
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. The Free 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.

Free License

A Free license can be requested using the automated sequence from the License Manager dialog. The Free license provides basic functionality for developing PLUS+1 GUIDE and PLUS+1 Service Tool applications and has no expiration date.

License Support

For general license related question, send an email to:

plus1license@danfoss.com

To create a PLUS+1 Helpdesk case, use this link:

<https://danfoss.secure.force.com/dpscustomersupport/? Product=license>

System requirements

	Service Tool Minimum	GUIDE Minimum	GUIDE/Service Tool Recommended	Update Center Minimum
CPU*	64-bit (x64), 4 cores, 2018 or later			
OS	Windows 11			
UAC	Local Administrator Access is needed only for installation of the tools, not for running them			
RAM	4 GB		16 GB	4 GB
HD	>10 GB Free, HDD		>10 GB Free, SSD	>10 GB Free, HDD
Resolution	1280 x 1024		1920 x 1080	1280 x 1024
Email	For license registration			
WebView2 runtime	Remote Interlink	N/A	Remote Interlink	For login

* The CPU should be intended for at least laptop use. Processors designed for netbooks, tablets or similar are not recommended. When running multiple Service Tool instances, it is required to have at least one CPU kernel per instance.

Version 2025.1

2025.1.2 (March 2025)

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

[P1TOOL-2709] **Feature:** Support for PLUS+1 UDS diagnostic protocol (W00007)
- PLUS+1 UDS supports 10 Security Levels (0..9) that may be used in application mode to control access to parameters.
- A Programming Key is required to download an application to an ECU using PLUS+1 UDS.
- Parameter Overview dialog include an option to export to a diagnostic data file for KWP2000/UDS protocol in PLUS+1 Service Tool (JSON) [P1TOOL-2164].
NOTE: This feature requires HWD support.

[P1TOOL-11930] **Feature Extension:** P1TOOL-11930 Improved Qt module support 2
- The following Qt modules are now supported in the GUIDE debugger:

- Qt 5 Compatibility APIs: Graphical Effects
- Qt Quick
- Qt Quick Local Storage
- Qt Quick Particles
- Qt SVG
- Qt WebChannel
- Qt WebSockets

[P1TOOL-12138] **Feature Extension:** Debugger enabled by Free license
- It is now possible to run the debugger while using the Free license.

What is Fixed

[P100007374] Parameters in screen definitions, called from within a page structure with name space, could cause the application to crash.

[P100007177] A specific ordering of graphical PLC code failed to compile with an unhelpful error message.

[P100007258] Improved error message when two or more NV signals map to the same NV memory cell.

[P100007261] Empty string constants were not supported in Vector-Based Screen Editor.

[P100007278] GUIDE crashed when adding and entering a screen definition in an application where the HWD did not support VBSE.

[P100007293] When having multiple NV parameters in linked pages with the same names (except for character case), an unclear compiler error would be presented.

[P100007297]	It was not possible to use the Educational license.
[P100007312]	No clear error message was shown during compilation when having duplicate NV parameters.
[P100007321]	In some cases, content from locked pages appeared in search results.
[P100007328]	In some cases, no search results were found in read-only pages within disabled pages.
[P100007336]	A compilation results file was saved as ANSI instead of UTF-8, which could lead to problems when not using English as the presentation language in Windows.
[P100007348]	If multiple signals with the same name (except for character case) were present in the same bus, the connect-to-bus dialog would only list one of them.
[P100007343]	FMU simulation could crash if no CAN port was defined for a transmitted message.
[P100007352]	When debugging an application with multiple Loop Input signals with the same names (except for character case), only one of each signal would be present in the Loop Inputs list.
[P100007356]	GUIDE debugger could crash if the CAN port of a CAN component was undefined.
[P100007028]	There was no information about the access level "D" in the GUIDE user manual.
[P100007203]	Display area was not clipped in GUIDE debug viewer.
[P100007214]	When debugging, Multi-dimensional array values were not visible in the PLC Editor.
[P100007257]	No warning message was shown during compilation when using ARRAY OF STRING variables in the RETAIN section of a POU. (Note: if used, those variables will be treated as regular local variables).
[P100007260]	Guide debugger crashed in some cases when the debugged application was a display application using texts. (P100007345, P100007354)
[P100007267]	Screen definition was not hidden in GUIDE debugger when enable signal is set to "FALSE" for the concerned "Show Screen" component.
[P100007276]	SCS modules with multiple consecutive spaces in their file names would lead to unclear compilation errors. Now a warning is shown when opening such a project, and it is no longer possible to name such files with multiple spaces.
[P100007287]	Issues using tab key in the Component Query dialog have been fixed.
[P100007288]	Issues using arrow keys in the Component Query dialog have been fixed.
[P100007289]	GUIDE debugger occasionally gave segmentation fault errors when debugging GUIDE applications using ROP.
[P100007292]	Issues using Ctrl+LeftMouse keys in the PLC code editor to navigate to the definition of a clicked POU identifier have been fixed.

[P100007295]	The debugger did not correctly handle when a float value was INF.
[P100007305]	It was not possible to copy and paste a text list in Vector-Based Screen Editor.
[P100007308]	Property CheckTextLength did not apply to text lists in Vector-Based Screen Editor.
[P100007322]	A text selection made before collapsing a code region remained with a selected look until another text selection was made.
[P100007325]	In the PLC Editor, if smart tabs are enabled, when using backspace directly after tab, the wrong number of characters were sometimes removed.
[P100007338]	When clicking on the last visible item in the connect-to-bus list, the list previously scrolled up, potentially leading to misclicks when double-clicking.
[P100007368]	After running and stopping the GUIDE debugger, it was not possible to delete the folder containing the debugged application, if PLUS+1 Virtual CAN Gateway was still running.
[P100007160]	Windows appeared outside the monitor area in certain situations.
[P100007323]	The PLC standard code block samples that can be drag-n-dropped into the editor are now more in line with the coding guidelines.
[#1372280]	There was an incorrect hint displayed in some cases to make FUNCTION_BLOCK variables private. (Note: FUNCTION_BLOCK variables are private by default).

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 Components with typed outputs (e.g. Hardware Input Typed), or 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 applog” and “Module Bus Input” to the input bus of the “Module Bus Output” component, or to the input bus of one of the aforementioned components, only the signals that are actually connected in that module will be available in the module bus. (P100002771).
Workaround: Use dedicated buses for these components. Do not connect them 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 SRD format, GUIDE version 2022.4 and earlier will not open P1X files with screen repository saved with GUIDE version 2023.1 and later.
Recommendation: Always back up project files before opening them in a new version of the tool.
- Due to new features affecting the ESD format, GUIDE version 2022.1 and earlier will not import ESD files exported with GUIDE version 2022.2 and later.
Recommendation: Always back up project files before opening them in a new version of the tool.
- Due to new features affecting the P1X format, GUIDE version 2023.1 and earlier will not open P1X files saved with GUIDE version 2023.2 and later.
Recommendation: Always back up project files before opening them in a new version of the tool.
- Due to new features affecting the SCS format, GUIDE version 2023.3 and earlier will not open SCS files saved with GUIDE version 2024.1 and later.
Recommendation: Always back up project files before opening them in a new version of the tool.

Table of common GUIDE related file formats in different versions of the tool.

- Bold text style indicates a breaking change introduced in that version, earlier versions of GUIDE cannot read.

- Normal text style indicates that the format was updated in a way that is backwards compatible, but some information may not be used when opened in an earlier version, and saving such files in older versions can lead to loss of such data.
- An empty cell means that the file format remains unchanged since the GUIDE version before.

GUIDE Version	Project file (P1X)	Drawing file (SCS)	Screen Repository Data (SRD)	Export Library Data (ELD)	Export Screen Definitions (ESD)	CCP Interface description (IDL)	PLC open (XML)	Parameter Overview (JSON)
2025.1	008D					013A		
2024.4								
2024.3	008C							
2024.2	008B							
2024.1		29				012A	001F	
2023.3								
2023.2	008A		006B		004B	011A	001E	003A
2023.1			006A			010A	001D	
2022.4								
2022.3	007D							
2022.2			005A		004A			
2022.1								
2021.2	007C		004F		003B			
2021.1								002A
12.2	007A	1.17						001A
12.1	006E							
12.0								
11.1			004E					
11.0	006D		004D					
10.1	006C		004C			009A		
10.0	006B		004B			008A	001C	
9.1			004A		003A		001B	
9.0	006A		002A	002A	002A		001A	
8.1								
8.0								
7.2	005C							
7.1						007A		
7.0	005B	1.16		001A	001A	006A		
6.1		1.15				005A		
6.0	005A		001A			004A		

• Output File Formats

Table of common GUIDE related output file formats in different versions of the tool.

- Bold text style indicates a breaking change introduced in that version, earlier versions of GUIDE/Service Tool cannot read.
- Normal text style indicates that the format was updated in a way that is backwards compatible, but some information may not be used when opened in an earlier version, and saving such files in older versions can lead to loss of such data.
- An empty cell means that the file format remains unchanged since the GUIDE version before.

GUIDE Version	Downloadable file (P1LHX)	Downloadable file for PLUS+1 UDS (P1LHX)
2025.1		002A
2024.4		
2024.3		
2024.2		
2024.1	001A	

- **OS C APIs when compiling for non-target environments**

When compiling for non-target environments, such as the Debugger, Test Tool, or FMU, specific OS C APIs may not be implemented in the used PLUS+1 GUIDE version. If an API is not implemented, the compiler will use header files containing stub functions in place of the original API header files to ensure successful compilation.

Table of implemented OS C APIs for non-target environments in different versions of the tool.

- Bold text style indicates a breaking change introduced in that API version, which earlier versions of GUIDE cannot use.
- Normal text style indicates that the API was updated in a way that is backwards compatible, but some functions may not be used in an earlier version of GUIDE.
- An empty cell means that the API version remains unchanged and can be used in an earlier version of GUIDE.

GUIDE Version	PLUS+1 Types
2025.1	
2024.4	
2024.3	1.0

- **OS and other environment considerations**

- Old TI compiler 5.2.5 occasionally has problems with extremely long compile times. This is no longer an issue when using newer TI compilers (6.4.9 and newer).
Recommendation: Update old projects to use HWD files designed for TI compilers newer than version 5.2.5.

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- 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.

- Projects put in the Download folder (or similar special folders) might not compile successfully depending on IT policies (P100004993).

Workaround: Use another folder.

- If you are experiencing problems accessing network locations, then please make sure you are not running as admin.

- 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.)

• Installation

- The user must exit GUIDE to install/uninstall other GUIDE versions.

Recommendation: Close all open programs before installing 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.

- 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.
- If a GUIDE project (P1X) contains files with a file size exceeding 250MB, then packing to P1P will not be possible.
- 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.
- 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.

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- 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. As a result, some languages (such as Arabic) will not be rendered correctly.
 - 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.
 - It is not possible to add a single code point in the range 0x80..0xFF to the code point set. A workaround for this is to add the entire range 0x80..0xFF. This range is a subset of the predefined Latin code point set.
 - Editing texts in Classic Screen Editor may be slow if the currently open screen page has many texts or signals. Workaround: Enter a screen page with few texts and signals before editing texts. [P100005481]

- **Test Tool**

- 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.
- 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.

- **Debugger**

- Anti-aliased fonts will be rendered as regular fonts in the system under test viewer.

- **PLC Code Editor**

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- 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.

- MC0xx-0xx units do not fully support the LREAL (also called F64 and double depending on language used) data type. The range and resolution is the same as the REAL (F32/float) data type. Comparing with INF and NaN will not work correctly with this data type on MC0xx-0xx units.

Workaround: Do not use LREAL data type on MC0xx-0xx units.

• **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.

• **Compare SCS**

- Pages that has content difference only in a sub-page are not necessarily displayed as having a content difference in the cad area. The tree view still shows a content difference.

• **User Interface**

- Sometimes no action is triggered when for example a menu item is clicked. (P100005767)

Workaround is to click it once more if this happens.

• **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.

• **Qt Support**

To build Qt applications, GUIDE must support the Qt version supported by the HWD. A Qt version is supported if the major version numbers match, and the minor version number in GUIDE is greater than or equal to the minor version number in the HWD.

Table of Qt versions supported by GUIDE.

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- An asterisk means that the Qt version is supported.
 - An empty cell means that the Qt version is not supported.

GUIDE Version	Qt 6.5
2025.1	*
2024.4	*
2024.3	*
2024.2	*

Product Support on the Web

For technical support, submit a ticket at the PLUS+1 Helpdesk support page:

<https://danfoss.secure.force.com/dpscusersupport/>

You can submit both defects and enhancement requests.

PLUS+1 Forum:

<http://www.plus1forum.danfoss.com/index.php>

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Previous Release Notes

Release notes dating back to 2.0.3 follow:

Version 2024.4

2024.4.3 (December 2024)

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

[P1TOOL-11166] **Information:** PLUS+1 licenses re-package

- It is no longer possible to request and use a Trial license.
- The Express license has been replaced by the Free license. It enables the same functionality as before but without a time limit.
- GUIDE functions that previously required the FuncSafety add-on license are now enabled by the Professional license:

- Project View
- Test Tool
- Compare SCS
- Dependency View
- SIL2 Compilation
- Traceability Properties
- Static Analyzer
- Generate FMU

[#1491179] **Information:** The License Manager is now a standalone executable part of the PLUS+1 Base installation. Included in this work is also some fixes related to themes [P100006966] and localization.

What is Fixed

[P100007114] In some cases, test code generation incorrectly failed with error code 21 when generating test code from a referenced page.

[P100007215] Some bitmap images were not handled correctly in the GUIDE screen editors.

[P100007233] When creating a folder for a new project, the operation of editing the name of the new folder could be interrupted.

[P100007253] NV arrays of base types with 32 or more bits did not work correctly with some NV components.

[P100007261] A compilation error link into a VBSE page did not open the VBSE page if further error details than the page itself were missing.

[P100007200] Monochrome images in Vector-Based Screen Editor were sometimes not rendered on the display.

[P100007223]	It was not possible to edit a text data value of string type in Vector-Based Screen Editor if it had been edited before and an undo had been performed.
[P100007231]	No informative error message was displayed when attempting to generate an FMU from the command line and no FMU export options were available.
[P100007235]	The incorrect button was focused as default in the 'Edit Image' dialog in the Vector-Based Screen Editor.
[P100007236]	It was not possible to build an FMU from a sub-page when a POU in the application called a CCP but that CCP was not called in the sub-page.
[P100007250]	In the Connect-to-bus dialog, some Undriven signals could incorrectly be shown as Driven.
[P100007255]	Some OS signals were erroneously cleared before first loop was run when using GUIDE debugger.
[P100006330]	The error message shown when opening a project containing an SRD file with an unsupported file format was unclear.
[P100007182]	In some cases, irrelevant warning messages were shown during FMU generation.
[P100007202]	Application Id properties automatically lost focus after editing each field in the inspector window
[P100007241]	It was not clear how to access the Windows shell sub menu in some cases.
[P100007265]	The inspector did not show the Page properties for the current page when clicking on the page again after using the inspector to change for example Component properties.

Version 2024.3.5

2024.3.5 (November 2024)

What is Fixed

[P100007217] Due to a third party update, Error/Warning/Hint links no longer worked without manually editing them first, and/or opening the generated HTML output file in Firefox.

Version 2024.3

2024.3.4 (October 2024)

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

- [P1TOOL-2191] **Feature:** PLUS+1 OS GUIDE/C API
- It is now possible to utilize OS C APIs in GUIDE projects and function libraries. This is done by including associated API header files in C code files, or by making them accessible to PLC C code POU's.
- NOTE: OS C APIs are provided by the HWD if supported.
- [P1TOOL-11251] **Feature Extension:** P1TOOL-11251 - Improved Qt module support
- Support has been added for the following Qt modules when debugging a GUIDE application referencing a Qt QML Project:
- Qt Location
 - Qt Positioning
- [P1TOOL-10346] **Feature extension:** Updated User Interface
- Light and Dark themes updated to look correct in Windows 11.
 - The support for DPI settings other than 100% has been improved.
- [P1TOOL-10709] **For Evaluation:** Aarch64 C/C++ compiler.
- This compiler is not yet verified and should not be used to compile applications for production release.
- [P1TOOL-11317] **Information:** Remove Generate S-function
- It is no longer possible to compile Guide to Simulink S-Functions, FMU can be used instead.

What is Fixed

- [P100007137] In rare cases, signals in buses going through referenced pages were lost.
- [P100007143] In some cases, Compile Changed did not work when a screen definition contained diagnostics or NV memory. This also affected the debugger.
- [P100007150] If an NV array of U8, S8 or BOOL type was placed last in the NV memory, then writing to that array would cause runtime issues.
- [P100007198] It was possible to call POUs having multi-dimensional arrays in their I/Os directly from GUIDE code, potentially leading to array data being overwritten.
- [P100007053] It was not possible to edit a text box in GUIDE if it contained unsupported control characters.
- [P100007094] An incomprehensible error message was shown when a non-unicode font was used together with a unicode HWD in Classic Screen Editor.

[P100007110]	Under some circumstances, sub-buses in a screen definition did not appear in the Connect to Bus dialog in GUIDE.
[P100007121]	When debugging applications with linked pages, some nets showed the wrong values.
[P100007151]	In some cases when compiling in a separate build folder, an LHX file was generated but not automatically copied back to the project folder.
[P100007156]	When importing ESD files into Vector-Based Screen Editor, in some cases images would disappear if they were duplicates and “Keep existing” was selected.
[P100007169]	When opening a project with a missing SYS file, there could be unrelated error messages displayed.
[P100007171]	Library files manually placed in the Library folder were not automatically unpacked correctly.
[P100007175]	It was possible to build an application containing Call Named POU components in object pages, even though NV memory and diagnostics are not supported in that case.
[P100007197]	A widget with Propagate Touches set to false, that was located in a screen definition with Propagate Touches set to true, could prevent touches from being detected in lower screen definitions.
[P100005539]	Multi-target CCP files made with certain versions of 7z zip tool were not compatible with GUIDE. <i>(When targeting older GUIDE versions for your multi-target CCP, it is still a recommendation to use another zip tool.)</i>
[P100006519]	The debug visualizer did not render text with serifs correctly, resulting in texts being cut off occasionally.
[P100006883]	The Static Analyzer incorrectly flagged a vertical wire connection to the top pin of the Hardware Input/Output component as non-collinear.
[P100006911]	The Static Analyzer failed to execute when using the Array Constant from File component with no defined array size.
[P100007023]	It was possible in some cases to add CCP files with the same names as C files to a project.
[P100007085]	Sometimes the memory calculation text during compile could be output in an interleaved manner.
[P100007103]	Some irrelevant hints could be shown during compilation for PLC code used in libraries.
[P100007104]	The OK button in the Classic Screen Editor text editor was not always visible when display scale was set to 125%.
[P100007124]	Compilation took a longer time when the PLC/C Editor window was in minimized mode.

