PcVue 15 Release Notes

Last update :	01/12/2021
Revision :	1.0
Content :	This document contains information about changes in PcVue 15. It includes information up to Maintenance Release 15.1.5.

PcVue Solutions

Content

1. Maintenance Release 15.1.5 (15.1.05900)

1. Fixes

Documentation not saved nor loaded (SPR #69921) Since version 15, documentation was no longer loaded nor saved due to a file format change.	**Configuration Environments > Application Architect** Also in: 15.2.0
Cyclic polling executed only on redundant field device (SPR #69846) In a redundant configuration, only the redundant field device was triggering cyclic polling.	**Data Acquisition > DNP3 Client** Also in: 15.2.0
Fatal error on Binary input update (SPR #69186) Under some circumstances, a fatal error could occur when trying to update a Binary input value while the device was unavailable.	**Data Acquisition > DNP3 Client** Also in: 15.2.0
Error with text variable in Data export name (SPR #69664, 68837, 68832) Text variables were not correctly supported when used in the Name property of a Data export item.	**Data Export** Also in: 15.2.0
Export not generated or incomplete (SPR #69907) Since release 15.1.0, Data Export was no longer working due to an incorrect range calculation when the property *Append after last row* was selected.	**Data Export** Also in: 15.2.0
Fatal error with export of aggregated statistic (SPR #69908) A fatal error occurred when exporting aggregated statistics with only the description header.	**Data Export** Also in: 15.2.0
Binary attributes not correctly loaded (SPR #69871) Since version 10.0, the binary attribute 32 was not correctly loaded at startup when it was set to 1. In such a situation, all the binary attributes were set to 1 except the binary attribute 32.	**General** Also in: 15.2.0
Fatal error on project migration (SPR #66997) A fatal error could occur when migrating a project developed with versions 10.0 SP1 to 12. The issue was due to a misinterpretation of a legacy field in the networking configuration.	**General** Also in: 15.2.0
Markers not displayed correctly (SPR #69519) Under some circumstances, markers were not displayed correctly when changing the zoom level while having the setting *Keep invisible markers in memory* enabled.	**HMI > Map control** Also in: 15.2.0
Several fixes related to Recipes (SPR #69322) The list of fixes includes: • An incorrect error message was displayed when a recipe file name was over 8 characters,	**Miscellaneous** Also in: 15.2.0, 12.0.24

- A fatal error occurred when validating a recipe without a title or recipe number,
- Under some circumstances, updating the title or recipe number was not taken into account or created a duplicated recipe.

Status of variable NS COM LAN at startup (SPR #69929) Under some circumstances in an architecture with multiple server associations, variables could remained NS COM LAN after a client startup and until a variable change occurred.	**Networking** Also in: 15.2.0
Fatal error on client session closing (SPR #69878) A fatal error occurred when closing a web session while a Sql query was still in progress.	**Web Server Extensions > WebVue** Also in: 15.2.0
Incorrect color for Alarm On and Alarm Off events (SPR #69800) The configured text color for the events *Alarm On* and *Alarm Off* was not correctly taken into account in the Log viewer and were always displayed with a white color.	**Web Server Extensions > WebVue** Also in: 15.2.0
Rotated text truncated (SPR #68935) Under some circumstances, rotated texts were incorrectly rendered. They were truncated when embedded in a symbol.	**Web Server Extensions > WebVue** Also in: 15.2.0
Trend viewer scrolling back in time (SPR #69565) Under some circumstances, when using the trend viewer scrollbar, it was not possible to scroll back in time up to when the mimic was open (as for the PcVue desktop trend viewer).	**Web Server Extensions > WebVue** Also in: 15.2.0

2. Enhancements

New function in the expression engine - IsDBNull() (SPR #69981) A new function IsDBNull() is available for the expression engine. It is particularly useful for managing NULL values returned by the Sql data acquisition driver.	**General** Also in: 15.2.0

3. Other fixes & enhancements

SPR #69894, 69895	Also in: 15.2.0, 12.0.25
SPR #69014, 69790, 69913	Also in: 15.2.0
SPR #69820	Also in: 15.2.0, 12.0.24

2. Maintenance Release 15.1.4 (15.1.04900)

1. Fixes

Fatal error on Log report modification (SPR #69558) A fatal error occurred when modifying or creating a Log report while the print spooler service was unavailable.	**Configuration Environments > Application Explorer** Also in: 15.2.0, 12.0.24
Several fixes in the IEC 61850 client (SPR #69617, 69591, 69028, 65630) The list of fixes includes: • A connection request was sent twice when a report group was duplicated configuration, • The Application Explorer froze after starting communication with an IED if the logical devices could not be browsed (empty descriptors), • It was possible to open multiple dialog for adding redundant RCB, • Syntax control was incorrect for the variable name in the mapping dialog.	**Data Acquisition > IEC 61850 Client** Also in: 15.2.0
Several fixes related to the Log viewer (SPR #69632, 69629) The list of fixes includes: • When resuming the auto-refresh, the list of events was not correctly refreshed, • Auto-refresh was deactivated when the user requested the most recent events (using line or page navigation buttons).	**HMI > Log viewer** Also in: 15.2.0
Variables @DATE & @TIME not updated (SPR #69349) Under some circumstances, the variables @DATE and @TIME could no longer be updated. The issue occurred after having applied a population.	**Miscellaneous** Also in: 15.2.0, 12.0.24
Instruction FTP modes DOWNLOAD & UPLOAD - GDI object leak (SPR #69306) A GDI object leak occurred when using the SCADA Basic instruction FTP with modes DOWNLOAD and UPLOAD.	**Scripting > SCADA Basic** Also in: 15.2.0, 12.0.24
Instruction MDNP3 - Arguments not recognized (SPR #69348, 69186) When using the instruction MDNP3, some arguments defined in the syntax 11 (modes related to CROB) were only recognized if using their numeric value. `MDNP3(Mode, Variable, OpType, Queue, Clear, TripClose, Count, OnTime, OffTime[, ResultVar]);` This was affecting the arguments *OpType, Queue, Clear* and *TripClose*.	**Scripting > SCADA Basic** Also in: 15.2.0
Symbols not displayed on tiles (SPR #69551) Under some circumstances, symbols were not displayed on tiles when using a Web & Mobile Back end license.	**SnapVue** Also in: 15.2.0

Several fixes related to the Log viewer (SPR #69746, 69699, 69668, 69666, 69632, 69629, 69535) The list of fixes includes: • When resuming the auto-refresh, the list of events was not correctly refreshed, • Auto-refresh was deactivated when the user requested the most recent events (using line or page navigation buttons), • Under some circumstances, the viewer was not emptied after a request that returned no line, • The active filter and sorting order could be reset when using the auto-refresh option, • The navigation scrollbars were moving atop when the auto-refresh option was activated, • The dialog box title displayed in the calendar selector was undefined.	**Web Server Extensions > WebVue** Also in: 15.2.0

2. Enhancements

Variable description in DNP3 mapping dialog (SPR #69433) The variable description can now be displayed in the DNP3 mapping dialog box.	**Configuration Environments > Application Explorer** Also in: 15.2.0

3. Installation

Missing component registration Since Release 15.0.0, the component registration was not executed automatically after installing a patch. On computers with other versions of PcVue or other products installed (such as FrontVue), fatal errors and other unexpected behaviors could occur due to the fact that the proper version of a component may not be registered within the operating system. This is a known issue in all Maintenance Releases of 15.0 and 15.1 up to 15.1.4	**Installation** Also in: 15.2.0

4. Security

TLS support (SPR #69616) The WebScheduler now supports the use of TLS 1.2.	**WebScheduler** Also in: 15.2.0

5. Other fixes & enhancements

SPR #69529	Also in: 15.2.0

3. Maintenance Release 15.1.3 (15.1.03902)

1. Fixes

Wrong alarm timestamp set (SPR #69559) Fix of regression, since 12.0.20 and 15.0.0, writing the value of an alarm in a SCADA Basic script was causing the timestamp to be changed even if the value was the same.	**Alarms** Also in: 15.2.0, 12.0.24
Fatal error with notification event A fatal error occurred upon reception of an event notification of type change-of-characterstring.	**Data Acquisition > BACnet Client** Also in: 15.2.0
Several fixes in the IEC 61850 client (SPR #69562, 69525, 69485, 69479, 69473, 69429, 69398, 69397, 69372, 69354, 69220, 69058, 69024, 68989) The list of fixes includes: - Incorrect behavior in the Application Explorer when validating a variable mapping with only an IEC 61850 network selected, - Update of the list of error codes corresponding to the AddCause for the M61850 SCADA Basic instruction. It now matches the AddCause enumeration as defined in the IEC 61850 ed 2.1 standard, - The Application Explorer could freeze when enabling/disabling the Send RptId property while the device was still in the connecting state or if the corresponding attribute of the Report Control Block was not writable for some reasons, - The time quality sent as part of a control was incorrect for BSC Data Objects, - Fix an incorrect behavior when controlling a Data Object with a CtlVal Data Attribute of type bitstring (typically BSC and BAC Data Objects), - Improved error management while browsing, the mapping dialog could freeze if an MMS PDU max size error occurred, - Update of the Common Data Classes catalog to fit changes and new CDCs in the IEC 61850-7-3 ed2 and ed2.1, - Offline mapping with redundant reports did not work properly, - Improved behavior of the mapping dialog if the connection to an IED is lost while in online mode, - Fix of a fatal error of PcVue when changing the mapping of a variable from a Data Object to a Data Attribute, - Fix of an incorrect behavior related to the handling of the trial mode causing a freeze of the Application Explorer when starting or stopping an IEC 61850 communication object, - The SCL attribute LDName is now used if it exists when using the offline browsing and mapping, - Improved automatic naming when mapping to a new variable. '-' are now replaced by '_' to fit the syntax constraints of a variable name, - Under some circumstances, the Application Explorer could freeze when changing the dataset associated to a report group, - If a report group is in an error state related to configuration - configured dataset does not exist in the IED for example - it will no longer try to reconnect	**Data Acquisition > IEC 61850 Client** Also in: 15.2.0

automatically. Automatic reconnection is still in place if the error state is related to typical runtime errors (loss of connection for example),

- Under some circumstances, a fatal error of the Application Explorer and repeating disconnection/reconnection could occur. The issue was related to the handling of the *object-access-denied* error when writing a Report Control Block attribute.

Could not export without the variable name (SPR #69560, 69226) A data export failed to export a trend page if it was not configured to include the variable name in the header.	**Data Export** Also in: 15.2.0
Detection of permissions on output folder (SPR #69521) The verification of permissions on the Export folder could be incorrect if it was a shared folder.	**Data Export** Also in: 15.2.0
Wrong language for the event title (SPR #64121) The property *Archive language* was not taken into account for the field *Event title* in HDS databases. The language corresponding to the *Configuration 1* was always used for this field.	**Historical data** Also in: 15.2.0
Tooltip truncated (SPR #69339) Under some circumstances, the tooltip of an animation was truncated.	**HMI > Animations** Also in: 15.2.0, 12.0.24
Tree-view control - Text and UserData deleted on edit (SPR #69470, 68985) The value of *Text* and *UserData* of a Tree-view control item where deleted when entering the edit mode of their respective field.	**HMI > Form controls** Also in: 15.2.0
Fatal error when adding trends by script (SPR #69477) A fatal error occurred when removing and adding trends to a Trend viewer via a SCADA Basic script.	**HMI > Trend viewer** Also in: 15.2.0, 12.0.24
Instruction TREND mode SETCONFIG - Incorrect properties (SPR #69319) When using the instruction TREND mode SETCONFIG in a WebVue context, the properties *Description* and *Unit* were not properly set.	**Scripting > SCADA Basic**
Could no longer minimize the toolbar (SPR #69377, 69289) Under some circumstances, it was no longer possible to minimize the system toolbar.	**Web Server Extensions > WebVue** Also in: 15.2.0
Log viewer emptied upon scrolling (SPR #69486) Under some circumstances, a Log viewer could be emptied while scrolling up or down with the mouse.	**Web Server Extensions > WebVue** Also in: 15.2.0
Trend viewer background color not applied (SPR #69375, 69270) Fix of a regression, the configured background color was no longer applied to the Trend viewer.	**Web Server Extensions > WebVue** Also in: 15.2.0

2. Other fixes & enhancements

SPR #69566	Also in: 15.2.0
SPR #69218	Also in: 15.2.0, 12.0.24

4. Maintenance Release 15.1.2 (15.1.02900)

1. Fixes

Busbar coloring - Handling of uncertain voltage (SPR #69355) Uncertain voltages were not correctly propagated to downstream nodes.	**Add-ons and Tools** Also in: 15.2.0
DDE Client - Fatal error (SPR #69385) Under some circumstances, a fatal could occur when linking a variable to an Excel file with DDE.	**Data Acquisition** Also in: 15.2.0
Fatal error when sending a command (SPR #68508) Under some circumstances, a fatal error occurred when sending a command to a device that had never been successfully connected.	**Data Acquisition > DNP3 Client** Also in: 15.2.0
Timestamp type configuration (SPR #69324) It is now possible to select how the timestamp of data should be interpreted. It can be either Local or UTC (default). For compatibility reasons, the new setting is set to *Local* for already configured devices.	**Data Acquisition > DNP3 Client** Also in: 15.2.0
Several fixes in the IEC 61850 client (SPR #69432, 69429, 69398, 69387, 69386, 69374, 69372, 69371, 69365, 69361, 69358, 69353, 69352, 69351, 69350, 69347, 69219, 69174, 69122, 69112, 68976, 68961)	**Data Acquisition > IEC 61850 Client** Also in: 15.2.0

The list of fixes includes:

- Incorrect datatype filter in the variable selector when opened from the mapping dialog,
- Under some circumstances, the variable type was changed when mapping on an existing variable from the mapping dialog,
- A fatal error could occur upon connection if the configuration included a dataset with a long name,
- DE, SBO and SBOw commands executed from a SCADA Basic script failed with error -6 (incorrect variable type) for variables mapped on any CDC type other than SPC and DPC (bit variables),
- A fatal error occurred when executing a command from a SCADA Basic script for a variable mapped on a DO of type BSC,
- Fix the catalog for the mapping of the BAC CDC,
- Fix of a regression, since 11.2.06092 & 15.0.0 writing a variable mapped onto a Data Attribute no longer worked,
- PcVue could freeze when sending a command if the command response comprised an unknown/unsupported data structure,
- Fix the error handling when receiving the response- object-access-denied upon sending a Select command,
- The max length of a report Id is now 129 characters (was 65),
- The timestamp quality was not properly set when sending a command,
- Traces added when commands are sent in test mode,

- Fix of a memory leak occurring when stopping or deleting a device while connection was still in progress,
- Under some circumstances, the Application Explorer could freeze when a report Id was changed at the device level while configuring a report group,
- Under some circumstances, the Application Explorer could freeze when starting a report group missing some required configuration properties.

Fatal error on disconnection (SPR #69276, 66623) Under some circumstances, a fatal error could occur when disconnecting from an OPC Server.	**Data Acquisition > OPC Client** Also in: 15.2.0, 12.0.23
Incomplete statistics log export (SPR #69203) Under some circumstances, log statistics exports were incomplete due to an incorrect line calculation.	**Data Export** Also in: 15.2.0
Incorrect aggregated value (SPR #69283, 67600) Under some circumstances, invalid aggregated values were exported. The issue occurred when no record was found in the exported time period, causing a random value to be exported.	**Data Export** Also in: 15.2.0, 12.0.23
Fatal error after online help opening (SPR #69346, 69266) Since version 15.1.0, a fatal error occurred when opening the online help from the SCADA Basic Editor to display the help associated to an instruction.	**General** Also in: 15.2.0
Clipboard paste (SPR #68372) Better control of the clipboard Paste command to prevent side effects when the type of data contained in the clipboard is not supported and not supposed to be pasted in a mimic.	**HMI** Also in: 15.2.0, 12.0.23
Mimic not opened in the correct region (SPR #69412, 69256) Cached mimic were not opened in the correct region when opened via a VBA script.	**HMI** Also in: 15.2.0
Instruction WEBVUE mode MULTIMEDIA - Fatal error when in the Main sub (SPR #69449) A fatal error occurred when executing the instruction *WEBVUE* with mode *MULTIMEDIA* from the *Main* sub of a SCADA Basic program.	**Scripting > SCADA Basic** Also in: 15.2.0
Associated actions not working (SPR #69329) Since version 15.0.0, associated actions were no longer working in a web context.	**Web Server Extensions > WebVue** Also in: 15.2.0
Setting FirstDayOfWeek not correctly taken into account (SPR #69314, 68462) The setting *FirstDayOfWeek* was not correctly taken into account in the Standard week display.	**WebScheduler** Also in: 15.2.0, 12.0.23

2. Security

Vulnerabilities in the Web back end modules	**Web Server Extensions** Also in: 15.2.0, 12.0.23, 11.2.06100

This is a follow-up to fixes available since 11.2.06097, 12.0.17 and 15.0.0. This fix covers other ways to exploit similar Remote Code Execution vulnerabilities uncovered after more tests of the initial fix.

The following vulnerability is fixed. It affects the interface between the Web & Mobile back end and the web services hosted in Microsoft IIS:

- CVE-2020-26867 - A Remote Code Execution vulnerability due to the unsafe deserialization of messages received on the interface - Affects all versions since 8.10.

See our Security alert page and Security Bulletin 2020-1 for more information.

3. Other fixes & enhancements

SPR #68847, 69249, 69259, 69278, 69340, 69379	Also in: 15.2.0

5. Maintenance Release 15.1.1 (15.1.01900)

1. Fixes

EtherNET-IP - Attributes 3 to 5 ignored (SPR #69250) It was not possible to use text extended attributes 3 to 5 to configure variables for the EtherNET-IP add-on.	**Add-ons and Tools** Also in: 15.2.0
Fatal error with OPC Server interface (SPR #68813) Under some circumstances, a fatal error could occur when using the OPC Server interface, due to some resources not being released properly.	**Communication interfaces > OPC Server** Also in: 15.2.0, 15.0.3, 12.0.22, 11.2.06099
Fatal error on alarm creation (SPR #69232) Under some circumstances, a fatal error occurred when creating an alarm if the text extended attributes were configured to store the alarm timestamps (Alarm on, Alarm Ack and Alarm Off).	**Configuration Environments** Also in: 15.2.0
Could not create an Open mimic geo action (SPR #69006, 68949) Under some circumstances, it was not possible to create a geo action of type Open mimic due to an incorrect syntax checking.	**Configuration Environments > Application Explorer** Also in: 15.2.0
Write priority not taken into account (SPR #69239, 69171) Since version 15.0.0, the priority of the 1st command sent for a BACnet variable was always set to 16 (the Write priority property of the variable was ignored). The Write priority property was correctly taken into account for subsequent commands. Depending on the BACnet server implementation, the issue could occur again after a re-start of the server controller.	**Data Acquisition > BACnet Client** Also in: 15.2.0
DataGroup variables not refreshed after network disconnection/reconnection (SPR #68663, 68619) Since release 15.0.0, status of variables mapped to a DataGroup were not correctly refreshed and remained NS COM after a network disconnection/reconnection.	**Data Acquisition > IEC 61850 Client** Also in: 15.2.0
Several fixes in the IEC 61850 client (SPR #69177, 69151, 69128) The list of fixes includes: • PcVue could freeze when sending a control if the IED did not expose the proper Data Attributes for a controllable DO, • The Application Explorer could freeze when activating traces on an existing report group, or upon a configuration change of a report (from a non-redundant to a redundant and vice-versa), • Misleading Error 0 traced upon creation of a report group, • A fatal error could occur under some circumstances when changing the configuration of a variable while a read or write request was being executed.	**Data Acquisition > IEC 61850 Client** Also in: 15.2.0
Improper NS SPEC status for OPC variables (SPR #69149)	**Data Acquisition > OPC Client** Also in: 15.2.0

Under some circumstances, OPC variables were displayed with the *NS SPEC* status instead of *NS* on passive servers and client stations.

OPC items with bad quality not ignored (SPR #69148) Since version 11.1, the setting defined in the OPC Server configuration that allows ignoring the value of an item with quality Bad was not working properly with bit and alarm variables.	**Data Acquisition > OPC Client** Also in: 15.2.0, 15.0.3, 12.0.23, 11.2.06099
Signed float 32-bit not correctly interpreted (SPR #69260) Variables of type *Signed float 32-bit* were not correctly interpreted and were set with status NS FMT when using the *Swapped word* format.	**Data Acquisition > Other built-in drivers** Also in: 15.2.0
Additional empty line (SPR #69119) When exporting logged events, an empty line was inserted between the header and the values.	**Data Export** Also in: 15.2.0, 15.0.3
ControlMinValue and ControlMaxValue not refreshed (SPR #69152) Despite being correctly set, the *ControlMinValue* and *ControlMaxValue* properties of a variable were not correctly refreshed after calling the *SetVariableAttributes* method.	**Development kits > SV Manager Toolkit** Also in: 15.2.0
Alarm timestamps not saved (SPR #69032) When an alarm was configured with the *Saved* property enabled, not all of its timestamps (*AlaOn, AlaAck, AlaOff*) were stored. Only the timestamp of its last state was recorded. These timestamps can be used in the Alarm viewer.	**General** Also in: 15.2.0, 15.0.3, 12.0.22
Upgrade **Could no longer create a version** (SPR #69196) Since version 15.0.0 and the introduction of the 3-digits scheme for project and lib versioning, it was no longer possible to create a version having a Major or Minor number greater than 100. It was still possible to update and load versions, but creating a new version on top of an existing one was leading to a fatal error when exceeding this limit. This is a known issue in 15.0.0 to 15.0.2 and 15.1.0	**General > Version management** Also in: 15.2.0, 15.0.3
Json path not recognized (SPR #69202) Under some circumstances, some Json paths were not correctly interpreted by the JsonGetValue function of the expression engine. The issue occurred when the Json path ended with an array index, for example JsonGetValue(value,'value.temperature.values[0]') This function is typically used with the MQTT Add-on.	**Miscellaneous** Also in: 15.2.0
Instruction EXPORT - Fatal error with a static export file name (SPR #69293) A fatal error occurred when calling the instruction EXPORT if the referenced export had a statically defined export file name, i.e. a name not defined by an expression.	**Scripting > SCADA Basic** Also in: 15.2.0
Instruction LISTBOX modes GETUSERDATA & GETTEXT - Returned an empty string (SPR #68787)	**Scripting > SCADA Basic** Also in: 15.2.0

Under some circumstances, the instruction *LISTBOX* modes *GETUSERDATA* and *GETTEXT* returned an empty string when executed from a web client for a newly added item (i.e. added with mode *INSERT* or *LOAD*)

Upgrade **Instruction LOGDISPLAY mode LINESELECT - Inconsistent result between desktop client and WebVue** (SPR #66032) The instruction *LOGDISPLAY* mode *LINESELECT* did not return the same Xml fragment when executed from a desktop client or from WebVue. The Xml content has been harmonized and now only returns the variable name. Scripts written for WebVue using this instruction need to be updated accordingly.	**Scripting > SCADA Basic** Also in: 15.2.0
Instruction MAPDISPLAY - Fatal error with modes LOADDEFAULT and EXPORT (SPR #69019) Under some circumstances, a fatal error could occur when calling the modes LOADDEFAULT and EXPORT in sequence.	**Scripting > SCADA Basic** Also in: 15.2.0, 12.0.23
Instructions CHECKBOX, LISTBOX & OPTIONLIST mode REMOVE - Incorrect return value (SPR #69155) Calling the mode REMOVE of instructions CHECKBOX, LISTBOX and OPTIONLIST always returned 0. It now returns 1 when successful and 0 otherwise, as described in the online help.	**Scripting > SCADA Basic** Also in: 15.2.0
Cursor value had incorrect decimal digits (SPR #68786) The cursor value displayed on the scale ignored the configuration of the max number of digits.	**Web Server Extensions > WebVue** Also in: 15.2.0
Improper cursor value in Trend viewer (SPR #68934) In a Trend viewer, the cursor column in the legend displayed an improper value after execution of the SCADA BASIC instruction *TREND* mode *SETVAR* or *CLEARVAR*, or after a request to the archives.	**Web Server Extensions > WebVue** Also in: 15.2.0
Exception period not reset for BACnet schedules (SPR #67240) The button to reset exception periods of a BACnet schedule was not effective. In such a case, most BACnet server devices support setting the length of the Exception-Schedule array to 0. For interop with devices that only support a fixed-length Exception-Schedule array, an interop property has been added to the configuration of BACnet devices so that resetting the exception periods does not change the length of the Exception-Schedule array but fills it with Null values instead.	**WebScheduler** Also in: 15.2.0
Incorrect label for the mode (SPR #69089) The displayed label corresponding to the mode of a time interval for a BACnet Schedule was incorrect and not taking into account the corresponding associated label.	**WebScheduler** Also in: 15.2.0

2.   Critical fixes

Data overwritten (SPR #69285, 69277)	**Data Export** Also in: 15.2.0
Since Release 15.0.0, when using the mode *Append after last row* for an Excel file, newly exported data could overwrite data exported during an earlier export. The issue was due to an incorrect calculation of the last non-empty cell in the Excel file. This is a known issue in 15.0.0 to 15.0.3 and 15.1.0	
Memory leaks (SPR #69240, 69217)	**Web Server Extensions** Also in: 15.2.0, 12.0.24
Memory leaks occurred when Web or Mobile clients were connected. The issue was a regression since release 15.0.0.	

