SISTEMA version history

Up to version 3.0.3.1, July 2025

UPD = update
IMP = improvement
FIX = bugfix
MSC = miscellaneous
ToDo = in planning

Version 3.0.3.1

Type	Description
FIX	General bug fixing.
FIX	In subsystems of category 2, a DC value was incorrectly required, although none is required for components with fault exclusion. This problem has been fixed.
FIX	Double-clicking a message in the VDMA Manager caused an error. This problem has been fixed.
FIX	The SISTEMA schema file 'ssm_30.xsd' contained errors. This problem has been fixed.
FIX	It was not possible to add an EMI-related document to a safety function. This problem has been fixed.
FIX	In rare cases, the generation of the summary could not be completed due to an infinite loop. This problem has been fixed.
FIX	In the Japanese language version, an error ('Error on loading ID-Manager!') would sometimes occur at startup. This problem has been fixed.
UPD	The Japanese and Spanish languages have been revised.
IMP	New option added to share the clipboard (Copy & Paste) with other applications (e.g. a second SISTEMA instance) (see Options → Expert Settings).
MSC	Some of the APIs used and the development environment have been updated.

Version 3.0.2.1

Type	Description
FIX	The SISTEMA configurator had problems detecting whether a selected directory was a network drive or a cloud directory (e.g. OneDrive). For this reason, the automatic check for cloud directories has been removed for the time being. Please note: The directories selected in the SISTEMA configurator must be located on the local hard drive.
FIX	If the '`Control modes and mode selection`' safety function type was selected in a safety function, and the project was reopened, the '`Isolation and energy dissipation function`' safety function type was displayed instead. This occurred because the same internal ID was assigned to both safety function types by mistake, and the first entry with this ID was displayed the next time the project was opened. This problem has been fixed. The problem has been fixed. Please note: This problem has existed since SISTEMA version 2.1.x. Please check your projects if necessary.
FIX	Copying a safety function did not copy the associated safety function identifier (SF-ID). This problem has been fixed.
FIX	The link in the SISTEMA help menu to the document 'Innovations in SISTEMA 3.0' was faulty. This problem has been fixed.
FIX	Double-clicking to open a SISTEMA project (*.ssm) did not work if SISTEMA was already running. This problem has been fixed.
FIX	Error when opening protected SISTEMA libraries. This problem has been fixed.

Type	Description
FIX	No calculation was performed for a category 2 subsystem, in which a fault exclusion was assumed for the functional channel (because the functional channel consists exclusively of components with fault exclusion). This problem has been fixed.

Version 3.0.1.1

Type	Description
FIX	Update problems regarding contextual data fields. These problems have been fixed.
FIX	General bug fixing.
FIX	The checksum changed when starting SISTEMA in a different language. The problem has been fixed.
UPD	In German, the word 'Subsystem' has been changed to 'Teilsystem' (as in DIN EN ISO 13849-1:2023)
UPD	Changes in the standard ISO 13849-1:2023 have been implemented into SISTEMA. Details can be found in the document "Innovation in SISTEMA 3.0.". A short overview: • PFH now comes without index 'D' and defined as 'average frequency of a dangerous failure per hour' • Texts for estimating the PL have been adapted, including - "Simplified procedure" from section 4.5.5 now is "alternative procedure" in section 6.1.9 - Safety-related software developed in accordance with Section 7 and Annex J or no software available. Note added to Section 7 (software safety requirements) and Section 10.3 (qualitative aspects). • If the alternative method is used to determine the PL, SISTEMA checks the function (input, logic, output), which changes the requirements of the category. • New input option for electromagnetic immunity (EMI) at the level of the safety functions and the subsystem.
UPD	Updated to Firebird 5 (affects the SISTEMA device databases)
UPD	Green messages for components subject to wear have been set to yellow by default and can be manually graded to green.
UPD	The green message that the 5% limit value accuracy is used for the DC_{avg} has been changed to yellow. The message can be manually downgraded to green.
UPD	The device identification can be displayed in the tree view and can therefore be used for searching or filtering.
UPD	New optional documentation fields at the level of the safety function (interfaces) are added.
UPD	An additional documentation and document field for entering a performance level in relation to qualitative aspects (e.g. software / SRASW) has been added for the subsystem.
UPD	An additional document field has been added to existing documentation fields.
IMP	In the user interface, all numbers are displayed as rounded values according to the selected number of decimal places. However, calculations are always performed using the full, unrounded numbers to ensure maximum accuracy.
IMP	A new diagram for the representation of the achieved PL / PFH value has been added to the PL tab of the safety function.
IMP	All messages that can be generated by SISTEMA can be documented. The documentation for this is always part of the summary.
IMP	Yellow reports can be downgraded to green by the user if this is documented. The information for this is always part of the report.
IMP	You can enter your own contact information on the last page of the report.
IMP	In the VDMA Library Manager, two decimal places were always displayed by default. Now, only the decimal places that are actually required are displayed.
MSC	Adjustment within the text of the SISTEMA readme file (no changes in content).
ToDo	Update help file.

