Text POU's were not necessarily identical to "1", they could also appear as higher values. This has now been fixed.
- [P100003067] Importing Structured Text code in PLCopenXML format that was saved by the 'Beremiz' tool did not work, but has now been fixed.
- [P100002975] It was not possible to import test definitions from a XLS file with more than 20 CAN messages. This has now been fixed.
- [P100003090] The Absolute Value component could produce incorrect output on TI hardware when the input value was less than -32768, and if the input net was also connected to a checkpoint. This is now fixed.
- [P100003095] It was not possible to mix screen definitions and checkpoints inside object pages. This has now been fixed.

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- [P100002992] In some rare cases, it was not possible to enter area pages. This has now been fixed.
- [P100002834] It was not possible to read the full warning message when opening a project with too many missing files. The message window became too large. This is now fixed by showing a resizable and scrollable message window instead.
- [P100002897] When renaming a project file, but then not saving the project p1x file, the project could end up in an inconsistent state where the project file would no longer be found. This has been resolved by automatically saving the project p1x file when renaming any project file.
- [P100002898] GUIDE would not work if GUIDE and Service Tool were installed into different paths.
- [P100002959] Warnings about project files changed outside GUIDE were sometimes shown when no changes had been made outside GUIDE. This is now fixed.
- [P100002949] The attempt to remove a non-existing language dependent font would result in an access violation. This is now fixed.
- [P100002950] It was possible to set priority to a negative value even though that is not allowed. This is now fixed.
- [P100002854] There was no warning that editing of a linked screen editor page would change the other linked pages as well. A warning message has been added.
- [P100003212] Flipped images had a one pixel shift.
- [P100002879] When trying to import test definitions from a read-only XLS file there was an error message shown and no test cases were imported. Now the import of XLS file is capable to handle read-only files.
- [P100002880] The selected node in the tree-view in Compare SCS was not highlighted in a consistent way. This is now fixed.
- [P100002881] When trying to import test definitions from a XLS file columns without header were sometimes misinterpreted as inputs which could result in corrupt data. This is now fixed.
- [P100002926] When a test case with no matching interface signals was used and all non-matching signals were deleted an error message was shown. This is now fixed.
- [P100002974] For CAN messages in Test Tool the length was not considered when showing data values. Now length is used to determine how many bytes to show in the result.
- [P100003104] An incorrect warning message about a required license could sometimes pop up when a new project was opened after the test tool was used in the previous open project. This has now been fixed.
- [P100003013] For IDL files with CCP methods with input parameters with default values, an error was triggered if there was no white-space character directly after that default value. This has now been fixed.

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- [P100003020] The drawing area was all black when routing with space and refreshing the area. This has now been fixed.
- [P100003042] The error message for Compile Binary File handle mismatch has been improved.
- [P100003045] When non-standard page sizes are used, then incorrect warnings about Components placed outside the page boundaries could be reported. That is now fixed, and additionally non-standard page sizes are now reportCompilation of an application containing an unsupported screen/application log page resulted in an access violation. An error message has been added instead. ed as warnings.
- [P100003068] Vector based screen definitions were one pixel too large in both dimensions. This has now been fixed.
- [P100003055] It was not possible to compile for Test if the project path contained Unicode characters such as for example: 'ääö'. This also affected Debug. This has now been fixed.
- [P100003120] Some svg images were not rendered correctly on the display. This has now been fixed.
- [P100003062] Block indentation of Structured Text code using tab and shift+tab keys did not work correctly if the code block was selected from a higher to a lower line number, i.e. it only worked if the selection was made top->down. This is now fixed.
- [P100003036] In the vector based screen editor component inspector, signal and constant were not shown for all properties. This has now been fixed.
- [P100003098] CCPs with partial IDL includes did not work to compile in GUIDE. This has now been fixed.
- [P100003099] A block of "VAR CONSTANT"-variables could not be listed after a block of ordinary "VAR"-variables in the Structured Text editor. They had to be listed first. This is now fixed.
- [P100003116] In some cases, the Connect To Bus dialog failed to list all available nets in the bus. This has now been fixed.
- [P100003135] Uninstalling HWDs while their documentation files were open in another program could cause those files to not be deleted. This would complicate the reinstallation of those HWD files. This situation will now be detected before the HWD is uninstalled.
- [P100003145] The Full installation of the Microsoft .Net v4 Framework is required for Structured Text support to work. However, if the Client installation of the same version was the only installed version, then GUIDE would not detect that the required version was not installed, and no indication would be given to the user. This has now been fixed.
- [P100002400] In the classic screen editor, it was possible to use the potentially dangerous %s printf formatting code in some cases. This has now been fixed.
- [P100003118] In some cases, importing an already present screen definition would cause the screen and application log repository to become unsavable. This has now been fixed.



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- [P100003127] Simultaneously editing the font on multiple selected text objects in the vector based screen editor was not possible. This has now been fixed.
- [P100003165] If the instance entry (A1) of a "Call Method of Externally Defined Class"-component was not connected, then an unclear error message was displayed. This error message has now been improved.
- [P100002838] SYS files expanded to disk were always saved using uppercase letters. Now they are saved using the same case as in the recipe file.
- [P100002856] Unconnected NV Components were handled differently depending on which type of NV component used. This has now been fixed so that all unconnected NV Components are handled equally; they will now in no case be optimized away.
- [P100002859] The error message that is shown when an invalid license is used has been made easier to read.
- [P100003140] When the empty string was entered as the name of a language, an incorrect error message was shown. This has now been fixed.
- [P100002869] The structured Text editor window was sometimes reopened partially outside a monitor. This has now been fixed.
- [P100002876] A number of error messages related to incorrect ROP files have been made easier to read.
- [P100002981] Compilation of a project with PLCOpenXML files, but without any POU would previously fail. This is now fixed.
- [P100002994] Backspace was erasing text on the right side of the cursor when it was at the leftmost position in the edit field. This is now fixed so only text on the left side of the cursor is erased.
- [P100003018] The error message that is shown for unlicensed use of licensed function library pages has been clarified in the case where the corresponding function library is not installed.
- [P100003027] Compilation of an application containing an unsupported screen/application log page resulted in an access violation. An error message has been added instead.
- [P100003017] The font size of a text list in the vector based screen editor was displayed as zero. Now the correct font size is displayed.
- [P100003072] Only the first 2 numbers of the required GUIDE version was shown when trying to compiling a project. Now the full required version is shown.
- [P100003035] Some files were not cleaned up when a project containing object pages was closed and packed. This has now been fixed.
- [P100003143] File extensions for known file types were not shown in the Project View if the corresponding setting was active in Windows Explorer. File extension is now always shown.

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- [P100003193] In the vector based screen editor, text lists were shown with borders in preview mode.
  - [P100003190] Variables in text lists did not show correct constant value in design mode.
  - [P100003162] Adding the same test case to a test list more than once was not possible. This has now been fixed.

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## VERSION 7.0.8

7.0.8 (September 2014)

### What is Fixed

- [P100003069] An incorrect checksum calculation made it impossible to download some applications to SC-controllers. This has now been fixed.
- [P100003093] Text lists in large screen definitions could in some cases result in a compile error. This has now been fixed.
- [P100003094] It was not possible to use several instances of a screen definition. This has now been fixed.
- [P100003108] Scaled and rotated image lists got the wrong insertion point. This has now been fixed.
- [P100003131] The position of an image list containing a rotated image was not stored correctly. This has now been fixed.
- [P100002967] In some cases, importing a screen definition would cause the vector based screen editor to crash. This has now been fixed.

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## VERSION 7.0.7

7.0.7 (March 2014)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

[F00263] **Feature Extension:** TestTool, handle test cases on pages within the test manager (Add-On license required: 'FuncSafety'\*).

### What is Fixed

[P100002843] Running in compatibility mode, for example Windows XP mode on Windows 7, is not supported and can result in an external exception after compilation in some cases. Now a warning message is displayed when starting GUIDE in compatibility mode.

[P100002882] Some valid Toolkey values were not possible to edit in 7.0.6. This has now been fixed.

[P100002889] For certain compilers, and when using large arrays from file, compile time could be quite long and also unpredictable with much variation for small changes of the code. This has now been fixed.

[P100002904] A problem where the GUIDE could sometimes crash when closing the classic screen editor has been addressed.

[P100002914] In some cases when connecting a net from one bus to another, and those buses were recursively sub-buses of each other, the GUIDE could crash. This is now resolved.

[P100002935] On some machines and user accounts, the installation failed to place files needed by the CAD GUI in the right folder. That has now been fixed by placing those files in the all users appdata folder instead.

[P100002941] In some cases the Screen Editor crashed when closed. That has now been fixed.

[P100002955] Unsaved changes in the Vector based screen editor, Structured Text editor and Test Tool editor were lost when performing a Save As. This is now fixed.

[P100002957] A project with multiple ROPs of the same type could not be opened correctly. This is now fixed.

[P100002895] An uninformative error message was displayed when a text was missing in the classic screen editor. A proper error message has been added.

[P100002892] In some cases, an unconnected input to the component "Non-volatile Memory Dynamic" was not detected until the compile step, and an unclear error message was shown. This is now fixed and a clear error message is shown.