3.   Enhancements

Maximum number of serial devices (SPR #69254)	**Data Acquisition** Also in: 15.2.0
The maximum number of devices declared for a serial protocol is now limited to 5000 (was limited to 1000).	
Instruction TREND - New modes GETCONFIG, GETCONFIG_ASYNC & SETCONFIG (SPR #69185, 68205)	**Scripting > SCADA Basic** Also in: 15.2.0
3 new modes are available for the instruction TREND: • GETCONFIG & GETCONFIG_ASYNC: To retrieve the configuration of a Trend viewer under the form of an Xml fragment, • SETCONFIG: To set the configuration of a Trend viewer by passing it an Xml fragment containing the desired configuration. These modes enable getting and setting the configuration of a trend viewer all at-once (list of trends, graphical rendering properties...).	
Filtering HDS log list with Sql-like syntax (SPR #68855, 68823)	**Web Server Extensions > WebVue** Also in: 15.2.0, 15.0.3, 12.0.22
It is now possible to use Sql-like syntax when filtering Log lists for a Log viewer with the SCADA Basic instruction *LOGDISPLAY* mode *FILTER*.	

4.   Performance

Time to open/close a session (SPR #69199)	**Real time data** Also in: 15.2.0, 12.0.23
The time to open and close a WebVue session has been significantly improved, in particular when the project comprises a large amount of alarm syntheses. For example on a project with 6000 alarms, 3000 alarm syntheses and 15000 alarm synthesis counters: Before performance improvement: • Time to open a WebVue session: 18.5 sec, including 17 sec to load alarm synthesis,	

- Time to close a WebVue session: 3 min 9 sec, including 3 min 5 sec to unload context variables.

After performance improvement:

- Time to open a WebVue session: 4.9 sec, including 3.5 sec to load alarm synthesis,
- Time to close a WebVue session: 2.5 sec, including 1 sec to unload context variables.

5. Audit & diagnostic

New system variables and audit counters (SPR #69320) New system variables are available for the IEC 104 outstation: - Number of active client connections: System.LocalHost.IEC104Server.NbClients - List of client names: System.LocalHost.IEC104Server.Clients They are also available in the branch System.<StationName> The following audit counters are now also available: - Number of outstation - Max nb of clients allowed - Number of point published - Number of clients connected - Number of write received from clients	**Communication interfaces > IEC 60870-5-104 Outstation** Also in: 15.2.0

6. Other fixes & enhancements

SPR #66940, 68964, 69073, 69209, 69213, 69341, 69342	Also in: 15.2.0
SPR #68704, 68881	Also in: 15.2.0, 15.0.3
SPR #69216, 69235	Also in: 15.2.0, 12.0.23

6. Feature Release 15.1.0 (15.1.00900)

1. New features

ICCP/TASE.2 interface	**Add-ons and Tools**
New interface based on the IEC 60870-6, the standard for data exchange between control centers.	
IEC 61870-5-101 client driver	**Data Acquisition**
This new driver operates in unbalanced mode over TCP or UDP and is designed to support legacy IEC 101 devices accessed through serial-to-IP gateways.	
SCL-based configuration	**Data Acquisition > IEC 61850 Client**
It is now possible to associate SCL files to IEC 61850 network and take advantage of offline mapping e.g. the ability to create communication items and map variables based on the content of your SCL files, even if devices are not connected.	
New data acquisition driver - AdNet	**Data Acquisition > Other built-in drivers**
A data acquisition driver for AdNet controllers is now available.	
New data acquisition driver - IpFluke	**Data Acquisition > Other built-in drivers**
A data acquisition driver for Fluke devices is now available.	
Mapping of the Quality property (SPR #68972)	**Data Acquisition > Sql**
The status (quality) of a variable can now be mapped onto the results of a Sql query by using any of the following: • VAR_QUALITY_GOOD - To set the variable status to valid, • VAR_QUALITY_NS - To set the variable status to invalid, • VAR_QUALITY_NSCOM - To set the variable status to invalid due to a communication error.	
Xml file references	**General**
In addition to Excel files available since version 12, it is now possible to reference Xml files that are used throughout the project, in particular in configuration modeling with the Application Architect. The support for Xml file references comes with a new expression function *XmlGetValue()* and an Xml file viewer . They help the application designer looking up Xml fragments based on XPath queries.	
Upgrade **New instruction M60870_5 for IEC101 & IEC 104**	**Scripting > SCADA Basic**
In addition to the new IEC 101 driver, a new SCADA Basic instruction M60870_5 is available for communication control of both IEC 101 and IEC 104 devices. The existing M104 instruction is deprecated but still supported at runtime for compatibility purpose.	

Progressive Web App support It is now possible to install WebVue as a Progressive Web App (PWA) on web client devices.	**Web Server Extensions > WebVue**

2. Fixes

DBImport - Log suffix not correctly managed (SPR #68868, 68864, 68744) When using the DBImport for importing logged events, the Log suffix was not correctly managed, leading to incorrect import.	**Add-ons and Tools** Also in: 15.0.2, 12.0.22
MQTT Publisher - First message not published (SPR #68835) The first message of a topic was not published for a variable that was used both for SUB and for PUB.	**Add-ons and Tools**
MQTT Publisher - Incorrect error code (SPR #68612) For an out-of-bounds register value, error code 1 was sent as part of the published message instead of error code 133 or 134.	**Add-ons and Tools** Also in: 15.0.1
MQTT Subscriber - Fatal error when extracting an analog value (SPR #68710) A fatal occurred when a data extraction returned an analog value.	**Add-ons and Tools** Also in: 15.0.2
MQTT Subscriber - Negative values not correctly managed (SPR #68712) Negative values were not correctly managed and interpreted with bad quality NS FMT.	**Add-ons and Tools** Also in: 15.0.2
MQTT Subscriber - Unable to read values (SPR #68811) It was not possible to parse values with the JsonGetValue() expression function when the Json path contained parentheses.	**Add-ons and Tools**
MultiTech LoRa - Fatal error due to missing Ack (SPR #68797) Under some circumstances, a fatal error occurred when the acknowledgement part of the message was missing, i.e. after sending a message with the format *Payload|Port* where *Payload|Port|Ack* was expected.	**Add-ons and Tools** Also in: 15.0.2
Masked alarm reappearing after passive server restart (SPR #68378) Under some circumstances, saved alarms were incorrectly reloaded when a passive server was restarting. Specifically, their saved *Masked* status could be corrupted and trigger reappearance or disappearance of such alarms upon a restart.	**Alarms** Also in: 15.0.1, 12.0.20
Fatal error on variable update (SPR #67987) Under some circumstances, a fatal error could occur upon update of a variable by an OPC client connected to the OPC Server if the configuration of the type was incorrect.	**Communication interfaces > OPC Server** Also in: 15.0.1, 11.2.06098
Incorrect list of attributes in Log lists (SPR #68543) When editing the list of attributes to records in a log list, a comma was added at the beginning of the value, preventing the property to be interpreted correctly at runtime.	**Configuration Environments**

SCADA Basic editor frozen (SPR #68683, 68650, 68448) Under some circumstances, the SCADA Basic editor could freeze, preventing from editing the opened script. The issue occurred after closing the editor while maximized and with line numbers displayed.	**Configuration Environments** Also in: 15.0.2
Fatal error on generation (SPR #68953) Under some circumstances a fatal error could occur when generating with a large project due to the dynamic refresh of consumed IO variables.	**Configuration Environments > Application Architect**
Incorrect attribute configuration for log lists The default list of attributes to record for a log list was set to empty instead of #@A1,#@A2 for proprietary, ODBC and free archive unit types.	**Configuration Environments > Application Architect** Also in: 15.0.1
OPC-XML server not correctly created (SPR #68568, 68486) OPC-XML servers were not correctly created if modeled with the Application Architect. The Url property was missing.	**Configuration Environments > Application Architect** Also in: 15.0.2, 12.0.20
Timestamp type for IEC 104 Sectors (SPR #68569) It was not possible to configure the Timestamp type (UTC or Local) for IEC 104 Sectors modeled with the Application Architect.	**Configuration Environments > Application Architect** Also in: 15.0.2, 12.0.21
Unable to set the Tile size (SPR #68917) It was not possible to set the tile size for actions on geographical zones.	**Configuration Environments > Application Architect**
Zones incorrectly deleted (SPR #68703) Deleting a zone was incorrectly deleting all the zones of the template if they had the same prefix.	**Configuration Environments > Application Architect** Also in: 15.0.2
Could not delete HDS database Since version 15.0.0, it was no longer possible to delete the last configured database of a project.	**Configuration Environments > Application Explorer** Also in: 15.0.1
Sql variables mapping lost (SPR #68969) The mapping of SQL variables was lost when configured on a client station.	**Configuration Environments > Application Explorer**
Unable to set the confirmation message in actions (SPR #68945, 68604) It was not possible to set a confirmation message for actions in Geographical zones.	**Configuration Environments > Application Explorer**
SG-OPC - Incorrect server after synchronization (SPR #68454) Under some circumstances, an incorrect server was set after an import synchronization. The issue occurred when multiples servers were configured and the selected server was different from the first one.	**Configuration Environments > Smart Generators** Also in: 15.0.1, 12.0.20
SG-TwinCAT - Fatal error when importing .tpy file (SPR #68659) A fatal error occurred when importing a .tpy file due an infinite loop while parsing an improper configuration with recursive properties in data type definitions.	**Configuration Environments > Smart Generators** Also in: 15.0.1

ReadPropertyMultiple fallback The following errors were not managed in case of ReadPropertyMultiple failure, and the fallback was not correctly triggered : • error_code_unknown_object • abort_preempted • abort_invalid_APDU	**Data Acquisition > BACnet Client**
IEC 104 - Interrogations sent twice on server switchover (SPR #68701) In a redundant architecture, Interrogation requests were sent twice on server switchover.	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06099
Several fixes & enhancements related to the IEC 104 client driver (SPR #68721, 68552, 65778, 65317, 62179, 60533, 58890) The list of fixes & enhancements includes: • Stopping multiple networks is now executed concurrently, • A fatal error could occur during project exit, • In case of device redundancy, a fatal error could occur if the standby device was considered as active, • Sectors and Devices needed to be restarted to apply configuration modifications, they are now applied dynamically, • New variables had an unknown status until their first refresh, they are now NS COM, • Under some circumstances, a fatal error could occur upon a device stop due to a memory leak, • An incorrect status was displayed in the Application Explorer when devices were not reachable or disconnected, • Under some circumstances, a fatal error could occur during project exit after multiple switchover of redundant devices, • Pending commands were not correctly cleared upon redundant device switchover.	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06098
Several fixes & enhancements related to the IEC 104 client driver (SPR #68490, 68489, 68208, 65317) The list of fixes & enhancements includes: • Variables could be NS COM after a server switchover due to a fatal error of a server, • Variables could be NS COM after a redundant device switchover due to a communication loss while switching, • STOP DT was not sent after a server switched passive, or stopped, • A new general setting is available to set a delay before switching from passive to active (defaults to 200 ms).	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06097
Fatal error on device disconnection (SPR #68291) Under some circumstances, a fatal error could occur upon device disconnection.	**Data Acquisition > IEC 61850 Client** Also in: 15.0.1, 11.2.06098
Fatal error on passive server (SPR #68426) A fatal error could occur when stopping a passive server due to pending reports not deleted correctly.	**Data Acquisition > IEC 61850 Client** Also in: 15.0.1, 12.0.20

Fatal error on server switch (SPR #69173)
 	
Under some circumstances, a fatal error could occur upon data acquisition server switchover, in a variety of cases when a BRCB could not be connected:
 	
   •   Device offline,
   •   RCB did not exist in the device,
   •   Wrong dataset referenced on the RCB,
   •   …
	Data Acquisition > IEC 61850 Client

Fatal error with File Transfer (SPR #68741) Under some circumstances, a fatal error could occur when using the File Transfer.	**Data Acquisition > IEC 61850 Client** Also in: 15.0.2
Incorrect error message in the event viewer (SPR #68425) Under some circumstances, incorrect error messages were displayed in the event viewer when sending a command for an IEC 61850 variable. The issue occurred when extended attributes were not enabled for the variable.	**Data Acquisition > IEC 61850 Client**
Incorrect status icon displayed (SPR #68348) An incorrect icon was displayed in the Application Explorer when configuring a report, with the *Network-dependent configuration* option selected for the property *Original Report name*.	**Data Acquisition > IEC 61850 Client**

Memory leaks (SPR #69111)
 	
Under some circumstances, memory leaks occurred, in particular:
 	
   •   Upon sending a command of type DEW or SBOW,
   •   Upon device connection.
	Data Acquisition > IEC 61850 Client

Report groups disabled (SPR #68460) Under some circumstances, a report group was disabled after receiving a report that had the buffer overflow flag set.	**Data Acquisition > IEC 61850 Client** Also in: 15.0.1, 12.0.20
Useless purge buffer sent (SPR #69164) Useless purge buffer commands were sent. The issue was a regression introduced in PcVue 15.0.1.	**Data Acquisition > IEC 61850 Client**
Memory leak with array of strings (SPR #68954) A memory leak occurred when variables were mapped to an OPC DA item of type array of strings. The amount of leake memory depended on the size of the array.	**Data Acquisition > OPC Client** Also in: 12.0.22
Fatal error when writing an SNMP variable (SPR #68479) Under some circumstances, a fatal error could occur when writing an SNMP variable.	**Data Acquisition > SNMP Manager** Also in: 15.0.1, 12.0.20
Memory leak on errors (SPR #68511) Under some circumstances, a memory leak could occur when facing connectivity issues with devices refreshed by polling. Some polled read requests were not correctly freed after errors.	**Data Acquisition > SNMP Manager** Also in: 15.0.1, 12.0.20

Test connection requires Diagnostic permission	**Data Acquisition > Sql**
The Test connection action in the Application Explorer now requires the user to have the Diagnostic permission.	
Trend export failed with Current period (SPR #68304)	**Data Export** Also in: 15.0.1
Since version 15.0.0, trend export failed if set to export for the Current period.	
Unable to deploy a web site with multiple bindings (SPR #68301)	**Deployment tools > Web Deployment Console** Also in: 15.0.1
It was not possible to deploy a web site with a mix of binding on IP address and binding on hostname.	
Memory leak on modification of text extended attributes (SPR #68634)	**General** Also in: 15.0.2, 12.0.21
A memory leak occurred when writing text extended text attributes of a variable.	
Temporary license not recognized (SPR #68563)	**General > Licensing** Also in: 15.0.1
An incorrect date was displayed when starting a project with a temporary license that was not yet active.	
Could not disable central project management (SPR #68456)	**General > Version management** Also in: 15.0.2
Since version 15.0.0, it was no longer possible to disable the central project management from the dialog box.	
Improved handling of the reference files (SPR #69050, 69045, 68982)	**General > Version management**
Several fixes and enhancements in the handling of the ref.dat and refversion.dat files to prevent incorrect updates of these files and locking of the Central Project Management user interface.	
Instant Messaging data wrongly included in project version (SPR #68401)	**General > Version management**
The folder *MsgData*, used for the Instant Messaging persistent data, is now by default excluded from Central Version Management.	
Localhost system variables not updated (SPR #68456)	**General > Version management** Also in: 15.0.2
Since version 15.0.0, the Localhost system variables related to the project and libraries versions were not correctly updated when the central project management was disabled.	
Progress bar not accurate (SPR #68409)	**General > Version management**
The progress bar displaying the progression of a version creation (or update) was not accurate.	
Unable to set Reference version (SPR #67963)	**General > Version management**
No error or warning message was displayed to warn the user when the current Windows user had insufficient write permission to the central version folder.	
HDS fatal error upon shutdown (SPR #68338)	**Historical data** Also in: 12.0.20
Under some circumstances, a fatal error of the HDS could occur upon project shutdown.	

HDS not stopping (SPR #68314) Under some circumstances, the HDS was not correctly stopped at project exit. The issue occurred after having added a new trend associated to a long update rate, and the project exit being triggered before the end of the first update period of the new trend.	**Historical data** Also in: 15.0.1, 12.0.20
Records lost after changing primary unit (SPR #67341) When changing the primary unit for a trend, the buffered but not yet recorded data were lost. The issue only affected proprietary archive units and occurred in particular when changing the primary unit of the trend with the instruction *HISTORY*.	**Historical data**
Instance Selector - Fatal error with filter (SPR #68763) Under some circumstances, a fatal error occurred when using some filters such as *Start With*, with special characters.	**HMI**
Virtual keypad for user animations (SPR #68669) The virtual keypad could not be used with some user animations (user name, signature …).	**HMI > Animations** Also in: 15.0.2, 12.0.21
Tree-view control - Mimic not closed (SPR #68539) In a tree-view control, the animation *Link.open* with the parameter *Caller mimic behavior* set to *Close* was not working correctly, the caller mimic was not closed.	**HMI > Form controls** Also in: 15.0.2
Anchor point lost on symbol creation (SPR #68886) When creating a symbol, the anchor point was reset to (0,0). The anchor point of the group is now retained as the anchor point of the symbol.	**HMI > Graphics**
#V not resolved (SPR #65319) The #V substitution string was not resolved in the Trend viewer, preventing from using it in the legend or Data export wizard.	**HMI > Trend viewer**
Fatal error with the Data export wizard (SPR #68475, 68163) A fata error occurred when using the Data export wizard from a Trend viewer in case of insufficient permissions on the export folder.	**HMI > Trend viewer**
Trends partially displayed (SPR #67819) Under some circumstances, trends were only partially displayed due to an incorrect behavior of the compression algorithm with invalid points.	**HMI > Trend viewer** Also in: 11.2.06097
Sending SMS with China-Telecom SIM card (SPR #68603) It was not possible to send SMS when using a China-Telecom SIM card.	**Miscellaneous**
Unable to send email or SMS to AD users (SPR #68190) When sending an email or an SMS to all users having a given profile, AD users did not receive the message even if the profile was associated to an Active Directory group.	**Miscellaneous**

Initial value of new variables not loaded (SPR #68578) When updating a project version on a passive server, newly created variables (in this project version) were not correctly initialized with their initial value after a server switchover.	**Networking** Also in: 15.0.1, 12.0.20
Multiple active servers in a single active server association (SPR #68379) In a single active server historical association, multiple servers could be active simultaneously when started at the same time or after a network failure.	**Networking** Also in: 15.0.1, 12.0.20
Multiple server switchovers at startup (SPR #68748) Under some circumstances, server were switching active/passive multiple times after a server restart due to a timing-issue on server status detection. The issue only occurred with an association having 3 or more servers.	**Networking**
Fatal error when editing a variable (SPR #68843) Under some circumstances, a fatal error could occur when modifying a variable produced by another station.	**Real time data**
Instruction FOPEN - Fatal error with unknown access mode (SPR #68097) A fatal error could occur when using the instruction FOPEN with an unexpected access mode argument.	**Scripting > SCADA Basic** Also in: 15.0.1, 12.0.20
Upgrade **Instruction GEOLOACTION modes GETDISTANCE and GETUSERACCURACY - Incorrect error return value** Instruction GEOLOCATION modes GETDISTANCE and GETUSERACCURACY now return -1 in case of error (instead of 0).	**Scripting > SCADA Basic**
Instruction M61850 modes START and STOP - Incorrect value for ResultVar (SPR #68422) An incorrect value was returned in the *ResultVar* variable by the instruction M61850 with modes START and STOP.	**Scripting > SCADA Basic**
Instruction OPTION mode REMOVE - Fatal error (SPR #68680) A fatal error occurred when removing an item from an option list control with the SCADA Basic instruction OPTIONLIST mode REMOVE.	**Scripting > SCADA Basic** Also in: 15.0.2
Instruction OPTIONLIST - Fatal error on selected item change (SPR #68981, 68980) Under some circumstances, a fatal error occurred when changing the selected item if the previous one had been removed via a SCADA Basic script (mode CLEAR).	**Scripting > SCADA Basic**
Fatal error on web session opening (SPR #68602) A fatal error of the Web back end could occur when opening a web session if an alarm synthesis was defined and the corresponding variable was missing in the configuration.	**Web Server Extensions** Also in: 15.0.2, 12.0.21
Login script not executed (SPR #66502) The SCADA Basic login script was not executed for web clients except for WebVue. It is now also executed when login in from the WebScheduler and when opening a session with the Web Services Toolkit.	**Web Server Extensions**