[P100007130]	SVN overlay icons were not visible in Project View, and in some cases an incorrect file was added by the commit command. (P100007131)
[P100007132]	Renaming a PLC file and moving POU's to it could result in POU calls in screen definitions getting incorrect source PLC units.
[P100007133]	Opening an old format P1P using an outdated HWD file, and then updating to the latest HWD, then finally immediately closing the project to P1P without saving changes could lead to an error message.
[P100007145]	Compilation failed when unnamed components called a CCP/POU containing NV parameters larger than 32 bits.
[P100007154]	Depending on the use order, some warnings about Initialize Hardware Output signals were not always printed out. Those warnings were also changed to hints in this case since the issue was partly in GUIDE before 2024.2, and partly remains in some HWDs, but is handled and not a user issue.
[P100007162]	For big SCS files, clicking on a search hit link in another SCS file than the currently open one could sometimes lead to the wrong page showing up as selected in the Page Navigator tree.
[P100007167]	Due to the absence of control character checks in the screen editors, corrupt project files could have resulted from invalid control characters in texts.
[P100007179]	Error handling for incorrect .qmlproject files has been improved.
[P100007188]	Debug compilation could fail when using a function library block with hidden POU dependencies.
[P100007196]	Percentage properties were not updated when pixel properties were set in Vector-Based Screen Editor.
[P100007168]	The column sort indicator was not shown in the Project View dialog after resizing.

Version 2024.2

2024.2.4 (June 2024)

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

- [P1TOOL-9938] **Feature:** Qt in PLUS+1
- It is now possible to include Qt graphics in PLUS+1 GUIDE applications.
NOTE: This feature requires HWD support.
- [P1TOOL-6053] **Feature extension:** Command Line Tool to set Page properties
- It is now possible to run commands to set page properties, export/import pages, update POU/XCLASS calls, install/uninstall SDLs, etc. (W01440). Use /? parameter to list supported commands.
- Internal tool "Create SDL" has been removed. (P100004976, P100006398)
- [P1TOOL-11117] **Feature extension:** Change url's to create support case from PLUS+1 Tools
- The URL for the PLUS+1 support form has been updated. Additionally, the "Product" field in the form will now be pre-filled.

What is Fixed

- [P100006772] VBB Emulator did not handle ECU reset ordered from Service tool properly.
- [P100006910] In some cases, it was not possible to generate an FMU from a page that had a namespace and contained NV parameters.
- [P100006944] In some cases, it was not possible to edit a screen definition.
- [P100006947] There were problems with losing indentations in multiline textbox when line was overflowed.(P100006948,P100006949)
- [P100006983] In some cases, it was not possible to generate an FMU from a module containing referenced pages because of how bus structures were handled internally.
- [P100006994] Due to optimizations made in P1TOOL-4701/W01642, when no User-POUs, or no Library-POUs remained to compile, compilation could fail when converting PLC code to C code. (P100006882, P100006998, P100007037)
- [P100006999] Some options (such as automatically generating P1D on compile) were not saved immediately on closing the options dialog, but instead saved later on program exit.
- [P100007007] Interface connected nets in referenced pages were shown without values when debugging.
- [P100007021] The CLI command -run-tests failed when running on a project where the module SCS files were not of the latest version.
- [P100007031] In some cases, the code generator would crash if there was no available NV memory.

[P100007039]	Some invalid combinations of input and output types were allowed on some NV components.
[P100007041]	Dual boot hex files were not present in the project folder after compilation in separate build folder.
[P100007063]	When using multiple Cloud Set Pulse components with the same name in different Namespaces, only the first signal was reset at the end of the program loop.
[P100007064]	The Potential User Issues section of these release notes have long stated that non-Latin characters are not supported in project paths, but previously GUIDE itself did not give any clear error message to the user when that was the case.
[P100007073]	GUIDE could hang during the compilation of a project where any NV parameter component type was not set from '?'.
[P100007095]	All images were occasionally not shown in the "Edit Image List" dialog.
[P100004007]	In the PLC/C Editor, "Replace All" in the Search/Replace dialog would only replace occurrences after the cursor's current location.(Similar issue with Search P100004025 was fixed in GUIDE 12.1)
[P100004911]	The microsecond counter did not provide the expected value when run under the debugger based on the current ExecTime value.
[P100005129]	In the GUIDE debugger, in some cases in linked pages, net values could display in the wrong position.
[P100005228]	"Save"-button in Test Case Manage was not properly documented.
[P100006171]	It was not possible to use trial licenses until start date.
[P100006409]	Wrong compiler flag sometimes used with some unreleased HWDs.
[P100006522]	Incorrect code for ROP files were generated when compiling for Test Tool
[P100006619]	TestTool did not include Ext and RTR in CAN message comparison.
[P100006713]	In the user manual, the description of the Receive CAN with Filter component was insufficient.
[P100006739]	It was possible to use Initialize Hardware Output on some HW signals that should only enable use with Hardware Output.
[P100006812]	It was possible to get an access violation message when deleting a test definition file.
[P100006837]	It was possible to get an error message when importing a previously removed test definition file in test tool.
[P100006928]	It was not possible to compile page B for test tool usage if you have following page structure: TOP->A-> B->C Page A contains a name space. Page C contains an NV parameter. Page B has a test definition.

[P100006967]	Data types of signals connected to a Show Screen component from a Call POU component were not detected correctly.
[P100006970]	It was not possible to use the keyboard for some datatypes when selecting the datatype of a VBSE interface signal.
[P100006972]	Repeat-until would time out prematurely when used in an FMU.
[P100006985]	NV and diagnostic global PLC variables did not show up in Service Tool when no POU of type FUNCTION_BLOCK was called.
[P100007010]	When debugging NV parameters of less than 16 bits, no values were displayed in the CAD area for associated nets.
[P100007020]	Certain areas of the tool did not scale correctly when using DPI settings other than 100%.
[P100007027]	An access violation error was shown when trying to change a Hardware Input component into a Hardware Input Typed component.
[P100007030]	In the user manual, the chapter Command Line Mode did not contain any information about FMU generation.
[P100007057]	If the Test Tool window was previously opened on a monitor that is no longer available, it could be unavailable when reopened.
[P100007059]	The CLI command -print-file-info did not support P1LHX files.
[P100007066]	It was not possible to add a widget from a widget library if there were no widgets at top level in the widget library.
[P100007083]	In some cases, the debug display was shown when debugging non-display units.
[P100007092]	It was sometimes not obvious whether a HWD was installed or not, because HWDs that were not readable with older GUIDE versions would not show up in the Hardware tree.
[P100006765]	Adding existing modules to a project would rename them even when not strictly necessary (no naming conflicts).
[P100006940]	The Cancel button in the search dialog was enabled at the wrong time.
[P100007000]	Error check on project with HWDs utilizing separate build folder failed always with internal error indication.
[P100007054]	The error message displayed when encountering a write-protected xclasses.xml file was insufficient.
[P100007091]	The TextBox editor occasionally made words, at end of line, invisible.

Version 2024.1.5

2024.1.5 (March 2024)

What is Fixed

- | | |
|--------------|--|
| [P100006980] | It was not possible to add renewal keys in License Manager. |
| [P100006987] | Applications used more ROM and RAM memory when the setting to automatically generate a P1D during compilation was set. |

Version 2024.1.4

2024.1.4 (February 2024)

What is Fixed

- | | |
|--------------|--|
| [P100006950] | Some fonts were incorrectly reported as missing. |
| [P100006939] | In some cases, an application containing images would not compile. |
| [P100006956] | NV memory writes did in some cases not take effect when using writeable GUIDE NV components. |

Version 2024.1

2024.1.3 (January 2024)

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

[P1TOOL-2393] **Feature:** Support for U64/S64/F64/F32 data types in non-volatile memory and Diagnostic components. (W00650)
Support for strings and arrays in non-volatile memory (W00026, W00046, W01529).
The Cloud component group is now available for being used also on hardware without Cloud support as long as the Cloud enable property is set to False (F), and now support the new types as well. (W01400).
Use the Cloud Set Value and Set Pulse components if you need Namespace support for Set Value or Set Pulse (W01409, W00037, W00440)
All Checkpoint components now support the string data type (W00638).
New types also supported as Module signals.
Access to the typed Hardware and Module input components has been restored in the Component Tab (W00254, W00129, P100006877).
If these new features are used, GUIDE will generate a P1LHX output file instead of an LHX file. (Requires a new Service Tool version to download.)

[P1TOOL-9084] **Feature extension:** Compiler Linaro v6.3 was updated to support C++ code.
(An updated HWD file is needed to take advantage of this feature.)

[P1TOOL-7348] **Feature extension:** A new node for Remote Controls hardware was added under Programmable HW.

[P100006885] **Information:** SCS files saved with GUIDE version 2024.1 cannot be opened in older versions of PLUS+1 Tools.

What is Fixed

[P100006856] Rounded Divide did not work as expected when it was located in an object page and connected to an Advanced Checkpoint with Namespace.

[P100006857] UP/Down Counter did not work as expected when it was located in an object page and connected to an Advanced Checkpoint with Namespace.

[P100006876] Fully transparent SVG images ended up as black on the display.

[P100006925] CAN messages were lost during FMU simulation when receiving through callbacks on multiple ports during the same program loop.

[P100006776] Unsaved changes in Vector-based Screen Editor or PLC/C Editor were not reflected in Parameter Overview.

[P100006800]	When creating an FMU with CAN database, an error message was incorrectly reported if a message name + signal name was equal to another message name + signal name.
[P100006827]	It was not possible to search for contents in a Read Only or Force Enabled page inside a page structure disabled by ViewLic.
[P100006858]	There were no scrollbars in the “Connected signals” dialog in Vector-based Screen Editor.
[P100006861]	Debugging by stepping in C code was not possible for projects using a separate build folder.
[P100006868]	In some cases when attempting to debug a project, the error message “Path is empty” was displayed instead.
[P100006869]	In some cases when there was a compilation error, the message “Path is empty” was displayed instead of the real compilation error.
[P100006874]	In projects using a separate build folder, it was not possible to open certain C files while debugging by double clicking on their names in the Callstack window.
[P100006892]	There could be an access violation when deleting a test case from the Project Manager.
[P100006893]	There was an access violation when deleting a duplicated watch in the debugger.
[P100006899]	In some cases, the error message for an unconnected input to a component would not be available in the Errors tab.
[P100006904]	Deleting a Global Range could raise an access violation.
[P100006912]	The old NV index ordering was initially used for newly created projects.
[P100006914]	CCPs with NV memory did not work for HWDs supporting separate build folder.
[P100006920]	Build time has been reduced.
[P100006927]	In some cases, when building very large applications while including hints in compiler result messages, GUIDE would shut down near the end of the build process.
[P100006930]	The option to suppress file format warnings for P1X and SCS file formats should not be inherited from one version of GUIDE to the next.
[P100006724]	Diagnostic variables declared in the PLC global variable interface were only visible in Service Tool when using the Call Named POU component, and if the variables were declared in the VAR_EXTERNAL section in the called POU. Now, diagnostic variables declared in the PLC global variable interface will be visible in Service Tool regardless if the Call Named POU or the Call POU component is used. They also do not have to be declared in the VAR_EXTERNAL section in the called POU.
[P100006813]	In Parameter Overview, the namespace was separated by an underscore instead of a dot for parameters originating from CCPs and POUs.

[P100006816]	Compiling a project without all necessary licenses from the command line could in some cases proceed further before failing in a more cryptic way than attempting the same in GUI mode.
[P100006818]	Code blocks for VAR_EXTERNAL did not collapse like for example VAR_INPUT and VAR_OUTPUT.
[P100006823]	Sub-pages of a page that is disabled by page property ViewLic were not always hidden as expected in Page Navigator.
[P100006825]	Some warning options for GUIDE graphical code were not available on the settings page for GUIDE graphical code warnings, but instead on the parent general warnings settings page.
[P100006828]	The scroll bar was insufficient for the Show Screen Query dialog when there were many screens to choose from.
[P100006832]	"REF_TO" and "reference to" were added to every autocomplete list in POU interface, regardless of the text on the left side of the cursor.
[P100006838]	On small screens with high DPI settings, the context menu could become too long to fit without scrolling. Especially when the project folder was in a location with many extra windows context menu options. This could lead to poor performance in selecting menus and sub-menus. This is now solved by placing the Windows Context menu items in its own sub-menu. Alternatively, hold down the Ctrl-key when first activating the context menu in the Project Manager to display only the Windows Shell menu items.
[P100006843]	The ordering of HWD groups could change when adding new HWDs with custom groups.
[P100006844]	Uninstalling the last HWD for a specific custom group does not remove the custom group.
[P100006846]	When compiling a project with several modules, one of which is missing a required license, the license error message was only shown briefly before automatically being hidden again.
[P100006849]	Multiline text editing sometimes added unwanted indents in TextBox.
[P100006862]	Texts containing format codes were displayed with an excessive width in Classic Screen Editor.
[P100006864]	Different versions of HWDs with libraries could be mixed up in the Hardware tree.
[P100006873]	In some cases, transparency did not work correctly in Vector-based Screen Editor.
[P100006880]	When one of the input pins of component "Read Array from Application Log" was selected while querying, the types for the output pins was automatically set to not valid selections in the Query dialog.
[P100006889]	Project folders were not cleaned up correctly.

[P100006897]	In some cases, screen objects in Vector-based Screen Editor would get an incorrect location.
[P100006900]	In some cases when trying to install a manually downloaded HWD file, that was damaged during download, did not give any understandable error message.
[P100006918]	When opening a GUIDE project containing PLC code, the PLCOpenXML file format was updated to the latest version even though no changes were made.
[P100006926]	Quick searching for physical product part number in the Hardware tree was not possible, and it was not clear how to trigger the advanced tree search (F3).
[P100005815]	The License Manager did not look correct when using DPI settings other than 100%.
[P100006906]	The context menu in the Page Navigator that shows a page's linked pages had some graphical glitches if it was long enough that scrolling the context menu was necessary.

Version 2023.3.4

2023.3.4 (October 2023)

What is Fixed

- [P100006845] It was not possible to build a GUIDE application containing a screen definition of the same name as a library widget.
- [P100006848] Some GUIDE applications could not be built if they were located on a network drive.

Version 2023.3

2023.3.3 (October 2023)

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

- [P1TOOL-1099] **Feature:** Separate Build Folder
- GUIDE applications will now be built in a separate, configurable folder structure.
- NOTE: This feature requires HWD support.
(W01002)
(P100005597)
- [P1TOOL-2530] **Feature extension:** FMU export - Instance pointer and multiple callbacks
- CAN callback functionality in generated FMUs has been replaced. New callback functionality supports multiple callbacks.
- [P1TOOL-4701] **Feature extension:** PLC2C compiler upgrades for v2023.3
- SFC POUs now support 2 new Action Qualifiers; Enter(E) and Exit(X).
 - The manual now contains detailed examples of all SFC qualifiers (W01583)
 - Optimization; POUs that are not used will now not be compiled (W01642)
 - VAR_OUPUTS are no longer modified by POU calls where the EN flag is FALSE.
 - A new built in function “flip_endianness” is provided to flip endianness for variables of 16 bits or more.
 - It is now possible to have self references to (REF_TO) the same struct or function_block type that is being defined.
 - Enhancements for auto-complete, VAR_EXTERNAL, and hints.

What is Fixed

- [P100006758] Checkpoints in object pages did not work if they were connected to the output of a Loop Counter or Loop Counter Level component.
- [P100006131] Compilation hung if the application contained an SVG image with a <text> element.
- [P100006707] When compiling an application after adding an existing module, compilation could fail with a message about invalid search database.
- [P100006729] In some cases, an external library translation could be overwritten.
- [P100006740] It was not possible to have a user defined C code file where the file name without extension was the same as the full name of another user defined C code file name in the project.
- [P100006747] Sometimes after editing a POU interface, an error message could be displayed on compile: “source code is not equivalent”.
- [P100006766] Compile changed did not work in some cases when using parameters in PLC.

[P100006773]	For some projects there could be an error message shown when compiling in GUI mode from command line with -keep-cli flag specified.
[P100006786]	The right side selector window could sometimes get stuck in a folded state.
[P100006790]	It was not possible to debug applications containing external kernel functions.
[P100006797]	It was not possible to compile applications containing function libraries with parameters in PLC function blocks.
[P100006589]	Links in the Error/Warning/Hint Messages tab did not work on some users' computers.
[P100006688]	Sometimes the compilation output was corrupted when using the CLI of PLUS+1 GUIDE.
[P100006730]	Deleting unused texts in External Library Translations did not always work.
[P100006731]	It was not possible to install common base documentation HWDs for hardware families in GUIDE 2023.2.4.
[P100006780]	Pressing enter when an item in the search result view was selected in GUIDE could cause an access violation.
[P100006794]	Widget property AllowResize did not work as intended if set to false while an instance had ScaleSize set to true and its parent was resized.
[P100006746]	The VAR_EXTERNAL keyword was not available in the code blocks tree nor in the autocomplete for FUNCTION type POU's.
[P100006789]	The components "Call Named POU" and "Show Named Screen" were not available in the searchable items list.
[P100006796]	When a screen definition was missing, there was no link in the error message.
[P100006804]	When replacing the fonts of a font list, only one font was replaced.

Version 2023.2.5

2023.2.5 (August 2023)

What is Fixed

- | | |
|--------------|--|
| [P100006743] | Having a custom boot logo image in combination with an application log lead to an error message when accessing the application log. |
| [P100006777] | An incorrect LHX file could be generated when compile changed was run after an NV index had been changed in Parameter Overview. |
| [P100006779] | Some projects containing PLC code did not compile successfully. |
| [P100006781] | An incorrect LHX file could be generated when compile changed was run and a POU containing NV parameters was called in one module while another (unmodified) module already contained such a call. |
| [P100006782] | It was not possible to select an application log definition at a Write Applog component. |
| [P100006752] | In some cases, images were rendered invisibly on the display. |

Version 2023.2

2023.2.4 (July 2023)

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

[P1TOOL-1017] **Feature:** C++ in GUIDE

- It is now possible to add C++ code files to a GUIDE project and work with them in a similar way as with C files.

- It is now possible to have C++ code files as part of a function library (SDL) file.

NOTE: This feature requires HWD support and the use of a C++ enabled compiler.

[P1TOOL-1292] **Feature extension:** Parameters and Checkpoints defined in CCP and POU code

- It is now possible to define Checkpoint, Set Pulse, and Set Value parameters in CCPs, via the new keywords `#_cp`, `#_sp`, and `#_sv`.

- It is now possible to define Checkpoint, Set Pulse, and Set Value parameters in POUs of type `FUNCTION_BLOCK`, via the new sections `VAR CHECKPOINT`, `VAR SET_PULSE`, and `VAR SET_VALUE`.

- It is now possible to define variables that are shared between instances of POUs by using the new attribute `SHARED`.