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## VERSION 7.0

7.0.6 (November 2013)

### **New Features and Functionality (see the GUIDE User Manual for more detailed information)**

- [F00144] **Feature:** Test Tool has been added to GUIDE (Add-On license required: 'FuncSafety'\*).
- [F00145] **Feature:** GUIDE to Simulink S-Function is now available as a full feature. It is used for converting a subset of a PLUS+1 GUIDE project to a Simulink S-Function (Add-On license required: 'SimModel'\*\*\*).
- [F00164] **Feature:** Support for using a version control tool when working in GUIDE is now available as a full feature (Add-On license required: 'FuncSafety'\*).
- [F00092] **Feature:** Compare SCS is added (outside the USA) as a full feature (Add-On license required: 'FuncSafety'\*).
- [F00230] **Feature Extension:** Import and export capabilities have been added to the Vector Based Screen Editor.
- [F00213] **Feature Extension:** Structured Text Editor has been extended to include quick reference to Code Blocks as a full feature.
- [F00248] **Feature Extension:** The external C compiler TI 5.2.15 has been added to support MC hardware (HWD Dependant).
- [F00251] **Feature Extension:** The external C compiler MinGW 4.8.1 has been added to support Test Tool and Debug Tool.
- [F00252] **Feature Extension:** The external C compiler GCC 4.7 for ARM (20130614-q2) has been added to support SC and MC hardware (HWD Dependant).
- [F00199] **Feature Extension:** The Add-On license system has been extended with 'FuncSafety'\* and 'SimModel'\*\*\* GUIDE upgrade features.
- [F00257] **Feature Extension:** A time limited, full, GUIDE license now enables 'FuncSafety'\* and 'Sim-Model'\*\*\* GUIDE upgrade features automatically for evaluation purposes.
- [F00151] **For Evaluation:** Debug Tool has been added to GUIDE (Add-On license required: 'Func-Safety'\*).
- [F00171] **For Evaluation:** GUIDE Dependency view to show dependencies between components has been added (Patent Pending) (Add-On license required: 'FuncSafety'\*).
- [F00225] **Information:** Windows 8 (32/64-bit) is now supported.
- [F00250] **Information:** The PLUS+1 GUIDE tools are now installed in a 'Danfoss' program group.
- [F00253] **Information:** The main window caption of the PLUS+1 GUIDE tools now also display the release part of the version number in addition to the major and minor release numbers.

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[F00260] **Information:** The Remote Desktop support software on the Help menu has been updated to a web-based solution.

### What is Fixed

[P100002821] Code inside locked pages could under certain circumstances inadvertently be modified through a linked page. This is no longer possible.

[P100002777] Array signals connected as input/output for the CCP and POU components could some times be prematurely optimized away, potentially leading to data corruption. This only happened if all of the following specific conditions were met:

- a) The CCP or POU component must be the last component using the array signal in the data flow
- b) Another component placed after the CCP or POU component (alternatively the CCP/POU itself) must use another array signal of identical type and length.  
-Additionally this other array signal must not be used before, or concurrently with, the original array signal.  
-Furthermore, this other array signal must be used within a limited number of components after the CCP or POU component (HWD dependent, but typically not more than a few hundred)
- c) There is no checkpoint component connected to the array signal
- d) The array signal net is not drawn backwards (from a data flow diagram point of view), and used by another component as input.
- e) The array signal is not constant, i.e. it is not the output from a constant component.

This defect is now fixed.

-In previous versions of GUIDE, the simplest and safest containment action is to connect checkpoints to each array signal used by CCP and POU components.

[P100002860] Application logs created in the vector based screen editor were not stored in a consistent way. This has now been fixed.

[P100002762] Unsupported vector based screen editor components were invisible. Now they are highlighted.

[P100002844] A regression in the handling of Structured Text code could lead to code that worked in GUIDE 6.0 no longer compiled in 6.1. This is now fixed in 7.0.

[P100002828] In some cases, already declared variables could be removed when a new function block variable was added from the code blocks tree in the Structured Text code editor. This is now fixed.

[P100002698] For very large buses, it could take several minutes to connect another bus. This has now been fixed.

[P100002757] Access levels did not work correctly for Advanced Checkpoints. This has now been fixed.

[P100002752] Touch is now detected correctly also when the screen definition does not begin in origo.

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- [P100002738] A regression preventing an array from file to end with a comma has been fixed.
- [P100002673] If the P1P backup file was write protected, it could occur that both a P1X and a P1P file with same name exist at same time in project folder. This has now been fixed.
- [P100002669] The error message indicating an undriven net was not shown if a Predefine type component was connected to the net. This has now been fixed.
- [P100002847] An unconnected module input component made compilations fail with a difficult to understand error message. This is now fixed.
- [P100002848] Error reporting for unsupported vector based screen editor features have been enhanced.
- [P100002837] Files unpacked from the SYS file had their names changed to upper case. This has been fixed, and files are now unpacked using their original names.
- [P100002815] It was not possible to use lower case letters in File Handle for compiled binary file. This is now fixed.
- [P100002799] Structured Text compilation of code imported from exp file format generated some warnings. This is now fixed.
- [P100002723] On some Windows 7 OS machines, the My Blocks folder was installed in the wrong path. This is now fixed.
- [P100002792] In some cases when working with a laptop an access Violation at compile after laptop undock - dock could occur. This has now been fixed.
- [P100002781] In Structured Text: Global Variables were sometimes lost after cut and paste. This is now fixed.
- [P100002709] In some cases a page name change did not immediately update the GUI. This has now been fixed.
- [P100002699] Multiple error messages popped up when duplicate module names were entered. This has now been fixed.
- [P100002766] The error message dialog that is displayed when entering an invalid time base was not always displayed when it should, and it did not exactly specify the error. This has now been fixed.
- [P100002712] Compile chain error messages didn't show up in the error messages tab. This has now been fixed.
- [P100002839] The component 'Generate Compiler Error on Range' had an error that made it quite difficult to set the min and max values. This is now fixed.
- [P100002719] In some cases when deleting a port in a bus, a segment of the bus itself could be deleted as well. This is now fixed.

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- [P100002713] Large applications using the TI compiler 5.2.5 (or older) could make the C compiler crash. This is solved by using the newer compiler TI 5.2.15, which however requires HWD support. It may also be necessary to decrease the optimization of the TI 5.2.15 compiler to medium or lower in the SYS settings in the project manager. See also [F00248] above.
- [P100002542] Applications using the TI compiler 5.2.5 (or older) could take significantly longer time to compile on Windows 7 compared with on Windows XP. This is solved by using the newer compiler TI 5.2.15, which however requires HWD support. See also [F00248] above.
- [P100002808] Shortcut keys F5 and F6 did not work “out-of-the-box” after installing GUIDE on a PC without any previous GUIDE installation. This has now been fixed.
- [P100002801] It was not possible to create a new POU when no PLCopenXml file had been added to the project previously. This has now been fixed.
- [P100002763] Read Access Level could not be set correctly for the old “Non-volatile Memory Dynamic Input” component (the one with only 1 access level setting). This is now fixed.
- [P100002157] In some cases the coordinates in error messages were only referncing the affected components, and not specifically the output positions.This has now been fixed.
- [P100002747] In some cases, an access violation error could occur in the hardware tree after opening an invalid project. This has now been fixed.
- [P100002761] In some cases, a file named \_DynamicDiagnostic.h remained in the project folder. This has now been fixed.
- [P100002686] In some cases, GUIDE displayed a save changes dialog on exit that was empty. This has now been fixed.
- [P100002677] The current day was in some cases difficult to read in a page property calendar edit. This has now been fixed.
- [P100002269] It is no longer possible to connect a non-applog port to applog.
- [P100002691] TEXTDATA.TDS showed up as a project file when the vector based screen editor as used. This has now been fixed.
- [P100002721] It is no longer possible to use the data type COLOR on a Set Value component.
- [P100002714] Preview of font LCD5x7e ruined later previews of other fonts.This has now been fixed.
- [P100002813] When changing HWD file in a project the button to confirm the hardware comment incorrectly indicated to replace even if keep existing was selected. This has now been fixed.
- [P100002819] Internal tool Create SDL failed to lock pages correctly. This has now been fixed.



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[P100002840] Non-unicode fonts in projects containing unicode HWDs were generated from fonts installed in Windows; now they are generated from p1f files. An error message is given if an non-existing character in such a font is used.

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## VERSION 6.1.7

6.1.7 (September 2013)

### What is Fixed

- [P100002698] For very large buses, it could take several minutes to connect another bus. This has now been fixed.
- [P100002757] Access levels did not work correctly for Advanced Checkpoints. This has now been fixed.
- [P100002777] Array signals connected as input/output for the CCP and POU components could some times be prematurely optimized away, potentially leading to data corruption. This only happened if all of the following specific conditions were met:
- a) The CCP or POU component must be the last component using the array signal in the data flow
  - b) Another component placed after the CCP or POU component (alternatively the CCP/POU itself) must use another array signal of identical type and length.  
-Additionally this other array signal must not be used before, or concurrently with, the original array signal.  
-Furthermore, this other array signal must be used within a limited number of components after the CCP or POU component (HWD dependent, but typically not more than a few hundred)
  - c) There is no checkpoint component connected to the array signal
  - d) The array signal net is not drawn backwards (from a data flow diagram point of view), and used by another component as input.
  - e) The array signal is not constant, i.e. it is not the output from a constant component.

This defect is now fixed.

-In previous versions of GUIDE, the simplest and safest containment action is to connect checkpoints to each array signal used by CCP and POU components.

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## VERSION 6.1

6.1.6 (April 2013)

### **New Features and Functionality (see the GUIDE User Manual for more detailed information)**

- [F00152] A vector based Screen Editor has been introduced. This feature is HWD dependent.
- [F00200] Licensing of function block libraries is now possible.
- [F00203] When changing the SYS file in a project, all System Parameters which exists both in the new and in the old SYS file will retain their user selected values, instead of reverting to default values as in previous versions. The user will be notified about this when applicable.
- [F00212] Structured Text Compiler improvements, including support for POINTER data type. In non-strict mode there is now more forgiveness from the compiler side for syntactical and semantical user errors.
- [F00224] When compiling without a Toolkey in the project, a new notification message has been added that warns about a potential security issue. It is possible to disable this notification message.

### **What is Fixed**

- [P100002675] In some cases the Install HWD Window was too small to fully display the name of an HWD. The Install HWD Window is now resizeable. This also applies to the Install SDL Window.
- [P100002674] In Structured Text, multiple VAR\_IN\_OUT sections in the same function header did not work correctly, This has now been fixed.
- [P100002593] In some cases it was not possible to adjust line width in Design Screen page using version 6.0. This is now fixed.
- [P100002637] LCD5x7 font appeared incorrectly in some cases on DPxxx hardware. This has now been fixed.
- [P100002668] Document icon were sometimes not updated correctly in the project manager. This has now been fixed.
- [P100002650] Empty ROP types caused compile errors that were difficult to understand. This has now been fixed by not including empty ROP types in compilation.
- [P100002647] CAN RX components with protected flag set, and set to receive the same CAN ID, which are placed in different modules did not have a well defined order for capturing CAN messages in the case where multiple CAN messages with that particular ID are received from one loop to the next. Now the order is defined as the order in which the modules are listed in the project manager.