Instruction WINDOW mode CLOSEALL - Mimics close failed (SPR #68639) The SCADA Basic instruction WINDOW mode CLOSEALL was not working properly in a web context. Some mimics could fail to close and remained open.	**Web Server Extensions > WebVue** Also in: 15.0.1, 12.0.20
Scrolling in the Log viewer (SPR #68846) In WebVue, scrolling in the Log viewer did not work properly.	**Web Server Extensions > WebVue**
Trends not displayed (SPR #68698, 67972) Trends were not displayed when the style of invalid points was set to *Invisible*.	**Web Server Extensions > WebVue** Also in: 15.0.2, 12.0.21
Incorrect text encoding (SPR #67999, 61478) Some cultures relying on non-latin characters were not correctly managed by the WebScheduler, leading to incorrect text display.	**WebScheduler** Also in: 15.0.2, 12.0.21
Schedules not displayed (SPR #68478) Under some circumstances, schedules were not displayed. The issue only occurred when a schedule had some special characters such has <, >, -, (or) in its title.	**WebScheduler**
Setting FirstDayOfWeek not taken into account (SPR #68462) The setting *FirstDayOfWeek* defined in the *web.config* file was not correctly taken into account. Starting from version 15, this setting can be set with the Web Deployment Console when deploying the WebScheduler.	**WebScheduler** Also in: 15.0.2, 12.0.21
WebScheduler not accessible (SPR #69170, 69036) Since version 15.0.0, it was no longer possible to use the WebScheduler without having a Web Service Toolkit option on the license. This regression was due to a tightened control of the web accesses in version 15.0.0. The issue also affected access from 3rd party software taking advantage of the Web Services Toolkit such as Dream Report. This is a known issue in 15.0.0 to 15.0.2	**WebScheduler**

3. Critical fixes

Several fixes in the IEC 61850 client driver (SPR #68689, 68649, 68638, 68600, 68521, 68519) The list of fixes includes: • Fatal error upon loss of connection to a device configured with reports, • Fatal error upon receiving an error from a device when using the file transfer services (empty source folder). In addition, when using redundant data acquisition servers: • Variable values were not correctly refreshed when an RCB was configured without GI, • Fatal error when stopping a redundant RCB if the dataset no longer existed in the configuration (typically occurred upon stopping a device), • Fatal error of both passive and active servers when stopping an active server.	**Data Acquisition > IEC 61850 Client** Also in: 15.0.1
Slow operations due to IEC 61850 (SPR #69165) The handling of persistency for Report Control Block EntryId caused a general periodic slow down of the computer used as data acquisition server.	**Data Acquisition > IEC 61850 Client**
Upgrade **Polling groups lost** (SPR #69086) When upgrading a project from version 12 to version 15, the SNMP polling groups were lost due to an issue in configuration saving with version 12. This was a known issue in 15.0.0 to 15.0.2	**Data Acquisition > SNMP Manager**

4. Enhancements

MQTT Publisher - TATT Topic definition
 	
It is now possible to define a topic by using multiple text attributes, which can be used to overcome their length limitation (100 characters):
 	
`TATT13 = BUILDING1/ROOM3/TEMP`
`TATT14 = MQTT|Generic|Broker1|SUB|0|TATT13`
 	
The same principle is applied with the '@' character to bypass the *GenericRootTopic*:
 	
`TATT14 = MQTT|Generic|Broker1|SUB|0|@TATT13`
	Add-ons and Tools

Population configuration (SPR #68494) It is now possible to copy, cut and paste population configuration items.	**Configuration Environments > Application Explorer**
Start & Stop commands for Sql connections It is now possible to start and stop Sql connections directly from within the Application Explorer. They require the user to have the Diagnostic permission. In addition, the current state of Sql connections is now displayed.	**Configuration Environments > Application Explorer**

System variables SubscriptionCompleted and UnsubscriptionCompleted not correctly refreshed	**Data Acquisition > BACnet Client**
System variables *SYSTEM.BACNET.<Network>.SubscriptionCompleted* and *SYSTEM.BACNET.<Network>.UnsubscriptionCompleted* were not correctly refreshed on COV subscriptions and unsubscriptions.	
Delaying value refresh after write (SPR #68871)	**Data Acquisition > IEC 60870-5 Client**
A new setting is available for IEC 60870-5 devices to disable the local refresh of a variable after sending a write command. When activated, the value is refreshed upon the next read request or notification.	
New BITMASK expression (SPR #68570)	**Data Acquisition > OPC Client**
It is now possible to use the custom field BITMASK(x) in the advanced properties of OPC variables. The variable value is then the result of the logical bit AND operation between the OPC item value and the mask.	Also in: 15.0.2, 12.0.21
New interop property (SPR #68568, 68486)	**Data Acquisition > OPC Client**
A new interop property is available for OPC-XML servers. It enables adding the http basic authentication header to all requests and is designed for OPC-XML servers that do not send the HTTP 401 error if the header is required.	Also in: 15.0.2, 12.0.20
Scope support for predefined Sql queries	**Data Acquisition > Sql**
Support for the concept of scope to control the distribution of Sql query results across user sessions. It allows shared data to be processed in any user context, and prevents user-specific data to be accessible to other user sessions.	
Override Export folder and Template folder settings	**Data Export**
It is now possible to override the default Export folder and Template folder settings in the advanced properties of a data export item.	
Improved usability	**General > User management**
In the Application Explorer, the list of Users and Profiles are no longer diplayed in the tree-view. Instead, the bottom-right panel is used to display the list of users associated to the selected profile, or the list of profiles associated to the selected user.	
More info in the group/profile association dialog	**General > User management**
In the group/profile association dialog for Active Directory, more details are now displayed : • Group description, • Members, • Current profile.	
Default soft keypads (SPR #68560)	**HMI**
Change of the default HMI option related to soft keypads for touch screen support. Upon creation of a new project, the HMI option is now by default set to take advantage of the most recent keypads.	

Confirmation dialog for saving/loading input files (SPR #68522, 68321) With form controls, a confirmation message is now displayed before reloading or saving items into a file (to avoid unintentional loss of the original file), or when leaving the configuration tab without having saved the modifications.	**HMI > Form controls** Also in: 15.0.2
Dynamic export folder (SPR #68582, 67953) It is now possible to change the destination folder when exporting data from the Trend viewer. In addition, a warning message is displayed if the destination folder is not accessible (folder does not exist or insufficient permissions).	**HMI > Trend viewer**
Dynamic recipients list (SPR #68191) It is now possible to use a text variable to define a recipients list for sending emails or SMS.	**Miscellaneous**
Form controls instructions - New mode SAVE A new mode SAVE is now available for the instructions COMBOBOX, LISTBOX, CHECKLIST, OPTIONLIST, PIE and TREEVIEW. It enables saving the Content tab to a file.	**Scripting > SCADA Basic**
Instruction EMAIL - Support for UNC path for attached files (SPR #68852) When using the EMAIL instruction, it is now possible to reference attachment files by using UNC path (e.g. \\hostname\folder\file.txt).	**Scripting > SCADA Basic** Also in: 12.0.22, 11.2.06099
Instructions ALARMDISPLAY and LOGDISPLAY - New modes SETCOLUMNWIDTH and GETCOLUMNWIDTH (SPR #69010) 2 new modes SETCOLUMNWIDTH and GETCOLUMNWIDTH have been added to the instructions ALARMDISPLAY and LOGDISPLAY to get and set the size of a column.	**Scripting > SCADA Basic**

User details for Active Directory
 	
It is now possible to retrieve more user details from the Active Directory with the SCADA Basic instruction SYSTEM mode USER:
 	
   • Phone number,
   • Email address.
	Scripting > SCADA Basic

Counter mode for Send command action on Register variable A new *Counter* mode is available for the *Send command* action for register variables. With this mode, the register is incremented by 1 until the variable maximum value is reached and then reset to 0.	**SnapVue**

5. Performance

Improved CPU usage for the Application Architect Improvement of the threading for configuration management of Templates and Instances. It brings a better usage of CPU resources and fixes freezes at generation time with large projects. In addition, messages have been added to the generation logging to indicate the name of the instance being processed. New audit time counters are also available.	**Configuration Environments > Application Architect**

Save/Load management of unselected instances	Configuration Environments > Application Architect
From now on, when unselecting instances, only the top-level instance unselected status is recorded in the Tpl_Instances.xml file. Proceeding this way fasten the saving and loading of instances while reducing the file size.	
Storage of pending records during an overflow	**Historical data**
During an overflow on an HDS archive unit, the Write period of pending records is set to its minimal value to fasten the recording of the pending records and minimize the duration of the overflow. When the pending records are cleared, the Write period is restored to its initial value. This optimization does not prevent the occurrence of an overflow.	

6.   Audit & diagnostic

New system variables for the Sql driver	**Data Acquisition > Sql**
New system variables are available for Sql queries and Sql variables: • System.SqlVariables.XOn • System.SqlVariables.LostTrans • System.Localhost.SqlVariables.Requests.FlowRegulation • System.Localhost.SqlVariables.Requests.SkippedByFlowRegulation • System.Localhost.SqlVariables.Requests.SkippedByOverlapping	
New system variables for user details (SPR #16006)	**General > User management**
New system variables are available to get the mobile phone number and email address of a user: • System.<StationName>.User1.MobilePhoneNumber • System.<StationName>.User1.EmailAddress • System.<StationName>.User2.MobilePhoneNumber • System.<StationName>.User2.EmailAddress	
New system variable for emergency purge	**Historical data**
A new system variable is available for HDS databases to indicate that an emergency purge is in progress: • System.Hds.<DatabaseName>.EmergencyPurge	

7.   Installation

Add-on for Commend ICX	**Add-ons and Tools** Also in: 15.0.1
New Add-on to interface with Commend ICX intercom systems.	

8. Security

Password displayed with virtual keypad (SPR #68668) When unlocking a user with the virtual keypad, the password was displayed in the input dialog instead of '*' characters.	**HMI** Also in: 15.0.2, 12.0.21
Double Signature accepted with expired password The Security animation Double Signature accepted a signature even if the confirming user had an expired password.	**HMI > Animations**
OpenSSL library updated The OpenSSL library has been updated to version 1.1.1j (8-Dec-2020).	**Security**

9. Other fixes & enhancements

SPR #17376, 62504, 66523, 66764, 68014, 68180, 68324, 68348, 68408, 68423, 68424, 68648, 68687, 68723, 68729, 68752, 68805, 69075, 69076, 69104	
SPR #68465, 68651	Also in: 15.0.2
SPR #68534	Also in: 15.0.1
SPR #68450	Also in: 15.0.1, 12.0.20

7. Initial Release 15.0.0 (15.0.00902)

1. New features

MQTT pub/sub driver (SPR #66294) A new Add-on that implements the MQTT standard and can be used as an MQTT subscriber and as an MQTT publisher: • The MQTT subscriber facet allows you to collect data from MQTT-enabled devices and take advantage of PcVue for alarming, trending, logging and HMI, • The MQTT publisher facet offers you the possibility to distribute information with the many additional metadata and qualifiers not readily available at the sensor level.	**Add-ons and Tools**
Modeling of File Reference objects Definition of File Reference configuration items in templates and instances.	**Configuration Environments > Application Architect**
Modeling of Geolocation configuration items Definition of Geolocation-related configuration items - Zones, Actions and Geo-tags - in templates and instances.	**Configuration Environments > Application Architect**
Display of Equipment data acquisition driver status (SPR #66944) Display of status and error codes of networks, nodes and frames.	**Configuration Environments > Application Explorer**
Display of Networking status Display of networking connection status and license-related information. New commands are also available on stations and nodes to control connections when advanced diagnostics are necessary. These commands are equivalent to some of the modes of the LAN instruction in SCADA Basic scripting.	**Configuration Environments > Application Explorer**
Ping command dialog box A new dialog box is available for the Ping command. It replaces the command prompt and is available for communication objects based on an IP interface (DNP3, SNMP, IEC 61850 ...).	**Configuration Environments > Application Explorer**
New BACnet Helper for Commands A new BACnet Helper is available for Command objects.	**Data Acquisition > BACnet Client**
Support for static binding It is now possible to configure static binding for BACnet devices by configuring their IP address instead of the BACnet MAC address in the configuration. This new feature makes it easier to address network segmentation requirements without the need to set-up the BBMD feature or a 3rd party BBMD component.	**Data Acquisition > BACnet Client**
New Panasonic Mewtocol-7 driver A data acquisition driver for Panasonic Mewtocol-7 devices is now available. It supports FP7-Series PLCs equipped with an Ethernet port.	**Data Acquisition > Other built-in drivers**

Client-side settings (SPR #66696)	**Deployment tools > Web Deployment Console**
Client-side settings for Web & Mobile apps can now be pre-defined at deployment time and enforced by the server, including the *Remember me* setting.	
New configuration import feature	**Deployment tools > Web Deployment Console**
It is now possible to import a previously exported configuration, which facilitates upgrading a deployment made with an earlier version as soon as the deployment configuration was backed-up using the Export feature of the WDC.	
Expressions - New functions	**General**

New functions are available in the expression engine. Depending on their usage, they can be used with several features such as expression on variables, MQTT variable mapping, Sql variable mapping, Application Architect...

The list of added functions includes:

- Json fragment parsing,
- Base64 string and hexadecimal value conversions,
- Timestamp value conversions,
- ...

Please refer to the online help for more information.

Geolocation & Micro-Geolocation	**General**

Based on the configuration of zones, actions and geo-tags, this new module provides users with patented location-based and proximity-aware services, both indoor and outdoor. Depending on the type of system you monitor & control, zones can be a geographical or logical breakdown of your installations, a real-world location such as a remote site, or a piece of equipment in a factory.

The following types of geo-tags are supported:

- Geolocation - GPS® for location-based services,
- Micro-Geolocation - NFC tags, QR codes®, Bluetooth® beacons and Wi-Fi® access points for proximity-aware services.

Patent number: US9819509B2

Instant Messaging	**General**

A built-in Instant Messaging system you can deploy on your segmented industrial network - No dependency to any third-party service requiring Internet access. It offers users of the desktop application, FrontVue and the SnapVue mobile app the ability to chat together. Users keep themselves in the loop for better effectiveness and team performances.

Main features:

- Chat,
- Exchange text and voice messages,
- Send and receive images and videos.

Preview for testing - Notification publisher	**General**

A module designed to support the Push Notification technology.
This feature is in **Preview for testing**. You must run the installation package in mode Custom to install it. Please contact us if interested.

Preview for testing - Smart Bot	**General**

Designed as a plug-in on the Instant Messaging infrastructure, the Smart Bot helps users follow operational and maintenance procedures.
This feature **is in Preview for testing**. You must run the installation package in mode Custom to install it. Please contact us if interested.

SnapVue Mobile App	**General**

SnapVue is designed for context-based monitoring & control of nearby assets. It takes advantage of the Geolocation and Instant Messaging services provided by your server to present relevant information to mobile users:

- Connect to and access data from multiple servers,
- Information, alarms, commands and set-points are displayed according to the user context: Location, proximity and permissions
- Logged events and trends,
- Access to external resources such as documents and web pages,
- Data filtering based on user profile,
- Built-in Instant Messaging,
- User tracking.

Sql data acquisition driver	**General**

Built on top of the Sql connection management introduced with version 12, the Sql data acquisition driver allows you to map variables onto results of predefined Sql queries. It is designed to make it easy to interface with Enterprise systems. Use cases include retrieving data from an ERP, CMMS, MES, Metering systems…

Variables can be updated cyclically or on event, and no scripting is required.

License protection based on software protection key	**General > Licensing**

In addition to USB hardware dongles, license protection based on a software key is now available.

New status PREREF (SPR #65597)	**General > Version management**

A new status *PREREF* is available. It takes place between *DEV* and *REF* phases in the lifecycle of a project or libraries. It is designed to identify a version under validation tests before being deployed in production.

In addition, the new command line argument *-preref* can be used to start the *PREREF* version.

Version numbering scheme with 3 digits (SPR #64869)	**General > Version management**

Project & Lib versions are now defined with 3 figures to accommodate a lifecycle policy including 3 stages: Major versions, minor versions and patch.

Custom context menu for Alarm and Log viewers	**HMI**

A new context menu is available. It is highly configurable at design-time, and as the toolbar, it offers run time users most of the useful commands in a single place:

- Generic commands: Print…,
- Commands on alarms: Acknowledgment, Masking…,
- Filter changes,
- Commands useful in the context such as actions associated to the selected alarm.

Instance selector	**HMI**

New selector to insert symbols in mimics by selecting instances designed with the Application Architect rather than searching through libraries of symbols and setting the branch manually.

Selection of active Tab at mimic opening (SPR #63066, 48273)	**HMI**

It is now possible to select with the animation *Link.Open* which tab is to be active when opening a mimic configured with multiple tabs.

Selection of mimic template at mimic opening (SPR #63360)	**HMI**

It is now possible to select the mimic template when opening a mimic with the animation *Link.Open*.
When a mimic template is specified, the default template is ignored.

Tree view-control - Support for icon customization	**HMI > Form controls**

To support this feature, a selector is also available so that you can pre-define the list of useful icons to be used in the project, as you do with the color palette.

Alongside with the new Icon selector, new modes for the TREEVIEW instruction have been added:

- SETNODEICON,
- SETCHILDICON,
- SETROOTICON.

Pie control - Support for real time data	**HMI > Pie control**

The Pie control can now be used to display the real time value of variables with no scripting required.

The evolution comes with several new SCADA Basic modes for instruction PIE, and new VBA methods to dynamically configure these new options.

Trend viewer - Support for 100 curves	**HMI > Trend viewer**

The trend viewer now supports up to 100 curves simultaneously.

Instruction GEOLOCATION	**Scripting > SCADA Basic**

The new instruction GEOLOCATION is available to support scripting of the Geolocation & Micro-Geolocation features. Please refer to the online help for further details.

Instruction SYSTEM - New mode LOADCOLORS (SPR #68119)	**Scripting > SCADA Basic** Also in: 11.2.06097
A new mode LOADCOLORS is available for the instruction SYSTEM. It enables loading a color palette from a file, which can be used for day/night color management or mitigate a user's color-blindness.	
Syntax: System("LoadColors", FileName);	
Where *FileName* corresponds to the path of the file to load:	
- An absolute path, - A path relative to the TP directory, - A path to a shared library starting with */LibName/*.	
Logging & Tracing - Syslog support	**Security**
For activity monitoring purpose, this interface allows you to send selected events to IT log aggregators. Designed to fulfill the most challenging security requirements, it supports the RFC 5424 and RFC 3164, in addition to RFC 5426 (UDP), RFC 6587 (TCP) and RFC 5425 (TLS).	
Improvements of logged events, in particular to better trace user account administration and project/lib version central management.	
Support for included mimics and popups (SPR #66242)	**Web Server Extensions > WebVue** Also in: 12.0.11
Included mimics and popups are now supported in WebVue.	
It was a known issue since 12.0.7 (Initial Release).	
Support for mimic tabs	**Web Server Extensions > WebVue**
Mimic tabs are now supported.	
Support for Security animations (SPR #67095, 67094)	**Web Server Extensions > WebVue**
WebVue now supports the security animations *Signature Confirmation* and *Double Signature*.	
Support of iPad OS 13	**Web Server Extensions > WebVue** Also in: 12.0.11
WebVue now supports the Safari web browser shipped with iPad OS 13.	
Support for Sofrel timetables	**WebScheduler**
The WebScheduler now supports Sofrel timetables.	

2.   Fixes

BACnet Server - Several fixes and enhancements (SPR #66981, 66980, 66132)	**Add-ons and Tools**
The list of fixes & enhancements includes:	
- The setting *DeviceCommunicationControl* was not correctly taken into account (was always considered as Disabled), - Some server properties were not correctly exposed (Object Name, Vendor Name, Model Name, Vendor Id, Firmware Revision), - Support for non-latin characters in variables names.	

DBImport - Fatal error when DBImport.log locked (SPR #67177) A fatal error of the DBImport tool occurred when closing it if the log file DBImport.log was used and locked by another process.	**Add-ons and Tools** Also in: 11.2.06092, 11.1.06124
EtherNet/IP - Fatal error at startup (SPR #66902) Under some circumstances, a fatal error could occur at startup when the add-on traces and logging were activated while a variable had an incorrect format declaration (i.e.: UINT instead of REAL).	**Add-ons and Tools**
Ethernet/IP Add-on - Handling of large arrays (SPR #68352) The Ethernet/IP add-on did not handle large arrays of DWord correctly. If the array was larger than 50 items, variables were always set to status NS (invalid).	**Add-ons and Tools** Also in: 12.0.19
Library converter - Fatal error when converting a large library (SPR #66988) A fatal error could occur when converting a library to binary or ASCII format due to a GDI object leak.	**Add-ons and Tools**
MultiTech LoRa Gateway - Saved variable value lost (SPR #66778) The value of a variable configured as *Saved* was not correctly stored at project shutdown, thus it was not correctly reloaded at project startup.	**Add-ons and Tools**
Error messages 15838 and 15810 at project startup (SPR #66927) Messages 15838 and 15810 were incorrectly displayed in the event viewer at project startup when the variable associated to an alarm synthesis was neither produced nor consumed by the station.	**Alarms**
Incorrect threshold alarms at startup (SPR #67429) Under some circumstances, alarms based on a threshold were incorrectly set with a good quality at project startup even if the underlying I/O variable was invalid if they were configured as *Saved* .	**Alarms**
Unable to mask an alarm (SPR #66235) In a single-active association of servers, it was not possible to mask an alarm from the passive server when the alarm was the result of an expression.	**Alarms** Also in: 11.2.06088, 11.1.06123
Incorrect value and boundaries for System.Localhost.Session.Type (SPR #67957) The variable *System.Localhost.Session.Type* had an incorrect low boundary, 0 instead of -1, and was wrongly set to -1 where the value should have been 104 when a client was connected using the Web Services Toolkit. The same fix applies to the values returned by the SCADA Basic instruction SESSION mode GETTYPE.	**Audit** Also in: 12.0.16

System variables related to the user not refreshed (SPR #65879)
 	
Some system variables associated to User authentication were not correctly refreshed with networking configuration:
 	
   • SYSTEM.LOCALHOST.USER.NumLocked,
   • SYSTEM.LOCALHOST.USER.Rejected,
   • SYSTEM.LOCALHOST.USER.TryLogin.
 	