- It is now possible to define Checkpoint, Set Pulse and Set Value parameters in Global Variables, via the new sections `VAR_GLOBAL CHECKPOINT`, `VAR_GLOBAL SET_VALUE`, and `VAR_GLOBAL SET_PULSE`.

- Diagnostic and Non-volatile parameters defined in a CCP will be included in the diagnostic data when using the new “Create Named Externally Defined Class” component.

- Diagnostic and Non-volatile parameters defined in a POU will be included in the diagnostic data when using the new “Call Named POU” component.

- Diagnostic and Non-volatile parameters defined in a POU that is used within a screen definition will be included in the diagnostic data when using the new “Show Named Screen” component.

- Diagnostic and Non-volatile parameters defined in CCPs and POUs will be present in Parameter Overview, where it possible to set an alias for those parameters.

- Parameters in POU interface sections `VAR_INPUT` and `VAR_OUTPUT` can be included as checkpoints in the diagnostic data by enabling the new global setting “PouConnectionLog”.

What is Fixed

[P100006662] Compare SCS could in some cases omit pages in File2 when a page with the same name existed in File1, but the page interface checksum matched another page.

[P100006620] Test tool did not handle NV memory correctly.

[P100006646] If a user had more than one Add-On license for the same function and with the same parent id, then GUIDE would crash on start-up.

[P100006650]	Under some circumstances, it was possible to debug an application that did not compile successfully.
[P100006654]	In some cases, monochrome images were rendered as fully transparent on the target display.
[P100006657]	Guide debugger crashed when skins in some HWDs did not bind RGB LEDs.
[P100006659]	There was an access violation if a compilation was started immediately before an opening project was completely opened.
[P100006667]	Three problems related to boot logo were fixed (screen object import, access violation in screen library, file name property in screen manager inspector).
[P100006674]	It was not possible to add a POU to a ScreenDef in VBSE when language was set to Chinese.
[P100006698]	In some cases the P1X file was updated and saved automatically when opened in GUIDE, thus causing warnings when reopened in an older version.
[P100004464]	GUIDE debugger did not handle never ending loops in user C code.
[P100005966]	In some cases, the GUIDE Test Tool was not able to generate test code if there were linked pages in the application.
[P100006534]	The debugger would not consistently show a value for an unused output net from a component in a GUIDE drawing.
[P100006633]	"Error Check All" could fail to complete its task for some applications containing connect Components.
[P100006677]	In some cases there was an access violation when trying to delete text in the screen editor.
[P100006685]	Quickly closing a project while it was still in the process of being opened led to an error message being displayed.
[P100006660]	At 125% DPI the font size was too large in the toolbar buttons.
[P100006664]	At 125% DPI the size of the tab text in the POU editor was too large.

Version 2023.1

2023.1.4 (April 2023)

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

- [P1TOOL-1722] **Feature extension:** Allow project images in VBSE
- It is now possible to use a boot logo image in Vector-Based Screen Editor (W01389)
- [P1TOOL-2250] **Feature extension:** Static Analyzer Improvements
- New metrics have been added.
 - It is now possible to configure if the Naming convention metric should take namespace into consideration for Checkpoint, Non-Volatile memory and Read-only parameters components. (P100006420)
 - It is now possible to configure if the generated warnings should be sorted and presented in priority order, with the most critical warnings listed first for each warning type. (W01514)
 - It is now possible to configure if warnings from different modules should be merged together before it is presented.
 - Stability improvements. (P100006359, P100006388, P100006430)
- [P1TOOL-2616] **Feature extension:** PLC2C compiler upgrades for v2023.1
- Comments in PLC data types are now supported (P100006321).
 - Keeping the formatting of PLC data types and global variables is now possible.
 - New hint/warning added when not declaring usage of global variables via VAR_EXTERNAL.

What is Fixed

- [P100006542] NV parameters inside referenced pages in object pages did not work. For each parameter in the referenced page, all instances were using the same NV memory cell.
- [P100006524] An incorrect text item was shown in the design area when double-clicking text list items in the screen manager in Vector-based Screen Editor.
- [P100006538] The editing performance of PLC code in 2022.4 was low.
- [P100006549] Circular POU references crashed GUIDE
- [P100006551] In some cases, monochrome images were not rendered.
- [P100006561] Searching in “My Code” could cause an error message if the search text started with the name of a sub folder.
- [P100006568] When starting the debugger; the previously compiled .lhx file, if any, would have got the extension .~lhx.

[P100006573]	Guide projects that use ECU parameters explicitly could, when run from debugger, cause Service tool to fail scanning the system on the virtual CAN gateway, with various error codes indicating invalid ECU.
[P100006578]	The Divergent Selection component in SFC code didn't show texts if there were more than 2 selections.
[P100006602]	In some cases there would be an access violation in VBSE when a screen definition was opened while another screen definition was being edited via the inspector.
[P100006605]	When a POU interface signal was selected in a screen definition in VBSE while it was deleted in the PLC editor, there would be an access violation.
[P100006606]	In some cases there would be an access violation in VBSE when importing library objects.
[P100006621]	There would be a compile error if an output of a Call POU component or a Call Method of Externally Defined Class component was connected backwards.
[P100006624]	There could sometimes be an error message when assigning test definitions in the page properties.
[P100005600]	CLI parameter -export-test-results did not support overwriting an existing excel file.
[P100005664]	<p>There was no warning message given on compile when #Unbuffered was set to constant TRUE in situations where the CCP or POU may have been developed in a way not compliant with the guidelines.</p> <p>A CCP can now (in format 010A and forward) explicitly declare which array signals in/out that are safe to use without a buffer, and which do need a buffer. Those marked as needing a buffer will always have a buffer even if the user sets #Unbuffered to constant TRUE.</p> <p>The user of a CCP can now also force a buffer to be used even in cases where the CCP indicates that no buffer is needed by setting #Unbuffered to constant FALSE.</p> <p>Now a warning is shown when #Unbuffered is set to constant TRUE, and:</p> <ul style="list-style-type: none"> - There are no signals affected by this, or - There are signals affected by this because the CCP or POU have not specified if it is safe to use unbuffered or not.
[P100006345]	The previous fix for the TAN component (P100005933) could cause longer execution times specifically on DP600TM.
[P100006458]	In some cases, a project would not compile if access level was set to D in a GUIDE component.
[P100006468]	The correct icon was not added to the project, nor was it displayed in the taskbar.
[P100006507]	The comment editor deleted new line characters if last character in a line was selected.
[P100006517]	The debug visualizer started every paint cycle with painting the concerned screen area black.

[P100006521]	Application ID was not treated the same when compiling for debug as when compiling for ECU, which could cause strange compile error messages when compiling for debug, yet still compile for ECUs worked.
[P100006526]	Time components were not handled correctly in TestTool
[P100006530]	Dollar escape sequences in PLC strings were sometimes not colored correctly in the editor.
[P100006541]	<p>Applications containing multiple CCPs, and where some CCPs are not self-contained, but depend on other CCPs would not always compile correctly in some scenarios, for example test code compilation.</p> <p>Now CCPs are handled in the order they are listed in the project manager, so CCPs can now be ordered from least dependent to most dependent.</p> <p>Note that:</p> <ul style="list-style-type: none"> - The recommendation that CCPs should be independent still applies. - The recommendation that CCPs should not contain header files still applies.
[P100006544]	<p>The parameters file was not considered to be a project file unless Parameter Overview had been used to modify it. Now an empty parameters file will be created and added to the project in the following cases:</p> <ul style="list-style-type: none"> - A new application is created. - An application with a project file format of 007A or later, in which Parameter Overview has never been used to edit parameters, is opened. (Note that any existing parameters file will be overwritten.)
[P100006556]	Signals driven by POU or CCP were sometimes shown as undriven in the Connect to Bus dialog.
[P100006559]	Compare SCS sometimes displayed some pages incorrectly; a page that existed in both SCS files could be displayed as being only in File1 and only in File2.
[P100006564]	Target Part number and Target Serial number could in some cases both contain text.
[P100006579]	Depending on Windows computer settings and policies, auto-routing of graphical PLC language code may not have worked.
[P100006580]	Boolean variables were not available in the drop down selection for SFC Actions.
[P100006593]	The Static Analyzer would sometimes crash when using the “Dead modules” metric.
[P100006597]	The context menu “Install Hardware” only appeared when clicking on a tree node in the Hardware tab.
[P100006598]	It was not possible to generate an FMU if the simulation contained input strings but no output strings.
[P100006604]	The TextBox changed color to white when tab is pressed.

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- [P100006610] Improvements in scrolling/zooming for SFC POU's. The same setting as for FBD/LD POU's now control whether the mouse scroll wheel controls zooming or scrolling (inverted by holding Ctrl key on keyboard).
- [P100006611] Opening POU's when the PLC Editor window is minimized was slow.
- [P100006615] Some content in the Code Blocks tree was missing, such as the VAR_EXTERNAL keyword.
- [P100006616] It was not possible to open header files under the Available Headers node by double clicking on them.
- [P100006618] Dragging types from the Code Blocks tree and dropping in a PLC struct added too much text, and in some cases in the wrong position.
- [P100006571] Related to P100006541 above, the project manager did not always show project CCPs in the same order as listed in the P1X file.
- [P100006587] Old GCC 3.4.0 compiler with known issues was removed. If your project is still using an old HWD that uses this compiler, then update the HWD in the project to the latest version.

Version 2022.4

2022.4.6 (December 2022)

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

- [F00590] **Feature extension:** GUIDE Editing performance 2
Improvement of GUIDE Editing performance in the following areas:
- Undo/Redo
 - Route bus to bus
 - Copy using CAD Engine. (C)
 - Copy/Paste using windows clipboard
 - Unlink linked pages
- (P100005435, P100005636, P100005652)
- [P1TOOL-947] **Feature extension:** Locking a page no longer requires manually breaking the links of the page and sub pages first. This is now done automatically.
- [P1TOOL-1877] **Feature extension:** Misc PLC compiler improvements:
- Additional warnings and hints for unused items, dead code, empty statements and Boolean expressions always being true or false.
 - Support for constant evaluation of many built in arithmetic and string functions.
 - Optimization of generated C code.
 - Parallel compilation of PLCopenXML files.

What is Fixed

- [P100006504] If an SCS file is damaged, GUIDE will attempt to restore as much of it as possible when opening it.
An error message like: "Symbol reference not found" will be displayed when opening it. Backup the file, then make any change to the file to force it to be saved again. Then compile the project to find if any components/pages must be replaced. The error messages should point to the elements that need to be replaced.
- [P100006404] If a Module Output component was connected to a constant array and a corresponding Module Input was used in the same module, the output of the Module Input would not contain the values of the constant array.
- [P100006471] Applications containing screen definitions calling POU's containing VAR RETAIN variables did not compile.
- [P100006476] An access violation occasionally appeared when performing Static Analysis on a project.
- [P100006480] GUIDE did not work correctly after adding a document containing more than one period in its name to a project.
- [P100006483] FMUs containing read-only parameters could crash when run in simulation tools.

[P100006484]	GUIDE did not give a warning when path length become close to the Windows limit.
[P100006495]	CCPs with shared NV memory were not handled correctly.
[P100006506]	Texts were visible outside their boxes in the debug viewer.
[P100006508]	The error message for unsupported applog was not displayed during debug compilation.
[P100006513]	Texts were sometimes rendered in wrong color in the debug viewer.
[P100006515]	Font processing during compilation for large applications took significantly longer time than in version 2021.1.
[P100006223]	It was possible to add invalid images to the screen repository in Vector-based Screen editor if multiple images were added at the same time.
[P100006285]	Fonts requiring antialiasing were not correctly rendered in the debugger visualizer.
[P100006343]	Under some circumstances, a bus member was not shown in the Connect to Bus dialog.
[P100006427]	For some file types, there was no asterisk (*) showing up in the project manager tree to indicate unsaved changes.
[P100006454]	If a boolean input signal was connected to a text object in Vector-based Screen Editor, compilation would fail with error 569 if the boolean input signal was set to a constant value at an instance of the screen definition containing the text object.
[P100006460]	For some combinations of SCS file differences, the compare next functionality could get stuck.
[P100006462]	Due to a Windows update, the terminal window would sometimes stay open when it shouldn't.
[P100006465]	It is now possible to update the Application ID Description field automatically when renaming a project or using Save As.
[P100006491]	The debug visualizer window now uses Application ID as window header.
[P100006492]	There was no way to assign a signal to the UID output of a generic viewport in the Common Properties dialog.
[P100006498]	The Default layout did not affect windows other than the main GUIDE window properly.
[P100006499]	In some cases, constant values assigned to library widgets were mixed.
[P100006501]	A bad error message was shown during FMU generation when a CAN database contained multiple signals with the same name in the same message on the same CAN channel.
[P100006509]	The error message that was supposed to be displayed during debug compilation for applications containing application log 2 was no longer displayed, and the debug compilation ended with a C compile error.

[P100006514]	Imagelist preview was sometimes not displayed correctly after scrolling it.
[P100005028]	It was possible to add constants to the debug watch list.
[P100006442]	The Compile with SIL button was enabled for some HWDs that were not SIL-ready. However, if clicked, the appropriate error message was given immediately.
[P100006450]	At 125% DPI, the SIL question during a SIL compilation would need to be scrolled through to read in its entirety.
[P100006488]	The error symbol was given a misleading position in the graphical code for a certain error related to the “Encode 8” component.
[P100006502]	Links to issues with global PLC variables could sometimes lead to the PLCopenXML file rather than to the exact issue position.

Version 2022.3

2022.3.7 (November 2022)

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

- [F00620] **Feature:** Virtual CAN server
- It is now possible to run several different GUIDE debug applications simultaneously, communicating as a system via the PLUS+1 Virtual CAN Gateway.
 - When running a GUIDE debug application, it connects automatically to the PLUS+1 Virtual CAN Gateway.
 - At most one GUIDE debug application can be executed from inside GUIDE, others must be executed standalone.
 - It is possible to open a GUI mode of the PLUS+1 Virtual CAN Gateway located in the system tray.
 - In the GUI it is possible to see all GUIDE debug applications that are connected to the PLUS+1 Virtual CAN Gateway.
 - In the GUI it is possible to configure which virtual channel each CAN port should be connected to.
- [F00621] **Feature:** Debugger support for skin visualization and persistent NV plus ROP files
- It is now possible to use a skin in the debugger when debugging display applications. If the skin is properly created it will be possible to use buttons and LEDs.
 - Non volatile memory components and Read Only Parameters can be handled from debugger using Service Tool. (See F00615 in Service tool) (Legacy single Read Only Parameters functionality has not been updated.)
 - Compiled executable for debugger is now named after the project, <project.exe>.
- [P1TOOL-977] **Feature:** License signature file
- A license signature file can be added to a project, allowing all licensed pages that existed at the time of signing to be used even by users that do not have the required licenses for those pages.
 - Pages that have dependencies on installed libraries still require those libraries to be installed.
 - The signature file will not be valid anymore if the hardware used in the project is changed, but upgrading it to a newer version is supported.
 - The feature to generate a project signature is licensed.
- [F00619] **Feature extension:** FMU export in GUIDE 4
- String and array types are now supported in the FMU interface.
 - SYS version is included in model description.
 - Command line support has been enhanced.
 - FMU name is now stored in the PLUS+1 GUIDE project.
 - FMU interface signal names "Default CAN bit value" and "OS.ExecTime(CoSimulation_Only)" are now valid C identifiers. (P100006250)
 - Support for full control of received and sent CAN messages has been added.

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- [F00630] **Feature extension:** Updated Help Menu in GUIDE
- It is now possible to select Tutorials from the help menu that will open the new GUIDE Tutorials document.
- [P1TOOL-1067] **Feature extension:** Single Compile for Debugger
- Debug compilation is significantly faster due to skipped regular compilation and other optimizations.
- [F00609] **Information:** The hardware tree has been updated so that hardware descriptions may define their own subfolders.

What is Fixed

- [P100006339] An error message was shown when trying to install very old HWD files.
- [P100006365] After naming an NV signal "X2" it was not possible to rename it later.
- [P100006395] Renaming a module file to something without file extension could crash GUIDE.
- [P100006396] A module with same name as a project C-file could in some cases be added to a project.
- [P100006401] Incorrect link in the need to enable library and licenses warning window.
- [P100006402] Viewports were not handled correctly in GUIDE debugger.
- [P100006403] Transparency was not handled correctly in projects compiled for GUIDE debugger.
- [P100006416] Adding an existing C code file located in the project folder to the project could cause an access violation error if it had the same name as a module in the project.
- [P100006425] The SFC Jump component was missing from the Code Blocks tree.
- [P100005027] It was not possible to debug an application containing Language Definition Input or Select Language components.
- [P100006315] Resized monochrome images were sometimes rendered incorrectly on the target display.
- [P100006397] Changing the group name of a pair of C/H files would lead to both of them losing their names.
- [P100006399] Hexadecimal prefix was not shown for the value zero in Vector-based Screen Editor.
- [P100006406] A misleading error message was shown when changing to a HWD without Application Log Definition support.
- [P100006407] Names of media files were not visible after compilation.
- [P100006415] In some cases, GUIDE indicated that a project had unsaved changes even though it had not.
- [P100006418] The insertion point of the "Suppress Warning End" component has been moved to the right side where the circle is located.

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- [P100006421] Expired Add-On licenses did not include 'License has expired' text in License Manager dialog.
- [P100006426] Hint texts in the project manager tree were sometimes cut off and not fully visible.
- [P100006428] The wrong warning hint was in some cases displayed for CCPs in the project manager.
- [P100006424] A section had incorrectly been named to "Cheat Chart" in the Coding Guidelines document. It has been renamed to "Architecture and Design".

Version 2022.2.6

2022.2.6 (August 2022)

What is Fixed

[P100006344] New installed HWD files did not show up in GUIDE 2022.2.5.

Version 2022.2

2022.2.5 (June 2022)

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

- [F00603] **Feature extension:** VBSE Wish List
- To improve POU support, data types U64, S64, F32, F64 and arrays of all supported data types are now supported in the VBSE interface.
 - Image lists now support image list definitions as signals of the new data type Image List. There is also a new output Count that outputs the number of images in the list.
 - Text lists now support text list definitions as signals of the new data type Text List. There is also a new output Count that outputs the number of texts in the list.
- (W01353, W01373)
- [F00608] **Feature extension:** Compliance Blocks Including CCP and POU
- Hardware descriptions may now contain a function library.
- (W01392)
- [F00612] **Feature extension:** Updated compiler for Test, Debug and FMU
- The existing MinGW 4.8.1 and 8.1.0 distributed with GUIDE has been replaced with a MinGW-w64 8.1.0 distribution that supports both 32- and 64-bit targets.
- [F00613] **Feature extension:** Improved render speed for Debug Visualizer
- [F00623] **Feature extension:** The PLUS+1 Tools now officially support Windows 11.
- [F00627] **Feature extension:** The Start Page has been improved.