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- [P100002525] Some functions of GUIDE were not compatible with conferencing with WebEx. This is now fixed.
- [P100002643] In some cases the key combination Ctrl+X in the Project Manager could result in an error. This is now fixed.
- [P100002472] Compile Changed did not work correctly for very large modules. This is now fixed.
- [P100002613] In some cases it was not possible to disable page view on imported pages. This is now fixed.
- [P100002559] A single page set to Object in one module did not compile. This is now fixed.
- [P100002558] In some cases it was not possible to get out of the GUIDE drawing area. This is now fixed.
- [P100002632] If the SYS file is accidentally deleted, then a bad error message was given on project open. This error message now states the name of the missing file.
- [P100002628] Multiple instances of the same CCP method using buffered array input with different lengths did not compile. This is now fixed.
- [P100002545] When opening a project created by a newer, and not compatible version of GUIDE, the error message was not easily understandable. That error message has now been improved.
- [P100002611] An occasional issue where the Compare SCS comparison dialog was not possible to close has now been resolved.
- [P100002580] Pressing "delete" while editing a POU name deleted the whole POU. This is now fixed.
- [P100002610] In some cases it did not work to add the template. This is now fixed.
- [P100002608] There was no warning when GUIDE was not run as admin. Now a warning is added.
- [P100002621] In some cases when closing GUIDE with unsaved changes in a read only SCS file those changes might be lost. Now GUIDE does not close if the user expresses an intent to save that file.
- [P100002571] The Screen Editor preview did not show transparent gif images correctly. This is now fixed.
- [P100002570] Buttons were partly invisible in Screen Library. This is now fixed.
- [P100002587] Some of the features used in the CCP tutorial no longer worked correctly in GUIDE 6.0.8. This is now fixed.
- [P100002538] In some cases the Component names shown in query dialogs did not match the names for the same Components in the Component tree. This is now fixed.
- [P100002575] In some cases when opening a P1P file with GUIDE an existing file on disk with the same name as a project file could be overwritten. This is now fixed.

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## VERSION 6.0.8 (December 2012)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- [F00164] Support for using a version control tool when working in GUIDE. This includes indicating which files that are source files, temporary files and other files. It also enhances the ability to work on a project with read-only files. Since this feature relies on open projects (no P1P) there is now an option to not get any Pack To P1P prompt on project close. There is now also an option to zip the project to 7z/zip without closing it. Future restriction: This feature is provided for evaluation purposes only. In future releases of PLUS+1 GUIDE this feature will be part of an additional package of features that will require an additional license to be purchased.
- [F00174] A new component called "Call POU" is added to call structured text from graphical GUIDE code. Existing or new structured text code can be added to the project and an integrated structured text editor allows the user to edit the code from within GUIDE.
- Known limitations:
- Editing of data types and global variables is not available.
  - Limited support for date, time and string data types.
  - Limited support for RETAIN variables. Only local variables of basic integer types in function block POUs called directly from graphical code are currently supported.
  - Some opportunities for optimization remain to be implemented.
  - Avoid placing large local variables in functions, these are currently placed on the stack.
  - Unicode characters can be used in comments, but double width characters may not always be displayed correctly.
  - Save As can in some cases not work correctly for a single POU where the interface has incorrect modifications.
  - Program POUs cannot be called from graphical code.
  - The arithmetic overflow and underflow runtime error flags might not always be set correctly after a POU call.
- Use of this feature requires the Microsoft .NET Framework 4 (Standalone Installer). It is available from Microsoft at: <http://www.microsoft.com/en-us/download/details.aspx?id=17718>
- [F00150] Array support for CCP calls. The GUIDE user can decide if arrays should be buffered or not. This is done by either connecting constant TRUE to an input bus signal named "#Unbuffered", or not. Idl version must be 004A or higher for this feature to be available.
- [F00092] It is now possible to compare two SCS files either on the complete SCS level or on page level by setting root node. The result can be shown as a combined view or as two separate views highlighting the differences. The user can then step between differences of different types. A report of the comparison result can be generated. Future restriction: This feature is provided for evaluation purposes only. In future releases of PLUS+1 GUIDE this feature will be part of an additional package of features that will require an additional license to be purchased.
- [F00171] Beta: A new functionality "Dependency View" is now available. It is used to determine dependencies between different signals to detect unexpected dependencies or missing dependencies. It is intended to be used during troubleshooting or to understand what impact a change in

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the code can have and to prove that no unexpected dependencies exists for safety critical signals. Future restriction: This feature is provided for evaluation purposes only. In future releases of PLUS+1 GUIDE this feature will be part of an additional package of features that will require an additional license to be purchased.

[F00145] Beta: A new functionality "GUIDE to Simulink S-Function" is now available. It is used for converting a subset of a PLUS+1 GUIDE project to a Simulink S-Function. Future restriction: This feature is provided for evaluation purposes only. In future releases of PLUS+1 GUIDE this feature will be part of an additional package of features that will require an additional license to be purchased.

### **What is Fixed**

[P100002499] Missing signals in bus could sometimes be reported when compiling even though the signals actually did exist. View logical net did not work either for these signals. This has now been fixed.

[P100002493] View Logical Net window could in some cases be too big for the monitor it was displayed on. This has now been fixed.

[P100002505] It was sometimes not possible to reopen compiler messages from toolbar. This has been fixed.

[P100002453] The "Next/Previous Page" functionality could slow down GUIDE after some time of usage. This has been fixed.

[P100002002] It is now possible to change the HWD used in a project even if the API-specification is opened

[P100002117] Using CCPs where a single method has a huge argument list now works

[P100002483] Starting GUIDE while a function block PDF file is open now works.

[P100002369] Illegal numerical values in screen object properties can no longer corrupt a screen page.

[P100002292] Infinite loop across bus: bus members connecting back to top level caused GUIDE to hang up. This has been fixed.

[P100002431] File times are now preserved when unpacking the SYS file during compile.

[P100002415] Typed constants in Application Log will now be output correctly to the log.

[P100002347] Array signals in module busses are now handled correctly.

[P100002379] A corrupt DDT file no longer prevents a GUIDE project from being opened.

[P100002352] Negative S8 values from NV memory on TI platform are now interpreted correctly

[P100002395] Spaces now appear correctly on the screen and the display when the font has been reinstalled in the PLUS+1 GUIDE, deleted from the project and added to the project again. [P100002324]

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- [P100002416] App log texts no longer lose their data values when the format code is changed.
  - [P100002351] Assigned font no longer disappears when the screen editor is entered.
  - [P100002334] Signal for Y coordinate is retained when a line is copied.
  - [P100002333] Long Text in DP600 application now shows up correctly
  - [P100002337] Undo now works correct in Page Interface Editor
  - [P100002418] Missing Windows library Normaliz.dll is now detected when opening a P1P file.
  - [P100002402] GUIDE compile chain now supports multiple application diagnostic data structures.
  - [P100002387] Header file for CCPs are now removed on project pack.
  - [P100002384] Remaining time for expired licenses is now reported correctly.
  - [P100002079] The code generated from the switch component is now terser.
  - [P100002380] Confile.exe now reports an error if the input file is missing.
  - [P100002307] The License Manager window could stop working when starting GUIDE without a license and then later reopening the License Manager, this has now been fixed.
  - [P100001307] Hardware Input/Output needed to have a connection on the output side in order to compile. This has now been fixed.
  - [P100002328] The Read Application Log symbol generated a very difficult to find error if an incorrect Application Log name was used. This has now been fixed with an error message that is displayed earlier in the compile process.
  - [P1dev00001315] Using some of the graphical themes of Windows 7, the text of the Project Management Utility was sometimes not fully visible. This has now been fixed.
  - [P100002406] When GUIDE was not started in maximized mode, the Compiler Messages window was displayed incorrectly in some cases. This has now been fixed.
  - [P100002396] The Warning message that is shown when installing fonts was not shown in some cases where it should have been shown. This has now been fixed.
  - [P100002375] Naming in application log pages has been corrected
  - [P100002374] Old application log area name changes are now reflected in the area selection dialog
  - [P100002373] When entering an Application Log page after its assigned area had got a new name there was an access violation. This has not been fixed.
  - [P100002358] Assign Application Log area popup menu is no longer available when an Application Log area page is already selected.
  - [P100002371] Edit menu items can now be used when editing texts in the screen editor.
  - [P100002339] Change of the value on a constant symbol was sometimes ignored when using Windows 7. This has now been fixed.

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- [P100002297] GUIDE was not always possible to activate using Alt+Tab. This has now been fixed
- [P100002311] While adding components in GUIDE, the toolbar and menus were not accessible. This has now been fixed.
- [P100002295] In some cases an access violation error was thrown by the SCS viewer. This has now been fixed.
- [P100002385] Some bus member names that are normally allowed were not allowed if the bus was connected to a screen page. This has now been fixed.
- [P100002435] GUIDE Screen Editor could not import Double Byte Character Set fonts as Unicode. This has now been fixed.
- [P100002515] Unicode fonts were not processed correctly. This has now been fixed.
- [P100002510] Very old screen pages cannot be entered in more recent versions of PLUS+1 GUIDE. In order to be able to enter such screen pages, the following workaround must be performed: 1. Open the project in 4.0.3. 2. Visit all screen pages. 3. Save the project.