The corresponding variables in the branch SYSTEM.<STATION_NAME> were properly refreshed.
	Audit

Incorrect OPC values returned (SPR #66161) Under some circumstances, OPC items could not be read correctly by OPC clients, in particular when requesting a group containing invalid or unknown items.	**Communication interfaces > OPC Server** Also in: 12.0.8, 11.2.06083
SNMP trap not sent (SPR #67679) When configuring multiple traps with the same generic format, only the last trap was sent.	**Communication interfaces > SNMP Agent** Also in: 12.0.16
Support for OID and Value in Generic Trap (SPR #67126) Generic traps were not supporting OID and Value parameters properly. They now behaves as described in the online help.	**Communication interfaces > SNMP Agent** Also in: 12.0.16, 11.2.06092

Expressions - Syntax highlighting and auto-completion (SPR #67795)
 	
Fixes & improvements to syntax highlighting and auto-completion in the Expression Editor for the following operators and functions:
 	
   • Operator POW,
   • Function POWER,
   • Function LOG,
   • Function ROUND,
   • Function MIN/MAX,
   • Function EXCELVTEXTJOIN,
   • Function EXCELHTEXTJOIN.
	Configuration Environments

Fatal error when displaying libraries of mimics or symbols thumbnails (SPR #66499, 66480) A fatal error of the Library Explorer, the Application Explorer or the Application Architect occurred when changing the displayed library of mimics and/or symbols if in thumbnails display mode.	**Configuration Environments** Also in: 12.0.11, 11.2.06088
Fatal error when importing description with line breaks (SPR #66670) A fatal error occurred when importing a configuration item if its description contained a line break (\n).	**Configuration Environments**
HMI variables not deleted after synchronization (SPR #68085) HMI variables were not correctly deleted when synchronizing an import from a Smart Generator or the Application Architect.	**Configuration Environments**

Import failed due to expressions (SPR #67558, 67545, 67276, 66885) When importing expressions via a Smart Generator or the Application Architect, expressions configured with a result variable that was not produced locally were only partly loaded and did not behave as expected at runtime.	**Configuration Environments** Also in: 12.0.16
Incorrect behavior of the auto-completion (SPR #68178) Under some circumstances, the auto-completion did not work properly in the expressions editor.	**Configuration Environments**
Missing warning if PcVue is not running (SPR #66092) No warning was displayed when launching a configuration tool (including the Application Explorer, Application Architect and Smart Generators) while the PcVue main process (Sv32.exe) was not running. It was a regression affecting version 12.0 Initial and Maintenance Releases.	**Configuration Environments** Also in: 12.0.10
Upgrade **Alarm synthesis default property value** (SPR #67799, 66701) The default value of the property *Take the applied population into account* of Alarm Syntheses items is False since version 11.2 Release. This new default value was mistakenly not applied to Alarm syntheses created with the Application Architect. It is now applied. This change may introduce a behavior change in the way alarm syntheses are calculated in some projects. Please refer to the Known issues section for more information.	**Configuration Environments > Application Architect** Also in: 12.0.16, 11.2.06094
Could not customize instances with additional behavior items (SPR #66945) Under some circumstances, trying to add additional behaviors on variables directly within an instance could fail and return an Unknown error. Affected behavior items were: • Alarm Acknowledgment transmission, • Alarm Window/Program action, • Alarm Masking, • Thresholds, • Chrono, • Counter.	**Configuration Environments > Application Architect**
Empty items in Validation rules properties of Parameters Some empty items were not properly displayed in the list of properties in the configuration of *Validation rule* for Parameters.	**Configuration Environments > Application Architect** Also in: 11.2.06094
Error message on Event filter definition (SPR #67626) Error messages were displayed when the property *Event filter* of a *Log list* was defined at the time of instantiation.	**Configuration Environments > Application Architect**
Error when loading instances (SPR #67956) An error could occur when loading the Application Architect files after having deselected an embedded template from an instance if the embedded template contained variables with ".".	**Configuration Environments > Application Architect**

Expressions generated without a server list (SPR #68086, 66435) Expressions were created without their server list set when the result variable did not belong to a producer list of the station where the import was done.	**Configuration Environments > Application Architect**
Fatal error when editing a property defined by expression (SPR #67450) Under some circumstances, a fatal error could occur when opening the expression editor for defining a property. The issue occurred when the operating system was set for the Hebrew character set. Other non-English languages were potentially impacted also (reproduced with French charset).	**Configuration Environments > Application Architect** Also in: 12.0.16
Fatal error when generating BACnet variables Under some circumstances, a fatal error could occur when generating variables mapped to a device that was already active and monitored.	**Configuration Environments > Application Architect**
Fatal error when generating instances with File items (SPR #67162) Under some circumstances, a fatal error could occur at generation time when an instance contained multiple File items of type Predefined format.	**Configuration Environments > Application Architect**
Global parameters on Threshold bit variable (SPR #65360) Global parameters were not correctly managed on *Threshold bit* variable items	**Configuration Environments > Application Architect**
Incorrect property values for IEC104 Sectors (SPR #67750) The default value for the properties Group Interrogation and Counter Interrogation of IEC 104 sectors were incorrect and not generated.	**Configuration Environments > Application Architect**
Mimic design screen resolution no longer forced to 1440*900 (SPR #66529) Mimic generated with the Application Architect were always configured with the resolution 1440*900 for the property *Design screen resolution*. They are now using the active resolution at the time of the generation.	**Configuration Environments > Application Architect** Also in: 12.0.19
OPC Group creation incorrectly prompted (SPR #67097) Changing a variable source from OPC to another source prompted the dialog box for OPC group creation.	**Configuration Environments > Application Architect**
Symbol position not correctly reset (SPR #67393) The reset of a symbol's position in a template was not correctly managed and ignored by the synchronization.	**Configuration Environments > Application Architect**
Unable to create expression on HMI variable (SPR #66181) It was not possible to create an Expression on variable item on an HMI variable.	**Configuration Environments > Application Architect**
Unable to load shared and local libraries having the same name (SPR #65960) The Application Architect could not load correctly when a shared and a local library had the same name. They are now correctly managed and loaded.	**Configuration Environments > Application Architect**

Unable to paste multiple File Items (SPR #65967) It was not possible use the multi-paste feature with File Items. The error "*The input value is too long. The maximum length is -3 characters.*" was raised.	**Configuration Environments > Application Architect**
Application Explorer frozen after IEC 61850 communication restart (SPR #67961) Under some circumstances, the Application Explorer could freeze after restarting an IEC 61850 network when the trial period was expired.	**Configuration Environments > Application Explorer**
BACnet Helper - Start and stop time inverted for Logs Start and Stop times were inverted in the BACnet Helper for Logs.	**Configuration Environments > Application Explorer**
BACnet helpers frozen Under some circumstances, BACnet helpers and the Application Explorer could freeze after having selected a BACnet variable which object-type is defined by its numeric Id.	**Configuration Environments > Application Explorer** Also in: 12.0.9, 11.2.06078
Could not configure Servers items (SPR #66109) The *Communication.Servers* entry was not available when the product was installed without the Web back end feature.	**Configuration Environments > Application Explorer**
Dialog boxes not visible (SPR #63006, 17193) The position of configuration dialog boxes is now reset automatically when they are outside of the screen area. Such a situation can occur when changing operating system display settings, for example when switching from 2 screens to 1.	**Configuration Environments > Application Explorer**
Event name not displayed after creation (SPR #67343) Under some circumstances, when creating an Event from the Variable pane, its name was not correctly displayed and/or its icon was incorrect in the associated behavior pane.	**Configuration Environments > Application Explorer**
Fatal error on IEC 104 variable modification (SPR #66372) A fatal error occurred when modifying a variable linked to a previously deleted IEC 104 device.	**Configuration Environments > Application Explorer**
Fatal error upon copy of a variable or trend (SPR #66986) Under some circumstances, a fatal error could occur when copying a variable or a trend.	**Configuration Environments > Application Explorer** Also in: 12.0.16, 11.2.06094
Fatal error when configuring a license renter station (SPR #67689, 67090) A fatal error of the Application Explorer occurred when modifying the configuration of a station to make it a license renter. The issue occurred if no license owner station was configured, or if the owner station had been previously deleted.	**Configuration Environments > Application Explorer** Also in: 12.0.19
Fatal error when creating a variable (SPR #66630) Under some circumstances, a fatal error could occur when creating a variable. The issue occurred when a branch segment of the variable was used in another branch previously deleted (e.g. B1.B2 and B2.B3).	**Configuration Environments > Application Explorer** Also in: 12.0.11

HMI variables not deleted (SPR #67432) HMI variables under a branch were not correctly deleted when the branch was deleted.	**Configuration Environments > Application Explorer**
Inconsistent thresholds configuration (SPR #65279) Several fixes to the handling of thresholds configuration: • Values not always refreshed, • First threshold randomly deleted, • Value sequencing not checked.	**Configuration Environments > Application Explorer**
Long time for opening association configuration dialog box (SPR #67019) Under some circumstances, with a large networking configuration, the association dialog box could take several minutes to open.	**Configuration Environments > Application Explorer** Also in: 11.2.06097
No frame address displayed (SPR #67049) Under some circumstances, no address was displayed in the Source tab of a variable when it was linked to an Equipment driver and if the frame type did not match the variable type. For instance, a bit variable linked to Word frame.	**Configuration Environments > Application Explorer**
Tree-views blinking (SPR #66643) General display of the Application Explorer slowed down and blinked when the project contained over a hundred communication items such as IEC 104, IEC 61850, DNP3 or OPC configuration.	**Configuration Environments > Application Explorer**
Unable to create thresholds (SPR #66804) Under some circumstances, it was not possible to create thresholds on a register variable if its minimum value was different from 0.	**Configuration Environments > Application Explorer**
SG-SAIA - Fatal error at file opening (SPR #66058) A fatal error occurred when opening a file comprising an array with relative indexes.	**Configuration Environments > Smart Generators**
SG-Unity - Fatal error when opening the synchronization UI (SPR #66610) A fatal error occurred when opening the synchronization UI of a SG Unity import.	**Configuration Environments > Smart Generators** Also in: 11.2.06089
Smart Generator for Wago - Incorrect mapping (SPR #66348, 65717) The last variable of a frame was incorrectly mapped if the last available index in the frame did not fit the size of the data point to map. The issue occurred in particular when the last data point to map was of type REAL.	**Configuration Environments > Smart Generators** Also in: 12.0.10, 11.2.06087
Unable to execute SET/SENDLIST Under some circumstances, write commands could not be correctly acknowledged when sent before a server switchover. The issue occurred in particular when using the SCADA Basic SET/SENDLIST instructions with protocols managing asynchronous writings such as OPC or BACnet. The result variable associated to the SENDLIST instruction remained locked after the switchover, preventing the execution other SET/SENDLIST calls with the same result variable.	**Data Acquisition** Also in: 11.2.06091

Code page displayed in string values (SPR #66842) When the code page was different from UTF-8, string values were prefixed with the applied code page (UCS-2, DBCS...).	**Data Acquisition > BACnet Client** Also in: 12.0.12
Fatal error after communication frozen Under some circumstances, when an on-demand read request for the property "all" of an unknown object failed, the BACnet communication could freeze and lead to a fatal error.	**Data Acquisition > BACnet Client**
Fatal error at startup (SPR #68005) Under some circumstances, a fatal error could occur at network startup on projects with a large number of BACnet devices among which some are disconnected.	**Data Acquisition > BACnet Client** Also in: 12.0.17
Inconsistent variables mapping after a change of the device identifier The mapping of variables was not updated when the identifier of their associated device was changed at the device configuration level.	**Data Acquisition > BACnet Client**
Incorrect COV lifetime The configured COV lifetime was not correctly applied and appeared to be 1.5 time smaller than defined.	**Data Acquisition > BACnet Client**
Memory leak with Trend Logs (SPR #66205) A significant memory leak occurred when retrieving Trend Logs.	**Data Acquisition > BACnet Client** Also in: 12.0.9, 11.2.06084
Number of items in BitString and OctetString values It is now possible to get the number of items in a BitString or OctetString by using the advanced property *Fields* with syntax BitString(index) or OctetString(index) with the index 0. Indexes larger than 0 are used to extract the value at the corresponding index in the BitString or OctetString.	**Data Acquisition > BACnet Client**
Several fixes & enhancements related to BBMD configuration (SPR #67042, 66921, 65407, 65355) The list of fixes and enhancements includes: - It is now possible to select a network interface when multiple interfaces are configured, - It is now possible to select a single station when no server association is configured, - It is now possible to edit an existing BBMD list, - Some missing tooltips added, - The name of a BBMD list was wrongly accepting the space character.	**Data Acquisition > BACnet Client**
Trend Log and Trend Log Multiple not working Trend Log and Trend Log Multiple objects were not working properly when they were mapped to more than one variable.	**Data Acquisition > BACnet Client**
Unable to read fault-high-limit property (SPR #66865) It was not possible to read a property of type *fault-high-limit*.	**Data Acquisition > BACnet Client**

Unavailable properties displayed in mapping configuration (SPR #62790, 62280) When doing online configuration and mapping, some unavailable or not-supported properties were incorrectly displayed, in particular those related to *event-enrolment* objects and properties associated to *notification-class* objects.	**Data Acquisition > BACnet Client**
Variable not correctly refreshed after Priority reset (SPR #66618) When resetting the *Priority* property with the SCADA Basic instruction *BACNET*, mode *RESET_PRIORITY*, the properties *present-value* and *priority-array* were not refreshed even if the option *synchronization by read after writing* was activated at the device level.	**Data Acquisition > BACnet Client** Also in: 11.2.06090
Variable properties overridden after EDE mapping (SPR #65426) When variable mapping was done at the network level with an EDE file, some previously defined variable's properties such as *Description* were overridden. This issue did not occur when the mapping was done directly at the variable level.	**Data Acquisition > BACnet Client** Also in: 11.2.06076
Writing instruction sent multiple times Under some circumstances, a single writing instruction could be sent multiple times due to an incorrect buffer processing.	**Data Acquisition > BACnet Client** Also in: 11.2.06090
Buffered AI and AO values not recorded (SPR #66941, 66834, 66297) The buffered values for AI and AO objects of a DNP3 device were not correctly recorded in the archives when they were associated to trends. These values are read when connecting to the device at startup or upon reconnection.	**Data Acquisition > DNP3 Client** Also in: 12.0.16
Command not sent Under some circumstances, DNP3 commands requests were not send due to the absence of an ACK message associated to a previous CROB or AOB command request.	**Data Acquisition > DNP3 Client** Also in: 11.2.06091
DNP3 redundancy - Communication frozen (SPR #67034) In an architecture with a single active server for DNP3 acquisition, devices remained disconnected on the passive server after a disconnection from the active server. As a consequence, the data acquisition appeared to be frozen and variables were no longer refreshed.	**Data Acquisition > DNP3 Client** Also in: 11.2.06091
Time-out on variable initialization (SPR #66803) Under some circumstances, a time-out could occur when initializing DNP3 variables.	**Data Acquisition > DNP3 Client** Also in: 12.0.12
Error message display on Clock synch (SPR #65772, 65754) An error message was repetitively displayed after a Clock synch of a remote device.	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06080
Fatal error on exit Under some circumstances, a fatal error could occur when closing the application with an active IEC 104 configuration.	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06080
Several fixes in connection handling The sequence of commands upon connection has been improved to limit network traffic and initialization burden (Clock synch, Global Interrogation, Counter Interrogation...).	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06081

Timestamp on requests The *Timestamp* property of the sector (UTC or local) was not taken into account when sending Clock synch, Test and Time-tagged commands.	**Data Acquisition > IEC 60870-5 Client**
Data acquisition frozen after writing a Data Attribute (SPR #66114) Under some circumstances, the IEC 61850 driver could freeze after writing on an IEC 61850 Data Attribute.	**Data Acquisition > IEC 61850 Client** Also in: 11.2.06082
Device never reconnected (SPR #67394) Under some circumstances, a connection to a device could be lost and never reconnected. The issue occurred when the connection ended with error code *Connection_Closed*. The code *Connection_Lost* was correctly handled.	**Data Acquisition > IEC 61850 Client**
Fatal error when browsing (SPR #67970) A fatal error could occur when browsing a directory containing a large number of files and folders.	**Data Acquisition > IEC 61850 Client**
Fatal error with rejected File transfer (SPR #66755) A fatal error occurred when a device returned the response *Error_Reject*.	**Data Acquisition > IEC 61850 Client**
Reconnection issues after a server switchover (SPR #66170) Under some circumstances, after a data acquisition server switchover, some devices were not correctly reconnected. The issue only occurred when the newly active server belonged to multiple associations.	**Data Acquisition > IEC 61850 Client** Also in: 11.2.06083
Reports not processed in case of large datasets (SPR #66118) Reports were not handled properly when associated to a dataset with more than 150 members. The fix is validated with up to 1000 dataset members associated to a Report Control Block.	**Data Acquisition > IEC 61850 Client** Also in: 12.0.8
Timestamp of Select and Operate commands (SPR #59139) Timestamps sent in Select and Operate commands were different and corresponding to the exact time when the message was sent, while they had to be identical and corresponding to the time of the initial message.	**Data Acquisition > IEC 61850 Client**
Unable to send command It was not possible to send a command to objects having an *operTm* defined.	**Data Acquisition > IEC 61850 Client**
Variables remained NS COM after communication restart Under some circumstances, after stopping and restarting the communication, some variables linked to a data group could remained in status NS COM.	**Data Acquisition > IEC 61850 Client**
Write commands on LonWorks variables (SPR #66373) Sending a write command on a LonWorks variable that was in status Not connected caused a fatal error.	**Data Acquisition > LNS** Also in: 11.2.06088

Fatal error with multiple OPC write command timeouts (SPR #66992) Under some circumstances, a fatal error could occur when sending too many OPC write commands completing in time-out. Now the server is considered as offline and the communication interrupted when 1000 or more time-out errors occur within 500 ms.	**Data Acquisition > OPC Client** Also in: 11.2.06092
Incorrect quality if range dependent on other variables (SPR #67969) Under some circumstance, the quality of register variables could be incorrect. The issue only occurred with OPC variables, when the variable range was defined by dependency to other variables.	**Data Acquisition > OPC Client** Also in: 12.0.19
Invalid OPC variables after switchover (SPR #66837, 66655) Under some circumstances, variables mapped to OPC items could remain invalid after a data acquisition server switchover if errors occurred during the switchover. The issue affected: • Versions 11.2.06781 to 11.2.06793, • All releases of 12.0 up to 12.0.14.	**Data Acquisition > OPC Client** Also in: 12.0.14, 11.2.06092
Driver IpOpenWebNet - Support for extension modules (SPR #67702) The SCS extension modules were incorrectly updated when a new measurement was received for a single Lighting Point.	**Data Acquisition > Other built-in drivers** Also in: 12.0.16
Driver SAIA - Equipment not correctly initialized (SPR #67443) At startup, some devices were not correctly initialized and connection could not be established. Startup of devices is now serialized to enforce a proper initialization.	**Data Acquisition > Other built-in drivers** Also in: 12.0.15, 11.2.06093
Fatal error on exit (SPR #66105) A fatal error occurred upon exit when using frames of type Info or Command not set to the maximum size.	**Data Acquisition > Other built-in drivers** Also in: 12.0.19, 11.2.06088
Fatal error on frame modification (SPR #66627) A fatal error could occur when modifying a frame while the communication was starting.	**Data Acquisition > Other built-in drivers** Also in: 12.0.15

Impossible to restore communication despite time-out errors (SPR #67881)
 	
Under some circumstances, the communication with some TCP/IP devices could not be restored despite multiple time-out errors. The issue was due to the PLC not responding to requests while the underlying socket was still in an Ok state.
From now on, after a period of 180 sec in time-out error, it is possible to force a close of the socket, which is then re-opened at the next retry.
 	
To activate this behavior, the following keys must be added in the file C\EqtConf.ini:
 	
`[TCPIP]`
`EnableCloseOnConsecutiveTimeOut = 1`
`MaxConsecutiveTimeOutInSec = 180`
	Data Acquisition > Other built-in drivers
	Also in: 12.0.17, 11.2.06097

Fatal error with redundant servers (SPR #67440) Under some circumstances, a fatal error could occur due to trap handling in redundant server set-up.	**Data Acquisition > SNMP Manager** Also in: 12.0.15, 11.2.06093

Host name resolved even when communication not started (SPR #66228) Resolution of the hostname of an SNMP device was executed even when the device was not started. Hostname resolution is now executed only when data acquisition is started for the device.	**Data Acquisition > SNMP Manager** Also in: 12.0.19, 11.2.06084
Data export copy/paste did not work (SPR #66027) An exported file was empty when generated for a data export item that was the result of a copy/paste.	**Data Export**
Data in the future incorrectly populated (SPR #66731, 66303) When exporting sampled data with a future end date, the data in the future were populated with the last known value instead of being left empty.	**Data Export**
Empty line in exported files An empty line was inserted in exported files when the option *Display columns header* was activated.	**Data Export**
Fatal error when exporting data with missing dates boundary (SPR #66747) A fatal error occurred when an export was triggered and either the starting or ending date was not set in the configuration or the SCADA Basic instruction call.	**Data Export**
Inconsistent sampled data exported on DST (SPR #64859) Sampled data were not correctly exported when the export period contained a Daylight Saving Time.	**Data Export**
Back end endpoint still active (SPR #66220) When a back end endpoint was removed from the configuration, it was still active for a web site until a new one was re-assigned.	**Deployment tools > Web Deployment Console**
Binding with IP address (SPR #67292) It was not possible to create a binding using an IP address as the hostname.	**Deployment tools > Web Deployment Console**
Configured web site title not taken into account The title configured for the web site in the WDC was not taken into account. It was always deployed with the title 'SV Website' in IIS.	**Deployment tools > Web Deployment Console**
Expired certificate (SPR #67259) When checking certificate validity, an incorrect message was displayed when it was expired.	**Deployment tools > Web Deployment Console**
Fatal error at startup (SPR #66066, 66017) A fatal error occurred at startup of the Web Deployment Console if the computer name had been changed at the operating system level. This was a known issue since 12.0.7 (Initial Release).	**Deployment tools > Web Deployment Console** Also in: 12.0.10

IIS prerequisites verifications (SPR #64742) The WDC now checks if all the IIS prerequisites are installed before allowing the user to deploy components.	**Deployment tools > Web Deployment Console**
Issue when changing the binding (SPR #65998, 65964) When changing the binding of a web site, the Registry service endpoint was not properly re-configured, preventing the web site from being operational. The workaround was to delete and recreate the web site or to modify the WDC configuration file manually. It was a known issue since 12.0.7 (Initial Release).	**Deployment tools > Web Deployment Console** Also in: 12.0.10
Newly created web site not visible (SPR #67258) Under some circumstances, newly created web sites were not displayed in the WDC.	**Deployment tools > Web Deployment Console**
Web component not correctly deployed on older operating systems (SPR #67994) The Web components were not correctly deployed by the WDC on operating systems using IIS 7.5 or lower, which include Windows 7, Windows Server 2008 and Windows Server 2008 R2. This was due to the use of the *applicationInitialization* element in the IIS configuration (only supported from IIS 8.0 onward).	**Deployment tools > Web Deployment Console** Also in: 12.0.17
Web site name syntax control (SPR #64740) A syntax control has been added to the WDC when entering a web site name to avoid illegal characters.	**Deployment tools > Web Deployment Console**
Incorrect value for svmgrVarSource (SPR #66531) The *_svmgrVarSource* enum was shifted by one, leading to incorrect value definition.	**Development kits > SV Manager Toolkit**
Status never set back to Valid after NS FMT (SPR #65569) The variable status was never set back to *Valid* after being set to *NS FMT* with the function *SetDataSet*.	**Development kits > SV Manager Toolkit**
Failed to import multiple events (SPR #66361, 66158) Importing multiple events on variable at once failed if the last part of their name was identical. The issue could be reproduced when generating multiple instances of a template comprising an event with the Application Architect.	**Development kits > XML Generic Import Toolkit** Also in: 12.0.10, 11.2.06086
Fatal error on exit (SPR #66398) Under some circumstances, a fatal error could occur during the exit phase of PcVue. The issue occurred during the exit in a scenario when a variable property dialog box had been open via the variable selector while configuring animations in the graphic editor.	**General** Also in: 11.2.06087

Upgrade **Fatal error with expressions in varexp.dat** (SPR #67839)	**General**
Under some circumstances, a fatal error could occur when migrating a project due to Expressions included in Varexp.dat file. The issue occurred when the bit 8 of the VARINCLUDEDFILES field was set to 1 (0x100) in the file Param.dat, with an expression exceeding 512 characters. To solve this issue, it is recommended to set this bit to 0.	
Loss of branches with description (SPR #65390)	**General**
Branches without variables but having a description were not loaded at project startup and lost at the next project shutdown.	
Network license token not retrieved (SPR #66654, 66652)	**General > Licensing**
Under some circumstances, client stations did not retrieve their license token when the station owning the network license was declared after the client station in the networking configuration.	
AD user login failure (SPR #68106)	**General > User management** Also in: 12.0.20
Active Directory users could not login after a restart of the computer and until it had reached the Domain controller at least once. From now on, group SIDs are managed in addition to user names and their associated groups.	
Script executed twice on logout (SPR #67695)	**General > User management**
The Logout script configured in the user profile was executed twice at logout for the DEFPROFILE profile.	
Could not load project version (SPR #66692)	**General > Version management**
No error message was displayed when it was not possible to load a project due to insufficient folder or file permission. Now an error message is displayed in the Event viewer.	
File & Folder filter for Project version not correctly saved (SPR #68848, 66794)	**General > Version management** Also in: 12.0.14, 11.2.06099
Under some circumstances, the file selection configured in the central project management was not correctly saved. The issue could occur in particular when selecting the *All files in project directory* checkbox at the project root level.	
#x substitution with free archive units	**Historical data** Also in: 12.0.11, 11.2.06087
The substitution #x (timestamp quality) did not work properly when used to record logged events on free archive units.	
Could not load or generate log reports (SPR #66341, 62750)	**Historical data** Also in: 12.0.10, 11.2.06086
It was not possible to load or generate log reports from a station using a server license. This change also fixes an issue related to user rights for log reports (as defined in the Window tab of a user profile).	
Fatal error at project startup (SPR #67652)	**Historical data** Also in: 12.0.16, 11.2.06094
Under some circumstances, a fatal error could occur at project startup due a conflict in accessing pending event logs (event logs waiting to be recorded).	