What is Fixed

- [P100006293] Certain sequences of editing, generating and running test cases would lead to error messages.
- [P100005836] Error in generated code of LC_Compare-High component in certain cases when using 32 bits variable values as inputs.
- [P100006017] Using incorrect parameter names for standard functions in an FBD could lead to an unclear error message.
- [P100006094] Error in generated code of LC_Compare-Low component in certain cases when using 32 bits variable values as inputs.
- [P100006120] Error in generated code of LC_Compare-Mid component in certain cases when using 32 bits variable values as inputs.
- [P100006233] It was not possible to connect STRING signals of specified length (e.g. STRING[2]) to VBSE definitions.

[P100006236]	ModuleConnectionLog:Enabled did not work.
[P100006251]	It was not possible to change property PortName in an application log definition.
[P100006252]	When connecting buses from Call POU and Call function of external class, only the signals from the Cal POU was shown in the connect-to-bus dialog.
[P100006263]	It was only possible to set breakpoints on components in modules that had been opened before entering debug mode.
[P100006269]	It was not possible to compile a project if a POU called from a screen definition had the substring "array" in its name.
[P100006273]	It was not possible to generate an FMU from a project that contains Tan components.
[P100006283]	In some cases, texts in a scaled screen definition were not scaled correctly.
[P100006294]	The debugger was significantly slower in 2022.1 than in 2021.2 for pages with many signals.
[P100006301]	In some cases, widgets inside library widgets were not displayed correctly.
[P100006318]	It was not possible to debug display applications containing video with some (newer) HWDs.
[P100005330]	In dark mode, some modal windows were briefly shown in light mode when opened.
[P100006227]	When locale is chinese the Register License window text could be hard to read since it was shown in italics.
[P100006232]	Changing the ROP port in the inspector did not trigger the "project modified" status, so if no other project change was made at the same time, such a change could go unsaved.
[P100006266]	When connecting an output bus from a POU call in a screen definition automatically, built in POU outputs #Return and #RuntimeErrors would add invalid signal names.
[P100006282]	It was not possible to create an FMU from a project that contained unused bios inputs with invalid name. Unused bios inputs are no longer included in test, debug and FMU.
[P100006310]	A bad error message was shown when attempting to compile with removed compiler.
[P100005296]	Wrong color shown for images having dFuchsia as color.
[P100005678]	A newline at the end of an IL POU is no longer needed.
[P100005932]	Text alignment was not supported.
[P100006253]	Sometimes no image was added when double-clicking an image in the Select items dialog in Vector-based Screen Editor.
[P100006295]	Updates to text definitions referenced in widgets were not reflected in the layout area.
[P100006325]	The error message when attempting to import incompatible setting from a newer version of GUIDE has been improved.

Version 2022.1

2022.1.3 (April 2022)

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

- [F00607] **Feature:** Install LHX for Linux in PLUS+1 Service Tool
- It is now possible to install diagnostic data from an LHX file of a Linux-based HWD in PLUS+1 Service Tool.
- [F00528] **Feature extension:** Static Analyzer Improvements
- It is now possible to use over 40 different metrics.
 - It is now possible to import/export Static Analyzer settings.
 - It is now possible to configure a limit for how many warnings should be shown for each warning type.
 - It is now possible to run the Static Analyzer in command line mode.
 - It is now possible to use “Suppress Warning Start” and “Suppress Warning End” components to disable a specific Static Analyzer warning within a code area.
 - The coding guidelines document has been updated and is accessible in the “Help” menu (P100003179).
- [F00617] **Feature extension:** New nodes have been added in the hardware tree for Programmable Valves, Electrical Converters, and PLUS+1 Partner Products.
(W01418)
- [W01158] **Feature extension:** A dialog is now shown when closing the License Manager when the license needs activation or rehosting.

What is Fixed

- [P100005962] Pages were not correctly linked.
- [P100006088] It was possible to select Express and Trial licenses when using renewal keys in License Manager dialog.
- [P100006100] A bad error message was shown when image compilation failed.
- [P100006103] In some cases, SVG images were scaled incorrectly in Vector-based Screen Editor.
- [P100006115] NV components with U32 type did not work to debug.
- [P100006137] When using the TI 6.4.9 compiler, some projects would not compile due to a missing DLL file.
- [P100006149] It was not possible to generate FMU:s from applications containing library dependencies from command line.
- [P100006150] It was not possible to use command modifier parameter -proceed-on-warnings when generating FMU:s from command line.

[P100006172]	An extra space between elements in exported text files from the screen editors has been removed.
[P100006176]	DBC files containing multi-line comments were not converted properly to XML.
[P100006177]	Installing an incorrect library SDL file could cause GUIDE to crash on start up.
[P100006185]	Chinese characters was not supported by TextBox
[P100006195]	Accumulating errors could have led to missed program loops in FMU simulation.
[P100006228]	Compiling a project using 100% NV memory often lead to error messages.
[P100004314]	Sub buses and wires with the same name in the same parent bus would lead to the name of the sub bus not being displayed in the "Connect to Bus" dialog.
[P100005933]	The TAN component did not handle the angle +/- 90 degrees in a defined way. Now S32Max is returned for this undefined situation. Also, the accuracy of the function has been improved some.
[P100005938]	The chapter on touch display functionality in the user manual has been updated with more information about the IsSink property.
[P100005975]	Using a Value Init component with a constant array value input without parentheses around it led to a compilation error.
[P100005982]	Fonts width was not updated when changed.
[P100005984]	Net connectivity was not propagated/resolved down in page hierarchy from "Commented page".
[P100006042]	POUs were sometimes shown to be having unsaved changes in cases when there were no unsaved changes.
[P100006049]	Internal PLC code compile messages were presented with a link that did not work.
[P100006053]	Disabled icons did not look correct in some dialogs when using dark theme.
[P100006058]	List index out of bounds error occurred when editing test case from inspector.
[P100006061]	The customize toolbar buttons were visible in the Classic Screen Editor.
[P100006157]	When changing the source file of an SVG image in Vector-based Screen Editor, there was no way to automatically update the default size of the image definition.
[P100006158]	There was some confusion about which pages were linked and which were not. Now it is possible to enable a setting to see all linked pages, even pages with only one instance.
[P100006163]	There were no checks to verify that only valid values were used as color constants.
[P100006165]	Resizing a screen definition could cause screen objects with KeepAspect and ScaleSize set to be rescaled incorrectly.

[P100006169]	The manual had the wrong type names in one place, “uint8_t” and “uint16_t” instead of “int8_t” and “int16_t”.
[P100006188]	Members in buses connected to component outputs were not handled correctly when routed to other buses inside object pages.
[P100006190]	Occasionally, the error message “Cannot focus invisible window” popped up when following links.
[P100006192]	The Quick Add list was not updated when moving My Code items.
[P100006208]	Clarified the manual about what command combinations that are valid for GUIDE command line usage.
[P100005781]	Wrong table name was used in manual
[P100006060]	The window icons were not fully visible when minimizing non-modal dialogs.
[P100006063]	The page design area header was not visible in the Classic Screen Editor.
[P100006113]	Minor graphical artefacts shown when opening GUIDE and right side window set to autohide.
[P100006143]	Pressing Enter in comment editor closed editor instead of giving a new line to add text to.
[P100006186]	The user manual has been updated with a clarification on layout manager selection.
[P100006196]	Header files were marked as changed when switching between grouping/ungrouping c/h files option.
[P100006225]	The image editor panel in Classic Screen Editor was clipped so that one text was not visible in its entirety.
[P100006226]	When pressing the delete button while editing the name of a folder in VBSE, an action to delete the folder was initiated.

Version 2021.2

2021.2.5 (December 2021)

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

- [F00553] **Feature extension:** Screen definitions may prevent touch events from propagating
- A screen definition may stop any detected touches from propagating to screen definitions beneath it.
 - A new property Propagate Touches determines this behavior. If set to False, touches will not propagate.
 - Propagate Touches is set to False by default in new screen definitions and True in already existing screen definitions. (W00380)
- [F00592] **Feature extension:** Misc Wishlist Enhancements 2021.2
- It is now possible to have pinned tab windows side-by-side with the CAD area, while unpinned tab windows are on top of the CAD area. (W00462)
 - Double clicking on an identifier in the PLC/C editor will now select the whole identifier, and nothing but the identifier. (W01186)
 - It is now possible to sort the page tree alphabetically (as before), or by execution order (new). (W01070)
 - It is now possible to update to the latest installed HWD version by context menu choice from the current HWD node in the project manager. (W01197, W01311, W01111)
 - It is now possible to download and install the latest available HWD version in Update Center by context menu choice from the current HWD node in the project manager. (W00457, W00724)
 - It is now possible to open a project where the SYS file is missing, and restore or update the SYS file by context menu choice from the current HWD node in the project manager. (W01268)
- [F00593] **Feature extension:** A Digital Displacement node has been added under hydraulic pumps in the hardware tree.
- [F00594] **Feature extension:** The license file is now using a block whose license information is synced between different versions.
- [F00595] **Feature extension:** Newly added trial/express licenses will automatically replace equivalent licenses with an older maintenance date.
- [F00599] **Feature extension:** Updated User Interface, Part V
- Light and Dark themes updated for better contrast and improved user experience.
 - Larger font size in many areas.
- [W00208] **Feature extension:** Pan and improved zoom in VBSE
- Pan mode is selected by default and can be turned off via a toolbar button.
 - In pan mode, keeping middle or right mouse button pressed while dragging the mouse will pan the view.
 - In pan mode, mouse wheel zoom will zoom to cursor.

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- In both modes, the Zoom Fit Page command (default key HOME) will set zoom level to 100% and center the view.

What is Fixed

[P100005669]	Sometimes it was not possible to build applications containing a large media repository.
[P100005829]	In some cases, it was not possible to install fonts for use in Classic Screen Editor.
[P100005908]	IsSink functionality did not work for screen objects without connected touch outputs.
[P100005925]	It was not possible to connect a signal to the IsSink property of a touchable screen object if the HWD supported multiple touch streams.
[P100005937]	Touches in the last touch stream were not detected on multi-touch displays.
[P100005945]	Some fonts were not displayed correctly.
[P100005990]	In some cases, not all changes made in the grid editing view of a PLC POU were saved.
[P100006000]	The "Select another license" confirm dialog did not show up when starting GUIDE without a license at the same time as Update Center was running.
[P100006011]	When using font output formats Regular or Anti-aliased, the text was rendered one pixel to the right. Semi-transparent pixels outside the boundaries of a glyph may also have been truncated when using font output format Anti-aliased.
[P100006022]	It was not possible to open a project with a damaged SYS file, and therefore not possible to easily recover from this fault.
[P100006044]	32-bit NV parameters did not work in simulation and test at sub-page level.
[P100005835]	Sometimes a Page's name was displayed even when no @PAGENAME had been specified in the Page interface editor.
[P100005881]	It was possible to add DLL licenses in License Manager dialog.
[P100005909]	Filtering in the Parameter Overview was slower the second time.
[P100005914]	Query on a licensed page without having the appropriate license installed generated no clear user feedback.
[P100005917]	It was not possible to search in a newly created project if search had been disabled in the previously opened project.
[P100005921]	The "Set default" button in the Comment Editor did not work for some settings such as bold, italic, underline.
[P100005929]	In some cases an error message was shown after saving project to P1P.
[P100005939]	HMC based projects were not possible to debug.

[P100005960]	In some cases an error message was shown after updating several project files outside GUIDE at the same time.
[P100005961]	In some cases, when compile errors occurs in a module that is not the active module, the project manager did not mark the erroneous module when user clicked on the link.
[P100005977]	Triggering a compilation really quickly after creating a new project could cause an error message to be displayed.
[P100005988]	It was not always possible to resize the Code Blocks tree.
[P100006010]	A project with only an empty PLC file was not possible to debug.
[P100006024]	Error indicator symbols from a previous compilation were not always cleared when starting a new compilation.
[P100006026]	The “Pan with hand” setting was not saved immediately after a change.
[P100006036]	There were some cases in CLI mode where -proceed-on-warnings did in fact not proceed on warnings.
[P100005833]	RatatoskT3 updated to match documentation when used with redundant NV flags.
[P100005834]	Clean up some not needed API calls.
[P100005859]	Some icons in Compare SCS were not scaled correctly in all DPI settings.
[P100005862]	The confirm dialog when deleting a license in License Manager had the wrong style.
[P100005967]	The HWD tree would become nonresponsive after uninstalling an HWD when no project was open.

Version 2021.1.7

2021.1.7 (October 2021)

What is Fixed

- | | |
|--------------|---|
| [P100005837] | In some cases, applications containing 32-bit NV parameters connected to division components did not compile. |
| [P100005845] | When opening some projects, an unexpected error message could show up and prevent GUIDE from starting again. |
| [P100005822] | Local touch coordinates did not work correctly for rotated displays. |
| [P100005883] | In some cases, an application would not compile if it contained touchable objects with no other outputs than local coordinates connected. |
| [P100005912] | It was not possible to build some applications. |
| [P100005920] | Pointer types cannot be used in POU interfaces for POUs called directly from GUIDE code, but this was not correctly detected on compile. |
| [P100005924] | In some cases, applications where object page outputs were connected to CSE pages did not compile. |
| [P100005826] | An access violation error appeared when performing the "Save As" operation on a file in the Function Library tree. |
| [P100005849] | When using library functions without any associated dependency files, there could be erroneous warning messages about the library not being installed shown when compiling. |
| [P100005865] | When packing a display project to P1P, some temporary files may not have been deleted. |
| [P100005872] | Depending on NV components and namespace, in some cases it was not possible to generate test code or FMU from a sub-page. |
| [P100005873] | Navigating the My Code tree using character keys on the keyboard stopped working in 2021.1. |
| [P100005901] | It was not possible to use POUs with array signal connections in VBSE. |
| [P100005918] | In case of an arithmetic error in the application code in a locked page, the debugger could display a hard to understand error message. |

Version 2021.1

2021.1.5 (July 2021)

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

- [F00470] **Feature:** Cloud Components support.
This feature was added for evaluation in 11.1, and is now officially released in this version.
Requires HWD support.
- [F00522] **Feature:** UDS support in GUIDE.
It is now possible to use the Parameter Overview window to set Diagnostic IDs for UDS.
Requires HWD support.
(W00975)
- [F00524] **Feature:** Persistent Address of NV Parameters.
It is now possible to use the Parameter Overview window to see and set NV indexes for parameters.
When migrating from earlier versions of PLUS+1 GUIDE, the order of NV parameters will be preserved unless there are NV parameters in POU's, CCPs or object pages.
Once set, the index for a parameter will not change unless the user changes the index or the parameter type.
(Changing the type may change the index if the new type is larger than the old type)
(P100003262) (W00404, W00718)
- [F00509] **Feature extension:** The common setting for My Documents folder can now be set directly from GUIDE and Service Tool in addition to Update Center as before.
- [F00527] **Feature extension:** Performance GUIDE Editing
Overall performance when editing the CAD is improved.
Direct2D graphics is introduced.
Opening and switching between POU's and C code files is now significantly faster.
Auto Pop-ups are now significantly faster (Component, Function, Hardware and MyCode trees).
(P100005062, P100005258, P100005261, P100005423)
- [F00570] **Feature extension:** Improved compilation speed
Overall compilation speed is slightly improved.
Font processing is considerably faster.
(P100005608)
- [F00571] **Feature extension:** Updated User Interface, Part IV
- The support for DPI settings other than 100% has been improved.
- Includes updated colors and general look.
- [F00575] **Feature extension:** FMU Export in GUIDE, Part III
- Each message to be transmitted in the CAN database has two new signals CANx->Message->TimeStamp and CANx->Message->Tx.

-
- Simulated applayer is now supported for evaluation.
 - Command line mode has been added.
 - Structured signal names are supported as an option.
 - Dot-delimited CAN messages are supported as an option.
 - CAN Tx Pending output can be disabled during simulation as an option.
 - Checkpoints can have causality set to local as an option.
- [F00576] **Feature extension:** Unit Test Tool Excel Integration Improvement 2
Introduced test suite concept.
Added possibility to add new test definition files in excel format..
Added command line options to add and run test suites, and import tets definitions.
- [F00577] **Feature extension:** Merge component search items
The Searchable Items tree in the GUIDE search dialog has been restructured.
Search item “Component Parameter Value” has been renamed to “Other Parameter Values”.
A search for “Other Parameter Values” will not find any matches that would have been found by including items in “Application Interface”, “Callable Components” or “Constants”.
- [F00578] **Feature extension:** Optimize search in unsaved unmodified units
No search indexing will occur when searching a unit that has not been modified since the most recent search.
- [F00580] **Feature extension:** Add LocalDeltaX and LocalDeltaY outputs to multi-touch components
Two new touch outputs LocalDeltaX and LocalDeltaY are available when the HWD supports multi-touch. They will be set to DeltaX and DeltaY relative to the orientation of the screen component.
- [F00581] **Feature extension:** Separate tab for SCS license errors.
A new tab has been added specifically for SCS file license errors.
This eliminates some situations where license errors and compile errors both needed to show content in the error tab at the same time.
- [F00587] **Information:** The email link to PLUS+1 Helpdesk on the start page has been replaced with a Web link to PLUS+1 Helpdesk.

What is Fixed

- [P100005769] In rare situations, compile errors in the code generator would not have caused the compilation to fail.
- [P100005812] In some situations, content from Classic Screen Editor pages was not processed during compilation.
- [P100004624] Changes in array files were not detected by compile changed.
- [P100004649] Changes in PLC files were not detected by compile changed.
- [P100004765] Compile Changed sometimes failed when using PLC code from an SDL library.

[P100005391]	Some projects with certain module bus configurations would have issues to compile specific module pages for test.
[P100005581]	Read Output from Hardware components set to bios inputs are now supported in test/debug/simulation.
[P100005595]	Add a warning message when screen object priority is used in a screen definition containing widgets in general and an error message when this is done in an unsupported way.
[P100005646]	Some settings were not saved properly.
[P100005648]	PLUS+1 GUIDE could run out of memory if a project containing several large images was compiled while the images were opened in Vector-based Screen Editor.
[P100005671]	It is now possible to generate test for subpage containing Read-only Parameter with namespace.
[P100005708]	If a sequence of images were viewed in the screen library preview in Vector-based Screen Editor, they could be drawn on top of each other.
[P100005706]	In some cases, a reload SCS dialog was shown even though it should not.
[P100005713]	When performing a "Save As" operation, some unsaved project properties could be saved first to the original project folder.
[P100005717]	There was no warning shown about missing libraries that may be needed for successful compilation of a project.
[P100005719]	A rotated screen definition could have its width and height switched after change of HWD.
[P100005720]	When importing parameters from CSV file to Parameter Overview, the wrong case of type names could be accepted as written in the CSV file.
[P100005721]	Certain monochrome SVG images were not displayed correctly in the preview in VBSE (correct image was shown on target system).
[P100005730]	FMU generation, test code generation and debugging failed when using cloud components with namespace enabled.
[P100005735]	In some cases the wrong values were sent when transmitting CAN messages in LE byte order in FMU simulation.
[P100005745]	It was not possible to generate an FMU if there were multiple CAN databases containing the same keyword.
[P100005757]	It was not possible to make changes to more than 5 modules at the same time from the Parameter Overview dialog.
[P100005786]	When selecting multiple objects of different type in Vector-based Screen Editor, an Invalid class typecast error message might have been shown.