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## VERSION 5.1.10 (May 2012)

### What is Fixed

- [P100002292] Infinite loop across bus: bus members connecting back to top level caused GUIDE to hang up. This has been fixed.
- [P100002337] Undo now works correct in Page Interface Editor
- [P100002324] Spaces now appear correctly on the screen and the display when the font has been reinstalled in the PLUS+1 GUIDE, deleted from the project and added to the project again. (P100002395)
- [P100002416] App log texts no longer lose their data values when the format code is changed.
- [P100002351] Assigned font no longer disappears when the screen editor is entered.
- [P100002334] Signal for Y coordinate is retained when a line is copied.
- [P100002333] Long Text in DP600 application now shows up correctly
- [P100002415] Typed constants in Application Log will now be output correctly to the log.
- [P100002347] Array signals in module busses are now handled correctly.
- [P100002352] Negative S8 values from NV memory on TI platform are now interpreted correctly
- [P100002431] File times are now preserved when unpacking the SYS file during compile.
- [P100002379] A corrupt DDT file no longer prevents a GUIDE project from being opened.

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## VERSION 5.1.9 (November 2011)

### What is Fixed

- [P100002301] Connecting the Y-coordinate of an image to a signal now works correctly.
- [P100002302] The correct default font name is now applied on Text lists in Screen Editor.
- [P100002308] Screen Editor texts with multiple lines are now displayed correctly in the layout pane.
- [P100002306] Problems upgrading from a 4.x license have been resolved.
- [P100002329] Export text in Screen Editor now works correctly.
- [P100002332] When new GUIDE applications using Read Only Parameter (ROP) are created in 5.1.8, the method described in the manual will not work. No ROP template file is created on first compile. This has now been fixed.

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## VERSION 5.1.8 (September 2011)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

Compile speed is improved. Depending on the project and the PC that is used, the average compile speed increases 10%–100%. Large display projects with many images now compile much faster.

[F00093] A System ID can be embedded in a GUIDE application. The Service Tool program uses the embedded System ID to automatically open a P1D file with a matching System ID.

[F00101] The Screen Editor now supports Unicode fonts. All display projects now store text in a Unicode format.

A user upgrading a Screen Editor project to GUIDE 5.1 must select a code page for each language that is used in their project. Code pages choices are 1250–1257 (Latin 2, Cyrillic, Latin 1, Greek, Turkish, Hebrew, Arabic, Baltic) and 874 (Thai).

Combined Unicode characters are only supported in cases where precomposed Unicode character forms exist. This can for example affect languages such as Hebrew, Thai and Arabic.

An HWD is required to provide Unicode support for new projects that display such languages as Japanese, Chinese, and Korean.

[F00128] The compiler now supports Sauer-Danfoss SC controllers.

[F00129] A user can now rename a P1P file and then open it with the GUIDE program.

The “Save Project As” command now works without a user first having to use the “Save Project” command. Previously, a user had to save changes into their current project before they could save these changes into a new project.

[F00136] An input field in the Screen Editor’s Inspector panel now holds a new value when the cursor moves out of the input field. Previously if the cursor moved out of the input field, the input field returned the old value.

[F00140] The Screen Editor’s Screen Library tab no longer requires a folder for images.

[F00143] The User Messages panel in the Compile Progress dialog box now lists a count of View Disabled pages and Read-only pages. (Show Compiler Statistics in the Options dialog box must be checked to display the page count.)

### What is Fixed

[P100002163] In big applications, GUIDE could sometimes crash or corrupt the source file when pasting large graphical blocks, this has now been fixed. (P100002271)

[P100002202] Renaming bus member variables, sometimes made GUIDE to hang up, this has now been fixed.

[P100002142] In an Array without end parenthesis the compilation was successful but the last value was interpreted wrong, now an error message is given.

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- [P100002242] In some cases the use of the Repeat-Until components gave an error in the compilation, this has now been fixed.
- [P100002196] The page numbering in a project has been fixed, some projects was showing the same page number on two different pages. The page numbering is now according to the execution order.
- [P100002139] Issues related to the designs with Application Log has been fixed (P100002141)
- [P100002149] Export/Import text in Screen editor can now handle commas
- [P100002176] Issues with editing the Page interface of a Screen editor page and then leave the Screen page has been resolved.
- [P100002088] In previous version 5.0, A “Compile changed” always resulted in that all C-files were compiled, this has now been fixed.
- [P100002110] Application Log write bit now only accepts Boolean as a data type.
- [P100002166] It is now possible to connect a constant array to the component “Write Array to File” (entry A2)
- [P100002093] The default layout now also reflects the Toolbar
- [P100001527] Temporary files in the project folder are now removed also from projects with Read Only Parameters.

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## **VERSION 5.0.9 (January 2011)**

### **What is Fixed**

- Issues related to reading PC information in the License Manager have been fixed (GetMacAddress failed). [P100002130]
- GUIDE Screen editor now imports 8-bit images with correct palette information [P100002123]
- In the GUIDE Screen editor, the Screen Manager occasionally showed text order incorrectly or hung up; this issue has now been fixed. [P100002131] [P100002132]

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## VERSION 5.0.8 (December 2010)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- The License Manager now supports re-hosting and subscription services.
- The License Manager User Manual is available via Tools menu > License Manager > Help.
- Note: PLUS+1 Tools products supported by License Manager version 4.x are not compatible with version 5.x [F00098]
- Support has been enhanced for imported compiled code libraries. The user can now add a code library to a project that has been developed outside GUIDE, e.g., C language. The graphical application can call the objects and thus data can be passed to/from the objects. This feature is HWD dependent. [F00059]
- Added the Application Keying component to give users the ability to lock a specific application to hardware. [F00125]
- It is now possible to use bus member names, port names, page names and namespaces longer than 16 chars. [F00124]
- Several Screen Editor improvements [F00105]:
  - A new sorting order in Screen Manager has been introduced. This change shows the stacking order of objects and makes drag and drop objects possible.
  - In the Screen Manager tab, when right-clicking a variable-expansion (the variable expanded with the object it is connected to) in the connected Data bus, an Edit option has been added.
  - Improved support for multi selection function has been added.
  - When selecting multiple objects in the Screen Page Layout pane/Screen Manager, It is now possible to move objects using arrow keys.
  - Improved support for starting dialogues with default values has been added.
  - Automatic choice of HW Ports (when applicable) has been added.
  - Automatic increase of screen area that occupies the whole port area has been added (when applicable).
  - Dialogues have been changed to use standard Windows buttons
  - Improved use of the Tab-key function has been added.
  - Auto scroll has been added to Screen Manager and Screen Library.
- The 64 bit version of Windows 7 is now supported. [F00063]
- The icons have been updated and large icon support has been added. [F00123]
- The white color scheme has been updated. [F00116]
- Shortcuts for Compile All, Compile Changed, Error Check All, Error Check Changed, Break Reference Link to Page and Page Interface Editor have been added. [F00103]

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- Additional compiler support for Displays has been added. [F00054]
  - Additional download support for Displays has been added. [F00099]
  - Encode 8 has been updated. It is now possible to output arrays longer than 8 positions. Also, the generated C-code is more compact than previously. [F00110]
  - Support for graphical terminal applications that were created before the Screen Editor became available have been removed. [F00122].

### **What is Fixed**

- Several fixes to the User Manual have been implemented. [P100002061], [P100002060], [P100002040], [P100002038], [P100002054], [P100001971], [P100001940], [P100001777], [P100002068]
- Performing many changes when working with large display projects sometimes caused a critical error. This has now been fixed. [P100002011]
- Under certain circumstances a compiler error could occur in a large application that uses a Compiled Code Package (CCP). This has been fixed [P100002058].
- The Shift Left and Shift Right components can malfunction when the number of positions to shift is variable and is greater than number of bits in the data type. This error affects MC hardware [P100002051] and has been fixed.
- The Get Array Element component did not typecast to data type S8 (the User Manual described this error). This has been fixed. [P100002071].
- The Arithmetic/Boolean Switch, Connect, Memory and Retype components has been changed to typecast to data type U8 and S8. This affects MC hardware [P100002090].
- Dynamic NV components with data types U8 or S8 now work correctly in projects that uses MC hardware, [P100001799]
- Error handling has been improved when renaming a P1P file and opening it. [P100001644]
- The result of renaming a screen area in an area page is now handled in a more user friendly way. [P100001967]
- Issues with having the API document from the HWD opened for viewing while exchanging the SYS-file have now been resolved. [P100002002]
- An error message is now presented if more than 20 format codes are used in a string for displays or application log. [P100001970]
- When using Query in the Module Viewer, the focus is now kept to the Module Viewer [P100002041]
- Issues involving applications that contains pages with a page name longer than 16 chars have been fixed. [P100001607] [P100001491] [P100001587]
- Array constants can now handle more than 48 characters. [P100001848]

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- Improved detection of not supported component versions [P100001862]
  - The boundary output on the Switch 16 Capped component only worked when connected to another boundary output. Otherwise a compiler error was generated. This has been fixed [P100001821]
  - On the Advanced Checkpoint component there was no check to see if the input was constant or not. This has been fixed. [P100002067].
  - Forward/Backward functionality has been fixed to function as standard applications. [P10000195]
  - Undo/Redo functionality in Screen Editor-Text/Image Register is now removed. Before it performed erroneous operation. [P100001991]
  - Changing language in a display application in the Screen Editor has been sped up significantly. [P100001978]
  - Moving multiple Screen Editor objects with the snap to grid option on now only snaps to the object with the lowest order. The other objects keep their relative positions. [P100002014]
  - Mouse wheel scrolling now works when a dialogue contains a vertical scrollbar. [P100001960]
  - Navigations within Screen editor pages using the Page Navigator now works correct when leaving pages. [P100001939]
  - Working with images in a copied folder containing images in a screen editor screen library previously created an error. This has now been resolved [P100002032]
  - Mouse wheel zoom problems when using a second monitor have been fixed. [P100001791]
  - The Error Messages tab displays compiler error messages. When a user clicks a compiler error message caused by an error within a view-disabled page, the closest view-enabled parent page displays along with an appropriate message. [P100000901].
  - An un-docked Inspector is now working correctly. [P100001934]
  - When canceling an Installation of HWD's, (i.e. not overwrite) the user information was misleading, this has now been fixed. [P100002031]
  - When adding images in screen editor, the default color depth is now controlled from the HWD. [P100002070]