Version 2.1.1.2

Type	Description
FIX	Refresh problem of the tree view while the filter is active. The problem has been fixed.
FIX	General bug fixing.
ToDo	Update help file.

Version 2.1.1.1

Type	Description
IMP	On saving a project, the existing *.ssm project file is copied to *.ssm_backup. If an unexpected problem occurs while saving, the user can restore the old project file by renaming it.
UPD	SISTEMA summary has been updated. A note on the last page clarifies that this document is not complete technical documentation in accordance with EN ISO 13849-1.
FIX	There were occasional problems when querying for known problems and the currently available version (http request failed). The problem was fixed with version 1.0.9.0 of the IFA_WebRequest.exe tool.
FIX	Problems while loading project files, error message: "List out of bounds ()". Under certain circumstances, a project was saved multiple times within one project file (with SISTEMA 2.0.8). During opening - because of a problem while reading - the projects were merged, which caused objects (subsystem, blocks, etc.) to be created and displayed multiple times. The problem has been fixed. This version recognizes the problem; duplicate entries are detected, automatically corrected and displayed correctly. SISTEMA will write a log file for this purpose. Please check afterwards whether your project is valid. Please contact us if you have any questions or problems: SISTEMA@dguv.de.
FIX	General bug fixing.
ToDo	Update help file.

Version 2.1.0.6

Type	Description
FIX	Error message appeared when starting SISTEMA in the case where the decimal separator was set to a point (Windows country settings). The problem has been fixed.
FIX	The "Type of safety function" field within the documentation of a safety function was filled with the content from the previously selected safety function if the field remained empty. The problem has been fixed.
FIX	The automatic line break was incorrectly saved in the documentation fields. The problem has been fixed.
FIX	Display problems such as truncated text or text that is difficult to read due to the lack of contrast have been fixed.
FIX	Adding components from a VDMA library does not work correctly with the optional pop-up menu. The problem has been fixed.
FIX	General bug fixing.
MSC	Adjustment within the text of the SISTEMA readme file (no changes in content).
ToDo	Update help file.

Version 2.1.0.5

Type	Description
FIX	When reading read-only SISTEMA libraries, an error message appeared under certain circumstances, which led to the SISTEMA application being terminated. The problem has been fixed.
MSC	The automatic check for updates and errors was deactivated by default. This default has been changed. An automatic check is now performed at startup.
ToDo	Update help file.

Version 2.1.0.4

Type	Description
FIX	Problem with the preparation of the report: The list of devices with a mission time of less than 20 years sometimes had not been displayed. The problem has been fixed.
FIX	Problems with the layout when setting a scaling greater than 100 % in the advanced scaling settings. The problem has been fixed.
FIX	Some hints had not been translated yet. The problems have been fixed.
IMP	The layout of the SISTEMA configurator has been slightly revised.
IMP	The build version has been added as information in the title bar of SISTEMA.

www.dguv.de/ifa

Type	Description
ToDo	Update help file.