[P100005795]	Debug data is no longer generated when generating an FMU.
[P100005809]	It is now possible to generate test code from a page containing Call Method of Externally Defined Class components where the Create Externally Defined Class component is located higher up in the page structure.
[P100004281]	Some FBD POU's where a wire was connected to three or more components could generate redundant warnings on compile. Note: This fix is applied when saving a FBD POU body, so existing POU's that generate such warnings will need to be resaved.
[P100004719]	Improved GDB compatibility for floating point values and presentation of runtime faults in the debugged code.
[P100004977]	In some cases, renaming an scs file that uses library dependencies could make it lose its dependencies until the project was reopened again.
[P100005062]	Auto-popups (if enabled) in the Component/Hardware/Library/MyCode trees were sometimes slow.
[P100005068]	Items in the screen library popup menu in Vector-Based Screen Editor have been clarified to indicate that definitions are being added.
[P100005102]	When debugging C code with pointers to inaccessible memory, an error dialog with a lot of indecipherable text could be shown. Now a clear error text is displayed next to the name of the pointer variable instead.
[P100005554]	While saving was in progress, right clicks in the GUIDE main window could sometimes pass through to the applications positioned beneath the GUIDE window.
[P100005590]	After clicking on an error link in another module than the current open module, the errors tab would be cleared.
[P100005591]	The References column in the Page Properties search result tab was sorted like text. Now it is sorted like numbers.
[P100005593]	Check All and Check Changed did not work for projects using certain Function Block libraries.
[P100005603]	To avoid potential problems, compile all may be run instead of compile changed depending on object pages and the HWD of the project.
[P100005607]	New error messages are added for connected object page outputs.
[P100005626]	In some cases during compile changed, screen definitions were recompiled even though they did not have any modifications.
[P100005635]	Case-sensitive sorting was used for search results in the PLUS+1 GUIDE search dialog.
[P100005651]	Change of image file was not always reflected in the Vector-based Screen Editor design area.
[P100005679]	In CSE, it was possible to add images with invalid file names.

[P100005683]	No argument list was shown when autocompleting a Function Block instance variable.
[P100005684]	Mouse back button cleared content of Project Overview.
[P100005685]	There were some inconsistencies in how POU parameters were displayed for Functions vs Function_blocks, and also differences between what was shown in the Code Blocks tree vs the autocomplete hint.
[P100005687]	It was not possible to create a new POU from the Call POU component query dialog if the new name was a substring of an already existing POU.
[P100005692]	Page statistics displayed after compilation for debug was doubled.
[P100005696]	Drag and dropping types into the PLC editor to create new variables would sometimes create additional VAR-groups which were unnecessary.
[P100005700]	A dialog shown during ESD import could be higher than the screen.
[P100005707]	In some cases the Page Count statistics shown after a Compile Changed could be doubled.
[P100005714]	Undo functionality was only enabled for changes made in the current visible module.
[P100005725]	Fixed some changed links in the License Help manual.
[P100005734]	Constant arrays were reset to zero after an FMU reset.
[P100005752]	It was possible to use the inspector to resize a widget with AllowResize set to false.
[P100005753]	Some incorrect extra menu items and actions existed for lfx and pfx file nodes in the Hardware tab tree.
[P100005762]	The color selection dialogs were not correctly scaled in all situations.
[P100005765]	GDI+ graphic engine could be faster. Feature F00527 introduced faster graphics, which solved these problems.
[P100005782]	Clicking Step very rapidly could cause an error message when debugging in some projects.
[P100005793]	Some C99 code support improvements for debug mode.
[P100005794]	In default layout, using “paste” from the main edit menu did not work.
[P100005796]	When adding multiple images in Vector-Based Screen Editor, the location of the images was not remembered the next time the New Image Definition(s) dialog was opened.
[P100005798]	Filter selections in the Parameter Overview dialog were lost if the dialog was moved between monitors with different DPI settings.
[P100005806]	Maximized tool did not cover the entire screen.
[P100005813]	Sometimes, moving objects in a text list in Vector-based Screen Editor did not work.

[P100005814]	Some forms of DDT file corruption were not properly detected and handled.
[P100005258]	Some items in the drawing area changed thickness while moved.
[P100005261]	The grid (if any) in the drawing area disappeared while moving drawing items.
[P100005366]	Edit CAN Messages Dialog Box had Graphical Issues when resizing box.
[P100005583]	An SCS file without unsaved changes would in some cases be marked as having unsaved changes after leaving a referenced page.
[P100005610]	The Search dialog had graphical issues when opened from Screen Editor.
[P100005754]	The system buttons in the title bar was not displayed correctly in certain situations when minimized.
[P100005783]	Ctrl+left mouse button can now be used to select or deselect objects in the design area of Vector-based Screen Editor.

Version 12.2.10

12.2.10 (April 2021)

What is Fixed

[P100005634]	One type of old CCPs that ceased to function in 12.2 are now functional again.
[P100005580]	A descriptive error message is shown when a P1P with a name that would be invalid for a project is opened.
[P100005604]	The “Save As” right click menu in the Hardware and Function tabs did not work.
[P100005650]	Certain kinds of edits in C code files would not trigger a save to be performed before compiling.
[P100005673]	It was possible to select a lower-case (incorrect) spelling for type names.
[P100005709]	Breaking a debug compilation on a DM1000 project would lead to GUIDE becoming effectively non-responsive.
[P100005592]	When importing a widget, signals connected to text data values were sometimes lost.
[P100005598]	An error message was sometimes shown when closing GUIDE after breaking compilation with both VBSE and Search windows open.
[P100005606]	ROP signals in called modules are now included in test and FMU simulation.
[P100005621]	It was not possible to open a PDF file in the MyCode tab by double clicking it.
[P100005624]	There were a few missing menu items in the context menu in the MyCode tab.
[P100005629]	Port names were not displayed in drawing area.
[P100005716]	CAN messages with extended ID were handled incorrectly when generating FMU.
[P100005718]	Transmitted CAN messages did not function as expected in FMU simulation.

Version 12.2.9

12.2.9 (February 2021)

What is Fixed

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| [P100005613] | In large SCS files, some drawing commands such as Move, Route, Stretch and others could be significantly slower than in GUIDE 12.1. |
| [P100005583] | An SCS file without unsaved changes would in some cases be marked as having unsaved changes after leaving a referenced page. |

Version 12.2

12.2.8 (January 2021)

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

[Note] **Information:** File formats P1X and SCS have been updated and are not backwards compatible.

[F00519] Feature: Parameter Overview

- An overview of NV and Diagnostic parameters in the application.
- Parameter properties can be modified directly from the overview.
(W00974)

[F00544] Feature: Multi-Line Unicode Comments

- It is now possible to have multiline Unicode comments in GUIDE code.
- Editing is done in a Rich Text type editor window.
- Images are Supported, editing of links are supported.
(W00074, W00281, W00450, W00698, W00764)

[F00561] Feature: FMU export in GUIDE

It is now possible to generate FMU (Functional Mockup Unit) that can be used in a simulation tool to simulate the software behavior.

This will replace S-function generation which will be deprecated and removed from the tool in a future version.

- FMU export supports both Model Exchange and Co-Simulation as well as 32- and 64-bit generation.
- CAN messages are managed with CAN database files, each CAN channel may have its own CAN database.
- PLC is supported
- CCP is supported
- ROP is supported
- It is possible to select output folder. (W00468)

Requires add-on license, no additional 3rd party tool required to export FMU.

[F00530] Feature extension: Unit Test Tool Excel Integration Improvement

- It is now possible to add test definition files written in excel.
- It is now possible to export test results as excel files.

Known limitations: If you edit the test definitions from Guide and choose to save the test definition file, any formulas or formatting will be overwritten.

[F00533] Feature extension: Support for multiple targets in CCP

- CCPs may now contain IDL files for multiple targets.
- If present in a CCP, CCP_GENERIC will be used for any target for which the CCP does not have an IDL of matching type.

[F00539] Feature extension: Improved compilation speed

- Projects using Classic Screen and/or Applog have been optimized.

-
- Compilation may be performed by a new builder. It performs some steps in parallel for shorter compile times and it contains defect fixes*. (requires HWD support)
*P100001612, P100003898, P100004125 and P100004624 are fixed in the new builder.
- [F00559] **Feature extension:** Updated User Interface, Part III
- The toolbar and status bar have been updated, and a vertical tool bar has been added.
 - The tool now have primary, secondary and tertiary buttons with different look.
 - The main menu structure has been updated and improved.
 - There a new node, "General", in the component tree, which contains basic components.
 - A 'Quick Add' button and shortcut (Ctrl+Shift+A) have been added [W00917 & W01165].
 - The support for DPI settings other than 100% has been improved.
 - Misc. button captions and option descriptions have been improved.
 - Includes updated colors and general look.
- [F00564] **Feature extension:** A new Communications node has been added under programmable hardware in the hardware tree.
- [F00566] **Feature extension for evaluation:** Diagnostic Data for Cloud component signals are now compressed for lower memory usage in the ECU.
This is an extension of F00470, which is still for evaluation in 12.2.
- [F00565] **Information:** The EULA has been updated.

What is Fixed

- [P100005458] It was possible to compile a CCP of incorrect type.
- [P100005393] In some cases, an error message from ChPargu2 would be eclipsed by error 302 {Invalid pointer operation}.
- [P100005423] Switching between tabs in the PLC/C editor took too much time.
- [P100005426] Font stacks in SVG images were not supported.
- [P100005433] In Compare SCS, identical sub pages of parent pages with differences were in some cases missing from the tree.
- [P100005434] In some cases, projects with unconnected bus ports would not compile.
- [P100005466] Compilation could hang for modules where the same bus was short-circuited both inside and outside of a referenced page.
- [P100005470] Attempting to "save as" into a folder where a project already was located would lock up GUIDE.
- [P100005475] Referenced pages with pass-through buses in several levels did in some cases not compile successfully.
- [P100005480] It was not possible to debug a display application containing anti-aliased fonts.

[P100005491]	After importing an ESD file containing library widgets of an installed library, the imported library widgets would not be rendered correctly.
[P100005500]	Changing Page View Access from Read Only to Disabled via the Page Navigator did not work correctly.
[P100005507]	If a project was saved at the same time as an SCS was automatically backed up, reload dialogs and error messages could have been shown.
[P100005517]	Search results could be incorrect if they involved components in pages that were copied between modules.
[P100005518]	When opening a screen definition containing multiple large images, these images would be loaded at full size potentially causing PLUS+1 GUIDE to run out of memory prematurely.
[P100005521]	In some cases, after performing Save Project As on a modified project, search functionality and compilation may not have worked.
[P100005533]	In some cases when generating test code after adding test cases, an error message was shown.
[P100005538]	Pasting many lines of C code into a C code file in the PLC/C Editor could take a long time.
[P100005546]	Integer data types in text data inputs (Vector-Based Screen Editor) did not work when active language was set to Chinese.
[P100005547]	In rare cases, signals connected to sub-widgets were lost when compiling a project.
[P100005555]	Touch did not work when Generic Viewport was rotated.
[P100005559]	Generic Viewport was misplaced when the display was rotated.
[P100005560]	Attachment point functionality did not work for Generic Viewport.
[P100005563]	It was not possible to generate an S-function using Matlab R2020a and MinGW64.
[P100005565]	In rare cases, duplicate search hits from modules were reported.
[P100005576]	When the Enable property of a widget was connected to a signal and there were screen objects above sub-widgets inside the widget, the z-order inside the widget was incorrect.
[P100005587]	Scrolling the mouse wheel in Vector-Based Screen Editor without an open screen or application log definition may have caused access violations.
[P100004978]	Using STRING data type in a module bus is now supported.
[P100005242]	The visualization in the the PLC/C editor was not correct in all situations.
[P100005349]	Clicking on an invalid plus+1 link could lead to the current project being closed.
[P100005364]	Global range check for input signal values was not performed.

[P100005382]	Some objects became invisible while dragged to the Vector-Based Screen Editor design area.
[P100005398]	In some cases, signals in buses from Show Screen/Write Appllog were not available.
[P100005463]	Mouse right-click to trigger context menu did not work in some places for windows placed on a secondary monitor.
[P100005469]	The 'View logical net' colors have been improved.
[P100005476]	The UI made it look like it was possible to delete the main module.
[P100005487]	For certain combinations of PLC code in widgets and/or libraries, some standard functions would not be available, leading to project link failure.
[P100005498]	The compilation messages tab stayed open after a successful compilation.
[P100005499]	Importing already existing test files caused too many dialogs asking for reload.
[P100005501]	Reloading externally changed test file bypassed naming check in test tool.
[P100005502]	The Screen Editor tab in the Options dialog has been updated with a category for properties that only apply to Vector-based Screen Editor.
[P100005508]	Only the currently active SCS module was backed up.
[P100005513]	When pressing OK after editing a newly imported text definition, an access violation might have occurred.
[P100005514]	The CAD area was no longer in focus after performing a Query operation.
[P100005515]	Depending on the selected visible layers, some texts could dissappear from the CAD surface. Now all layers will be visible by default on startup.
[P100005523]	It was not possible to add an Application Log Definition in the Project Manager when using an HWD supporting Application Log 2 but not Vector-based Screen Editor.
[P100005535]	When placed in object pages, components "Generate Compiler Error on Range" and "Generate Compiler Error on Not Constant" would generate error links with incorrect paths when activated.
[P100005566]	Drag and Drop types into Global Variables did not work.
[P100005575]	The link for the menu: "Help->Support->PLUS+1 Support Web Page" was changed and no longer valid.
[P100005577]	In a few cases, error links relating to duplicate NV parameter names pointed to the wrong location.
[P100005362]	When selecting some fonts in Vector-Based Screen Editor, a warning message related to Classic Screen Editor was shown.
[P100005424]	A few icons in the Application Log Editor were not visible when disabled (dark theme).

[P100005425]	When entering screen- or app logeditor white background flashed, when running on dark theme.
[P100005436]	The indication of active/pressed toolbar and status bar buttons has been improved.
[P100005446]	Images in the Vector-Based Screen Editor design area could not be deleted when Enable was set to false.
[P100005461]	The Replace Main Module dialog was not displayed correctly in DPI settings other than 100%.
[P100005462]	When a new module was added, the properties were not shown in the inspector.
[P100005468]	The Project Manager was not displayed correctly when undocked.
[P100005496]	An “index out of bounds” error appeared during the creation of an SDL.
[P100005511]	The resizing algorithm of the preview image in Vector-based Screen Editor has been improved.
[P100005512]	Hidden languages are no longer shown in the Edit Text List dialog.
[P100005525]	The compiler statistics showed doubled page count values after the generation of an FMU.
[P100005527]	Components without editable properties could not be queried.
[P100005530]	Some incorrect icons have been corrected.
[P100005541]	Minor typo in the INSERT PLC function when drag and dropped into code from the Code Blocks tree.
[P100005589]	Parts of the PLC/C Editor dialog were not displayed correctly in DPI settings other than 100%.

Version 12.1.8

12.1.8 (September 2020)

What is Fixed

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|--------------|---|
| [P100005412] | Breaking compilation while modified SCS files were being saved would lead to GUIDE hanging, and could in some cases lead to data loss in the SCS file. |
| [P100005419] | It was not possible to compile an application that tried to initialize more than one BIOS output array. |
| [P100005380] | Vector-Based Screen Editor objects Text, Text List, Hardware Image and Generic Viewport could cause a compilation error if they were constantly disabled and had a connected output. |
| [P100005381] | It was not possible to delete an added Tool Key using the context menu, only by the Delete key on the keyboard. |
| [P100005388] | Certain regional settings in Windows (for example Finnish) made it not possible to compile projects. |
| [P100005402] | Saving test results could be very slow in some cases. |
| [P100005414] | Widgets with attachment points might have been placed incorrectly in runtime. |
| [P100005433] | In Compare SCS, identical sub pages of parent pages with differences were in some cases missing from the tree. |
| [P100005439] | Certain SVG images could prevent a project from being successfully compiled. |
| [P100005420] | Cloud enabled array checkpoints caused invalid diagnostic data. |
| [P100005472] | The VBSE property "CheckTextLength" only worked correctly in 100% DPI. |
| [P100004978] | Removed error message when using STRING data type in a module bus. This is still not supported in 12.1.8, but it can work in some corner cases (use with care). Note: STRINGS in module buses will become officially supported in GUIDE 12.2. |
| [P100005110] | In certain scenarios, the user was not asked to reload an externally changed test file. |
| [P100005403] | The time reported for running tests could be off by a few seconds per test. |
| [P100005418] | When compiling with the new Aurix compiler, the resulting LHX file was never marked as production ready. |

Version 12.1

12.1.7 (June 2020)

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

- [F00502] **Feature extension:** Search Feature Extension 3
- The time spent for license check at start of compilation of applications with large modules has been significantly reduced.
 - It is now possible to search for page properties Object, ViewLic and Library.
 - The number of other pages in the same module that have the same LinkID as a certain page is now presented in the Page Properties search result tab as “References”.
- [F00505] **Feature:** Chinese language support in GUIDE.
(Originally added for evaluation in GUIDE 12.0.6)
- [F00518] **Feature extension:** Official support for external C-compiler Aurix.
(Originally added for evaluation in GUIDE 12.0.6)
- [F00543] **Feature extension:** Updated User Interface, Part II
- The tool now supports DPI settings other than 100%.
 - Includes updated icons, colors and general look.
- [F00547] **Feature extension:** Misc. Wishlist Enhancements 12.1
- Module Viewer:**
- Added “Save As” functionality.
- Compare SCS:**
- Added option to display horizontal or vertical diff.
 - It is now possible to select the type of difference to view for pages that have multiple types of differences.
 - It is now possible to filter for any set of difference types.
- Both Module Viewer and Compare SCS:**
- Added “Reload” functionality.
 - Added “Monitor for file changes” options.
- Test Tool:**
- When selecting pages to generate tests for, pages without any associated tests will be collapsed initially and “Check All” only checks all pages with tests.
 - Test code generation for other pages now proceeds even when generation fails for certain pages.
 - When running tests, the progress and test results are now visible and updating continuously.
 - The words “Expected” and “Actual” are now used instead of the previous “Out” and “Meas” in the test tool UI. It is also allowed to use these keywords in Excel test definition files that are imported into GUIDE projects.
 - Misc performance and UI improvements.
- GUIDE:**
- In the project manager tree, when selecting an output LHX file that was compiled in GUIDE

12.1 (or later), it is now possible to see Compile Time, as well as ROM, RAM and NV memory usage for that LHX. (Note: this information is cleared for projects that are packed to P1P format.)