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## VERSION 4.3.7 (April 2010)

### What is Fixed

- The TI compiler, version 5.2.2, has been replaced with version 5.2.5 [F00108]
- Issue with transparency and monochrome bitmaps has been fixed. [CQ100002000]
- Linked pages using a bus with same name on wire and sub-bus now compiles. [CQ100001995]
- Issues with access levels and Checkpoints and Set value/pulse components have been fixed. [CQ100001993]
- Several issues with Compiled Code Packages have been fixed. [CQ100002003] [CQ100002008] [CQ100002007]
- Screen Editor options File Transparency and Visible were not able to uncheck, this is now fixed. [CQ100002012]
- The Screen Editor preview for grayscale images has been fixed. [CQ100002021]
- In the Screen Editor a conversion from an image with palette to an image without palette now works. [CQ100002024]
- Component Limit has been replaced in Component tree to resolve compatibility issues with older versions of this component. [CQ100001918]

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## VERSION 4.3.6 (February 2010)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- PLUS+1 GUIDE now runs on Windows 7 (32-bit).
- A new version of the TI compiler, version 5.2.2, is now supported. This compiler will be introduced in HWD files. This feature is HWD dependent. [F00053]
- A new component to read out Application Log data into arrays. This feature is HWD dependent. [F00058]
- A new component to write arrays to USB memory stick. This feature is HWD dependent. [F00057]
- User settings will now be automatically imported from the previously installed version. When editing a GUIDE project, it is now possible to choose to remove files instead of deleting them from the project. In previous versions it was only possible to delete files from the project folder with remove command. the files will now be removed from the project but remain in the project folder. [F00072]
- The project will now always include the API document from the HWD/SYS. [F00071]
- In Screen Editor; The user can now perform Move To Back and Move To Front on objects in the screen. [F00079]
- The install of Hardware and Function Libraries has been improved. Multiple files can be installed with one action. The user can also select which files within a PAC file to install. [F00080]
- Shortcuts: Leave Page, Zoom In and Zoom Out are now also working in the screen editor. [F00074]

### What is Fixed

- Miscellaneous updates and clarifications have been added to the user manual. [P100001794] [P100001804] [P100001802] [P100001875] [P100001846]
- In some complex page structures, links to Referenced Pages were erroneously broken. This has been corrected [P100001805]
- Unconnected Connect Nets from Objects now generates correct code. [P100001819]
- Moving folders or moving images/texts in folders in Screen Editor sometimes corrupted the image/text ID and/or settings were lost. This has now been fixed [P100001912] [P100001909] [P100001913]
- Odd numbers of the length of data in a Read Only Parameter file for Displays now work. [P100001822]
- The installation size in Microsoft Windows' Add/Remove Programs is now correctly reported. [P100001656]
- Improvements has been made when working with large projects that potentially run out of memory [P100001891]
- Using brackets in image names in display projects now works. [P100001783]

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- It is now possible to import text containing commas in the Screen Editor (display projects and application log). [P100001792]
  - Issues have been fixed with texts containing only characters (%c) [P100001827]
  - It is no longer possible to erroneously exit a bit map setup in Screen Editor without setting transparency [P100001906]
  - Previously, when the Module viewer was opened, the drawing was zoomed out, the Module viewer now opens the drawing correctly. [P100001814]
  - Changing components from group Counters with Query, to specific component Loop Counter with Carry now works correctly. [P100001782]
  - It is now possible to double click on an LHX ReadMe file and have it opened by the correct Microsoft Windows associated software. [P100001842]
  - Compile changed now works after diagnostic data has changed. [P100001894]
  - “ModuleConnectionLog:Enabled” now works in projects using the screen editor. [P100001904]

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## VERSION 4.2.6 (June 2009)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- The component Initialize Hardware Output can now be connected to components within a component group; Non Volatile memory dynamic. Previous, it was only possible to connect to constants. For example, this feature enables the same application to have the same node ID as a parameter. Note: it is the user's responsibility to take care of non initialized non volatile memory cells. Some older Display HWD's do not support this feature.
- Full color support for displays. This feature enables displays to work with higher color depth. With this feature the colors are taken from the image and there will be no separate palette. This also enables a better preview for both color and monochromatic images, thus it is easier to design. This feature is HWD dependent.
- Supports the possibility for the user to add precompiled code that is executed by the operating system. This feature is HWD dependent.
- Design speed has been improved (enter screen pages)
- It is now possible to directly access the PLUS+1 Support Web Page and launch Remote Desktop from the Help Support menu.

### What is Fixed

- In Screen Editor – in an Area page the order was not saved or loaded when doing Undo/Redo, this is now fixed. [P100001736]
- In Screen Editor – Undo/Redo now reflects order in Area pages [P100001736]
- In a display project – If the project contained an image with the same name as the project, the compilation failed with an error message that was hard to interpret, this has now been fixed. [P100000974]
- In a display project – In the selector when copy and paste text folders, the text inside the pasted folder were not correct, this has now been fixed. [P100001770]
- The preview feature of the screen editor will now show black text on white images correctly. [P100001652]
- Better error handling in cases of an application using objects but the hardware file (SYS) in the project doesn't support it. [P100001216]
- Changes in an array constant file will now be detected by a Compile changed command. [P100000628]
- Validation of array values in Multi-character constant component has been fixed [P100001663]
- Validation for maximum length of Application ID:Description/Type/Version naming has been introduced. [P100001733]
- Component Non-volatile Memory Dynamic Input is now correct when it is changed by Query from some other component in the group Non-volatile Memory Dynamic [P100001711] [P100001238]

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- It is now possible to access the GUIDE from the taskbar or using Ctrl-Tab when one or more Module viewers were started. [P100001769]
  - The component Accessrights App Log Statistics has now the correct name in Component tab, preview and in the graphical source. [P100001157]
  - In the screen editor it is now possible for the user to right click and delete text/image list objects. [P100001722]
  - It is now not possible to drag in scs files/blocks from the Hardware tab if the project has no hardware. [P100001697]
  - Improvements have been made to better support GUIDE when being used on 2 monitors. [P100001704]
  - In screen editor in the Screen Library tab in Selector, the preview now shows transparency correctly. [P100001717]

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## **VERSION 4.1.7 (April 2009)**

### **What is Fixed**

- Page Name and Namespace properties for a page can now be changed regardless of linked sub-pages. [P100001698]
- Application log port pages can now have names other than the default name. [P100001703]
- The graphical editor has been enhanced to allow the pasting and loading of blocks into large applications. A warning message has been introduced to avoid out of memory situations in large applications. [P100001710]
- Applications containing very complex bus and wire hierarchies would occasionally not compile. This has been fixed [P100001712]

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## VERSION 4.1.6 (January 2009)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- The feature Page View Access has been extended.
- It is now possible to perform Force Enable/Read-Only/Disable operations. Because of this feature the SCS format has changed.
- Object Support for Advanced Checkpoint with Namespace and all Non-Volatile Memory Dynamic Components has been added.
- Compilation speed is improved; up to 20% faster.
- Design speed is improved (enter pages, insert blocks, etc)
- Startup speed is improved Module (SCS) file size has been reduced.
- Two new Page View Access settings have been added to options tab
- An unnecessary window has been eliminated when adding new wire/bus-port.
- When exiting the screen editor, the prior state of the Manager tab is now retained.

### What is Fixed

- The following error messages have been improved;
  - when an input of an object page is not connected [P100001566]
  - when multiple pages contain same area name. [P100001487]
  - now case sensitive for signal names [P100001547]
  - when access levels on Bios signals [P100001505]
- Occasional errors when using the Next/Previous Arrows in the GUI caused exception errors. This has been corrected [P100001601]
- “Error check all/changed” now functions when objects are in the project. [P100001554]
- An error message is now generated when the “Set Pulse” component output is connected to other component outputs. [P100001613] [P100001615]
- In texts in the text editor, if a user uses a quotation mark [“] it will automatically be converted to a [“], this method will prevent an error in the compilation. [P100001409]
- Occasionally the Project Manger/Navigator tabs and/or some tool buttons were not visible, this has been fixed. [P100001605] [P100001606]
- Under some circumstances there were problems compiling display projects; no LHX file was generated. This has now been fixed [P100001637]
- A U32 variable can now be retyped to the COLOR data type. [P100000888]

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- When the application attempts to use more than the available amount of NV-memory, the compilation is now aborted with an error message. [P100001541]
  - When using Save Project As. . . , the GUI will warn the user that the project must to be saved before the operation can be performed. [P100001496]
  - Fonts with numbers at the beginning of the font name will now be corrected [P100001116]
  - Problems related to the screen editor when changing to another type of display hardware has been corrected. [P100001537]
  - Changes made by user in Icon Menu will now remain changed [P100001546]
  - Issues with starting the Icon Menu while the auto save is in operation have now been fixed [P100001552]
  - In Page Navigator Window the Forward and Backward arrows now work [P100001321]
  - Operating issues involving screen saver functions have been corrected [P100001526]
  - Instances involving the screen editor indicating a change even if no change was made has now been corrected [P100000561]
  - It is now possible to use Save as. . . on document Tech info Controllers in Selector. [P100001532]
  - The Screen editor inspector default size has been adjusted to accommodate all properties. [P100001533]
  - After deleting a screen area in a screen editor layout panel, the screen area will now be updated correctly [P100001542]
  - In screen editor the “Y” field is now correct for line objects. [P100001600]
  - In screen editor, for text lists and image lists, the inspector window now shows values on properties like “AutoIndex” ,“Color”, etc. [P100001603]
  - Grid settings are now saved when exiting GUIDE [P100001497] When using multi screen environments, GUIDE is now opened on the 2nd monitor if it was closed there. [P100000229]
  - Using the option to make module connections visible for the Service Tool did not work, this has been fixed [P100001632]
  - The last used preview font in screen editor is now saved [P100001545]