Fatal error at startup with HDS records (SPR #67471)	**Historical data**
A fatal error occurred at project startup when the HDS invalid record file (*.hds) was not accessible, for instance due to a file lock by another process. Now an error messages is logged.	Also in: 11.2.06094
Fatal error on project shutdown (SPR #66363)	**Historical data**
Under some circumstances, a fatal error occurred at project shutdown after having deleted an archive unit containing trends.	
Fatal error upon HDS shutdown (SPR #66900)	**Historical data**
A fatal error could occur during shutdown when the HDS tried to record the exit invalid trend points. It only occurred when one of the trend had no previous record available in the database.	Also in: 12.0.20, 11.2.06095
Fatal error when reading ODBC trends points (SPR #66564)	**Historical data**
A fatal error occurred when accessing trend points recorded with extended attributes in an ODBC archive unit.	Also in: 11.2.06090
Fatal error when requesting HDS archives (SPR #66579)	**Historical data**
Under some circumstances, a fatal error could occur when a read request to the HDS was cancelled due to an Out of Memory error, in particular with queries returning a large amount of points or logs.	Also in: 11.2.06089
HDS failed to shutdown (SPR #67837, 67552, 67269, 16966, 16117)	**Historical data**
Under some circumstances the HDS did not shutdown properly when shutting down PcVue.	
Incorrect user recorded in log lists with Watchdog alarm variables (SPR #62426)	**Historical data**
Variables set by a Watchdog alarm equipment (VARTREAT) were recorded in log lists as having been set by the logged user. As it is a background operation that is not initiated by any user, the corresponding field is now recorded empty.	Also in: 11.2.06092
Message filling rate variable out of range (SPR #66733)	**Historical data**
On client stations, the variable linked to the filling rate of a proprietary archive was incorrectly initialized, leading to erroneous messages at startup.	Also in: 11.2.06091
Other fixes & enhancements	**Historical data**
[FIX][#67725] HDS : UpgradeDatabase.sql : remove reference to steps in output. Step 3 now correctly indented on the left	
Populations not correctly applied to HDS log lists (SPR #66699)	**Historical data**
Under some circumstances, populations were not correctly applied to HDS log lists in Log Viewer, leading to an empty display. The issue occurred when multiple criteria were applied to the same attribute.	Also in: 12.0.15

Fatal error when exiting the VCR mode (SPR #66773) Under some circumstances, a fatal error could occur when exiting PcVue if running in VCR mode and while playing records.	**Historical data > VCR** Also in: 12.0.12
ActiveX controls based on .Net loaded twice (SPR #66858) ActiveX controls based on .Net components were loaded twice.	**HMI** Also in: 12.0.13
Associated actions and context mimic not accessible (SPR #67797) Under some circumstances, associated actions and context mimic were not accessible from a log or alarm viewer. The issue only occurred when the mimic was opened via a SCADA Basic script executed at startup.	**HMI** Also in: 12.0.17, 11.2.06094
Context mimic with variables attributes (SPR #67261) Since version 12.0, it was possible to open a context mimic from a graphic object animated with a variable attribute such as #_Q, #_T or TATTx#. Such mimics only support a context based on a variable value.	**HMI** Also in: 12.0.15
Context window not disabled (SPR #66323) The advanced property *No context window* of variables was not correctly taken into account in the Alarm and Log viewers.	**HMI**
Fatal error on symbol edition (SPR #67832) Under some circumstances, a fatal error could occur when modifying symbol sub-objects via the Graphic Explorer.	**HMI** Also in: 12.0.17
Fatal error when browsing through mimics (SPR #66838) Under some circumstances, a fatal occurred when browsing through mimics while a mimic was being closed.	**HMI** Also in: 11.2.06091
Fatal error when closing a mimic (SPR #67571) Under some circumstances, a fatal could occur when closing a mimic. The issue occurred when trying to close a mimic while it is already being closed. For example, it could happen when mimic closure required the execution of a with VBA or SCADA Basic script taking some time to execute.	**HMI** Also in: 12.0.20, 11.2.06094
Fatal error when opening mimics in binary format (SPR #66783) Under some circumstances, a fatal error could occur when opening a mimic due to some objects being loaded twice.	**HMI** Also in: 12.0.15
Fatal error with image and symbol selectors (SPR #66005) It was possible to try to insert an image or a symbol using the corresponding selector even if no mimic was open, causing a fatal error.	**HMI** Also in: 12.0.9
Fatal error with symbol containing a Trend viewer (SPR #66968) A fatal error occurred when manipulating a symbol containing a Trend viewer with the option *Save runtime properties* activated.	**HMI** Also in: 12.0.13

Graphical interface frozen (SPR #67045)	**HMI**
	Also in: 12.0.15
Under some circumstances, the graphical interface could freeze due to the use of AVI or GIF objects in mimics. The loading and display of these objects is now optimized to avoid an overconsumption of CPU resources.	
Layer toolbar not hidden after pressing F8 (SPR #15590)	**HMI**
The layer toolbar was not hidden as other toolbars and menus after pressing the F8 key.	
Layer toolbar not refreshed after SCADA Basic call (SPR #65119)	**HMI**
The layer toolbar was not refreshed after calls to the SCADA Basic instruction *WINDOW* mode *LAYER*.	
Mimic incorrectly resized and positioned when switching to Design mode (SPR #66196)	**HMI**
	Also in: 12.0.9
Under some circumstances, when switching a mimic from runtime to design mode, its size and position were incorrectly recalculated due to screen resolution adaptation.	
Missing items added in the Animation toolbar (SPR #66888)	**HMI**
Some items were missing in the Animation toolbar, in particular, Image animations.	
Residual objects displayed with large preview (SPR #67062)	**HMI**
	Also in: 12.0.15
Some residual objects were displayed in images and symbols selectors when using large preview.	
Unable to edit symbol from the Graphic Explorer (SPR #66665)	**HMI**
	Also in: 12.0.13
Under some circumstances, it was not possible to edit a symbol directly from the Graphic Explorer. The issue occurred when the anchor point of a symbol was invalid.	
Incorrect display if Print format includes tabs (SPR #67841)	**HMI > Alarm viewer**
	Also in: 12.0.19
Alarm viewer columns were incorrectly filled when the *Print format* was empty or set with tabulation characters.	
Incorrect filtered list of alarms in Alarm viewer (SPR #67009)	**HMI > Alarm viewer**
	Also in: 12.0.14, 11.2.06091
Under some circumstances, the alarms displayed in an Alarm viewer did not match the expected filter. It could occur if a filter was applied using VBA while quickly opening and closing mimics.	
Associated labels not correctly displayed with mismatching label type (SPR #66371)	**HMI > Animations**
	Also in: 12.0.11
Under some circumstances, the displayed associated label was incorrect. The issue occurred when the compatibility setting *Allow use of mismatched associated label type* was enabled, with a variable of type alarm configured with a *Bit Associated Label*.	
Fatal error with a variable name used in a tooltip (SPR #67020)	**HMI > Animations**
	Also in: 12.0.14
A fatal error occurred when a variable with a name longer than 80 characters was used in a tooltip.	

Marker zoom levels not retrieved (SPR #68089)	**HMI > Animations**
The zoom level limits of markers were not correctly retrieved in the Map positioning animation.	
Virtual keypad - Validate text input with key Enter (SPR #66378, 65503)	**HMI > Animations** Also in: 12.0.19
Text input could not be validated by pressing the hardware keyboard key *Enter* (if any). The input could only be validated with the *OK* button of the Virtual keypad.	
Background image position (SPR #66458)	**HMI > Chart control** Also in: 12.0.11
Background image settings were not correctly interpreted in the Chart Control, leading to an incorrect positioning of the image.	
Event OnSelectionChanged improperly triggered in Combo-box (SPR #68123)	**HMI > Form controls** Also in: 12.0.18
The event *OnSelectionChanged* was improperly triggered in the Combo-box control when navigating in the dropdown list using the keypad. It is now only triggered upon validation of the new item selection.	
Fatal error when adding a Security animation to a tree-view control (SPR #68238)	**HMI > Form controls**
Under some circumstances, a fatal error could occur when adding one of the following security animation to a tree-view control: • Double signature, • User information, • User manager.	
Fatal error when loading the content file of a tree view (SPR #66779)	**HMI > Form controls** Also in: 12.0.12, 11.2.06091
A fatal error occurred when updating the content of a tree-view control by loading a content file defined by a variable link. The initial loading worked properly, the issue occurred when loading another file including items with animations.	
Tree-view control external file not saved after changes (SPR #67489)	**HMI > Form controls**
Rearranging or deleting nodes in a Tree view control did not trigger the save prompt when the content of the tree-view was defined in an external file.	
Font not properly initialized (SPR #66411)	**HMI > Graphics** Also in: 12.0.11, 11.2.06087
Under some circumstances, when using the ASCII format, text fonts were not properly initialized. Consequently, the text graphic item failed to load and display.	
Incorrect position and size in the status bar (SPR #66176)	**HMI > Graphics**
The size and the position displayed in the status bar for the selected item was not correct unless the item had been moved or resized.	
Text characters overlapping (SPR #66350)	**HMI > Graphics**
Text characters were overlapping when using a non-fixed-pitch font such as Arial with a small size (2 or 3) when a zoom was applied to a mimic.	

Opening a mimic containing the Grid Control (SPR #67930)	**HMI > Grid control** Also in: 12.0.17, 11.2.06095
When using the Grid Control with the Variable Tracking mode activated, the height of each row was unnecessarily stored in the mimic (or symbol) file. It was leading to an unusual long time to open the mimic, and could lead to a fatal error in some cases (due to timeout errors).	
VBA event KeyPressed not triggered (SPR #68045)	**HMI > Grid control** Also in: 12.0.17
The VBA event *KeyPressed* of the Grid Control was not triggered when pressing an arrow key if the key was associated to a *Function Key* action.	
Enumerated labels not displayed with ODBC source (SPR #67335)	**HMI > Log viewer**
Enumerated labels were not correctly displayed in the Log viewer when the archive unit was of type ODBC.	
Event labels Alarm On and Alarm Off incorrectly displayed (SPR #65440)	**HMI > Log viewer**
When the setting *Log only alarm on/off changes in log lists* was enabled, the events *Alarm On* and *Alarm Off* were not displayed with the correct label.	
Blinking effect (SPR #65506)	**HMI > Map control** Also in: 12.0.19
Fix of a blinking effect on the map control when a marker position was updated.	
Error message displayed when opening a map (SPR #66956)	**HMI > Map control** Also in: 12.0.15, 11.2.06093
Under some circumstances, an error message could be raised when displaying a map at project startup, due to execution synchronization issues.	
Fatal error on text color modification (SPR #67988)	**HMI > Map control** Also in: 12.0.19
A fatal error could occur when editing the text color of a Text marker.	
Incorrect position of a symbol in design mode (SPR #67570)	**HMI > Map control** Also in: 12.0.15
In design mode, a symbol at an absolute position was incorrectly anchored in the Map Control.	
Markers not refreshed after a VBA call (SPR #67222)	**HMI > Map control**
Under some circumstances, position of markers were not correctly refreshed after changing the zoom level or the position via a VBA script.	
Persistent properties not loaded (SPR #67420)	**HMI > Map control**
Persistent properties *Zoom* and *Position* were not correctly loaded at mimic opening when it was saved in the ASCII format.	
VBA form issue with the map control (SPR #65854)	**HMI > Map control** Also in: 12.0.8, 11.2.06082
Under some circumstances, when a VBA form was open on top of a map control, it could happen that mouse events were trapped by the map control, thus preventing correct user interaction in the VBA form.	
Zooming with SCADA Basic	**HMI > Map control**
It was not possible to modify the zoom level via SCADA Basic when the zoom was not activated in the control.	

Upgrade **Relative path not based on folder TP** (SPR #66559)	**HMI > Pie control**
In the Pie control configuration, the path of the file containing the item list was based on the BIN folder instead of the TP folder of the project if using a relative path.	
Textbox control not initialized with variable content (SPR #67452)	**HMI > Textbox control** Also in: 12.0.19
The Textbox control was not correctly initialized with the value of a variable when used in a mimic with a branch.	
Change Period dialog not opening (SPR #66188)	**HMI > Trend viewer** Also in: 11.2.06084
Some tools of the Trend viewer such as the *Change Period* dialog box were inactive if the parent mimic did not have the focus. It was occurring in particular cases when the mimic was opened in a Tab.	
Empty button in the legend (SPR #66812)	**HMI > Trend viewer**
Under some circumstances, icons were not displayed on buttons of the legend (scale, visibility …).	
Incorrect cursor value (SPR #68428)	**HMI > Trend viewer** Also in: 12.0.20
The cursor value displayed in the Trend viewer was incorrect for curves whose rank was over 8.	
Thresholds not found (SPR #66329)	**HMI > Trend viewer**
If the mimic had a branch, threshold values were not found when configuring thresholds for a new trace with the auto-mode.	
Trend data export wizard did not consider the buffer size (SPR #67401)	**HMI > Trend viewer**
The Trend data export wizard did not consider the *Buffer size* property and thus could export more data than expected.	
Trend viewer runtime configuration lost (SPR #66736)	**HMI > Trend viewer** Also in: 12.0.12
The runtime configuration of Trend viewer was not correctly saved with branched mimics.	
Trend viewer runtime properties lost (SPR #66648)	**HMI > Trend viewer** Also in: 12.0.12, 11.2.06090
The runtime properties of Trend viewer was lost when a curve's label contained a comma.	
Trends not displayed correctly on large screens (SPR #68081)	**HMI > Trend viewer** Also in: 12.0.19, 11.2.06095
Curves were not rendered properly if the Trend Viewer was larger than 3200 pixels.	
Trends not displayed upon request to the archives (SPR #66731)	**HMI > Trend viewer** Also in: 12.0.17, 11.2.06095
Under some circumstances, trends could disappear and no longer be displayed when requesting historical data. The issue occurred when a real time value (for one of the displayed variables) was received while processing the historical data.	

Cyclic action not correctly removed (SPR #66128)	**Miscellaneous**
	Also in: 11.2.06083
Under some circumstances, cyclic actions were not correctly deleted after being created with the SCADA Basic instruction *CYCLIC*, mode *ADDPROGBYID*. It was causing the following message to be displayed in the event viewer: 'Cyclic action not found in share configuration'.	
Fatal error sending an SMS (SPR #67406)	**Miscellaneous**
	Also in: 11.2.06093
A fatal error could occur when sending an SMS completed with a time-out.	
Fatal error when broadcasting Schedules and Cron.dat (SPR #67412)	**Miscellaneous**
	Also in: 11.2.06093
A fatal error occurred when broadcasting schedule modifications while the access to the file CTEMP\Cron.dat was locked (opened by another application).	
Fatal error on fast connection/disconnection (SPR #67249)	**Networking**
	Also in: 11.2.06095
Under some circumstances, a fatal error could occur when a station disconnected quickly after its connection (within a few milliseconds).	
Fatal error with misconfigured server association (SPR #67100)	**Networking**
	Also in: 11.2.06092
Under some circumstances, a fatal error could occur with a single active server association comprising 3 or more servers with some missing node links between servers. For instance a 3-server association where the link between server 2 and server 3 is deactivated.	
Incorrect value for system variable	**Networking**
	Also in: 11.2.06091
The system variable *System.AssocNumber.StationNumber.Switch.Passive_completed* was not correctly initialized at project startup on passive servers. It was set to 0 instead of 1.	
Upgrade **#B filter not working for treatment WATCHDOG** (SPR #65765)	**Real time data**
Since version 10.0, the #B filter was no longer working when used in a Variable Life Indicator (treatment *WATCHDOG*).	
Upgrade **Could not load Event on Text variables** (SPR #66244)	**Real time data**
Under some circumstances, events configured with an expression on Text variable were not correctly loaded when upgrading a project from an older version, due to the presence of multiple simple-quotes and lower-case characters.	
Could not write simulated variables (SPR #67500, 67499, 67498, 67455)	**Real time data**
It was not possible to write to a variable if it was not configured to be commandable. As one purpose of the Simulated property is to simulate user operations, such variables need to be writable when simulated.	
Fatal error with Chrono variables	**Real time data**
A fatal error occurred when a Chrono variable was configured with a Triggering or Initialization bit having a name which length was greater than 132 characters.	
Invalid initial values (SPR #62921)	**Real time data**
In an architecture with an association of type multiple active servers, the initial values of variables were correctly loaded only on the first server that started. On all other servers in the association, variables remained invalid.	

OPC watchdog treatment not fully executed (SPR #66922) Under some circumstances, watchdog treatment on OPC variables was not working properly and only part of the variables were set to NS WD on watchdog failure.	**Real time data** Also in: 12.0.19, 11.2.06091
Population with an incorrect filter (SPR #66918, 65995) No error message was displayed when creating or loading a population having an incorrect Filter. The control of these filters has been enforced and error messages are now displayed.	**Real time data**
Simulated property lost after restart (SPR #67318) The *Simulated* property of a variable was lost after project restart if the variable was also configured as *Saved*.	**Real time data**
Supervisor life indicator updated too frequently (SPR #67846) The treatment of type Supervisor life indicator was not correctly handling the producer list of the item itself and that of its result variable, leading to the update of the variable by multiple stations.	**Real time data**
Treatment WATCHDOG did not invalidate variables (SPR #65764, 59121) Variable Life Indicator (treatment item of type *WATCHDOG*) did not invalidate variables correctly when the field 19 was set to 0.	**Real time data**
Unit and Format properties of HMI variable (SPR #68195) The *Unit* property of HMI variables did not support special characters (i.e.: °C, °F ...), and the *Format* property was not correctly checked and interpreted.	**Real time data**
Fatal error with a large number of recipes (SPR #68267) A fatal error could occur when opening the *Select recipe* dialog from an animation if having more than 5120 recipes configured in the project. Up to 15360 recipes can now be displayed. Additional recipes are not displayed.	**Recipe**
Loading recipes with the same label or number (SPR #65803) No error message was shown when trying to load multiple recipes having the same label or number. An error message in now raised in the Event viewer to inform the user about the misconfiguration.	**Recipe**
Several fixes & enhancements to recipes (SPR #66666, 65990) The list of fixes & enhancements includes: • Variable titles are now displayed with their index, • Selection issue if a recipe had special characters in its title, • Recipe number not retrieved when selected by title.	**Recipe**
SV Manager Toolkit - Some variables not accessible (SPR #66727) Since version 12, it was no longer possible to access variable having a scope Session context or Client context.	**Scripting**

BeforeClose script not triggered (SPR #68418) The SCADA Basic function called upon closing a mimic was not correctly triggered when the mimic was closed via SCADA Basic. This fix applies to PcVue desktop only.	**Scripting > SCADA Basic** Also in: 12.0.20
Fatal error when importing variables Under some circumstances, when the auto-number internal identifiers (variable tagname) setting was not activated, a fatal error could occur when importing variables with the SCADA Basic instruction VARIABLE modes IMPORTFILE or IMPORTBUFFER.	**Scripting > SCADA Basic** Also in: 12.0.8, 11.2.06081
Upgrade **Instruction ALARM - Population filter not taken into account** (SPR #65557) When using the instruction ALARM modes ACKALL, ACKDOMNAT, ACKPRIO, ACKLAST or ACKOLDEST, the currently applied population filter is now taken into account. Population filter taken into account is the one corresponding to functions 8 and 9 (alarms acknowledgement using the Run macro animation and using scripting).	**Scripting > SCADA Basic** Also in: 11.2.06086
Instruction CHART mode SERIES_SETVAR - Did not work with branch (SPR #66122) The SCADA Basic instruction CHART mode SERIES_SETVAR did not work properly with branched mimics.	**Scripting > SCADA Basic**
Instruction CIMWAY mode READFRAME - Fatal error when read request failed (SPR #66607) A fatal error could occur when a read request triggered by the instruction CIMWAY mode READFRAME failed.	**Scripting > SCADA Basic** Also in: 12.0.12
Instruction CONVERT mode ATOBCD - Inconsistent result (SPR #66897) The instruction returned an inconsistent result if the argument did not correspond to a numeric value. Now, it returns 0.	**Scripting > SCADA Basic**
Instruction CRONTAB mode NETWORKBROADCAST - Unknown list or variable (SPR #11737) The instruction CRONTAB mode NETWORKBROADCAST did not return an error when the modification list or the status variable passed as argument did not exist.	**Scripting > SCADA Basic**
Instruction EVENT modes DEL & DELPROG - Support of the @ character (SPR #67342) The instruction EVENT modes DEL and DELPROG did not support the use of a variable name starting with the @ character.	**Scripting > SCADA Basic**
Instruction EXPORT_LOG mode GETSTATISTIC - Sort order argument ignored (SPR #68221, 68211) The argument *StatSortOrder* was not correctly taken into account when using the instruction EXPORT_LOG mode GETSTATISTIC. No error was returned when passing an inappropriate value, and with a correct value, it was not taken into account and sorting was not effective.	**Scripting > SCADA Basic** Also in: 12.0.19