- It is now possible to copy text from several dialog windows shown by GUIDE.

(W00415, W00596, W00602, W00686, W01023, W01024, W01053, W01080, W01096, W01103, W01112, W01119, P100002414, P100004724, P100005236)

What is Fixed

[P100005029]	In some cases, an application could not be compiled when a CCP class component was placed later in the data flow than a function call component on that class instance.
[P100005120]	Screen objects having their position controlled by a signal and their attachment point set to something else than apDefault did not behave as expected.
[P100005126]	A bad error message was shown when attempting to compile a project containing a library widget from a missing library.
[P100005171]	Code generated for the AF_SUB component has been updated to be compatible with the Aurix compiler. The compatibility issue did not affect any project using a released HWD file, but generated code will be different in some cases.
[P100005172]	Code generated for the AF_RDIV and AF_MOD components has been updated to be compatible with the Aurix compiler. The compatibility issue did not affect any project using a released HWD file, but generated code will be different in some cases.
[P100005173]	Code generated for the AF_DIV_B component has been updated to be compatible with the Aurix compiler. The compatibility issue did not affect any project using a released HWD file, but generated code will be different in some cases.
[P100005175]	When a text definition of a screen object was changed so that a data value would become invalid, the value displayed in the Layout Pane was set to zero but the value in the inspector was not modified.
[P100005208]	It was possible to drag Generic Viewport to a size larger than allowed by the HWD.
[P100005211]	When compilation failed for a page to be tested in the test tool, there was no clickable link to the result file for that page.
[P100005244]	Images inside an image list having Image Size set to Aspect Ratio Preserved were not aligned to the attachment point of the image list.
[P100005268]	Compilation could hang when project files were missing.
[P100005272]	Compilation could hang when certain project files were unsaved and compilation was initialized by shortcut key from the PLC editor.
[P100005279]	It was not possible to use Compare SCS to compare read-only pages' page-interfaces.

[P100005291]	When working with multiple monitors with different DPI settings, dragging the C Editor from one monitor to another could trigger an error message.
[P100005299]	SVG images with certain fonts were displayed with the wrong font.
[P100005309]	Using POU interface variables of type “array of string” would prevent compilation from succeeding.
[P100005315]	It was not possible to generate a test case from a page with a string signal in its interface if that string signal was used inside the page.
[P100005317]	Unconnected bus ports in referenced pages could prevent projects from compiling.
[P100005335]	Using the zoom menu in combination with graphical POUs and Page interface editor could cause GUIDE to not be able to close properly.
[P100005340]	Minimizing the search window while debugging could lead to it becoming unusable until GUIDE was restarted.
[P100005345]	Clicking the Save button multiple times in the Save As dialog could lead to an error message being displayed.
[P100005355]	Deleting the Screen and Application log Repository would lead to loss of delete functionality for certain other project files until project was re-opened.
[P100005361]	It was not possible to generate test code from code calling a module containing a scalar bios signal.
[P100005368]	Certain sequences of resizing the Test Tool window could lead to it no longer responding to user input.
[P100005370]	It was not possible to debug an application with application id containing quotation marks.
[P100004499]	It is now possible to give a PLUS+1 GUIDE project the name “TextData”.
[P100004503]	Reserved words in C and some other characters as interface names caused unnecessary name changes in TestTool
[P100004700]	An error message was sometimes shown when connecting a previously existing (but not connected in any end) net to a bus.
[P100004942]	When displaying a string a widget connected through an input signal, it might have been shorter on the display than in Vector-Based Screen Editor.
[P100004978]	An uninformative error message was shown when using STRING data type in a module bus.
[P100005123]	Compiling a project with a new and never opened SFC POU could lead to an error message being displayed during the compile process.
[P100005135]	When comparing enum values in PLC code, a warning message was emitted by the C compiler.

[P100005152]	Links in a function library could trigger error messages when used.
[P100005154]	The 'Page Editor' icon was incorrect.
[P100005167]	The dialog for creating new C code entry points was cut off for some DPI settings in Windows.
[P100005168]	Individual text definition translations were not shown in the replacement tab of the search and replace dialog.
[P100005170]	It was not possible to expand certain nodes in the VBSE Screen Manager tree view in certain situations.
[P100005174]	It was difficult to dock undocked side panels in certain situations.
[P100005183]	The checkboxes in the 'Generage Test Code' dialog had incorrect look.
[P100005194]	The wrong icon was displayed in certain situations when the compilation failed.
[P100005197]	Some texts in the Project Files dialog had the wrong foreground color in Dark theme.
[P100005226]	GUIDE did not retain the latest used New Project path.
[P100005227]	GUIDE did in some cases add "\\Danfoss\\PLUS1\\GUIDE\\" to the latest used New Project path.
[P100005232]	The language dependent font list in the text definition object list did not have scrollbars when needed.
[P100005234]	When replacing language dependent fonts, items in the replacement list that were not selected might have been replaced.
[P100005237]	For certain components, the query dialog was too narrow to fit the entire dialog caption text.
[P100005240]	Selecting Default Layout in GUIDE when the GUIDE window was placed on a secondary monitor resulted in an incorrectly positioned GUIDE main window.
[P100005245]	When using the query dialog to change an autotyped constant to a typed constant, the type was always changed to '?'.
[P100005247]	The wrong icon was used when dragging an image from the Selector panel to the screen definition in the VBSE.
[P100005253]	The Query Screen Component dialog had some graphical issues.
[P100005262]	When several text objects were selected in Vector-Based Screen Editor and the font size was changed in the font menu that is opened via the inspector, not all text objects were updated.
[P100005265]	When importing test definition Excel files, there was no good error indication to let the user know about CAN messages mismatches in the file.

[P100005290]	Debug net values were not always shown in modules.
[P100005301]	A different error message than the correct one was shown on compilations where the correct target part number was not specified.
[P100005305]	It was not possible to debug an application containing a screen definition with language dependent fonts.
[P100005316]	When expanding a node in the Component tree or Project Manager tree, in some situations a different node in the tree would be selected.
[P100005319]	The file path drop-down list in Open/Save file dialogs was not styled correctly in dark theme.
[P100005321]	The save button in the test tool was always enabled, even when there were no unsaved changes.
[P100005322]	Generate Test Code in the test tool could trigger an error if no page was selected.
[P100005339]	It was hard to see where the items would end up when using drag-and-drop to restructure the screen library in Vector-Based Screen Editor.
[P100005343]	The link of the error message caused by Show Screen/Write Applog components with unconnected SHOW/ENABLE inputs was incorrect.
[P100005357]	GUIDE did not check for malformed UTF-8 sequences in STRING constants.
[P100005374]	GUIDE did not respond correctly to the Windows "Tile" command.
[P100004491]	Incorrect preview for the graphical component "Write Applog".
[P100005127]	Error message links to object pages did not work.
[P100005136]	Progress form was displayed as separate form in task bar.
[P100005138]	Some texts were not fully visible in the Options dialog.
[P100005156]	There were some graphical issues in the Test Tool result tab.
[P100005213]	The project manager flickered in certain situations.
[P100005217]	The project manager panel had some graphical issues when it was undocked.
[P100005219]	Undocked panels got wrong positions after changing theme.
[P100005229]	The text definition editor did not have scrollbars in certain situations.
[P100005250]	When starting GUIDE without a sufficient license, the license manager was always displayed using the light theme.
[P100005266]	When the name of a screen object in Vector-Based Screen Editor was changed via the Common Properties dialog, its new name was not shown in the screen manager tree unless the project was reopened.

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- [P100005271] When the width of a video input frame in Vector-Based Screen Editor was set to an invalid value in the Common Properties dialog, no error message was shown and the value was silently reverted.
- [P100005278] The auto pop-up delay setting also affected hints.
- [P100005289] Debug net values were not always cleared after exiting debug mode.
- [P100005292] Using the zoom buttons on the toolbar could block or delay other commands from being executed.
- [P100005342] The scrollbar in the Browse for folder dialog (from Create New Project dialog) was not styled correctly in dark theme.

Version 12.0.7

12.0.7 (March 2020)

What is Fixed

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|--------------|--|
| [P100005140] | In GUIDE 12.0, some projects containing linked pages with complex bus structures stopped compiling successfully. |
| [P100004946] | Rotation of screen objects did not work when attachment point was set to a value different from apDefault. |
| [P100005121] | Initialize Hardware Output behaved as Hardware Output when the input was of string type. |
| [P100005131] | It was not possible to debug an application containing a page with more than one Show Screen/Write Applog component referencing the same screen/application log definition. |
| [P100005139] | When searching in GUIDE using "Include namespace", components inside a referenced page structure got an incorrect expanded namespace in the search results if that page structure contained non-referenced pages with namespace. As a result, a search for the expanded namespace of a component would not find that component. |
| [P100005143] | Running large tests suites required much more time in 12.0.6 than in previous versions. |
| [P100005169] | Some SVG images were not shown correctly. |
| [P100005176] | In older version of GUIDE it could happen that screen objects got duplicate stacking orders. When this was first handled, all items were given unique orders, but this was done by sending some objects to the end of the list which could change the appearance on screen. Now the original error with duplicate stacking order is handled correctly. |
| [P100005188] | The bus junction color has been restored to green. |
| [P100005198] | In certain cases, drag and drop in the VBSE could lead to objects getting an incorrect stacking order value. |
| [P100005210] | In some cases, it was not possible to search PLUS+1 GUIDE projects in file structure. |
| [P100005215] | In some cases, a monochrome image would be filled with noise in its transparent part. |
| [P100005218] | "Touch Area" was not available in the selector in VBSE for hardware that supported multitouch. |
| [P100005142] | GUIDE was unresponsive while executing tests. |
| [P100005144] | Using auto pop-ups to add content to the CAD area did not work in some cases. |
| [P100005163] | There were no scroll bars in Image Lists. |
| [P100005181] | When using repeat connection, new connections were not immediately visible. |

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- [P100005249] Some chapters were missing in the Chinese version of the HTML help.
- [P100005134] Texts with System font that only contained 1 character was displayed incorrectly.
- [P100005196] Fixed spelling error in print setup colors.
- [P100005212] Setting the 'Mirror Image' option of a text made the text go invisible.

Version 12.0

12.0.6 (December 2019)

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

- [F00458] **Feature:** Vector-Based Screen Editor support for the new DM display family
This feature was released for evaluation in PLUS+1 GUIDE 11.0.
- [F00469] **Feature extension:** Compilation speed has been improved.
Note: Projects using Classic Screen and/or Applog will not be fully optimized in 12.0.
- [F00515] **Feature extension:** Updated User Interface
- New light and dark themes are now available for the GUIDE.
 - The theme selection is made from the Options dialog, under General Settings.
 - The CAD area is now using antialiasing and true type fonts.
 - Includes updated icons, colors and general look.
 - Components and other drawing items are now consistently dropped when moving the mouse cursor outside the drawing area.
- [F00513] **Feature extension:** Misc. Wishlist Enhancements 12.0
- General**
- The Compile Dialog now gives more information about the total progress when compiling for test, for debug, and for Simulink.
 - The Module Viewer now supports printing.
 - “Force Enabled” pages are now marked with green text color in the Page Tree.
- Query**
- The Time Base component now supports drop-down selection of available time bases.
 - Improvements in handling the auto-typed components.
- Debugger**
- There is a new tab which allows setting initial values for all input signals.
 - It is now possible to run the debugger to a specific loop index from the context menu in the “Loop Input” tab.
 - The “Add Watch” dialog now supports drop-down selection of signals.
 - Editing the Loop inputs has been improved, and import/export via CSV files has been added.
- VBSE**
- The stacking order of objects is now easier to inspect and modify, both via improved context menus, drag-and-drop, and keyboard shortcuts.
 - A “Screens” section has been added to the “My Code” tab in GUIDE. Screens can be exported and import between the project and MyCode via context menus.
- (W00352, W00772, P100004959, W00773, W00749, W00980, W00411, W00665, W00666, W00667, W00663, W00334, W00441, P100004589, W00696, P100004944)
- [F00514] **Feature extension:** Performance GUIDE startup time.
On average, GUIDE now starts up faster, especially on systems where many Function libraries are installed. (W00973)

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- [F00494] **Feature extension:** Status message displayed when the used C compiler is not verified.
After a successful compilation in GUIDE, a status text is displayed if the used C compiler has not been verified for correctness. The exact text of this message can vary. For example, if the compiler has known defects, the message will indicate that it is deprecated.
The TI 3.0.9 compiler is no longer included in the GUIDE setup.
- [F00504] **For Evaluation:** Support for adding media files to project (HWD Dependant).
- Added files/folders will be including in the output LHX file.
- Popup menu "Copy Full Name" on project media files can be used to get a reference to the file (e.g. for use in graphical code and POU calls).
- [F00505] **For Evaluation:** Chinese language support in GUIDE.
The scope for this feature includes:
- Chinese PDF and HTML manuals.
- Partial Chinese tool translation.
- Project files and folders must still be in ASCII like before.
- Comments in Graphical code must also be in ASCII.
(W01034)
- [F00518] **For Evaluation:** Aurix compiler.
This compiler does not support locked libraries or used memory calculations in 12.0.
It will be fully supported in a future version of GUIDE.

What is Fixed

- [P100004214] It was not possible to compile an application containing a disabled text list with arguments.
- [P100004594] When generating test code or S-Functions, an error message is now shown if two signals will get the same name after being prefixed with the underscore separated bus path.
- [P100004798] Wingdings fonts did not work in Vector-Based Screen Editor.
- [P100004913] Only NV signals from the main module showed up when debugging.
- [P100004923] It was sometimes not possible to set the constant value for a string data value in VBSE.
- [P100004946] Rotation of screen objects did not work when attachment point was set to a value different from apDefault.
- [P100004963] In some cases, SVG files were not imported correctly.
- [P100004972] Importing an already existing widget to a project could corrupt it.
- [P100005020] If a project SRD file was corrupted, and a font format data field was empty, then an unhelpful internal error message would be shown during compile.
- [P100005035] Trying to remove an available header file using the delete key lead to an exception error dialog.

[P100005036]	Incorrect error message was given when importing an excel file with test definitions containing different array data type lengths.
[P100005058]	Closing the last VBSE tab using mouse-middle-click caused VBSE to become inoperable until GUIDE was restarted.
[P100005064]	Depending on color, monochrome images might have been rendered invisibly on the target display (VBSE only).
[P100005066]	Newly created screen definitions would not get their initial size until they were opened for the first time.
[P100005070]	An application containing a hardware image component with enable constant set to false and not connected to a signal would not compile.
[P100005082]	Sometimes the stacking order was not updated when screen objects were dragged and dropped in the screen manager.
[P100005100]	NV signals were not properly supported in Loop Outputs tab when debugging.
[P100005106]	It was not possible to use touch outputs of screen objects in an application with a multi-touch HWD.
[P100005115]	In rare cases, using multi touch outputs i Vector-Based Screen Editor would cause a C compile error.
[P100005118]	IsSink did not work for gestures.
[P100004502]	An error message was shown when entering a screen page after performing Save Project As if the project was using Classic Screen Editor and font LCD5x7.
[P100004628]	No proper string was suggested when validation of string constants failed.
[P100004731]	Missing description of the touch states in User Manual PLUS+1 GUIDE Software.
[P100004902]	Removing tests from a page was not reflected in TestStatus.xml unless the page was tested again.
[P100004920]	In some cases GUIDE 11.0 or later would display an admin elevation dialog when started if GUIDE 10.1 or older had been started previously.
[P100004921]	Incorrect description about transfer between pages, in User Manual PLUS+1 GUIDE Software.
[P100004931]	When test description was edited in the Page Manager, only the test definition description was updated.
[P100004935]	After using a File Open or File Save dialog in GUIDE, the folder was temporarily locked so that it could not be deleted.
[P100004943]	Changing the width or height of an object in VBSE where Keep aspect ratio was set could in some cases generate a hard to understand error message.

[P100004949]	Test List did not show the same list of test cases in Test Manager as in Page Manager.
[P100004954]	When connecting a bus to the input bus of a Show Screen Component, sub buses were missing in some cases.
[P100004962]	Zooming in VBSE was not possible when the VBSE window was placed at negative screen coordinates. (E.g. on a monitor to the left of the main monitor).
[P100004965]	Adding a new column in the test case editor would not immediately update the column headers text.
[P100004966]	CompareSCS jumped to current page instead of navigating to the expected page when double clicking after zoom.
[P100004995]	In Vector-Based Screen Editor, all items may not have been shown in large text lists.
[P100004997]	The multi character constant component listed more types than it actually supported.
[P100005015]	Leave page button was enabled instead of disabled when entering a CSE page button
[P100005017]	An image passed to a library widget by an interface signal would not be shown.
[P100005018]	VBSE Layout management did not work when an object as large as the screen definition was centered and there were other objects in the same screen definition.
[P100005022]	Array length was not checked to evaluate the test result, shorter expected array length than measured value array length could still result in test being passed.
[P100005027]	No error message was given when compiling for debugger or test tool or generating a Simulink S-Function and a select language or language definition component was to be handled.
[P100005032]	License Manager did not send all renewal requests when adding multiple renewal keys.
[P100005039]	Copying and pasting a library widget in Vector-based Screen Editor could result in an error message.
[P100005045]	It was possible to enter invalid tag values for texts and text lists in Application Log 2.
[P100005051]	When two conflicting signals by the same name were defined in two different modules, the resulting error message only correctly pointed out the first signal.
[P100005052]	The preview in the main GUIDE window was updated when a disabled function library was selected in VBSE.
[P100005053]	In rare cases, the height percentage of a screen object in Vector-Based Screen Editor would be incorrectly set to zero.
[P100005054]	Missing error message links when multiple defined alias is reported.
[P100005059]	Changing a POU name in the POU grid editor did not immediately update the name of the POU shown in the tab.

[P100005060]	When a POU file used in a screen definition was missing, the error message was misleading.
[P100005076]	In some cases the code page sub-menu of the first language in Classic Screen Editor was not shown.
[P100005094]	When connecting to a Show Screen/Write Applog bus, the Connect to Bus dialog did not always show the available signals and sometimes it showed non-existent sub-buses.
[P100005101]	It was not possible to generate Simulink S-Functions or test code for a subset of a module containing untyped Hardware Input/Output components.
[P100005107]	Renaming a global range file did not always take effect immediately, and in some cases the file extension would not be set correctly.
[P100005109]	Changed installation scripts to allow "." in installation path.
[P100005119]	There could in some cases be an error message shown when leaving the inspector with an unfinished edit by double clicking another module.
[P100004276]	The manual did not describe why some components do not support breakpoints when debugging.
[P100004912]	Automatically added widget interface connections were not always highlighted correctly.
[P100004918]	When expanding a Library node in the Function tab, in some situations a Function Block would be selected for addition to the GUIDE drawing.
[P100004926]	Some unavailable items in the component tree were not hidden when the setting to hide such items was selected.
[P100004924]	The read-only property of some project files was not examined for changes at the right time.
[P100004941]	When opening the PLC editor for the first time, and for a POU written in a graphical language, the drawing area was on some PCs smaller than it should be.
[P100004952]	There was no mention in the manual of the color significance of page names in Compare SCS.
[P100004983]	Help for Median Value Capped contained wrong data types
[P100005024]	There was a spelling mistake in Add Column dialog in Test Case Manager.
[P100005047]	It was not possible to switch focus back when dialogs were open.
[P100005093]	If a new screen definition was opened while Vector-Based Screen Editor was in preview mode, it looked as though Vector-Based Screen Editor was in edit mode.
[P100005098]	The grid in VBSE was hard to see if the background color was similar to the grid color.