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## **VERSION 4.0.3 (October 2008)**

### **What is Fixed**

- Some defects in GUI – SCS format changed. [P100001575]
- Compile sequence error is not always reported and make job does not terminate correctly. [P100001613]

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## VERSION 4.0.2 (June 2008)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- This version supports Application keying
- The user can now lock pages to prevent viewing.
- GUIDE now supports Multiple Application Log Files. Require support from HWD
- GUIDE now supports Multiple Read Only Parameter Files. Require support from HWD
- New Repeat-Until, Loop Counter and Time measurement components
- Support for text variable @NS for as NameSpace property container (like @PAGENAME).
- In My Blocks tab it is now possible to define a link to a folder.
- It is now possible to select a page (Enter, Stretch, Query etc) by clicking inside its boundary box.
- Forward and backward arrow added in the Toolbar, also on keys Alt+Right/Left and Mouse's where supported. The forward and backward function controls the navigation in pages.
- In Options it is possible to enable Auto-generation of interface ports to/from the Page Interface Editor.
- The SYS file and the template can be added by right click functionality.
- It is now possible to use different text font styles in module files (scs)
- . In Options it is possible to enable warning messages to warn the user about conflicting file formats.
- Memory on different file browser dialogues
- When adding signals in Screen Editor the Drop down list is in Alphabetic order.
- Possible to add files to project that already is in project folder.
- Possibility to copy text from Compiler Messages windows by right click in the window.
- Print dialogue options have been enhanced.
- Error Messages have been enhanced.
- GUIDE installs default in a new folder structure containing the version.
- In Options it is possible to disable zoom on mouse wheel.
- In Options it is possible to enable zoom fit to page after leaving the Page Interface Editor.
- In Options it is possible to enable partial compiler statistics.

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## What is Fixed

- Error Check works correct, without forcing a Compile first. [P100001319]
- Switch time bases now works correct. [P100001393]
- After undo in Screen Editor, objects are now displayed in correct. [P100001394]
- Screen capture now works correct [P100001402]
- Default layout now works correct [P100001404]
- It is now possible to drop a Text in a Text List on the Screen Area also if it is zoomed in. [P100001344]
- It is now possible to mark (High light) an Image List also if images are marked. [P100001311]
- Unconnected output of Add Capped symbol causes compile to fail, has been corrected [P100001332]
- Page Navigator now shows linked pages correctly [P100001416]
- Problems with updating graphics when shifting between normal and maximum window are now fixed [P100001381, P100001258, P100001310]
- Adding a non-linked page does not show icon for linked page; refresh no longer needed [P100001460]
- The Manager/Inspector and Selector windows retracts correct [P100001372, P100001377]
- Having an open project but all modules closed, the component selector have no been disabled [P100001397]
- An issue updating the Page Navigator have been corrected [P100001398]
- When drawing area is empty and open a module from Project Manager is now working correct [P100001399]
- After closing and reopening a module, some commands didn't work correct, this has been fixed [P100001400]
- Change template file name form is always shown when replacing a template [P100000819]
- Compiler messages are always hidden after a successful compile if it was hidden when the compile started [P100001309]
- A situation when exiting screen editor and clicked exit button twice, could sometimes caused an error, this has now been fixed [P100001407]
- Mouse wheel now only zooms when mouse pointer is on drawing area [P100001428]
- Errors in generated Data Template for Read Only Parameters have been corrected [P100001251]

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## **VERSION 3.2.5 (April 2008)**

### **What is Fixed**

- Some large display application did not compile an LHX file; this has been resolved (P100001437)
- It is now possible to compile an object inside a module other than the main module (P100001432)

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## VERSION 3.2.4 (January 2008)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- Enhanced error messages.
- New Set Pulse component.
- New Array Constant from Binary File component.
- Upgraded Page Interface Editor now has the same look as the main PLUS+1 GUIDE window.
- The SCS Viewer now has a Menu and Toolbar. It is also possible to do a Query as in Editor mode but the properties cannot be edited.
- A Print window replaces the Plotter Output Setup window. Use the mouse scroll wheel to zoom in and zoom out.
- Classic, Windows and Custom short cut key schemes.
- The Transfer between Pages feature is available from menu and custom short cut keys
- . Some components that were restricted to use in Objects now work in Objects (see User Manual for details). Objects inside Objects now work.

### What is Fixed

- Bad error messages, all fixed as part of the job to enhanced error messages [ P100000445, P100000485, P100000700, P100000855 and P100000925]
- After a Project Save As operation and rename of scs file, the changes are now not lost [P100001375]
- It is now possible to have underscore, ( \_ ), in module names [ P100000946 and P100000844]
- In Screen Editor, a defect when selecting multiple objects has been fixed [P100001118]
- A defect regards Missing/Wrong Shortcut Keys in the Edit and View Menus has been corrected[P100001131]
- In Screen Editor: When Holding the shift key while clicking on an object made a copy; this has now been fixed [P100001134]
- In Screen Editor: A problem with Area orders was fixed [P100001160]
- A defect when pressing 'Break' during build process could possibly cause GUIDE to hang; this has been fixed [P100001198]
- An application/project named "check" will give an error message from the GUI [ P100001210]
- It is now not possible to set the Object flag for an App log page [P100001219]
- In some cases a compile of an empty project gave wrong behavior of GUIDE; this has now been fixed [P100001246]

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- Linked pages in a project and right clicked in Page Navigator caused an exception; this has been fixed [P100001263]
  - The “Hardware Output” symbol sometimes did not work properly with bidirectional signals. This has now been fixed [ P100001308]
  - Page Navigator in GUIDE Forward and Backward Arrows now works [P100001321]
  - “Compile changed” and Error Check changed” now works correctly; before it behaved like “Compile All” and “Error Check All” [P100001322]
  - Color scheme now works correctly [P100001023]
  - All plotting of sub pages is now possible because of the new Print Interface [P100000187]
  - A module name can now contain an underscore ( \_ ) combined with non-volatile memory components [P100000844]
  - Hardware Output symbol now works with bidirectional signals properly [P100001308]

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## VERSION 3.1.5 (October 2007)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- GUIDE is an IEC61508 SIL2 certified code generation tool.
- GUIDE now has a page-by-reference functionality.
- GUIDE now has cut to clipboard, copy to clipboard, and paste from clipboard functions.
- GUIDE can attach a readme file to an LHX application file. The GUIDE Service Tool software displays this readme file before the LHX file download starts.
- GUIDE has a “lock lhx” feature that restricts the download of an LHX application file by either hardware part number or hardware serial number.
- GUIDE software saves backup files (~\*\*\*.scs) to the current project folder.
- The installation of GUIDE now follows Microsoft Windows installation guidelines.
  - User Data files can now be found in the %UserProfile%\My Documents\Sauer-Danfoss folder.
  - Application Data files are now in the %AppData%\Sauer-Danfoss folder.
- If previous versions of GUIDE are installed, the installation software will automatically copy all necessary user and application data to the 3.1.5 installation.

Notes for directory structure:

- %AppData% is typically: C:\Documents and Settings\\Application Data
- %UserProfile% is typically: C:\Documents and Settings\- {InstallPath} is typically: C:\Program Files

This pertains to the following GUIDE files:

- Hardware Files
  - From: {InstallPath}\Sauer-Danfoss\PLUS1\P1ToolData\Hardware\
  - To: %AppData%\Sauer-Danfoss\PLUS1\GUIDE\Hardware\
- Library Files
  - From: {InstallPath}\Sauer-Danfoss\PLUS1\P1ToolData\Library\
  - To: %AppData%\Sauer-Danfoss\PLUS1\GUIDE\Library\
- Font Files
  - From: {InstallPath}\Sauer-Danfoss\PLUS1\P1ToolData\Fonts\
  - To: %AppData%\Sauer-Danfoss\PLUS1\GUIDE\Fonts\
- MyBlocks Blocks

- 
- From: {InstallPath}\Sauer-Danfoss\PLUS1\P1ToolData\MyBlocks\Blocks\
    - To: %UserProfile%\My Documents\Sauer-Danfoss\PLUS1\GUIDE\MyBlocks\Blocks\
      - MyBlocks Pages
        - From: {InstallPath}\Sauer-Danfoss\PLUS1\P1ToolData\MyBlocks\Pages\
          - To: %UserProfile%\My Documents\Sauer-Danfoss\PLUS1\GUIDE\MyBlocks\Pages\
            - MyBlocks Pages

If this auto copy doesn't work, (e.g. access rights problems), the copy process can be done manually with GUIDE not running.

### **What is Fixed**

- In the GUIDE User Manual: Errors were corrected in the description of the Loop Counter with Carry component; in the Compare in Window component example; a description was added explaining how the Import command strips out the contents of Define Screen pages; a description of read-only parameters function was added; the Array Constant from File component description now states that no periods are allowed in the file name; and graphical errors were corrected in the Keyboard shortcuts chapter (CQ P100000887, P100000849, P100001077, P100001004, P100001035, P100001061).
- The Loop Counter with Carry component now carries without needing an OUT connection (CQ P100001123).
- The Accessrights History component now requires a BOOL input.
- In earlier GUIDE versions, the Accessrights History component required an INT input. An INT input now causes a compiler error (CQ P100001079).



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## **VERSION 3.0.5 (June 2007)**

### **What is Fixed**

- Documentation has been fixed for some defects and the descriptions of some features have been enhanced.
- Fixed defect so Checkpoint can be used on data type Array [CQ P100001178, P100001179].