Version 2.1.0.3

Type	Description
FIX	The default password for network libraries was set incorrectly, resulting in a connection error. The problem has been fixed.
FIX	Error when displaying the name of the safety function: When entering the Safety function identifier, this text was added to the name of the safety function. The problem has been fixed.
FIX	Update problem in the display of the tree view when changing the sorting. The problem has been fixed.
FIX	Partially incorrect size or positioning of UI elements. The problem has been fixed.
FIX	The read-only documentation fields of read-only components were not displayed as 'read-only' (grey background). The problem has been fixed.
FIX	Error when using the filter function in the VDMA Library Manager. A possible problem has been found and fixed.
FIX	Error message when starting SISTEMA by double-clicking on a SISTEMA project file (automatic opening of the application via the file with *.ssm extension). The problem has been fixed.
IMP	The safety function identifier is now also displayed as a column in the list of safety functions.
IMP	The input field "Software suitable up to PL" at subsystem level has been renamed in "Qualitative aspects (e.g. Software) suitable up to PL".
ToDo	Update help file.

Version 2.1.0.2

Type	Description
FIX	Error when using the clipboard. The problem has been fixed.
FIX	Problem with the representation of large numbers: These were displayed as exponential numbers in all fields. The problem has been fixed.
IMP	Text wrapping enabled in all memo fields.
ToDo	Update help file.

Version 2.1.0.1

Type	Description
IMP	All messages are displayed in a message window which has been optimised for SISTEMA.
IMP	The default font size of SISTEMA has been increased.
IMP	The font size of SISTEMA can be adjusted in three levels (Options → View).
IMP	A list of recently opened SISTEMA project files has been implemented. The number of elements can be adjusted (Options →General).
IMP	New online version check with an automatic check on startup of SISTEMA. This check can be deactivated but is not recommended (Options →General).
IMP	The online list of known errors can be viewed via SISTEMA (Help menu). During startup of SISTEMA, this list is automatically queried, and changes are displayed. This function can be deactivated, but disabling this control is not recommended. (Options→General).
IMP	All devices of a safety function with a service life of less than 20 years are summarised in a list. This list is displayed at the level of the safety function ("PL" tab) and is part of a summary.
IMP	The default password for the SISTEMA network libraries can be changed. (Options → Expert settings).
IMP	VDMA66413 libraries can be added per drag & drop (in the tree view of the library manager).
IMP	You can add more than one VDMA66413 library at the same time.
UPD	All documentation fields have a monospace font. Each character is therefore of same width.
UPD	Devices with a mission time of less than 20 years are labelled with a "green" message (previously they were classified as "yellow").
UPD	Multiple selection has been implemented.
UPD	The "Type of safety function" on the documentation page of the safety function is also translated whenever the language is changed (as long as one of the SISTEMA specifications is used).

Type	Description
UPD	If the simple calculation method (Table K.1) is used, there is a new green message. This message shows which DCavg value is used for the calculation.
UPD	A new verification for direct entry of the values of a subsystem has been implemented. The system checks whether the manually entered performance level (PL) matches the selected category. If this is not the case, the subsystem is categorised as "Red", which means that it is not possible to calculate the safety function (SF).
UPD	If the name of a project, a safety function or a component has not been defined, this element is categorised as "Red".
FIX	General bug fixing.
FIX	Update problems in the channel manager. The problem has been fixed.
FIX	Minor errors in the summary / report have been adjusted (nothing safety-critical).
MSC	All APIs used and the programming environment have been updated so that new functionalities (e.g. extended search options) can be added in future.
ToDo	Update help file

Version 2.0.8.4

Type	Description
FIX	General bug fixing.
FIX	An error occurred when trying to import a device with Category B from the VDMA66413 library. The problem has been fixed.
FIX	Device type 4 was not displayed correctly in the library manager for the VDMA 66413 files, while the import of such a device did work correctly. This display problem has been fixed.
FIX	When copying an entire project, the file name was not reset. This could lead to an unintentional overwriting of the original file. The problem has been fixed.
FIX	Presentation errors in the report. The problem has been fixed.
FIX	There were problems in selecting items in the list of CCF measures. The problem is fixed.
IMP	The signature fields can now be hidden in the report.
IMP	It is now also possible to specify a reference designator for a safety function (Safety function designator), which is displayed in square brackets in the navigation panel.
ToDo	Update help file.