Upgrade **Instruction FILETRANSFER - Relative path not based on folder TP** (SPR #66864)	**Scripting > SCADA Basic**
When downloading files with the instruction FILETRANSFER, the destination folder was based on the *BIN* folder instead of the *TP* folder of the project if using a relative path.	
Instruction FORMAT - Fatal error with incorrect format (SPR #66446)	**Scripting > SCADA Basic**
Under some circumstances, a fatal error could occur when the format of the input string was incorrect.	
Instruction GETARG mode WBRANCH - Returned mimic name instead of branch (SPR #66174)	**Scripting > SCADA Basic**
The name of the mimic was incorrectly returned instead of its branch when using the instruction GETARG mode WBRANCH after a call to the instruction ALARMDISPLAY mode ONLINESELECT.	
Instruction HISTORY mode GETTREND - Fatal error when requesting values (SPR #67698)	**Scripting > SCADA Basic**
Under some circumstances, a fatal error could occur when requesting historical values with the instruction HISTORY mode GETTREND, and a large format generating records with more than 120 characters each.	
Instruction HISTORY mode UNIT - No error returned if unit did not exist (SPR #66772)	**Scripting > SCADA Basic**
No error was returned by the instruction HISTORY mode UNIT if the archive unit did not exist.	
Instruction KEY mode ADDPROG - Call to a script in a local library failed (SPR #67804)	**Scripting > SCADA Basic**
When using the instruction KEY mode ADDPROG, it was not possible to add a function key calling a script stored in a local library.	
Instruction KEY mode ADDPROG and ADDPROGS - Failure with key code greater than 26	**Scripting > SCADA Basic** Also in: 12.0.17
The SCADA Basic instruction KEY with modes ADDPROG and ADDPROGS failed when the key code was greater than 26.	
Instruction KEY modes ADDPROG, ADDCLK and ADDSTD - Existing key not replaced (SPR #67955)	**Scripting > SCADA Basic** Also in: 12.0.16
When creating a new function key action with the SCADA Basic instruction KEY modes ADDPROG, ADDCLK or ADDSTD, an existing definition of the key combination was not replaced by the new one, leading to the execution of both actions when triggered. As described in the help, any existing definition of a temporary key is now replaced, and the instruction returns an error if the existing key is permanent (configured) and cannot be replaced by script at runtime.	
Instruction LOGDISPLAY mode FILTER - Fatal error with multiple INC clauses (SPR #66217)	**Scripting > SCADA Basic** Also in: 12.0.9
A fatal error occurred when using a filter having multiple INC clauses and using the % wildcard. e.g.: =(#A1 INC %Domain%) && (#A2 INC %Nature%)	

Instruction M104 mode DEVICESETIPADD - Application Explorer not refreshed (SPR #66382, 65416)	**Scripting > SCADA Basic**
The information displayed in the Application Explorer was not refreshed after updating an IEC 104 device IP address with the instruction M104 mode DEVICESETIPADD. The runtime was correctly updated and connection properly done with the newly set IP address.	
Upgrade **Instruction M61850 - Rework of return and error codes** (SPR #66916)	**Scripting > SCADA Basic**
Returned values and error codes of all modes of the instruction M61850 have been reworked. Please refer to the online help for further details.	
Upgrade **Instruction PIE modes COLLECTED_LABEL, COLLECTED_COLOR and CUSTOM_PROPERTY - Incorrect return value** (SPR #67687)	**Scripting > SCADA Basic**
The instruction PIE with the modes COLLECTED_LABEL, COLLECTED_COLOR and CUSTOM_PROPERTY always returned 0 even when correctly executed. It now returns 1 in such conditions.	
Instruction POPULATION mode ADDLINE - Filter not added (SPR #68199)	**Scripting > SCADA Basic**
A population was not correctly updated when new lines/filter were added with the SCADA Basic instruction POPULATION mode ADDLINE.	
Instruction POPULATION mode DUMP - No result displayed after creation (SPR #65988)	**Scripting > SCADA Basic**
When executing the instruction POPULATION mode DUMP right after having created or modified a population, the result displayed was the previous content of the population (empty after a creation).	
Upgrade **Instruction RECIPE mode NETWORKBROADCASTALL - Incorrect status values** (SPR #65430)	**Scripting > SCADA Basic**
The status values returned by the instruction RECIPE mode NETWORKBROADCASTALL were incorrect. It was returning -1 instead of 1 (as stated in the documentation) for the stations that did receive the broadcast successfully.	
Instruction RECIPE mode NETWORKBROADCASTALL - Unknown list or variable (SPR #11737)	**Scripting > SCADA Basic**
The instruction RECIPE mode NETWORKBROADCASTALL did not return an error code when the modification list or the status variable passed as argument did not exist.	
Instruction SEQ_BUFFER mode PUT_LINE - Fatal error (SPR #67813)	**Scripting > SCADA Basic**
Under some circumstances, a fatal error could occur when using the instruction SEQ_BUFFER mode PUT_LINE with a string having the same size as the buffer.	
Instruction SQL_COMMAND mode READBUFFERCELL - Empty cells were ignored (SPR #67266)	**Scripting > SCADA Basic** Also in: 12.0.15
String cells having a NULL value were ignored and skipped when using the instruction SQL_COMMAND with the mode READBUFFERCELL. They are now interpreted as empty strings.	

Instruction SVLOG - Last line missing in buffer (SPR #68234) When exporting data with the SCADA Basic instruction SVLOG, the last line was missing in the exported buffer.	**Scripting > SCADA Basic** Also in: 12.0.20, 11.2.06097
Instruction SVLOG mode EXTRACT - Lines enclosed with double-quote (SPR #68234, 66631) Since version 11.2.06066, every lines returned by the instruction SVLOG mode EXTRACT were enclosed with double-quotes. This could cause compatibility issues with 3rd party software or scripts used to parse the exported files.	**Scripting > SCADA Basic** Also in: 12.0.20, 11.2.06091
Instruction TREND modes GETYMIN and GETYMAX - Real time values with auto fit (SPR #66364) The instruction TREND modes GETYMIN and GETYMAX returned the configured values instead of the current runtime values when the *Auto fit* option was active.	**Scripting > SCADA Basic**
Instruction TREND modes SETVAR and SETVARLIST - Empty labels (SPR #66237) When using the TREND instruction with modes SETVAR and SETVARLIST, the Label argument was ignored when the Label was initially left empty in the Trend Viewer.	**Scripting > SCADA Basic** Also in: 11.2.06088
Instruction VARIABLE mode GET_TYPE - Did not work with HMI variables The instruction VARIABLE mode GET_TYPE returned an error when used with HMI variables.	**Scripting > SCADA Basic**
Instruction VARIABLE modes GET_DOUBLE_IN_DB and GET_LONG_IN_DB - Always returned 0 (SPR #68187) The instruction VARIABLE modes GET_DOUBLE_IN_DB and GET_LONG_IN_DB always returned 0 when used with a variable of type Bit or Alarm.	**Scripting > SCADA Basic**
Instruction WINDOW mode IS_OPEN - Handling of the '*' (SPR #66337) Using the value '*' for the branch argument when calling the instruction WINDOW mode IS_OPEN no longer worked. This issue was a regression introduced in version 11.2.06048.	**Scripting > SCADA Basic** Also in: 12.0.10, 11.2.06086
Issue with long string literals (SPR #66255) Using a string literal with a size longer than 80 characters generated a memory overrun that could lead to a PcVue fatal error.	**Scripting > SCADA Basic** Also in: 12.0.10, 11.2.06086
Memory leak when changing a threshold on a passive server (SPR #68034) Under some circumstances, a memory leak could occur when executing the instruction VARIABLE mode THRESHOLD_SETVALUE on a passive server.	**Scripting > SCADA Basic** Also in: 12.0.17, 11.2.06095

Syntax highlighting and auto-completion (SPR #67416, 66404, 66403, 66004)	**Scripting > SCADA Basic**

Fixes & improvements to syntax highlighting and auto-completion in the SCADA Basic editor for the following instructions:

- instruction EVENT mode TRACE,
- instruction EVENT mode ADDEMAIL,
- instruction EVENT mode ADDSMS,
- instruction OPC all modes (use of . as communication object separator instead of /),
- instruction POWER,
- instruction WEBVUE mode HYPERLINK,
- instruction WINDOW mode CHANGE,
- instruction XMLPATH mode COUNT.

Text variable truncated after a copy (SPR #66784)	**Scripting > SCADA Basic**

When copying a working variable of type string to a Text variable, the working variable was truncated to the maximum length of the target variable.

```
Dim sText As Str;
sText = 'azerty';
@VAR.TEXT = sText; 'sText is truncated to the length of
@VAR.TEXT
```

Empty Alarm and Log viewers (SPR #68670)	**TouchVue** Also in: 12.0.22

Alarm and Log viewers displayed in a mimic in TouchVue remained empty even when there were alarms and/or events to display.
Displaying the same mimic in WebVue worked properly.

No error message on unauthorized user action (SPR #66568)	**TouchVue**

A friendly user message is now displayed when a user tried to execute an unauthorized action (interlock condition, profile level …).

Session closed after displaying a Mimic or a Symbol	**TouchVue**

User session was forcibly closed after having displayed a Mimic or a Symbol. The issue only occurred when the advanced back end setting *Immediate release of WebVue authentication subscription* whas enabled.

Several fixes & enhancements to TouchVue (SPR #67297, 66946, 66697, 66640, 65853, 65370)	**TouchVue** Also in: 12.0.15

The list of fixes & enhancements includes:

- Under some circumstances, mimics could freeze,
- Under some circumstances, users could not logout nor login,
- Some variable commands were not correctly triggered when embedded in object groups, symbols or mimic tab,
- Incorrect error messages were displayed after unsubscribing a variable.

Could not filter alarms with level 0 only (SPR #67821)	**Web Server Extensions**
	Also in: 12.0.17
It was not possible to filter real time alarms with level 0 only (*minLevel=0* and *maxLevel=0*). With such requests, the *maxLevel* parameter was automatically set to 29.	
This issue only affected web components with alarm filtering capabilities (WebVue, Web Services Toolkit and TouchVue).	
Fatal error on browse request by a web client (SPR #67983)	**Web Server Extensions**
	Also in: 12.0.17
Under some circumstances, a fatal error could occur when the configuration of a variable was modified while a browse request was being processed for a web client.	
Fatal error when closing a web session	**Web Server Extensions**
	Also in: 12.0.17
Under some circumstances, a fatal error could occur when closing a web client session. The issue could be reproduced if an *Alarm Syntheses* was configured with the option *Take the applied Population into account,* and if the value of an extended attribute was changed while closing the web session.	
Incorrect event codes for Command to 0 and Command to 1	**Web Server Extensions**
The event codes *Command To 0* and *Command To 1* were incorrectly returned when requesting logged events. The Web Services Toolkit as well as the Log viewer in WebVue were affected.	
Login/logout of web users not archived (SPR #66104)	**Web Server Extensions**
The login and logout actions of web users were not archived when the Web back end server did not had a license with the archiving option.	
Misleading message displayed (SPR #66068)	**Web Server Extensions**
	Also in: 12.0.9
When a web back end endpoint was configured but the corresponding feature was not installed, a misleading message was displayed at startup: "*No configuration found for the backend. Use web deployment console to deploy*" instead of indicating that the feature was not installed.	
Web session immediately closed (SPR #65837)	**Web Server Extensions**
Sessions were closed immediately when the *Automatic Logoff Timeout* setting was greater than 32767 sec. The automatic logoff timeout can now be up to 10 hours.	
Alarm viewer filter #t not applied (SPR #67287)	**Web Server Extensions > WebVue**
Filtering by SCADA Basic using #t did not work properly with the Alarm viewer in WebVue.	
Alarm viewer sorting not working with checkbox selection (SPR #68143)	**Web Server Extensions > WebVue**
In WebVue, sorting was incorrectly done on the adjacent column when the *Line selection mode* was set to *By checkbox*.	Also in: 12.0.19
Alarm viewer with first column empty (SPR #66855, 59115)	**Web Server Extensions > WebVue**
A fatal error of the web back end occurred when displaying a mimic in WebVue if it contained an alarm viewer with the first column configured to be empty.	Also in: 12.0.12

Animation not triggered (SPR #67697) When a symbol was part of a group, its animations were not correctly triggered on mouse-click.	**Web Server Extensions > WebVue** Also in: 12.0.18
Auto-size property not taken into account (SPR #65574) The *Auto-Size property* of Text elements was not taken into account in WebVue context. It could cause truncated display of register or text values when associated with *Text.Register* or *Text.Text* animations.	**Web Server Extensions > WebVue**
Blinking colors not working in animation (SPR #66679) Blinking colors were not correctly supported in an animation when changing from blinking to fixed color.	**Web Server Extensions > WebVue** Also in: 12.0.12
Blinking colors with indexed colors (SPR #66091) Blinking colors were not properly displayed on text objects when using indexed colors.	**Web Server Extensions > WebVue** Also in: 12.0.12
Calendar dialog box not modal (SPR #66099) The calendar dialog box of the Trend viewer could be improperly hidden behind the mimic. It is now managed correctly as a modal dialog.	**Web Server Extensions > WebVue** Also in: 12.0.10
Calling mimic not closed (SPR #66911) In a WebVue context, the calling mimic was not closed when a *Link.Open* animation was triggered from a tree-view control.	**Web Server Extensions > WebVue**
Control animation played twice Under some circumstances, control animation could be executed twice on Safari for iPadOS.	**Web Server Extensions > WebVue**
Domain and Nature filters duplicated in GPConf.dat (SPR #65621) Under some circumstances, duplicated filter lines were written in the *C\GPConf.dat* file when Domains and Natures were containing space characters.	**Web Server Extensions > WebVue**
Error message with the Timetable animation (SPR #66889, 65971) A user-friendly message is now displayed when opening the not supported Timetable Animation in a WebVue session.	**Web Server Extensions > WebVue**
Fatal error when hiding a Trend viewer scale Under some circumstances, a fatal error could occur when hiding a scale in a Trend viewer while a cursor was active.	**Web Server Extensions > WebVue**
Fatal error when opening a web client (SPR #67012) Under some circumstances, a fatal error of the web back end station could occur when running a WebVue client. This issue was due a synchronization issue with the server.	**Web Server Extensions > WebVue** Also in: 12.0.14
Fatal error with included mimics (SPR #66854) A fatal error occurred when an included mimic was opened with a Link open animation when the parent mimic was named explicitly (instead of using the * character).	**Web Server Extensions > WebVue** Also in: 12.0.12

Filter lost in Log viewer (SPR #66360) A filter set by SCADA Basic was lost when scrolling from one page to another one within the Log viewer itself.	**Web Server Extensions > WebVue**
Images not stretched (SPR #66947, 65941) The option *Stretch image* was not taken into account when rendering images used in *Images* animations (e.g.: *Image on Bit*).	**Web Server Extensions > WebVue** Also in: 12.0.13
Incorrect behavior of the send register animation (SPR #66236) If a user double-clicked on a send register animation (instead of a single click), WebVue improperly opened an empty confirmation dialog box that the user could not close.	**Web Server Extensions > WebVue** Also in: 12.0.10
Incorrect blinking color on alarms (SPR #66111) Under some circumstances, the blinking color of graphical items remained even after a status change of the alarm, typically after its acknowledgment.	**Web Server Extensions > WebVue** Also in: 12.0.9
Incorrect colors in Trend viewer (SPR #66754) Under some circumstances, color of traces were incorrect in a Trend viewer. The issue occurred when a trend historical request was executed while another one was still in progress.	**Web Server Extensions > WebVue** Also in: 12.0.13
Incorrect mouse icon with slider animation (SPR #65819) With the Firefox web browser, a *move* mouse icon was displayed when triggering a slider animation (*Translation.Single Axis Positioning*).	**Web Server Extensions > WebVue**
Incorrect text color in MS Edge (SPR #66036) Under some circumstances, an incorrect color was displayed when multiple overlapping text elements had the same content but different colors. Only the first color was rendered while it should have been the last. The issue only occurred with the Edge web browser.	**Web Server Extensions > WebVue**
Incorrect Trend viewer display (SPR #66149) Under some circumstances, a Trend viewer in a WebVue context could be blinking or having an erroneous display after calling consecutively multiple set modes (*SETVAR, SETYMIN, SETYMAX, SETTYPE, SETCOLOR*) of the TREND instruction.	**Web Server Extensions > WebVue**
Incorrect values in Trend viewer legend Some values were not correctly disabled and refreshed in the Trend viewer legend when used in a WebVue context. In particular : • For *Scale Min* and *Scale Max*, the configured number of digits was not taken into account and they were not refreshed when zooming; • The *Timestamp* at the cursor was not correctly refreshed in real time mode, and not cleared when unselecting all curves.	**Web Server Extensions > WebVue**
Infinite loop when opening mimic with Trend viewer (SPR #66145) Under some circumstances, an infinite loop error could be triggered when opening a mimic with a Trend viewer. The issue occurred when the SCADA Basic instruction TREND mode SETVAR was executed within the script called at mimic opening.	**Web Server Extensions > WebVue**

Instruction TREND mode SETVAR - Trend viewer frozen Under some circumstances, the Trend viewer could freeze after using the SCADA Basic instruction TREND mode SETVAR. The issue only occurred if the requested variable did not exist or if the requested variable was identical to the one already displayed.	**Web Server Extensions > WebVue**
Instruction TREND mode SETVAR - Variable description not updated (SPR #66637) In a WebVue context, the variable description was not updated in the legend when the curve was modified with the SCADA Basic instruction TREND mode SETVAR.	**Web Server Extensions > WebVue** Also in: 12.0.15
Lost control zones (SPR #66209) Control zones were lost on polygons after executing them once.	**Web Server Extensions > WebVue** Also in: 12.0.10
Modal mimics not disabling all background clickable commands (SPR #66147) Under some circumstances, some commands located in a mimic in background could be triggered even when a modal mimic was opened in foreground. The issue only occurred when the web browser had been resized.	**Web Server Extensions > WebVue**
Object flickering with translation animation (SPR #66725) In WebVue, graphic objects were flickering when configured with a translation animation and rendered partly outside of the visible window.	**Web Server Extensions > WebVue** Also in: 12.0.12
Position of the Close button (SPR #68073) The Close button of popup mimics was not correctly positioned.	**Web Server Extensions > WebVue**
Printing the Trend viewer in Firefox (SPR #67926) When using the Firefox browser, printing a Trend viewer did not work properly. A new setting *Keep WebGL Buffer for printing* is available in the WebVue client settings. It must be activated for the trend viewer printing to work in Firefox, but may have a significant impact on the performances. This issue only affected Firefox browser. WebKit based browsers are able to print even if the option is disabled.	**Web Server Extensions > WebVue**
SCADA Basic script not executed on mimic opening (SPR #66785, 66340) SCADA Basic script on mimic opening were not executed in WebVue when the mimic was containing an empty Trend viewer.	**Web Server Extensions > WebVue** Also in: 12.0.12
Send and Link animations not available on transparent graphic objects (SPR #66577, 66327) Send and Link animations were not executed when configured on an object with invisible border and background. The control zone was not active nor displayed.	**Web Server Extensions > WebVue** Also in: 12.0.12
Send Bit animation - Mode Handled and Pulse reworked (SPR #66459, 66439, 66334) The *Send Bit* animation has been reworked, in particular the modes *Handled* and *Pulse*: • With *Handled* mode, the bit value was not reverted when the mimic lost focus, • *Pulse* mode was executed only when the HMI option *Mimic.Animations.Send bit.Handled & Pulse execution* was set to *Standard*.	**Web Server Extensions > WebVue** Also in: 12.0.11

Sizeable comment column in the Log viewer (SPR #66034) The *Comment* column was always sizeable even when columns were defined as locked in the Log viewer properties.	**Web Server Extensions > WebVue**
Support for Sql-like filter for LOGDISPLAY instruction (SPR #67282, 66722) Sql-like filtering is now supported by the SCADA Basic LOGDISPLAY instruction when used in the context of a WebVue session.	**Web Server Extensions > WebVue**
System menu hidden (SPR #66033) Under some circumstances, the system menu was moved outside of the visible bounds after having used the web browser built-in zoom features.	**Web Server Extensions > WebVue**
Time filter wrongly disabled in the Log viewer (SPR #66606) The Time filter in the Log viewer was incorrectly disabled if the access to filtering options was disabled.	**Web Server Extensions > WebVue** Also in: 12.0.11
Tooltip displayed for hidden buttons (SPR #68024, 67993) The tooltip was displayed on graphic objects, even if it was hidden due to a Visibility animation.	**Web Server Extensions > WebVue** Also in: 12.0.19
Translation animation with improper control zone (SPR #66230) Graphic objects configured with a translation animation were always highlighted with a control zone even if the cursor mode was not activated on the animation.	**Web Server Extensions > WebVue** Also in: 12.0.12
Trend viewer cursor value not rounded (SPR #66430) The cursor value in a Trend viewer is now rounded according to the configuration.	**Web Server Extensions > WebVue**
Trend viewer legend Min, Max and Average not refreshed (SPR #67633) In a WebVue context, the *Min*, *Max* and *Average* legend columns of the Trend viewer were not correctly refreshed when switching from Real time to Pause mode.	**Web Server Extensions > WebVue**
Trend viewer not displaying curves Under some circumstances, real time trends were not displayed in Trend viewers in a WebVue context. The issue occurred when there was no previous point recorded in the primary archive unit or when the variables were dynamically set with SCADA Basic instruction *TREND* mode *SETVAR*.	**Web Server Extensions > WebVue**
Trend viewer toggle button show/hide (SPR #67701) The toggle button to show/hide curves (in the legend) was not working properly when trends were dynamically set via SCADA Basic instruction *TREND* mode *SETVAR*.	**Web Server Extensions > WebVue** Also in: 12.0.18
Trends not set with SCADA Basic instruction (SPR #66340) Opening a mimic and defining trends with the SCADA Basic instruction SETVAR in the same script was not working properly.	**Web Server Extensions > WebVue** Also in: 12.0.12
Useless scrollbar removed from the Trend viewer (SPR #66455) A useless horizontal scrollbar was always displayed in the Trend viewer.	**Web Server Extensions > WebVue**

Web client frozen after closing foreground mimic (SPR #66179) Under some circumstances, the web client could freeze after closing a foreground mimic when another foreground or modal mimic was opened.	**Web Server Extensions > WebVue** Also in: 12.0.9
Web client frozen when displaying Trends (SPR #67816) WebVue could freeze when displaying a Trend viewer configured with an interval between grid lines set to 0. Now with such setting, the Trend viewer uses the automatic mode to adjust grid lines.	**Web Server Extensions > WebVue**
Web client frozen with modal mimic in background (SPR #66037) Under some circumstances, after opening a mimic from a modal mimic, the web client could freeze due to the modal mimic being moved to background and no longer being accessible.	**Web Server Extensions > WebVue** Also in: 12.0.9
Web client no longer refreshed (SPR #68066, 67305) Under some circumstances, when using popup mimics, WebVue was no longer refreshed and was disconnected after a while.	**Web Server Extensions > WebVue** Also in: 12.0.19
Zoom actions not working in the Trend Viewer (SPR #66048) Under some circumstances, the zoom actions of the Trend Viewer were not working properly.	**Web Server Extensions > WebVue** Also in: 12.0.9
Improper disconnection Without a user action causing a request to the web server, the user was forcibly disconnected after the session time-out (default 1 mn). It could happen when configuring multiple schedules before saving them at once. A keep-alive request is now sent every 10 sec to make sure the connection is maintained.	**WebScheduler** Also in: 12.0.16