Version 11.1.6

11.1.6 (September 2019)

What is Fixed

- [P100004938] Monochrome image format is now supported on rotated displays in VBSE.
- [P100004956] When compiling VBSE projects, and using regional setting “Language for non-Unicode programs” with a non-Latin1 region, the resulting application could cause a runtime error in the target Display unit.
- [P100004991] A project that contained PLC code only via library function blocks (no PLC code in the project manager) would not be possible to debug, and would not work correctly at runtime.
- [P100004893] The modified status of an SCS file was not reported correctly after an undo operation, which could lead to changes not being saved correctly.
- [P100004915] Touch stream outputs from screen objects on multi-touch displays were not updated correctly.
- [P100004928] Memory footprint has been significantly reduced when a project containing a large amount of Show Screen components is compiled.
- [P100004934] A syntactically incorrect settings file could cause the tool to not start up correctly.
- [P100004939] When changing a POU name from the Project Manager, the change was in some cases not saved correctly to file.
- [P100004950] If a PLCopenXML file was edited from outside of GUIDE, and this change affected the interface of a POU, then the old version of the interface would still be used at compile time.
- [P100004955] There were in some cases an error message shown when closing the PLC editor.
- [P100004958] Opening a screen editor project could fail with cryptic error messages depending on used regional settings.
- [P100004960] It seemed possible to edit the name of a POU from the inspector even though the setting “Enable interface text auto-formatting and grid editing” was unchecked.
- [P100004969] The use of stack memory in functions generated from PLC code has been reduced.
- [P100004980] Widgets from libraries and additional code point sets could not coexist in the same application.
- [P100005012] A string generated from converting an array of U8 values did in some cases not work correctly when passed to a POU call.
- [P100004916] It was not possible to set breakpoints on components in Read-Only pages.
- [P100004974] Undo in the Screen Editor could in some cases undo more than one action.

Version 11.1

11.1.5 (May 2019)

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

- [F00457] **Feature:** Added ability to control distribution of Screen Editor objects for enhanced flexibility to design screens for multiple devices with various resolutions. This is handled by two additions to the Screen Editor:
- Attachment Point that allows user to define insertion point on the object to one of the 9 available points (top/center/bottom, left/center/right)
 - Set constant values for insertion point and size as percentage of screen size as complement to pixels.
- [F00439] **Feature extension:** Official support for external C-compiler Linaro 6.3 for DM10X00 hardware. (Originally added for evaluation in GUIDE 10.1)
- [F00493] **Feature extension:** Floating point unit support for external C-compiler GCC 4.7 for ARM (20130614-q2) has been added (HWD Dependant). (This compiler was originally added without floating point hardware support in GUIDE 7.0)
- [F00482] **Feature enhancement:** GUIDE UX and Wishlist Enhancements 11.1
- The Update Center has been updated to give instructions for how to obtain old versions of software.
 - The module viewer has been improved with the option to copy page property values, back and forward page navigation, and a page navigator tree like in GUIDE.
 - It is now possible to define a keyboard shortcut to toggle through all non-modal GUIDE windows (Main window, PLC editor, VBSE, and Search).
 - It is now possible to Export all GUIDE settings to a file.
 - In the test tool, it is now possible to copy signal data from one column to another.
 - Select HWD and Template when creating new project.
 - Misc GUI improvements.
- (W00056, W00311, W00393, W00519, W00568, W00620, W00648, W00657, P100002787, P100004596)
- [F00470] **For Evaluation:** Cloud Component Support
- Preliminary components available under new Cloud group in Component tree.
- [F00497] **Information:** PLUS+1 GUIDE installer updates
- PLUS+1 Service Tool was removed from the PLUS+1 GUIDE installer.

What is Fixed

- [P100004639] The component RDIV had a rounding issue on DM1010 hardware when A2 was a constant S32 or U32 with min/max values for the data type.

[P100004641]	The component MUL_B had an S32 issue on DM1010 hardware when A1 or A2 was constant min S32 value.
[P100004642]	The component DIV_B had an S32 issue on DM1010 hardware when A1 or A2 was constant min S32 value.
[P100004643]	The component RDIV_B had an S32 issue on DM1010 hardware when A1 held min S32 value, and A2 was constant U32.
[P100004647]	A Hardware Output component connected to the same net as a Checkpoint component could prevent compilation depending on in which order they were connected.
[P100004648]	Retype component now supports converting U8 Array -> U8 Array, String -> String, and treats array as zero-terminated when converting U8 Array -> String.
[P100004657]	The component LC_WINDOW-0 had an issue on DM1010 hardware when A3 was constant, and $A1 + \text{half } A3 > S32\text{Max}$.
[P100004659]	In the Vector Based Screen Editor (VBSE), texts imported from CSV files were not immediately updated in the application.
[P100004671]	The component COMPARE_MID had an S32 issue on DM1010 hardware when A1 was constant max S32 value.
[P100004686]	Starting a debug session with unsaved PLC changes could lead to the compile process not starting up correctly.
[P100004775]	Widgets from libraries could prevent compiling for test and debug.
[P100004707]	The component COMPARE_MID had an S32 issue on DM1010 hardware that could result in an internal overflow.
[P100004725]	Test result no longer associated with a page still remained in the TestStatus file.
[P100004754]	Test Tool was not adding non-volatile memory components to the module interface under certain conditions when generating testcases.
[P100004763]	An error in the search functionality could prevent compilation.
[P100004834]	When executing tests from command line the order of execution could be different from executing in Test Tool GUI.
[P100004730]	In the test tool, it was not possible to run tests for pages with non-integer bus-inputs.
[P100004788]	In CSE, copying and editing texts directly after adding a new language could lead to errors.
[P100004795]	Selecting more than one image file when browsing for an image definition would lead to an error message.
[P100004806]	The component "Get Time us" was only possible to use in the main module.
[P100004822]	It was not possible to create a data type with named values in PLC code.

[P100004836]	When using certain combinations of library functions with dependencies, GUIDE compilation could hang.
[P100004854]	Certain characters for anti-aliased fonts could be displayed with partially inverted colors.
[P100004871]	Clarified usage of LLVM.
[P100004880]	A unicode text added as a constant on a variable string could be displayed incorrectly on the hardware screen.
[P100004904]	CAN OUT data with don't care defined ('-') was not handled correctly in Test Tool.
[P100003330]	The manual did not describe some aspects of the Scale components sufficiently.
[P100004323]	Not possible to minimize tool after it was restored from minimized state during file association.
[P100004441]	Some elements were not updated after changes in Page Interface Editor.
[P100004573]	In some cases, changing the name of a linked page could also change the Link ID.
[P100004584]	Undo in the Classic Screen Editor (CSE) sometimes undid too many actions.
[P100004663]	Changing layouts while in the Classic Screen Editor (CSE) would lead to the "Exit screen editor" and "Preview" toolbar buttons being hidden.
[P100004666]	Changing the path of a newly added text in the Classic Screen Editor (CSE) could clear its text value.
[P100004677]	In the test tool, delete row was enabled in the editor even if there was only one row left.
[P100004680]	In the classic screen editor, copying language for texts outside the code page was possible.
[P100004682]	The "Language Definition Input" component provided some unsupported output type choices, leading to compile errors if used.
[P100004685]	In both screen editors, it was possible to set negative line widths.
[P100004702]	When running as non-admin and trying to write to a protected location, no error message was displayed.
[P100004706]	Selecting and modifying a signal name in the "Connect to bus" dialog would edit the whole signal name, even if only part of it had been selected.
[P100004718]	A field in the test definition editor (EndSeq) that should not be editable was possible to edit.
[P100004742]	It was possible to start GUIDE with Basic license, which is no longer supported.
[P100004744]	Major.Minor version is now included in Start Menu shortcuts for user manuals. (The Start Menu in Windows 10 does not display subfolders for shortcuts).

[P100004771]	An error dialog was displayed if the enter key was used in the edit field of the install HWD dialog.
[P100004782]	When importing test definitions from an excel file it was not possible to overwrite an existing file in the project folder.
[P100004783]	When trying and failing to open a corrupted project file, GUIDE did not display the start page afterwards.
[P100004774]	Only Latin-1 characters are considered valid for values of “Application Type” and “Application Version” fields.
[P100004796]	In VBSE, it looked like editing of text positions in text lists via the Screen Manager would be possible (it isn't).
[P100004801]	Right aligned texts would sometimes appear to be slightly cut off in VBSE when zoomed in. This did not affect output to display hardware.
[P100004816]	Custom default values for PLC VAR_OUTPUT variables were not set for POU's called directly from GUIDE code.
[P100004817]	It was not possible to use non-decimal default values for VAR_INPUT signals in POU's called directly from GUIDE code.
[P100004818]	Drag and drop of types into a POU to create new variables would in some cases generate incorrect code into interface section.
[P100004821]	It was not possible to open a project if its .tp1x file was corrupted.
[P100004823]	String constants with special characters could sometimes be missing some characters when opened for editing in GUIDE.
[P100004828]	There were some editing inconsistencies for page properties depending on whether the edit dialog or the edit inspector was used.
[P100004830]	In some cases an error message could be shown after a second debug session ends, if the GUIDE project was edited between debug sessions.
[P100004835]	Renaming a file in the Project Manager to the same name, but in a different case, was not possible.
[P100004839]	Editing components with more than two V-parameters in the Query dialog could lead to a situation where only the Cancel button was enabled.
[P100004849]	In some cases, two buttons in the VBSE toolbar could become invisible but still functional.
[P100004850]	Some changes in VBSE did not cause the undo button to become enabled.
[P100004851]	In VBSE, the edit dialog was enabled when multiple objects were selected, although it does not support editing of multiple objects.

[P100004853]	When adding multiple header files at the same time, the "Make your C code Available for POU's" dialog was sometimes shown multiple times.
[P100004855]	Test related CLI commands did in some cases not return exit code 1 on fail.
[P100004859]	On some Win10 computers, the icon shown for items in the Function and Hardware tabs were incorrect.
[P100004894]	It was not possible to set negative padding values for images using the edit dialog in VBSE. (It worked using the inspector.)
[P100004896]	The flexible width setting for images was sometimes possible to edit when it shouldn't be from the VBSE inspector.
[P100004017]	Error/Warning/Hint Messages was not cleared if there were no more non-licensed blocks.
[P100004247]	In the test tool the hide/unhide checkbox was clickable from the entire cell making column width adjustment difficult.
[P100004448]	Texts in the CAD area could appear temporarily distorted when panned over the window edge.
[P100004485]	The text labelling regarding options for ports duplicating in page interface (and vice versa) was confusing and misleading.
[P100004579]	The manual did not describe the .p1m file.
[P100004622]	On creating a new GUIDE project, the name was limited to 50 characters.
[P100004646]	A namechange on a test case was not reflected in all instances in the test tool.
[P100004664]	Sorting of fonts in the Classic Screen Editor (CSE) did not always match with the sorting indicator in the fonts context menu.
[P100004668]	Some unsupported Windows context menu items for text edit fields have been removed (Right to left reading order).
[P100004679]	The cut indicator for image objects was not always updated immediately in the Classic Screen Editor (CSE).
[P100004714]	The manual was outdated regarding license requirements for using the debugger tool.
[P100004736]	It was not possible to see/clear modified shortcuts in the "Shortcut:" field before the Apply (or OK) button was pressed.
[P100004761]	The order between "Select" and "Step" was inconsistent in the Search/Replace interface.
[P100004766]	An "Unable to focus" message was sometimes shown when project files were being edited outside of GUIDE.
[P100004820]	In VBSE, multiselection did sometimes not enable editing of common properties in the inspector correctly.

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- [P100004837] It was possible to set the array length to 0 in the add variable dialog for PLC.
- [P100004845] In Compare SCS, the compare coloring would become incorrect if any part of the compared graphical code was selected.

Version 11.0.8

11.0.8 (February 2019)

What is Fixed

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|--------------|--|
| [P100004665] | GUIDE did not correctly identify the font needed for compilation when a specific style of a base font was not installed in Window. |
| [P100004673] | In some cases, compiling multiple times with unsaved project files could lead to an error message being shown: "Error create window device context". |
| [P100004699] | The Z order of texts and lines in the Vector Based Screen Editor (VBSE) could become corrupted when using the Undo function. |
| [P100004703] | SVG images used in the Vector Based Screen Editor (VBSE) were in some cases not shown correctly on display hardware. |
| [P100004753] | In some cases, no data template CSV file was generated for ROP data. |
| [P100004757] | Compilation with one specific beta HWD for DM1000 was not possible due to an issue with multi-touch support. |
| [P100004767] | In some cases, Switch components with Strings would not function correctly. |
| [P100004778] | Some library functions could not be compiled when used in a DM430 application. |
| [P100004790] | Using the same object page in more than one module made it not possible to compile. |
| [P100004791] | A project with multiple tif images would intermittently fail to compile. |
| [P100004638] | Images with mono color were sometimes shown differently on a display hardware unit than in the GUIDE preview. |
| [P100004760] | Repeat-until loops were interrupted after the first iteration in Test and Debug use cases. |

Version 11.0

11.0.7 (November 2018)

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

- [F00456] **Feature:** Multi-user support and removal of admin requirement at runtime for PLUS+1 tools
- Support for multiple users on the same computer
 - Running as administrator is no longer required, nor is it recommended
 - It is now possible to perform an unattended (non-interactive) installation of GUIDE. Just specify the flag: "/VERYSILENT" on the command line after the installer EXE file name.
- (W00230, W00437)
- [F00360] **Feature:** Widget Libraries
- Libraries may now contain widgets. A library widget is used in the same way as other widgets but they can't be opened or edited.
 - Library widgets can be license controlled.
 - Library widgets are added by reference; their content is hidden and immutable. They may also be extendable, in which case they can be imported to a project in a similar way as an external screen definitions file.
 - It is possible to search for library widgets.
 - Vector-Based Screen Editor GUI has been rearranged and a tab containing libraries has been added.
 - If a library widget has no translation for a certain language, a translation can be added to the PLUS+1 GUIDE application.
 - If a library widget contains touch related functionality and such functionality is not supported by the HWD of a GUIDE application, it will still be possible to use that library widget. All touch outputs will be set to zero in run-time in that case.
- [F00453] **Feature enhancement:** GUIDE GUI Enhancements for 11.0
- New start page with shortcuts to common tasks
 - Configurable number of recent projects
 - Possibility to bookmark projects
 - Many functions are now accessible without an open project
 - Simple search field in the right side tabs
 - "Recently used" and "Favorite" categories added to component tree
 - Possible to store Modules, C, CCP and PLC code in "My Code" tab
 - Autocompletion and other improvements of the "Connect to Bus" dialog
 - Support for storing and switching between multiple layouts of GUIDE
 - Improved structure in page navigator context menu
 - Improved query dialogs
- (W00023, W00025, W00057, W00109, W00140, W00148, W00151, W00190, W00195, W00246, W00251, W00325, W00327, W00445, W00481, W00483, W00493, W00495, W00527, W00578, W00609, W00614, W00617)

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- [F00455] **Feature enhancement:** Compilation speed for projects with many Vector-Based Screen Editor screens has been improved.
- [F00466] **Feature enhancement:** PLC updates for 11.0
- Full support for reference types (ref_to)
 - Fewer lines of less complex code is now being generated, leading to faster compile times.
 - Misc improvements towards compliance with version 3 of the standard (see compliance statement for more information)
- NOTE: Manually written C code that used definitions made in PLC header files directly may no longer compile. This applies especially to use of PLC STRING data type in manually written C code. Use of PLC STRING data type in manually written C code is not supported. See the GUIDE manual for more details about the recommended method to pass string data between C code and PLC code.
- [F00444] **Feature enhancement:** Lock Application to multiple partnumbers
- Support for disabling page view if locking application to multiple partnumbers
- [F00465] **Feature enhancement:** License controlled page view access
- Support for library developers to disable page view if user does not have required license installed.
- [F00458] **For Evaluation:** Vector-Based Screen Editor support for the new DM display family
- If supported by the HWD, it will be possible to add a boot logo that is shown when the target display is starting.
 - When the HWD supports multiple touch streams, screen objects will consider all touch streams and output the first touch it detects, if any.
 - If supported by the HWD, a new type of screen object displaying graphics from the SYS will be available.
 - If supported by the HWD, it will be possible to use anti-aliased font rendering.
 - HWDs can now support more than one font format. Which font format to use in those cases can be set for each font.
- [F00462] **For Evaluation:** Debugger Display Simulator
- It is now possible to view the graphics of VBSE applications while debugging them.
 - A new “Debug Visualizer” button has been added to the Debug Toolbar of GUIDE.

What is Fixed

- [P100004554] In some cases, compile change would produce unexpected output when screen objects were added to a screen definition and no changes were made to any calling module.
- [P100004604] In some cases, text lists with thousands of elements could cause unexpected ECU behavior.
- [P100004470] Editing properties in a large project in Classic Screen Editor could be slow in Windows 10.

[P100004519]	When no project was open in GUIDE, it was not possible to enter the character 'p' into the search box.
[P100004536]	In some situations, when two texts in Vector-Based Screen Editor had different length, both texts would be rendered with the same length.
[P100004552]	Using NV Parameters as Loop Input in Debugger did not work.
[P100004561]	When modifying a coordinate of a screen object with non-zero rotation point offset in Vector-Based Screen Editor, the other coordinate could also be modified.
[P100004569]	On MC050-110 hardware, repeat-until loops could in some cases be interrupted prematurely.
[P100004605]	In some cases, a large amount of connections to a POU Call in a Screen Definition could cause a compile error.
[P100004607]	Debugging of projects using precompiled code (CCP) was not possible in 10.1.
[P100004615]	Compile Changed did not work after a module had been removed.
[P100004619]	In a project with many modules, compiling while a module other than the main module was displayed could cause the project to end up in a non-editable mode after compilation finished.
[P100004645]	Touch detection was off by one pixel along the right and bottom edges of a screen object.
[P100004650]	In CLI mode, -proceed-on-warnings had no effect on the "missing Tool Key" warning.
[P100004501]	A treeview-related error message was sometimes shown in Vector-Based Screen Editor after certain operations.
[P100004505]	Change of sorting order in Screen Manager inside Vector-Based Screen Editor could cause the nodes to be rearranged in an incorrect way.
[P100004514]	In some cases, code points below 256 were not included in the code point set even though they were selected.
[P100004523]	GUIDE could become unresponsive in some situations when closing the Test Tool after adding a new test case.
[P100004524]	When having two monitors with different resolution the Test Manager Inspection panel could become hidden when moving the Test Tool to the monitor with lower resolution.
[P100004530]	Precompile analysis could give false warnings for C code PLC POUs about items defined in header files made available to PLC code.
[P100004532]	There was no reference image for component Advanced checkpoint in the manual.
[P100004551]	Editing a text in Classic Screen Editor could result in the loss of an internal line break.
[P100004563]	Color constants passed to POU calls inside screen definitions resulted in compile errors.