Version 2.0.8.3

Type	Description
FIX	General bug fixing
FIX	Problems while opening a project file via double click (works only if SISTEMA has already been started). The problem has been fixed.
FIX	The new value range for B10 / B10D values did not work correctly in SISTEMA. The problem has been fixed.
UPD	If a device without a required RDF value is imported from a VDMA library, this RDF value can be set by the user himself.
ToDo	Update help file

Version 2.0.8

Type	Description
UPD	There was a small adjustment in the VDMA schema file (the B10/B10D range has been extended). This has been adopted in SISTEMA.
UPD	CCF and DC measures have been adjusted to meet the current standard.
UPD	The field "DOCUMENT" can now also save a directory name instead of a file name. A directory has to be entered manually (e. g. by copy & paste) or inserted via drag & drop.
FIX	General bug fixing
FIX	Known bug/Former problem: Copy & paste of a complete project did not reset the creation date. The problem has been fixed.
FIX	For blocks and elements, the B10D value was not correctly transmitted in the summary. The problem has been fixed.

Type	Description
FIX	Refresh problems in the channel manager. The problem has been fixed.
FIX	When performing copy & paste of text e.g. from PDF files, control characters might have been inserted into data fields. After saving the project, the project file could no longer be read by SISTEMA. The problem has been fixed.
FIX	Resetting the window settings by using the SISTEMA-Configurator did not work correctly. The problem has been fixed.
MSC	The colour of the VDMA Devices icon has been changed for better visibility.
MSC	The list of messages can be exported as a text file (right-click on the message window).
ToDo	Update help file

Version 2.0.7

Type	Description
FIX	General bug fixing
FIX	During start-up of SISTEMA an Umlaut in the file paths [DataDir] or [WorkDir] resulted in an error. The problem has been fixed.
FIX	Under certain configurations, there are display errors in the VDMA Library Manager. The problem has been fixed.
FIX	The column "DCavg" had been missing in the list view of subsystems and has been added.
FIX	If the point was used for a decimal separator in the country-specific number formats of Windows, SISTEMA has not allowed the input of numerical values such as in the field of "PFH_D". The problem has been fixed.
FIX	Certain constellations led to the list of SISTEMA libraries being reset. The problem has been fixed.
UPD	In the list of "Typical components values" the entry "Push buttons" was missing, it has been added.
MSC	In rare cases, there are display problems, such as the radio buttons in the tabs are not completely visible. A new option has been added (menu: options/view). For these special cases, it will be helpful to set this option to a value like "125" or "150" (magnification of the image in percent).
MSC	The shortcut key CTRL + A was used by SISTEMA to open the VDMA Library Manager so far. This keyboard shortcut changed to CTRL + M.
ToDo	Update help file!

Version 2.0.6

Type	Description
FIX	General bug fixing
FIX	Update issues in the library manager for the VDMA-66413 format fixed.
UPD	Japanese has been implemented as an additional language in SISTEMA. The translation was done by the company Omron.
UPD	The summary/the report has been revised. The level of detail can be adjusted with the help of new print options.
UPD	"Performance Level Software" was renamed to "Software suitable up to PL".
UPD	Links are updated (for example, "Innovations in SISTEMA 2.0 – Beta" renamed to "Innovations in SISTEMA 2.0")
MSC	If the performance level of a subsystem is determined with the help of a SIL value, a green hint message is generated.
MSC	The default setting for decimal places has been reduced from 2 to 1 or 0.
ToDo	Update help file!