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## VERSION 3.0.4 (April 2007)

### What is Fixed

- Documentation has been fixed for some defects. Sections Install Additional Fonts, Components for Read Only Parameters have been added.
- A defect in the maker has been fixed; it fixes a problem with large display applications containing many images [CQ P100001007].
- Fixed defect where old NV-symbols give an error message when compiling with newer HWD's [P100001114, P100001135]
- Fixed defect where interaction between GUI and graphical engine caused system lock-up [P100001139, P100001122, P100001106, P100001092]
- Fixed defect that, when closing and compacting a PLUS+1 GUIDE project with unresolved read-only parameter file links, corrupted the project file and the project file could not be reopened. [P100001117]
- Fixed defects where Access violation errors occurred within the Screen Editor [P100001124, P100001136]
- Fixed defect in Screen Editor where errors occurred when the Area orders were changed [P100001160]

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## VERSION 3.0.3 (January 2007)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- NOTE: To access many of the new features it is necessary to update the Hardware HWD files. These can be downloaded from the Sauer-Danfoss website.
- NOTE: Please review the relevant section of the manual for further details of the new features added to the PLUS+1 GUIDE program in this release.
- Over 30 new components are included in this version of the PLUS+1 GUIDE program. These include:
  - A Family of Switch Components so any number of inputs from 2 to 16 can be selected.
  - Rounded and Modulo Divide Arithmetic components with Capped and Uncapped varieties.
  - The Modules Connection components have been extended to include Bus connections.
  - A Family of Password Components that also control the access level. See User Manual for further details of this powerful new feature.
  - A Family of Components to support Read Only Parameter files.
- The Graphical User Interface of the PLUS+1 GUIDE program has been updated with new toolbars, icons and menus.
- Application Logging has been added. This allows the Application to log data to memory that can be subsequently downloaded by the Service Tool (requires hardware that supports this new feature).
- Context sensitive help has been added for all the Components of the Component Selector and Menus. Thus, highlighting a component or a menu item and pressing F1 will open the User Manual at the correct section.
- A “Viewer” has been added. This allows any graphic source file to be viewed by right-clicking it in the Project Manager. It is possible to navigate in the viewer in the normal way and export blocks of data from the viewer. Multiple Viewers may be open at one time, giving multiple views of the same source file if required.
- The Screen Editor now supports the import of fonts. Thus, fonts created or licensed by the user can be imported into the PLUS+1 GUIDE program and used in the screen editor. This includes Arabic, Cyrillic and Asian fonts.
- The Screen Editor allows import of several new image file formats including JPEG, TIF, and GIF.
- The Screen Editor now supports Image and Text Lists. Simple animation can now be supported together with the conversion of a number into a text string from a list of strings.
- Read-Only Parameter files are now supported. This allows read-only constant files to be created and downloaded separately from the application. This feature has many useful implementations, see the User Manual for further details.
- The compile process is now displayed in a single pop-up window.

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- The memory consumption statistics provided for the Controllers after the compile process in the Compile Message Tab has been extended to Displays.
  - The method of storing data for the PLUS+1 GUIDE Service Tool program has been changed so, in most Applications, additional memory is available. When extended diagnostic information is required it can now be accommodated by this new method.

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## **VERSION 2.2.7 (September 2006)**

### **What is Fixed**

- The Component Inspector of the Screen Editor allows properties to be changed without generating errors [CQ P100000932, P100000934, P100000942].
- When leaving Modules with large file sizes on PCs with restricted memory, the data is correctly stored [CQ P100000937].
- In some cases, use of the File/Open Recent projects left the existing project open. This has been corrected [CQ P100000945].

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## VERSION 2.2.6 (June 2006)

### What is Fixed

- In some cases it was not possible to drag a Function Block onto the drawing area after a compile. This defect has been corrected and the Project Manager Tree is left as it was before the compile began [CQ P100000904, P100000884].
- In some cases the names of NV symbols produced an incorrect compile error. This has been corrected [CQ P100000905].
- The Text Editor Preview displays text correctly regardless of the background colour chosen [CQ P100000910].
- The Undo Function has been updated to support Text strings that contain a data value correctly [CQ P100000911].
- PLUS+1 Compliances HWD Files are now installed in the correct locations in the Tree of the Hardware Tab [CQ P100000907].
- The init connect symbol does not terminate the compile process when it is connected to type ARRAY[259]U8 [CQ P100000912].
- In some cases the memory optimization of Arrays did not work correctly, including the use of the Array Set Component. This has been corrected [CQ P100000919, P100000926].
- It is now possible to connect a checkpoint directly to the output of a CAN Symbol [CQ P100000921].
- The Screen Editor value for clBlack was incorrect (\$01010100), this has been updated to black [CQ P100000924].

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## VERSION 2.2.5 (May 2006)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- NOTE: Data relating to the GUIDE Service Tool has been moved to a separate GUIDE Service Tool Readme file.
- NOTE: To access some of the new features it is necessary to update the Hardware HWD files. These can be downloaded from the Sauer-Danfoss Website when they are available.
- The Hardware Tab of the Component Selector has been significantly enhanced and now supports multiple levels of folders and hardware. This update is specifically targeted as the support of Sauer-Danfoss PLUS+1 Compliant products.
- The Hardware Tab now includes a search function that allows parts to be found by keyword and part numbers. It is possible to collapse the whole tree with a single click. "Next"/"Previous" navigation keys are also provided.
- A "My Blocks" Tab has been added to the Component Selector. This allows the user to create blocks to be sorted, stored and shared. It is also possible to send complete sections of "My Blocks" to other users using file-zipping tools.
- The Component Inspector pop ups have been extended to the "Hardware" and "My Blocks" Tabs.
- The GUIDE Compiler has been enhanced to significantly reduce the amount of RAM consumed with Arrays.
- The Encode symbol supports conversion of up to 8 bytes of U8 or S8 to an Array, and the Decode symbol supports conversion from Array to U8.
- An online context sensitive windows Help file is now included in addition to the pdf Manual.
- It is now possible to update a Display Application using one type of screen to an Application using a different screen type.
- The operation of the Pop Up Editor has been refined and enhanced, for example it is now possible to enter values before entering the type.
- GUIDE now opens much faster than in previous version.
- This version of GUIDE support Application Hardware and Software Personalities and Application Blocks using the hardware's property: "Target Part Number" in the Inspector tab.
- A bug report facility has been added to GUIDE to make bug reporting easier and more comprehensive including a facility that allows keystroke and operations to be logged.

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## What is Fixed

- In some conditions Application Files were not saved or memory problems at the beginning of the compile process or generate exception errors were reported when handling file data. These issues have been resolved [CQ P10000065, P100000261, P100000340, P100000413, P100000496, P100000529, P100000681, P100000547, P100000575, P100000727, P100000748]
- In some conditions Access violation errors when opening or closing projects appeared. These issues have been resolved [CQ P100000767].
- A problem when using the constant cBlack in Display applications has been resolved. The constant is redefined so it will show Black in Sauer-Danfoss Displays [CQ P100000754, P100000488, P100000477 ].
- In some cases the names of the wire were displayed in error. This has been corrected [CQ P100000127, P100000573].
- It is possible to add a Module that is already in the project directory [CQ P100000250].
- Cut and Paste in the Screen Editor works correct when used from the menu and toolbar [CQ P100000307].
- Setting images with the transparent property now works [CQ P100000328].
- Changing the names of images in the Screen Editor now behaves as anticipated [CQ P100000422].
- Operation of the toolbar when resizing the screen is improved [CQ P100000434].
- Issues with the Pop Up Query Window displaying a list of data have been resolved [CQ P100000587]
- When undo is active other operations are prohibited to ensure incorrect operations do not occur [CQ P100000598].
- Double clicking a P1P file in windows now launches GUIDE and opens the project correctly [CQ P100000600].
- The operation of the pop up panels on the side of the screen has been refined [CQ P100000661].
- Copy and paste of images in the Screen Editor now works correctly [CQ P100000667].
- Operation of toolbar functions has been enhanced [CQ P100000680].
- Drag and drop operation the screen editor has been enhanced to make it easier to drop at the desired location [CQ P100000684, P100000481].
- Hourglass is sometimes displayed when all operations are completed. This has been corrected [CQ P100000688]
- Display of extended characters in the screen editor has been reviewed. All characters with ASCII code below 32 (except 8, 10 and 13) have been removed [CQ P100000713]
- Un install screens have been changed so all data can be displayed [CQ P100000720].
- Turning the grid on and off has an immediate effect [CQ P100000728]



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- Operation of keystrokes Ctrl-O and Ctrl-N have been made consistent [CQ P100000512]
  - Operation of the Page Navigator now works in the Screen Editor [CQ P100000416]
  - Operation of the lists in the Screen Editor have been improved when expanding and collapsing them [CQ P100000525]
  - It is possible to enter a “d” or “D” to disable a checkpoint or NV Symbol form diagnostic access [CQ P100000705].
  - It is possible to delete a namespace and make it blank after it has been added [CQ P100000733].
  - Top View editor is now disabled when in the Screen Editor editing text or images [CQ P100000735].
  - The License Manager is disabled when in the Screen Editor [CQ P100000745].
  - Error reporting of invalid Page Port names have been improved [CQ P100000431, [CQ P100000432].
  - Operation and behavior of the Pop Up menus has been improved and enhanced [CQ P100000466, P100000761].
  - Several compiler issues and refinements have been made to make the compile process more robust [CQ P100000601, P100000751, P100000760, P100000762, ].
  - An error is generated if a Null constant is used as a connection to a checkpoint [CQ P100000616].
  - The GUI text entry editor correctly tests for an array with 0 elements [CQ P100000630].
  - The Hardware BIO Symbols has been resized to be consistent with other symbols, other symbols have been reviewed and now align with the standard grid [CQ P100000657, P100000747].
  - The operation of the Shift Left Symbol (AF\_SHL) has been corrected. Previously with a U8 output data type some bits were incorrectly shifted resulting in a result larger than the U8 limit [CQ P100000703].
  - Errors reporting associated with connections to an INIT BIOS symbol have been improved, particularly when no connection is present [CQ P100000722].
  - If GUIDE is used with a demo license and a project opened, then the P1P file will not be deleted [CQ P100000739].
  - Text Color issues between the DP6xx and the preview in GUIDE has been aligned so text does not “disappear” [CQ P100000750]
  - Zooming in and out of the screen editor could in some instances move objects. This has been corrected [CQ P100000772].
  - The screen editor now validates extended characters. Previous versions did not and this could lead to data corruption [CQ P100000775].
  - It was possible to have two Set symbols (IC\_SET) with the same name but of a different type. This has been corrected and will generate a compile error [CQ P100000776].