[P100004565]	VBSE was not set to read-only mode while debugging.
[P100004593]	In some situations, closing a modified project to P1P after an HWD change could fail with an error message.
[P100004599]	Inserting rows in Test Tool resulted in unintuitive handling of CAN messages.
[P100004612]	In some cases, debugging into FBD code could cause an error message to be shown from the debugger.
[P100004613]	In the GUIDE manual, the PLC function 'Mid' was incorrectly called 'Middle'.
[P100004621]	In some situations, search results in a modified module would not be updated unless the module was saved.
[P100004625]	In some situations, Compile Changed could fail after a debug session, test code generation or Simulink S-Function generation.
[P100004626]	Lower case hex digits in escape sequences of GUIDE STRING constants were not recognized as valid escape sequences.
[P100004629]	When changing the interface signal names on a page tested with Test Tool it could be that added columns seemed to be included in the test when they were not.
[P100004506]	The size of the highlighting of selected objects in Screen Manager would not update when the name of a selected object was changed.
[P100004507]	Adding a corrupted SCS file to a project lead to two error messages being displayed instead of just one error message.
[P100004516]	Closing a project that had already been deleted on disk would lead to an error when trying to open another project.
[P100004538]	Duplicate parameters to GUIDE CLI were not correctly detected and reported.
[P100004546]	Cycling through a component's data types with key-presses of the initial character of the type name could give the types in the wrong order on the first cycle through.
[P100004553]	It was not possible to debug applications containing NV-parameters with names that were identical, except for character case.
[P100004564]	In Vector-Based Screen Editor, it was not possible to freely edit the size of non-True Type fonts in the Common Properties dialog.
[P100004574]	Shortcuts for Ins/Home/PgUp were in some cases shown as NUM X in the Options Dialog "Shortcut"-field.

Version 10.1.7

10.1.7 (June 2018)

- [F00455] **Feature:** GUIDE Compile Time Optimization
- Code generation of screen definitions has been optimized.

What is Fixed

- [P100004521] For large projects with many VBSE screens and/or object pages, the command line could become too long, thereby preventing compilation. This defect fix also requires an updated HWD file to work.
- [P100004529] The carry output could be set incorrectly on the Loop Counter with Carry component on MC0xx-0xx hardware if the X2 output had U8 type and the A2 input was of U16 or higher type and with a value of more than 255.
- [P100004513] When reinstalling the tool on a computer where the previous installation had been damaged in a way such that the uninstaller for that version no longer worked, the installation process did not work correctly.
- [P100004522] In some situations, Vector-Based Screen Editor would crash.
- [P100004525] Signals that had a Namespace from outside of the tested page were not available in the test interface.
- [P100004531] Modifying constants in the Configure Object Interface dialog would sometimes clear the value of other constants.
- [P100004533] Rotated screen definitions were rendered incorrectly on target displays.
- [P100004534] When changing HWD, screen definitions having ScaleSize set could be corrupted.
- [P100004535] In Vector-Based Screen Editor, an access violation could occur when connecting two objects to a signal at the same time.

Version 10.1

10.1.6 (May 2018)

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

- [F00426] **Feature:** Official support for ARM-GCC compiler 5.4.1 for DM430E hardware.
(It was included for evaluation in 10.0).
- [F00424] **Feature Extension:** Added support for Function Block Libraries including dependencies on C, CCP and PLC code.
- Library functions used in applications can now embed generic CCPs, PLC and C code.
 - Files included in Function Libraries can now be addable automatically to the project when adding a Function Library that depends on them.
 - Files included in Function Libraries can now optionally be addable to the project via a context menu.
- [F00427] **Feature Extension:** VBSE Widgets Update 2
- More detailed hyperlinks have been added to error messages involving widget interface signals and text object data value signals.
- Screen object properties affecting top level screen definitions and widget instances have been separated in the inspector.
- It is now possible to edit screen objects having their Enable property set to false. Such objects will not be shown in the Preview.
- [F00428] **Feature Extension:** Strings in BIOS-HWDs.
- Initialize Hardware Output, Hardware Input, Hardware Input Typed, Hardware Output, Read Output from Hardware and Read Output from Hardware Typed now support datatype STRING.
 - Set Value now supports datatype STRING.
 - Initialize Hardware Output now supports kernel arrays.
- [F00429] **Feature Extension:** GUIDE command line part 3.
- create-project command.
 - error-check-all and -error-check-changed commands.
 - print-file-info has support for LHX, P1X and P1P files.
- [F00430] **Feature Extension:** PLC Editor Enhancements.
- Converting PROGRAM POU's to FUNCTION_BLOCK POU's is now possible via a context menu.
 - Some code completion improvements have been added.
 - Editing of POU interfaces in grid mode has been improved.
 - Support for using PLUS+1 GUIDE "COLOR" data type in PLC code.
- (W00459) (P100004246)
- [F00431] **Feature Extension:** GUIDE Menus Enhancements.
- GUIDE menus have been slightly reorganized, and additional options added.
- (W00089) (W00141) (W00333) (W00421) (W00422) (W00423) (W00471) (W00502)

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- [F00433] **Feature Extension:** VBSE Multiple Skin Support
When an HWD supports multiple skins, it will be possible to choose which skin to show.
- [F00441] **Feature Extension:** VBSE Enhanced Connections
- Improvements have been made in the area of screen definition interface signal addition.
- It is now possible to select multiple screen definition interface signals and buses. (W00248)
- It is now possible to change the data type of multiple signals simultaneously. (W00312)
- The interface of a widget or POU call can now be edited in a dialog where all connections are shown in a table.
- A command for copying and connecting a widget or POU call sub-bus to the screen definition interface has been added.
- A command for connecting members in a widget or POU call sub-bus to members in another bus structure has been added.
- Constant value editing has now been improved.
- [F00443] **Feature Extension:** Dedicated HMI section for non-programmable hardware, and programmable HMx and foot pedal hardware, have been added to the Hardware Tab.
- [F00445] **Feature Extension:** Colors from color properties will not be rendered with alpha channel in Vector-Based Screen Editor.
- [F00448] **Feature Extension:** There is now extended support for importing a wider range of valid PLCopenXML format variations.
- [F00449] **Feature Extension:** Scaling of objects in Vector-Based Screen Editor.
- Scaling of screen objects with ScaleSize and KeepAspect has been improved.
- Due to the improved scaling, the appearance of an old application compiled with PLUS+1 GUIDE 10.1 may change.
- A warning message has been added when an old display project is opened to address the updated scaling.
- [W00245] **Feature Extension:** Increase size of signal selection comboboxes in Vector-Based Screen Editor
Signal selection comboboxes have been enlarged so that a greater number of signals can be displayed without the need to scroll.
- [W00541] **Feature Extension:** Fit Screen Size to Object in Vector-Based Screen Editor
A new context menu command "Fit Screen Size to Object" has been added for screen objects. It will set the size of the containing screen definition to the size of the screen object.
- [W00548] **Feature Extension:** Use modifier key to control mouse operations in the design area
Pressing the Control key while modifying the rotation of an image or an end point of a line will result in 15° increments of image rotation or orthogonal lines.
- [F00439] **For Evaluation:** Added initial support for C-compiler Linaro 6.3 for DM10X00 hardware.
- [F00452] **Information:** The EULA has been updated.

[M00130] **Information:** Hints related to changed component behavior will now be made for the three most recent previous versions only. When migrating older projects, GUIDE 10.0 can be used to find older hints.

What is Fixed

- [P100004443] Components Loop Counter and Loop Counter Level did not correctly handle the case where a signed output was used, and the value wrapped around the output type maximum. In that case, the output value was negative for one loop. The use of signed output types was not described in the manual.
- [P100004475] The Compare in Window component had an issue in the debugger and on DM430E hardware when inputs A1 and A2 were constant and with a difference in values of 2147483648. This defect did not affect any hardware that was released at the time.
- [P100004284] Search result links for PLC Data Type and PLC Global Variable did not work.
- [P100004290] No warning was displayed on opening a project saved in a later (but still compatible) file format.
- [P100004312] Pages that failed to compile for test was still marked as tests passed in the page tree view.
- [P100004322] When routing a wire from one bus to another bus that is related to the first bus (e.g. a parent bus), then the name suggestions would not be displayed correctly.
- [P100004380] In addition to the normal GUIDE window, an empty window was displayed on some users computers.
- [P100004390] Fully transparent images were rendered as fully black and opaque on the display.
- [P100004429] Having a huge amount (more than 1000) of global floating point PLC variables could make the startup time of the hardware unit too long, and the watchdog would cause reboots.
- [P100004437] In some cases, connected outputs in Vector-Based Screen Editor led to an error message without a working hyperlink.
- [P100004450] Touch areas in nested widgets did not compile.
- [P100004454] Import of some ESD files resulted in an access violation.
- [P100004456] It is now possible to connect a string signal to a data value in an Application Log 2 text list.
- [P100004458] When reconnecting a wire to a bus that it was already connected to, in some cases the presented list of available connections was reduced for the second connection.
- [P100004459] Some components with STRING as output type would not compile if they were located in a class definition.

[P100004466]	Importing of LD code using wired Boolean logic would result in some connections being lost and some affected networks could potentially be broken up into separate networks.
[P100004484]	Compilation was terminated with an irrelevant error message if the application contained a screen definition which in turned contained a widget which had never been opened.
[P100004487]	Installing a not valid HWD file could in some cases cause the HWD file to be unpacked to disk. This could later cause GUIDE to lock up while rebuilding the hardware tab data.
[P100003309]	The manual did not explain overflow conditions and capped components in sufficient detail.
[P100004030]	It was possible to add a traceability property with an empty ID.
[P100004256]	In Vector-Based Screen Editor, aspect ratio was not maintained when an image was resized to a few pixels and then enlarged.
[P100004282]	Compare SCS failed to move to next difference when standing on a interface difference on a linked page.
[P100004286]	Discarding unsaved changes when closing a POU tab did not work.
[P100004288]	Unsaved changes in PROGRAM POU interfaces would lead to unclear error messages.
[P100004291]	An error message was shown if a language was added to a PLUS+1 GUIDE project containing unvisited screen definition.
[P100004296]	It was possible to set an invalid value for a FONT constant. Doing so would result in an unclear error message during compilation.
[P100004283]	No error was displayed when the PLUS+1 Base installation was missing.
[P100004309]	Date format in test result xml file and in inspector was not using standard format (ISO8601).
[P100004317]	It was not possible to add images in Vector-Based Screen Editor when the search feature of the file browser dialog was being used.
[P100004329]	When replacing image formats during a change of HWDs, it was not always possible to use the Select All checkbox.
[P100004333]	GUIDE crashed when closing if there were any detached windows.
[P100004335]	The mathematical formula describing the Scale Component was missing in the manual for GUIDE 10.0.
[P100004340]	When the layout pane in Classic Screen Editor was smaller than the GUIDE window and the low right part of the layout pane was displayed, dragging a new screen object would move the view so that the top left corner of the layout pane was displayed.
[P100004342]	Sometimes when a widget was being used in multiple instances, an incorrect error message would be reported during compilation.

[P100004353]	When a page in an SCS module was queried while VBSE was open, the properties in the VBSE inspector could become rearranged.
[P100004356]	When VBSE was open and a POU called from the currently active screen definition was edited, changing the name of an object in the screen definition could result in an apparent name change in the POU interface.
[P100004383]	It was possible to swap a supported "Non-volatile Memory Dynamic Input" component into an unsupported "Non-volatile Memory Dynamic Input" component.
[P100004384]	Changes to test case descriptions were not reflected in the TestStatus.xml file immediately.
[P100004385]	The size of an image list using a layout manager was not updated when the active index was changed and an image of different size was selected.
[P100004398]	The save indicator for PLC code did not give immediate visual feedback on save for POUs with unsaved changes before a compile.
[P100004403]	An unhelpful error message was shown when mixing incompatible types on a switch component if the output type was STRING.
[P100004404]	Compare SCS did not display all page property differences.
[P100004405]	Test Tool reported 'Error loading SUT.DLL' in some situations.
[P100004413]	The -change-project-hwd command returned the wrong exit code when used without the -proceed-on-warnings command modifier and there was a warning.
[P100004414]	Edit test case returned an out of data type error for each iteration, so if a step had multiple iterations it resulted in a burst of error messages.
[P100004415]	Defining a test case with a CAN message length greater than 8 resulted in an access violation.
[P100004428]	When a screendefinition calling a POU is being exported, a dialog with the option to include the entire PLC XML file of the POU is shown.
[P100004431]	Breakpoints in C code were sometimes not marked in the Breakpoints tab as being the currently hit breakpoint.
[P100004434]	Read-only TestStatus.xml file was missing information warning when trying to update from Test Tool.
[P100004439]	Namespace was sometimes incorrectly written as "Name Space" in the manual and in the tool itself.
[P100004442]	Read-only project files were sometimes missing from the warning shown when opening a project. In other cases shown as duplicates when packing to P1P.
[P100004445]	The manual did not describe the sub-command shortcuts usable while routing or moving code.

[P100004449]	In some cases it was not possible to rename a page to the name of a recently deleted page.
[P100004453]	Upper/lower case in test case names was handled inconsistently.
[P100004461]	Missing inclusion of limits.h.
[P100004469]	Incorrect CLI return code 0 was returned when trying to replace an existing GUIDE HWD without using the proceed flag.
[P100004472]	When compiling a project using an old HWD for MC0xx-0xx in GUIDE 10.0, MemCalc did not provide accurate numbers for the memory usage. Using an updated HWD (or GUIDE 10.1) resolves this issue.
[P100004478]	In Vector-based Screen Editor, only the currently active translation was checked for texts having the CheckTextLength property set to true.
[P100004493]	The CAD area was not refreshed after following a view logical net compile link.
[P100004496]	In some cases, a bus that was removed and then added again would not show up in the signal interface of a screen definition.
[P100004498]	When installing hardware or libraries, it was not possible to manually edit the location field.
[P100003312]	There were some inconsistencies in the ROP examples in the manual.
[P100004292]	Lines added to the design area in Vector-Based Screen Editor were flipped.
[P100004293]	The image indicating an undefined image list did not fill the entire image list object when an image list was added to the design area in Vector-Based Screen Editor.
[P100004294]	When opening a C code POU in a project that contains any duplicate POUs, an unclear error message was displayed.
[P100004306]	It was not possible to rename an architecture document before it was generated for the first time.
[P100004321]	Query on a page did not pre-select the page name for immediate editing.
[P100004338]	Using the keyboard to select signals in the Vector-Based Screen Editor Common Properties dialog did not always work.
[P100004339]	When the path to an image file had been pasted in the Vector-Based Screen Editor image file dialog, the select button was not enabled.
[P100004347]	The last line of the user defined C code in the C Code preview tab for POU code was displayed in duplicate.
[P100004351]	In VBSE, dragged library items would get an incorrect icon after a screen definition was moved using drag and drop.

[P100004396]	Expanding or collapsing a node in the page navigator tree could in some cases mark the wrong node.
[P100004402]	In Compare SCS the color of the overlay page view icons did not match the color of the drawing elements.
[P100004412]	In some cases, temporary header files could get incorrect include guards.
[P100004421]	There was no help button or help shortcut active in the Delete/Remove file dialog.
[P100004423]	There were some inconsistencies in behavior for setting C code breakpoints.
[P100004451]	In some cases GUIDE would not alert the user about changes made in project files outside of GUIDE.
[P100004480]	Under some circumstances, a display application with a code point set would generate a number of files with names on the form “__CodePointDefinitionTemp1.fot”, where the digit 1 is repeated an indefinite number of times.
[P100004488]	When a screen definition was dragged in the layout pane, the upper left corner coordinates were not updated in the inspector until the screen definition was de-selected and then selected again.
[P100004320]	Improved error message regarding expired maintenance period.
[P100004500]	The file name displayed in the Edit Image dialog in Vector-Based Screen Editor was not always correct.

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.

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 Aplog 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 Aplog 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.

[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).

[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.

[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.

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.

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.
- POUs 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\P1Tools\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.

[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 Appllog 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.

[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".

[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.

Version 9.0.8

9.0.8 (December 2016)

What is Fixed

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|--------------|---|
| [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. |
| [P100004023] | Members in sub-buses of the buses connected to Show Screen or Write Applog components did not appear in the Connect To Bus dialog. |
| [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. |
| [P100004021] | In some cases the error information tab was not updated correctly after a compile changed. |

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)

[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.

[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

[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.

[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.

[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.

[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.

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.

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 POU's 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.

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.

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.

[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 Appllog 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 Appllog 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.

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

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.

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 Applog have been updated so that the selected screen/applog 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.

- 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

	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]	Busess 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.

[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.

[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.

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.

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 $0x10000000000000000 \leq (A1 - A5) * (A3 - A4) \leq 0x100000000FFFFFFFFF$.
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

	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.

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 Applog, 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.

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 Aplog, 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 TI 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 Check-point. 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 Check-point. 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.

[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 undescriptive 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 uneditable 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.

[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.

[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.

[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.

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. |

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.

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 'SimModel'** GUIDE upgrade features automatically for evaluation purposes.
- [F00151] **For Evaluation:** Debug Tool has been added to GUIDE (Add-On license required: 'FuncSafety'*).
- [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.

[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.

[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.

[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.
[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.

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.

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.

[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.

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

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]

[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.

[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.

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.

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.

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.

[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.

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]

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]

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]

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]

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]

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]

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 Manager/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 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]

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]

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.

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]

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)

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]

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\<user profile name>\Application Data
- %UserProfile% is typically: C:\Documents and Settings\<user profile name>
- {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\

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).

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].

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]

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.

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].

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].

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.

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 P100000065, P100000261, P100000340, P100000413, P100000496, P100000529, P100000681, P100000547, P100000575, P100000727, P100000748]

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- 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]
 - 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]

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- It is possible to enter a “d” or “D” to disable a checkpoint or NV Symbol from 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 gird [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].
 - 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].

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].

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 it is 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].

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]

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].

VERSION 2.0.4 (March 2005)

What is Fixed

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

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.