Version 2.0.5 build 2 beta

Type	Description
FIX	While using the copy function a problem occurred. The problem was fixed.
FIX	Project files that were created with a newer version of SISTEMA and having the same data structure were not accepted. The problem was fixed.

Version 2.0.5 beta

Type	Description
FIX	In some situations, a project could not be saved. The problem has been fixed.
UPD	Firebird has been updated (from 2.5.2 to 2.5.6).

Version 2.0.4 beta

Type	Description
FIX	General bug fixing
FIX	The problem with the text box for "Lambda" values (block/element) is fixed.
UPD	Link "Getting Started" added to the Help menu.
UPD	Links are updated.
UPD	Windows 10 support (Windows 2000 and Windows XP are no longer supported).
UPD	Texts of the user interface have been adjusted/unified.
IMP	Support for multi-user operation of SISTEMA projects. If a project is already being processed by someone else, a message shows up.

Version 2.0.3 beta

Type	Description
UPD	Details of all changes are described in a separate paper. You can find the link to this PDF file in SISTEMA under "Help -> Innovations in SISTEMA 2.0 - Beta".
UPD	Support of the universal data format for safety-related values of components or parts of control systems "VDMA 66413".
UPD	Expansion by many additional documentation fields at all levels, so that all data fields of the format "VDMA 66413" are supported by SISTEMA.
UPD	SIL can be used as a parameter for evaluating a control system. SISTEMA automatically converts the SIL into a matching PL.
UPD	Texts for the category requirements have been revised. If available, additional information is displayed by using tooltips.
UPD	In addition to the category requirements, performance level requirements have been added, which have to be confirmed by the user.
UPD	A new gui-control "Software PL" was added. It can be used to specify the achieved performance level by the application software of the control part.
UPD	The list "Type of safety function" has been enhanced by additional items.
UPD	List of DC and CCF measures has been updated (ISO 13849-1:2015).
UPD	List of substitute values for $MTTF_D/B10_D$ "method of good engineering practice" has been updated (ISO 13849-1:2015).
UPD	Amendments to ISO 13849-1:2015 have been entered into SISTEMA, i.e.: - Capping of $MTTF_D$ 2500 a for Category 4 by default True - Reduced testing frequency for category 2 is possible - New simplified method for the output part of the SRP/CS for determining PL/PFH_D without $MTTF_D$ - PL_r determination with possibility to consider the probability of occurrence Details can be found on: http://www.dguv.de/webcode/e89507 ("Amendment of EN ISO 13849-1, A survey of the essential improvements in 2015")
IMP	The texts for CCF measures and DC measures are automatically adjusted to the current SISTEMA language. Self-defined measures are not translated. This behavior can be adjusted by selecting "Expert settings/Use the current language for CCF-/DC-Measures".
IMP	Additional messages, indicating that inputs maybe incorrect or missing, have been added.
IMP	The validation of XML files against a schema file is performed directly by SISTEMA. An additional Windows DLL file (MSXML4.dll) is no longer necessary.
IMP	For creating a new project, the default values have been adjusted in order to avoid incorrect values to be entered or missing inputs.

Type	Description
IMP	When selecting "Typical components values", the description and details for the selection are copied to the clipboard. Thus, if necessary, this information can be entered into the documentation field.
FIX	After saving a project, the checksum may change due to non-visible characters like "Tab" at the end of a text which are removed. The problem has been solved.
FIX	Problems while updating the tree view have been fixed.
FIX	The list of libraries in the Library Manager of SISTEMA was not saved when SISTEMA was closed, while the library window was still visible. The problem has been fixed.
FIX	Problems with the Windows display setting unlike 96 DPI were fixed.
MSC	Name changes: $MTTF_d \rightarrow MTTF_D$; $B10_d \rightarrow B10_D$; $PFH \rightarrow PFH_D$ etc.
MSC	By pressing "Return/Enter" the next text box will be selected. This behavior can be changed by option and is active by default.
MSC	The filter function has been revised. If the current selection is within a project, also this project will be filtered only. To filter in a different project, the filter must be cancelled before.