3. Critical fixes

Loss of variables configuration after synchronization (SPR #65228, 63244, 63130) Under some circumstances, part of the variable configuration was lost after an import synchronization. It was due to the deletion of branches created by the initial import that were enriched by additional variables from other imports or added via the Application Explorer.	**Configuration Environments > Smart Generators**

Several fixes & enhancements to the IEC 104 client driver (SPR #67233, 67208, 67190, 65778) The list of fixes & enhancements includes: • SCADA Basic instruction M104, modes NETWORK_STOP and DEVICE_SET_IPADD were leading to a fatal error when used with an empty string for the communication object parameter, • After a server switchover, some devices were not correctly reconnected and a fatal error could occur, • Devices could remain disconnected or with an unstable connection state after connection was initiated (upon startup, switchover, communication failure and reconnection...). As part of these fixes, the device connection and handshaking sequence was heavily reworked for both active and standby devices.	**Data Acquisition > IEC 60870-5 Client** Also in: 11.2.06092
Polling stopped after 25 days (SPR #66766) The cyclic polling mechanisms used by the IEC 61850 data acquisition driver stopped working properly after a period of 25 days. It was necessary to restart the application to recover a correct behavior. The affected mechanisms were the following: • Polling of Datagroup (all versions affected), • Polling of DataSet (all versions affected), • Polling of watchdog (all versions affected), • Cyclic attempt to reconnect a disconnected device (all versions affected), • Cyclic re-synch GI for reports (affected since version 11.2), • Cyclic attempt to reconnect disconnected reports (affected since version 11.2).	**Data Acquisition > IEC 61850 Client** Also in: 12.0.12, 11.2.06090
Several fixes & enhancements to the IEC 61850 driver (SPR #66682) The list of fixes & enhancements includes: • A fatal error occurred when starting a Report already used by another client, • Enhanced management of requests callbacks to avoid the communication to be frozen, • Starting and stopping network and devices are now asynchronous to avoid the process to freeze.	**Data Acquisition > IEC 61850 Client** Also in: 11.2.06092
Several fixes in the IEC 61850 client driver (SPR #67463) Fixes are related to the handling of communication object stop/start and includes: • Fix of a fatal error that occurred when changing the configuration of several variables linked to IEC 61850 report or dataset. The issue could be reproduced when doing an Application Architect synchronization with IEC 61850 devices connected and communicating actively. • Variable updates could be frozen for 1 minute upon redundant data acquisition server switch from active to passive. • Failure to reconnect to URCB or BRCB upon redundant data acquisition server switch from active to passive.	**Data Acquisition > IEC 61850 Client** Also in: 12.0.16, 11.2.06094
Unable to restart serial communication (SPR #67037) Since version 12, it was no longer possible to restart a serial communication after stopping it. The application had to be restarted to correctly reinitialize the COM port.	**Data Acquisition > Other built-in drivers** Also in: 12.0.15

Emergency purge not executed (SPR #67005) Since version 12.0, the emergency purge was no longer executed properly. In addition, if no scheduled purge was configured, the issue could lead to potential storage issues and changes no longer recorded.	**Historical data** Also in: 12.0.13
Event lost or incorrectly archived in downgraded mode (SPR #65921) Under some circumstances, some events were not correctly archived (for some specific types of logged events). The issue occurred only with HDS archive units, when records had been temporarily stored in the .hds file (due to DB connection loss).	**Historical data** Also in: 11.2.06081
Fatal error at startup with HDS archive unit (SPR #66718) Under some circumstances, a fatal error occurred at startup when using HDS archive unit. This issue was a regression introduced in version 11.2.06089.	**Historical data** Also in: 11.2.06090
Modification of the Send bit animation behavior (SPR #66449) It is no longer possible to configure a *Send.Bit* animation to send the *Reverse* value with the modes *Pulse* or *Maintained*. Existing animations will still be executed as configured, even if such a combination is not recommend because depending on the protocol in use, it may lead to an undefined behavior.	**HMI > Animations**
Inconsistent values between clients and servers (SPR #67293) Under some circumstances, with a large amount of variables and high-end architectures (multi-level, long-distance WAN…), values on client stations could be wrong due to abnormal long delay in handling subscription after a disconnection (network issue, server switchover …). Restarting the client was the only method to restore consistent values. As a consequence, third-party applications connected to these stations via server interfaces such as the OPC server might have been notified with incorrect values in the meantime.	**Networking** Also in: 11.2.06093
Session context not taken into account in RealTimeData service (SPR #66609, 66410) Session context was not correctly managed in the *RealTimeData* service of the WST. As an example, the USER variable was returning the name of the user logged on the back end hosting the services (if any) instead of the name of the user authenticated as part of the WST session.	**Web Server Extensions > Web Services Toolkit** Also in: 12.0.11
Loss of variables (SPR #68541, 66899) Under some circumstances, session context and client context variables were lost when a Web user logged in. The issue only occurred if the compatibility setting *Auto-number internal identifiers* was disabled.	**Web Server Extensions > WebVue** Also in: 12.0.20

4. Enhancements

BACnet Server - Support for the device Restart procedure	**Add-ons and Tools**
The BACnet Server Add-on now support the device Restart procedure.	
EtherNet/IP Add-on - Dynamic variable mapping (SPR #65583)	**Add-ons and Tools**
Variable mapping is now dynamically updated when adding, modifying or deleting a variable. It is no longer required to restart the application to have such configuration changes taken into account by the add-on.	
License Utility - Display of activation date (SPR #67528)	**Add-ons and Tools**
The activation date is now displayed in the License Utility.	
MultiTech LoRa Gateway - Redundancy support	**Add-ons and Tools**
The Add-on now supports data acquisition server redundancy.	
New return codes for the DBImport (SPR #65829) Return codes have been added to the DBImport tool to facilitate usage in console mode. It now returns: • 0 if successful, • 1 if the import was successful but contained duplicated lines, • 2 if the import failed or was cancelled.	**Add-ons and Tools** Also in: 11.2.06083, 11.1.06121
Replication Manager - Purging previous steps before a new replication (SPR #65618) When an earlier replication failed to complete, remaining steps were still pending and stored in a dedicated table so that they can be processed later on. This feature had side effects in case one did not want the pending steps to be executed. It is now possible to purge this table of pending steps before executing a new replication, by using the Database Manager tool or by using the /P command line argument: • /P=1 to purge the table, • /P=0 to keep previous steps (default).	**Add-ons and Tools** Also in: 12.0.18, 11.2.06093, 11.1.06120
Support for double spontaneous transmissions (SPR #68078) Support for double transmission of information objects with cause of transmission spontaneous. It can be configured in the advanced properties of IEC 104 points.	**Communication interfaces > IEC 60870-5-104 Outstation** Also in: 12.0.17
Timestamp type configuration (SPR #63247) It is now possible to select the timestamp type of data published by the IEC 104 Outstation. It can be either Local or UTC (default).	**Communication interfaces > IEC 60870-5-104 Outstation** Also in: 11.2.06097

Time period edit field (SPR #59490) In configuration tools, all properties and settings corresponding to a time period are now displayed and edited using a human-readable format such hh:mm, hh:mm:ss or hh:mm:ss.lll, where a numeric value in a given unit of time had to be entered until now. Example of such fields are: • Time period for cyclic actions, • Timeout and watchdog periods (IEC 104, IEC 61850, DNP3, OPC, SNMP, BACnet…), • Polling period (IEC 104, IEC 61850, DNP3, OPC, SNMP, BACnet…), • Execution period (IEC 104…), • Clock Synchronization period (IEC 104…), • Archive units and Polling groups, • Duration of Chrono behavior, • Time before automatic logout, • Audit counters, • …	**Configuration Environments**
Empty BACnet properties When configuring BACnet items, some property lists remained empty while network or device parent items were not previously configured. Now these lists are automatically filled with the whole set of possible properties, and filtered according to their parent network or device once configured.	**Configuration Environments > Application Architect**
Input parameters at instantiation time The need to set a value for an input parameter at instantiation time can now be defined as optional, recommended or mandatory by the template designer.	**Configuration Environments > Application Architect**
Modeling of SCADA Basic scripts on mimic open and mimic close It is now possible to configure the SCADA Basic scripts executed on mimic open and mimic close for mimics modeled with templates and instances.	**Configuration Environments > Application Architect**
Property reset by category It is now possible to reset all properties of a given category at once.	**Configuration Environments > Application Architect**
Column selection The context menu to select the columns to display is now accessible from a right-click on columns headers. In addition for variables, extended attributes can now be displayed.	**Configuration Environments > Application Explorer**
HDS archives items sorted alphabetically (SPR #63242) All the HDS archive items - trends, log lists, archive units, trend groups, tables and databases - are now sorted alphabetically in the Application Explorer.	**Configuration Environments > Application Explorer** Also in: 11.2.06083
Modification of archive database connection string (SPR #61370) In the Archives configuration, it is now possible to edit the database connection string. It requires a restart to be taken into account.	**Configuration Environments > Application Explorer**

Number of configured elements (SPR #14252) The number of configured items is now displayed at the bottom of the Application Explorer.	**Configuration Environments > Application Explorer**
SG-OPC - Support for multiple groups (SPR #66202, 65877) The Smart Generator OPC is now able to import variables in different groups of an OPC Server. Until this change, all variables had to be mapped on the same group.	**Configuration Environments > Smart Generators**
SG-SAIA & SG-TwinCAT - File location selection upon synchronization (SPR #67028) It is now possible to select a new file location when synchronizing an SG SAIA or SG TwinCAT import.	**Configuration Environments > Smart Generators** Also in: 11.2.06091
Could not change exception-schedule with ISMA devices Using the WebScheduler, changing exceptions on a BACnet schedule failed with devices from the manufacturer ISMA. The displayed exceptions did not match the actual value of the exception-schedule property in the WebScheduler. The issue related to the handling of the *ReadProperty* service when applied to properties of type *Array* in the particular case when the array is empty.	**Data Acquisition > BACnet Client** Also in: 11.2.06082
Improved fallback for interop with iSMA devices Changing BACnet Schedules could fail with iSMA devices. The fallback mechanism for writing variable-size arrays have been improved.	**Data Acquisition > BACnet Client** Also in: 11.2.06080

New SYSTEM variables for COV subscription (SPR #66352)
 	
Two additional SYSTEM variables are available for each BACnet network:
 	
• System.BACnet.<Network>.SubscriptionCompleted
  • 0: COV subscription in progress
  • 1: COV subscription completed or no COV subscription to perform
• System.BACnet.<Network>.UnsubscriptionCompleted
  • 0: COV unsubscription in progress
  • 1: COV unsubscription completed or no COV unsubscription to perform
 	
In addition, the pending subscriptions and unsubscriptions are displayed in a column of the Application Explorer.
	Data Acquisition > BACnet Client

Support for new objects and properties Additional BACnet objects and properties defined in the ASHRAE 2016 standard are now supported: • Binary-Lighting-Output, • Network-Port, • Elevator-Group, • Escalator, • Lift.	**Data Acquisition > BACnet Client**

Rework of the IEC 61850 mapping dialog box The IEC 61850 mapping dialog box has been changed to improve the user experience. The list of fixes & enhancements includes: • Improved responsiveness and display of values to avoid freezing of the mapping dialog box, • Browsing of dataset members for DataSet and DataReport was incorrectly displayed, • Possibility to create new variables from all Data Attributes of any Data Object, • Support for mapping on Arrays.	**Data Acquisition > IEC 61850 Client**
Watchdog polling period (SPR #65433) The polling period of Data Report watchdog is now 10 min (was 5 sec).	**Data Acquisition > IEC 61850 Client**
Support for IzoT Net Server 4.5 Starting with version 15, the LNS data acquisition driver is validated with IzoT Net Server 4.5 (also known as OpenLNS) and supports recent operating systems: Windows 8.1, Windows 10, Windows Server 2012, Windows Server 2016 and Windows Server 2019 at the time of writing.	**Data Acquisition > LNS**
Mapping of indexed array (SPR #65350) It is now possible to link variables to indexed arrays. It can be configured in the advanced properties of the variable. This feature is available since version 8.10 SP4, but no configuration interface was available until now.	**Data Acquisition > OPC Client**
OPC-XML - Support for arrays (SPR #66898) When using OPC-XML, it was not possible to map a variable on a specific index of an array of items (string, boolean, I4, UI4...). This feature was already available with the OPC-DA client.	**Data Acquisition > OPC Client** Also in: 12.0.12
OPC-XML - Support for Http Basic Authentication (SPR #67279, 67278, 65932) The OPC-XML driver now supports Http Basic Authentication.	**Data Acquisition > OPC Client** Also in: 12.0.19
Allow write commands when equipment is in error (SPR #66436) Prior to this modification, write commands were not sent when the equipment was seen in error. In particular, they were not executed on valid write-only frames when another frame had a status error. Now, writes commands are sent based on the frame status instead of the device status.	**Data Acquisition > Other built-in drivers** Also in: 12.0.11
Driver XBUS-IP-MASTER - Handling of connection termination (SPR #66310) In order to improve interop with some devices, it is now possible to select if a connection shall be terminated using the TCP RST_ACK or FIN_ACK flag.	**Data Acquisition > Other built-in drivers** Also in: 12.0.19, 11.2.06085

Driver XBUS-IP-MASTER - Support for host names (SPR #66635, 66616) The XBUS-IP-MASTER driver now supports addressing devices by using host names instead of IP addresses. Such configuration can only be done by manually editing the file *C/Comm.dat* and typing the host name in the *IP1* field.	**Data Acquisition > Other built-in drivers**
Support of signed float 32 bits format (SPR #68105) New format *Signed float 32 bits (swapped word)* is now available for built-in drivers.	**Data Acquisition > Other built-in drivers** Also in: 12.0.17
Non-printable character (SPR #66914, 66913) A new property is available for text variables mapped to the SNMP driver to discard non-printable characters that may be retrieved via the SNMP Manager acquisition driver.	**Data Acquisition > SNMP Manager**
Ability to disable file opening after data export (SPR #65359) From now on, when the user does not have the desktop rights, the Data Export Wizard of the Trend Viewer and the Grid Control no longer asks the user if he/she wants to open the generated file, a simple information is displayed, thus preventing the access to the file system.	**Data Export** Also in: 12.0.11
Configuration of folders (SPR #65978, 64630) In the general settings of Data export, it is now possible to define an absolute path for both Template Export folders. In addition, a folder selector is available.	**Data Export**
Sampling period greater than the export period (SPR #67469) It is now possible to have a sampling period equal or greater than the export period. This change allows using the export feature to generate a single sampled value snapshot.	**Data Export** Also in: 12.0.16
Checks before running Component Registration Tool (SPR #65708) The Component Registration Tool now checks whether an affected process is still running before proceeding. In addition, a warning message is displayed to warn the user about the potential overwrite of system configuration settings such as services accounts.	**Deployment tools > Component Registration tool**
Certificates storage for IIS (SPR #67780, 65939) The *Webhosting* store is now used by default by the WDC when generating or importing a certificate (instead of the *Personal store*).	**Deployment tools > Web Deployment Console**
Configuring a Web Server with different private and public ports A new advanced setting *UseClientHostForRedirect* is now available in the WDC. It enables the configuration and deployment of a Web Server that uses different IP addresses and ports on public and private networks.	**Deployment tools > Web Deployment Console**
Multi-binding support A web site can now be configured with multiple bindings to support deployment scenarios requiring a web or mobile app to access the web server with a different Url/certificate depending on the network it connects from.	**Deployment tools > Web Deployment Console**

New setting MachineName for the GraphicalData service (SPR #65876) To better support infrastructure where the Web back end has multiple network interfaces, it is now possible to configure the *MachineName* setting, typically with the IP address of the network interface to be used by the Web back end to call back the GraphicalData service hosted in IIS.	**Deployment tools > Web Deployment Console**
New functions to get Timestamp status Two new methods are available on *svmgrVarStatus* enabling to get the quality of the timestamp: • IsTimeStampPLC_OK • IsTimeStampPLC_NOK	**Development kits > SV Manager Toolkit**
Expressions - New functions for angle conversions (SPR #66296) New functions are now available for expressions: • ToDegrees(angle): To convert an angle from radians to degrees, • ToRadians(angle): To convert an angle from degrees to radians, • Pi(): Returns a rounded value of the constant π. Similar conversion functions are now also available with the SCADA Basic instruction CONVERT.	**General** Also in: 11.2.06086
New standard action for central project management (SPR #65584) A new standard action to open the central project management on a function key is available. The SCADA Basic function *KEY* has been updated accordingly with the action code *124*.	**General**
Support for extended function keys The list of fixes & enhancements includes: • Support of F13 to F16 function keys, Back Space and Tab keys, • Support of the Alt key as a modifier, • Error and Log messages reworked.	**General** Also in: 12.0.17
Instruction SYSTEM mode CHANGEPASSWORD - Support for Active Directory user accounts (SPR #16223) It is now possible to change the password of an Active Directory user with the instruction *SYSTEM* mode *CHANGEPASSWORD*.	**General > User management** Also in: 11.2.06085
Support for more user account syntaxes with Active Directory (SPR #66112, 59301) It is now possible to log in by specifying the domain of the user with the following user name formats: • Down-Level Logon Name: DomainName\UserName • User Principal Name: UserName@Domain.local It enables logging in to a different Active Directory domain.	**General > User management** Also in: 11.2.06085
User title When using Active Directory integration, the user title is now retrieved from AD.	**General > User management**

Canceling central project and library loading (SPR #68251, 68250) It is now possible to cancel the loading of a project or library version from the Central folder. When canceled, the local version is used.	**General > Version management**

More information about project and libraries versions (SPR #67349)
 	
Additional information is now stored and displayed in the version management view for each version:
 	
    • Product version used to create the project/lib version,
    • Product version used at the time of the last update of the project/lib version.
	General > Version management

New command line argument (SPR #65596) A new command line argument is available to enable starting with a specific version of the project or libraries: -d proj=x.y.z lib=t.u.v where x.y.z (resp t.u.v) corresponds to the version of the project to start (resp version of the libraries).	**General > Version management**

SYSTEM variables (SPR #65220, 61233, 60708, 16723)
 	
New system variables to monitor if a new version of the project or libraries are available. This makes it easy to generate an alarm to the operator if a restart is required:
 	
    • System.Version.Reference.Project,
    • System.Version.Reference.ProjectLastChange,
    • System.Version.Reference.Library,
    • System.Version.Reference.LibraryLastChange,
    • System.LocalHost.Version.Reference.ProjectIsNotCurrentRef,
    • System.LocalHost.Version.Reference.LibraryIsNotCurrentRef.
	General > Version management

Update of the Comment property It is now possible to update the comment associated to a version of a project or libraries.	**General > Version management**
Database max size only set at creation time (SPR #67484) The database maximum size is now only set at the time of creation (was set at each project startup). This change also avoids a systematic error message at startup if the database user does not have the SQL dbcreator role.	**Historical data**

Enhancements of the replay module
 	
The list of enhancements includes:
 	
    • Automatic synchronization of historical data when opening the player,
    • Ability to move backward in time,
    • Tuning of the playback speed,
    • Timeline to make it easy to figure out which time slot is being replayed. The cursor allows jumping from a time slot to another one in a single click.
	Historical data > VCR

Default position of anchor point (SPR #67711) The default position of the anchor point for symbols is now the top-left corner (0,0) (was the bottom-left corner).	**HMI**

New option to close both a popup and its calling mimic (SPR #66810, 66694)	**HMI** Also in: 11.2.06090
A new option enabling to close both a popup mimic and its parent is now available. It can be activated in *HMI Options.Mimics.Popup.Close container mimic on link close animation using "*"*. This option is useful if mimic navigation is designed to open a secondary popup mimic from a primary popup. In such a situation, if this new option is enabled, both popups will be closed at once.	
New substitution characters for timestamp formatting - 12-hour clock (SPR #67015)	**HMI** Also in: 12.0.14
New substitution characters are available in the Alarm viewer, the Log viewer and the Trend viewer for timestamp formatting based on 12-hour clock representation: • #H: Hours from 1 through 12 (as opposed to #h for 00 through 23), • #p: AM/PM designator. In additional, only for the Alarm viewer, #H and #p support the suffix *AlaOn*, *AlaAck* and *AlaOff*.	
Open multiple mimics at once (SPR #63142)	**HMI**
It is now possible to open multiple mimics at once from the *File.Open* dialog.	
Built-in filter and Sql-like syntax support	**HMI > Alarm viewer**
A new property *SQL filter* is now available for the Alarm viewer, which enables defining an advanced Sql-like filter for the displayed alarms.	
Current branch displayed in the variable selector status bar (SPR #16333)	**HMI > Animations**
When selecting a variable for an animation, the current branch is now displayed in the status bar of the variable selector.	
Default mode of On text animations (SPR #66983)	**HMI > Animations** Also in: 12.0.13
On text animations now use the *Variable mode* by default (was using *Value mode*).	
Layer selection (SPR #64844)	**HMI > Graphics**
Two new buttons *All* and *None* are now available in the advanced properties of all graphic items to select or unselect all layers at once.	
Support for ODBC archive units in Historical mode	**HMI > Grid control**
The Grid control in Historical mode can now be used with ODBC archive units.	
Warning displayed with multiple trends in mode raw data (SPR #68049)	**HMI > Grid control**
A warning is now displayed in the Historical mode of the Grid Control when selecting several trends if in raw data mode. This mode allows displaying data of only one variable.	
Cut/Copy/Paste/Delete actions in the Map marker editor (SPR #61498)	**HMI > Map control**
The Cut/Copy/Paste/Delete actions are now available in a context menu accessible on right click for markers and layers.	

Positioning of markers (SPR #67820)	**HMI > Map control** Also in: 12.0.16

It is now possible to select at design time how markers of type Symbol shall be anchored on the map:

- Centered,
- Anchor point,
- Top-left corner,
- Top-right corner,
- Bottom-left corner,
- Bottom-right corner.

Ruler tool (SPR #64495)	**HMI > Map control**

A Ruler tool is now available in the Map control to allow the user measuring the distance between two points.

Setting the maximum number of markers (SPR #64010)	**HMI > Map control**

When configuring a dynamic layer in the Map markers editor, it now possible to set the maximum number of marker to be loaded.

Broadcast of deadband value and type	**Real time data**

A change of the deadband value or type properties of a register variable are now broadcasted to all stations in case of networking configuration.

Additionally, the SCADA Basic instruction VARIABLE mode SET_DEADBAND has a new argument to indicate the name of a register variable which will contain the result of the asynchronous broadcast:

- 0: In progress,
- 1: Failed,
- 2: Succeeded.

Writing the same value (SPR #68416)	**Real time data** Also in: 12.0.20

Until this change, writing the same value to an internal variable was not triggering notifications in components such as the *SV Manager Toolkit* even if the global variable setting *Send write request even if the value to write is the same as the current value* was enabled. In such circumstances, it is now possible to send multiple times the same value and be notified accordingly, which is required by some on add-ons such as the KNX driver.

It was working properly with I/O variables.

Improved language switch for the SCADA Basic editor (SPR #68128, 68109, 63114)	**Scripting > SCADA Basic**

The SCADA Basic editor now correctly follows the currently active language of the project.