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- When GUIDE was processing other commands clicking the icon toolbar sometimes did not result in the action being carried out. This has been reviewed so icons are only available when actions can be executed [CQ P100000780].
  - COS and SIN calculations for U32 inputs which should result in a negative result now do so. Also an input of -2147483648 for Controllers which resulted in an error of approximately 1/10,000 been corrected [CQ P100000781]
  - The alias names on EEPROM locations have been made more robust [CQ P100000788].

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## **VERSION 2.1.3 (November 2005)**

### **What is Fixed**

- The SWITCH16 Symbols works correctly when switching arrays [CQ P100000730].
- Deleting Images from the Screen Editor's Image Register deletes only the file selected, not the whole folder [CQ P100000693].
- It is possible to connect Capped Symbols to BIOS connections without generating compiler errors [CQ P100000731, P100000679].

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## VERSION 2.1.2 (September 2005)

### New Features and Functionality (see the GUIDE User Manual for more detailed information)

- NOTE: To access many of the new features it is necessary to update the Hardware HWD files. These can be downloaded from the Sauer Danfoss Website.
- Over 30 new symbols are included in this version of GUIDE. These include:
  - A Family of CAN symbols implementing virtual mailboxes.
  - A Family of Array symbols to allow array data to be manipulated.
  - A Family of Non Volatile symbols.
  - A Family of “capped” symbols so data does not overflow or underflow in calculations.
  - A Family of User Compiler Error symbols.
  - A Family of User defined Compiler Error symbols.
- The operation of the Symbols Tab in the Component Inspector has been significantly enhanced:
  - The cursor is moved the branches of the tree open automatically and where components have options these are presented.
  - Symbols with multiple configurations like “compare” has been radically extended and can now be selected directly before a symbol is placed on the drawing.
- The Hardware tab of the Component Inspector now contains a preview window for the Hardware selected.
- It is now possible to install HWD files for IO Modules and other Plus 1 Compliant Hardware and drag and drop them into an application.
- “Namespace” has been added. This provides an automatic prefix to alias names for example names with Checkpoints. Thus checkpoints can be placed in a page, the page copied and pasted, and by using the “Namespace” in a page’s properties, each checkpoint can be uniquely accessed.
- The range of Security Access Levels has been extended to include “D”, which inhibits access from the Service Tool. Thus is it possible to construct secure passwords within an application.
- The Setup > Options screen has been extended and enhanced to include options not only for the Screen Editor but also the Component Inspect.
- P1P and P1X files are now associated with GUIDE in the Windows registry and will open GUIDE directly from Explorer.
- It is possible to install and uninstall GUIDE and the GUIDE Service tool independently. [CQ P100000553]
- When using newer HWD files, compilations that have been successfully completed will show memory used for the Application in the Compile Messages Tab at the bottom of the screen [CQ P100000632].
- Using the CTRL key it is possible to select multiple objects. Once selected, it is possible to move the objects or edit the common properties collectively.

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- Images and Text strings are shown in a preview window similar to the symbols tab.
  - Scroll bars have been added to the Screen Editor to allow the screen to be panned [CQ P100000419]
  - It is possible to export text from the Screen Editor, so it can be translated, and the modified text then imported back into the Screen Editor of an application.
  - Image selection has been improved, so it is possible to select an image even from the transparent part of an image.
  - When adding an image file the description is automatically complete as the files name, this can then be changed by the User.
  - The names used for properties and labels used in panel is much more descriptive of there function. The functionality remains the same in all instances.
  - Undo and Redo have been added to the Screen Editor. Multi line text strings can now be easily added by using the <CR> when entering text, (previously it was CTRL <CR>).
  - The right click menu of an object has been enhanced to include cut, copy and paste [CQ P100000479]
  - Right clicking on an object will cause the properties to be displayed, but will not move the object.

### **What is Fixed**

- The pop up menus of the Component Inspector are disabled when the GUIDE is not the active application.
- The Time data type is correctly validated for all symbols so errors cannot be generated [CQ P100000574].
- It is possible to change an application from one display to another. For example a DP600 application to a DP620 or DP610. This is achieved by removing the link to the Port Name of the display, see manual for further details [CQ P100000551].
- The Compare Symbol behaves as expected when it is changed to different types [CQ P100000557].
- HWD Function Blocks can now be correctly inserted into GUIDE [CQ p100000569].
- Modules can be named by the user as desired. It is not necessary to use the default settings of Module1, Module2 etc. [CQ100000572].
- The Switch Symbols now work correctly with Arrays [CQ P100000591].
- The Receive CAN with ID Mask symbol now behaves correctly when the ID is connected to a variable [CQ P100000619].
- When quotation marks are used in the text of the Screen Editor error messages are reported corrected, ANSI C Syntax should be used to insert quotation mark [CQ P100000620].
- Applications using large arrays will work with the Service Tool [CQ P100000621].
- Arrays now work correctly with the Connect Symbol [CQ P100000624].

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- The Get Array Symbol behaves correctly when incorrect indexes are used [CQ P100000625].
  - The NV Symbols behaves correctly when the Alias name is changed [CQ P100000626].
  - The Memory Used display in the Compile Messages Tab now reports the correct results [CQ P100000632].
  - BIOS “CAN Buffers” supported Overrun in the new Library [CQ P100000634]
  - When copying a language in the Screen Editor it behaves correctly [CQ P100000635].
  - Moving backward and forward in the Screen Editor Define Page is now directionally correct. [CQ P100000639].
  - Applications created in 2.0.x will compile in 2.1.2 in all but the most exceptional cases (small amounts of additional memory are required to the defect fixes of some symbols) [CQ P100000641].
  - The Switch symbols are now able to switch colour types [CQ P100000642].
  - The compiler reports duplicate Alias names correctly [CQ P100000644].
  - All transition symbols are available from the pop up query menu once they are placed on the drawing [CQ P100000653].

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## **VERSION 2.1.1 (July 2005)**

### **What is Fixed**

- The GUIDE Compile function now works consistently for applications [CQ P100000566, P100000576].
- LHX Files are produced correctly and the “INTERNAL: UNKNOWN KEY VALUE” error report from the Service Tool is fixed [P100000581]
- Component “Find Array” corrected regarding data types on input and output
- Component “Loop Counter with Carry” fixed regarding; Outputs always static in corrected version [CQ P100000583]

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## VERSION 2.1.0 (June 2005)

### What is Fixed

- The shift right component operates consistently for all data types when truncating data [CQ P100000533]
- New Symbols can be used in old application where the hardware supports them, for example the Compare symbol. (CQ P100000377).
- The User can determine the number of lines the Menu Toolbar will use [CQ P100000225]
- GUIDE will compile projects in all cases where errors do not exist [CQ P100000483]
- Files that are write protected behave as expected including those in MS-Visual-Source-Safe with meaningful warnings from GUIDE [CQ P100000521]
- File compression of p1p files works in all cases [CQ P100000405]
- Module names can be longer than 16 characters, even when the scale symbol is used [CQ P100000505]
- The compile tests that alias names are unique in all instances [CQ P100000538]
- When updating to different EQ symbols the symbol behaves as expected [CQ P100000377]
- Clicking F1 opens the GUIDE Manual. A new chapter has been added with further details about the use and operation of the Screen Editor.
- It is possible to rename the screen areas without losing the object on them [CQ P100000478]
- The Image register does not allow an image file with the same name to be added twice to a project [CQ P100000500]
- The insertion point of images is always shown in the same way using EntryX/ValueX, EntryY/ValueY [CQ P100000441].
- Text is displayed correctly in the preview mode, even when placed on a dark background (CQ P100000484).
- The operation of the cursor keys has been corrected so they do not move objects when they should not (CQ P100000457).
- Fast operation when dragging and dropping images or text is now supported (CA P100000470).
- The maximum number of screens in an application is now limited only by memory space The maximum number of images in a project is now limited only by memory space. Deleting text from the Text Editor also removes it from the screen [CQ P100000476].
- When a screen area is renamed the objects associated with the screen area are retained [CQ P100000478].
- An image must have a description before it is possible to save an image [CQ P100000417].
- Images are correctly rotated in the preview screen [CQ P100000442, P100000459, P100000495].
- The Graphic editor keyboard commands are disabled in the Screen Editor [CQ P100000457, P100000425, P100000418].



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- The Image Register now ensures only a single instance of an image with the same file name is present in the register [CQ P100000500].
  - The manual has been extensively updated to provide detailed use of the screen editor [CQ P100000312].
  - The positioning and selecting of objects has been made more precise with “intelligent” control of mouse movement [CQ P100000414];
  - The insert point of images is always displayed even after the screen is minimized and restored [CQ P100000441];
  - The Transparent setting is disabled when it does not perform a function [CQ P100000469].
  - When exiting the Screen Editor it behaves as expected and does not start a compile [CQ P100000427].

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## **VERSION 2.0.4 (March 2005)**

### **What is Fixed**

- The compile speed on some PCs types was extended this has been corrected. [CQ P100000464].

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## VERSION 2.0.3 (February 2005)

### **New Features and Functionality (see the GUIDE User Manual for more detailed information)**

- The installation process automatically removes the previous installation of GUIDE, with the user's confirmation.
- GUIDE Libraries and Hardware Files (HWD) are no longer supplied with GUIDE, they should be downloaded from the website as required. A demonstration library and hardware file is included. These files should be uninstalled when not required. They cannot be used in "real" applications on real hardware.
- The Compile operation has been enhanced to improve the compile speed. It is now 40 times faster than the previously released version of GUIDE.  
New symbols have been added to the GUIDE. These include: Module Bus Input, Module Bus Output (allowing Buses to be passed between modules instead of individual wires), Value Initialization, Set Value, Compare (which has 6 options), and may more.
- A preview for the Function Blocks has been added.
- GUIDE now automatically opens with the last project loaded, if it was not compressed to a p1p file.