Instruction CONVERT - New modes for angle conversions	**Scripting > SCADA Basic** Also in: 11.2.06086

2 new modes are now available for the instruction CONVERT:

- Mode RADTODEG: To convert an angle from radians to degrees,
- Mode DEGTORAD: To convert an angle from degrees to radians.

Similar conversion functions are now also available in expressions.

Instruction LOGDISPLAY - New mode UNSELECTALL (SPR #66358)	**Scripting > SCADA Basic**

A new mode UNSELECTALL is now available for the instruction LOGDISPLAY. It can be used to unselect all currently selected lines of a Log viewer.

Instruction M61850 - Custom orCat, orIdent and interlock-check for SBO, SBOw DE, and DEw commands (SPR #66932)	**Scripting > SCADA Basic**

The SCADA Basic instruction M61850 modes SBO_SELECT, SBOw_SELECT, SBO_OPERATE, SBOw_OPERATE, SBO_CANCEL, SBOw_CANCEL, DE_OPERATE and DEw_OPERATE now support optional arguments:

- test,
- SynchroCheck,
- InterlockCheck,
- orCat,
- orIdent.

Instruction SYSTEM mode MKDIR - Support of UNC paths (SPR #66218)	**Scripting > SCADA Basic**

The instruction SYSTEM mode MKDIR now supports UNC paths (i.e.: \\host-name\folder-name).

Instruction SYSTEM mode USER - New sub-modes to get details (SPR #67737)	**Scripting > SCADA Basic**

New sub-modes have been added to the instruction SYSTEM mode USER to get additional details regarding the connected user:

- LASTNAME,
- FIRSTNAME,
- DISPLAYNAME,
- TITLE,
- EMAIL,
- PHONE.

Instruction TRACE mode FILE - Message max length (SPR #67950)	**Scripting > SCADA Basic** Also in: 12.0.17

The instruction TRACE mode FILE can now handle a message of up to 2047 characters (was 80).

Instruction TREEVIEW - New mode ADDCHILD (SPR #67559)	**Scripting > SCADA Basic**

A new mode ADDCHILD is available for the instruction TREEVIEW. It enables inserting a new child node in a tree-view control.

Instruction TREND - New mode SETCURSORMODE (SPR #66634)	**Scripting > SCADA Basic**

A new mode SETCURSORMODE is available for the instruction TREND. It allows changing the cursor of a Trend viewer:

```
TREND("SETCURSORMODE", Window, Branch, Identity, Mode);
```
With Mode having the following possible values:

- 0 : no cursor (default),
- 1 : line cursor,
- 2 : cross cursor mode.

Instruction VARIABLE - New mode SETINVALID	**Scripting > SCADA Basic**
The new mode SETINVALID is available for the instruction VARIABLE. It allows setting the quality of a variable to NS.	
SCADA Basic Editor font size (SPR #66440)	**Scripting > SCADA Basic**
For a better display, the default font size has been increased to 10 (was 8).	
Support for structured names when referencing graphic items (SPR #66420)	**Scripting > SCADA Basic**
Instructions referencing graphic items in mimics (i.e.: TREND, LOGDISPLAY ...) now support structured names to allow the handling of items contained in symbols or groups. For instance, to identify the item *Trend1* contained in the symbol *Symbol1*, it is possible to address it as Symbol1.Trend1. Short names are still supported and address the first matching item in the mimic.	
New method to log messages (SPR #67826)	**Scripting > VBA** Also in: 12.0.16
A new method *LogInformation* is available in VBA on the *Project* object. It can be used to send log messages to the Event Viewer. `ThisProject.LogInformation LogLevel,LogMsg` Where *LogLevel* can take value 1, 2 or 3, and LogMsg is the message to be logged (string) • 1 = Information, • 2 = Warning, • 3 = Error.	
Ability to limit a user to one active web session	**Web Server Extensions**
It is now possible to limit a user to have only one active web session at a time. It is defined at the profile level.	
Instruction LOGDISPLAY mode SETDATETIME - WebVue support	**Web Server Extensions > WebVue**
The instruction LOGDISPLAY mode SETDATETIME is now supported in the context of a WebVue session.	
Instruction WINDOW mode POPUPCLOSE - WebVue support	**Web Server Extensions > WebVue**
The instruction WINDOW mode POPUPCLOSE is now supported in the context of a WebVue session.	
Small font size in Send Text animation (SPR #66342, 66038)	**Web Server Extensions > WebVue** Also in: 12.0.11
When a Send Text animation was configured with direct input, the font size for displaying and typing the text were different.	
Support for line breaks in texts (SPR #66080)	**Web Server Extensions > WebVue**
WebVue now correctly supports line breaks (\n) for Text elements.	
Support for popup and included mimics (SPR #68359, 66924, 66887, 66146)	**Web Server Extensions > WebVue**
Improved support for all types of modal, popup and included mimics.	

Support of SCADA Basic modes INSERT and REMOVE for CHECKLIST, COMBOBOX, LISTBOX and OPTIONLIST instructions (SPR #66028) The SCADA Basic modes *INSERT* and *REMOVE* of the instructions *CHECKLIST*, *COMBOBOX*, *LISTBOX* and *OPTIONLIST* are now supported in WebVue.	**Web Server Extensions > WebVue** Also in: 12.0.11
Two-finger scrolling and zooming on touch devices Two-finger scrolling and zooming is now correctly supported on touch devices.	**Web Server Extensions > WebVue**
BACnet exception handling (SPR #66582) Handling of Exception Schedule has been reworked to improve interop with devices that do not clear obsolete exception entries themselves.	**WebScheduler** Also in: 12.0.11, 11.2.06089, 11.1.06123, 11.0.06101

Show/hide columns
 	
It is now possible to hide the columns *Is Standard Week Empty* and *Is Exception Period Active*. By doing so, the time to load the list of timetables is greatly reduced.
The setting to add to the WebScheduler web.config file is the following:
`<setting name="HideSpecialColumns" serializeAs="String">`
`  <value>True</value>`
`</setting>`
	WebScheduler
	Also in: 12.0.16

5.   Performance

Improved mapping dialog When using the mapping dialog, all the properties are now read at once when changing the object selection instead of only reading visible properties. It helps having a smoother rendering when navigating among the properties.	**Data Acquisition > BACnet Client**
GDI object leak (SPR #67251) A memory leak occurred when opening a mimic containing Form controls (Combo-box, List-box, Option-list, Tree view). One GDI object was lost for each control using a custom font.	**HMI > Form controls** Also in: 12.0.15
Filtering based on populations (SPR #66703, 66695) Since version 12 Initial Release, runtime performances related to population filters were degraded due to a regression. Applying a population filter could take several minutes to be fully performed. It is now almost instantaneous.	**Real time data** Also in: 12.0.12
Time to load populations (SPR #68210) The time to load populations having a filter on only one extended attribute has been significantly improved. With a configuration containing 150.000 alarms and 700 alarm syntheses, the loading time has been decreased from 11mn to 1mn.	**Real time data**
Degraded response time (SPR #67120) Since version 12.0 Initial Release, general performances when requesting Web Services were degraded up to 50 folds (100 read requests within 50 seconds instead of 1 seconds). This fix restores performances to a level similar to version 11.2.	**Web Server Extensions > Web Services Toolkit** Also in: 12.0.15

Image caching (SPR #66155)
 	
Images loaded in mimics and symbols were not cached by the web browser, thus they were loaded every time the mimic was opened.
The setting to add to the GraphicalData web.config file is the following - Value in seconds, default to 0 (expiration controlled by the web browser) :
<pre><setting name="CacheMaxAge" serializeAs="String">
  <value>0</value>
</setting></pre>There is no need for customization to take advantage of the default value.
	Web Server Extensions > WebVue
	Also in: 12.0.16

6. Audit & diagnostic

LAN Audit counter - Incorrect value The Audit counter indicating the number of pending messages in the mailbox for the LAN manager was incorrect.	**Audit** Also in: 11.2.06082
IOPCSyncIO traces incorrectly activated (SPR #66604) Some traces were always generated despites having not been activated, in particular those related to the OPC server *IOPCSyncIO* events.	**Communication interfaces > OPC Server** Also in: 11.2.06089
Frame error message (SPR #60764) To avoid pollution of traces, frame error messages are no longer repeated at each polling period, but only on status change.	**Data Acquisition > Other built-in drivers**
Operating System and IIS Version (SPR #64714) Operating System and IIS version are now included in exports of diagnostics information.	**Deployment tools > Web Deployment Console**
Incorrect error message with -k command line argument (SPR #63669) Incorrect messages were displayed in the event viewer when the -k command line argument was misconfigured or when the remote license was not available.	**General** Also in: 11.2.06092

7. Installation

OPC-UA Gateway version 1.5.6 Update of the installation package of the OPC-UA Gateway available in the Add-ons & Tools section of the DVD.	**Add-ons and Tools**

8. Security

Secret storage (SPR #67338, 67309, 63934)
 	
Multiple password fields for devices were displayed in plain text in the Application Explorer. They are now masked in UI and stored ciphered:
 	
  • SMS Account - PIN Code,
  • SNMP Manager - Authentication Key (Network and Device),
  • SNMP Manager - Privacy Key (Network and Device),
  • BACnet - Device Management Password (Device).
	Configuration Environments

Secret storage (SPR #68391) The storage of the Authentication password for IEC 61850 devices is now protected and can include quotes.	**Data Acquisition > IEC 61850 Client** Also in: 12.0.20
Subject Alternative Name (SAN) in certificates (SPR #68064) It is now possible to add a Subject Alternative Name (SAN) of type dNSName to certificate requests and to self-signed certificates. Filling the subjectAltName with the FQDN is important because the use of the Common Name for identifying a web server is deprecated and the RFC 2818 is now being enforced by some web browsers (namely Google Chrome at the time of writing).	**Deployment tools > Web Deployment Console**
Access to the online help and potential security policy infringement (SPR #66776, 65910) Under some circumstances, access to the online help was possible before completion of project startup. It could occur in particular by pressing the F1 key from one of the message box opened to indicate that network access issues prevent access to the version management central folder. Access to the file system was therefore possible before user authentication, which could be against the security policy on some systems.	**General** Also in: 12.0.13, 11.2.06091

Several fixes & enhancements to user management (SPR #67616, 67615, 67614, 67613, 67611, 67610, 67609, 67608, 67448, 67419, 67417, 67407, 67391, 66306, 65994, 65221)
 	
The list of fixes & enhancements includes:
 	
  • Rework of the event logging when modifying the user accounts (creation, deletion and modification of users, profiles and associations),
  • Added login reason in event logging (local or web session, signature, unlocking…),
  • Added logout reason in event logging (user action, time-out…),
  • Better event logging regarding account unlock actions by admins,
  • Display of the user account status in the Application Explorer (no associated profile, no web access…),
  • Complete deletion of User/Profile association in advanced security mode,
  • It was not possible to delete users without profile or with 0-level profile in advanced security mode,
  • Admin users were able to deactivate themselves,
  • Under some circumstances, the password generator could propose a weak password in advanced security mode.
	General > User management

mbedTLS library updated	**Security**
The mbedTLS library has been updated to version 2.24.0.	
OpenSSL library updated	**Security**
The OpenSSL library has been updated to version 1.1.1h (22-Sep-2020).	
Access to another web session (SPR #66644)	**Web Server Extensions** Also in: 12.0.15
Under some particular circumstances, a web client was able to access the session of another web client, leading to potential information disclosure and privilege elevation. This was due to the reuse of a previously closed session Id, but with an access token not yet expired.	
Vulnerabilities in the Web back end modules	**Web Server Extensions** Also in: 12.0.17, 11.2.06097
The following vulnerabilities are fixed. They affect the interface between the Web & Mobile back end and the web services hosted in Microsoft IIS: • A Remote Code Execution vulnerability due to the unsafe deserialization of messages received on the interface - Affects all versions since 8.10. • A Denial Of Service vulnerability due to the ability for a non-authorized user to modify information used to validate messages sent by legitimate web clients - Only affects version 12.0. • An information exposure vulnerability allowing a non-authorized user to access session data of legitimate users - Only affects version 12.0. See our Security alert page and Security Bulletin 2020-1 for more information.	
Automatic logout not effective in WebVue (SPR #66653)	**Web Server Extensions > WebVue** Also in: 12.0.12
The automatic logout was not completely effective in WebVue. After the inactivity timeout elapsed, it was indicated that the session ended but refreshing the page (with F5 or Refresh button) was opening it again without entering credentials.	
Weak password wrongly accepted	**Web Server Extensions > WebVue**
When renewing a password with WebVue, a weak password was accepted even if the configuration imposed a strong one.	
Disable WebScheduler help (SPR #67044)	**WebScheduler**
It is now possible to disable the access to the online help of the WebScheduler via a setting that can be defined at the time of deployment with the WDC.	

9. Other fixes & enhancements

SPR #62922, 65363, 65368, 65595, 65651, 65884, 65897, 65912, 65991, 66030, 66136, 66137, 66144, 66164, 66165, 66248, 66292, 66299, 66331, 66450, 66693, 66740, 66750, 66786, 66795, 66798, 66805, 66890, 66934, 66938, 66976, 67047, 67087, 67088, 67226, 67298, 67345, 67373, 67415, 67501, 67631, 67663, 67891, 68029, 68037, 68040, 68060, 68120, 68136, 68144, 68148, 68149	
SPR #68498	Also in: 12.0.20
SPR #65348	Also in: 12.0.19
SPR #67223, 67986	Also in: 12.0.17
SPR #67486	Also in: 12.0.16

SPR #66811, 66857	Also in: 12.0.12
SPR #66192	Also in: 12.0.11
SPR #66009, 66150	Also in: 12.0.10
SPR #66219, 66269	Also in: 12.0.9
SPR #67466	Also in: 11.2.06093
SPR #66177, 66223	Also in: 11.2.06089
SPR #66370, 66465	Also in: 11.2.06088
SPR #65935, 66079	Also in: 11.2.06086
SPR #66106, 66177	Also in: 11.2.06085
SPR #66309	Also in: 11.2.06085, 11.1.06122, 11.0.06098
SPR #65700	Also in: 11.2.06081, 11.1.06118

8. Known Issues

Audit counter mean values are inaccurate (SPR #65251) Calculation of mean values is wrong for audit counters (error every 27 hours).	**Audit** 15.0.0 Also in: 12.0.7
Lost instances (SPR #67013) Under some circumstances, all instances are lost. Investigations indicate that this may be caused by the deletion of the root node. While the investigations continue to uncover and fix the source of the issue, changes have been made to mitigate and prevent the root node deletion. Specific diagnostic traces have been added to indicate that an attempt to delete the root node occurs. In addition, a specific backup (in addition to the rolling backup files) is now performed to ensure that instances configuration will not be lost. These changes are in effect starting with the Maintenance Release 12.0.13. If you run an earlier release of version 12, and notice that the instances root node is not displayed in the Instances tab of the Application Architect, you have probably ran into the issue and the instances are lost. In such situation, stop PcVue and recover a valid instances configuration from the rolling backup files located the *C\Templates\Back* folder. Do not restart PcVue multiple times before you recover your configuration as it exposes you to losing the useful rolling backup.	**Configuration Environments > Application Architect** 15.0.0 Also in: 12.0.13
Upgrade **Potential behavior change for alarm syntheses** (SPR #67799, 66701, 60594) Starting with version 11.2 Release, by default, new alarm synthesis items created with the Application Explorer or the XML Generic Import do not take the population filter into account. This change was not introduced for alarm syntheses created with the Application Architect, leading to the following potential issues if your project includes populations and alarm syntheses created based on templates and instances with the Application Architect: • If you have migrated or are migrating a project from version 11.1 or earlier to version 11.2 or later, you should check with the Application Explorer that alarm syntheses are configured to fit your requirements (take into account or ignore population). If configuration does not fit, reverse the value of the 'Take population filter into account' using the Application Architect and proceed with a full synchronization. • Do the same verification and configuration changes if your project was once migrated to 11.2 (earlier than 11.2.06094), and is now being migrated to 11.2.06094 or later. • Do the same verification and configuration changes if your project was once migrated to 12 (earlier than 12.0.16), and is now being migrated to 12.0.16 or later. • In all cases, pay particular attention to alarm syntheses created with version 11.2 and 12, as it is likely that the population filter property is not applied as it used to be with earlier versions. You are not impacted by this issue if you do not use population filtering in your project, or if alarm syntheses are not created based on application modeling with the Application Architect.	**Configuration Environments > Application Architect** 15.0.0 Also in: 12.0.16, 11.2.06094

Supported operating systems for the KNX Add-on	**Data Acquisition > KNX**
	15.0.0
The KNX add-on is only supported on the following operating systems, with the exclusion of any virtual environment:	Also in: 12.0.7, 11.2.05001
• Windows 7 SP1 (x64),	
• Windows Server 2008 R2 SP1 (x64).	
Upgrade **[Fixed] Polling groups lost** (SPR #69086)	**Data Acquisition >**
	SNMP Manager
When upgrading a project from version 12 to version 15, the SNMP polling groups are lost due to an issue in configuration saving with version 12.	15.0.0
	Also in: 15.1.0
[Edit: Fixed in 15.1.0 and 15.0.3]	
[Fixed] Trend export fails with current period	**Data Export**
	15.0.0
Since version 15.0.0, trend export fails if set to export for the current period.	
[Edit: Fixed in version 15.0.1]	
[Fixed] Cannot delete HDS database	**General**
	15.0.0
Since v15.0.0, following an enhancement to better manage default items in the HDS archiving configuration (default DB, default table...), it is no longer possible to delete the last configured database.	
[Edit: Fixed in version 15.0.1]	
SQL filtering on HMI variables (SPR #65903)	**HMI > Grid control**
When using the Grid control in variable tracking mode, the Sql syntax cannot be used to filter HMI variables.	15.0.0
	Also in: 12.0.7
BeforeClose script not triggered (SPR #68418)	**Scripting > SCADA Basic**
	15.0.0
Since version 12.0.7, the SCADA Basic function called upon closing a mimic was not correctly triggered when the mimic was closed via SCADA Basic.	Also in: 12.0.20
[Edit: Fixed in 12.0.20 and 15.0.0 for PcVue desktop]	
A fix for WebVue is planned for a later release.	
Issue with host name resolution on Android (SPR #65724)	**Web Server Extensions**
	15.0.0
Android versions earlier than 5.1 are known to be affected by a bug related to host name resolution.	Also in: 12.0.7
When using DHCP, the issue prevents from using a host name other than a Fully Qualified Domain Name even if the host name is properly registered in a local DNS and the DNS server automatically updates itself to reflect DHCP leases. The issue is that Android devices do not use the DNS search path provided by DHCP.	
Please refer to the Google Issue Tracker for more information:	
https://issuetracker.google.com/issues/36916949	
Drag handling with Firefox (SPR #68507)	**Web Server Extensions**
If a position animation with *Cursor mode* enabled is used on an image, the user needs to click twice in Firefox to perform the action.	**> WebVue**
	15.0.0
	Also in: 12.0.7
Known limitation related to hiding control zone highlighting (SPR #68507)	**Web Server Extensions**
At the time of writing, hiding the control zone highlighting (according to the HMI option) is only implemented for rectangle shapes.	**> WebVue**
	15.0.0
	Also in: 12.0.7

Known limitation related to the animation Send register in Step mode	**Web Server Extensions > WebVue**
The '+' and '-' buttons are not rendered in WebVue when using the *Send register* animation with the *Step mode* enabled.	15.0.0 Also in: 12.0.7
Restrictions related to web browsers (SPR #68507)	**Web Server Extensions > WebVue**
Each web browser can come with its own restrictions, in particular when security is at stake. Below is a list of known behaviors, specific to one or the other web browser available on the market at the time of writing. These restrictions may be cleared and others appear depending on web browser updates and their publisher's strategy. • Safari on iOS - When the Safari web browser is closed without logging out from WebVue, WebVue is re-open by default the next time the user opens Safari, but the user will not be able to successfully login, and will be stuck on the WebVue loading page. This is due to the Safari snapshot of the last visited page where Safari display the web page without actually requesting the web server. The solution is to go to the address bar and click the Go button, or ask Safari to reload the page. • Google Chrome - The password manager of Chrome does not store credentials if the connection to the web server is insecure. As a consequence, if you do not have a proper certificate on the web server, users will not be able to use the Chrome password manager to store their credentials. • Microsoft Edge - Edge in versions prior to 79 (Jan 2020) does not store the session cookie when using the local computer as a web server with a binding on the hostname at the IIS level. As a consequence, you cannot successfully log in, and can see a warning message indicating that the version of the client is not compatible with the server. The solution is to add .local to the computer host name when setting up the web site binding with the Web Deployment Console (for example, https://mycomputername.local instead of https://mycomputername).	15.0.0 Also in: 12.0.7
SCADA Basic scripting of form controls (SPR #65938) When scripting form controls in SCADA Basic in a WebVue context, the GET modes such as GETSELECTEDINDEX, GETTEXT… do not return the correct value if the currently selected item was selected either via the keyboard or another script (with a mode such as SETSELECTEDINDEX). These GET modes work properly if the selection was done via mouse-click or a tap (on a touch device).	**Web Server Extensions > WebVue** 15.0.0 Also in: 12.0.7
Support for WebFont requires manual installation on Windows 7 SP1 (IIS 7.5) (SPR #65847) If the Web Server runs IIS 7.5 - a Windows 7 desktop or Windows 2008 R2 server computer - the default font (Times New Roman) is used instead of the Roboto Web Font for texts inside pre-defined WebVue pages and mimic tittles. Texts used in animations within mimics and symbols are not affected. This issue is due to the lack of pre-configured support for WebFont in IIS 7.5. The solution is to install the MIME type handler for .woff files manually using the IIS manager. This issue may be fixed in a later version of the Web Deployment Console.	**Web Server Extensions > WebVue** 15.0.0 Also in: 12.0.7

Upgrade **WebScheduler migration issue** (SPR #68507) In order to fit with Microsoft Windows default privileges for the IIS_IUSRS group, the configuration files of the ScheduleData service are now stored in the folder ScheduleData\AppData on the IIS Web server. These files, namely ScheduleDataAccess.xml and SchedulesAccess.dat, used to be stored in the folder ScheduleData\config. Upon migrating a project to PcVue 12.0, it is advised to move the files manually to avoid losing customization of any piece of configuration. The manual copy shall take place after installation and deployment of the WebScheduler (using the WDC).	**WebScheduler** 15.0.0 Also in: 12.0.7
Upgrade **[Fixed] Polling groups lost** (SPR #69086) When upgrading a project from version 12 to version 15, the SNMP polling groups are lost due to an issue in configuration saving with version 12. [Edit: Fixed in 15.1.0 and 15.0.3]	**Data Acquisition > SNMP Manager** 15.1.0 Also in: 15.0.0
[Fixed] WebScheduler not accessible (SPR #69170, 69036) Since version 15.0.0, it is no longer possible to use the WebScheduler without having a Web Service Toolkit option on the license. This regression is due to a tightened control of the web accesses in version 15.0.0. The issue also affects access from 3rd party software taking advantage of the Web Services Toolkit such as Dream Report. [Edit: Fixed in 15.1.0 and 15.0.3]	**WebScheduler** 15.1.0 Also in: 15.0.0
Upgrade **[Fixed] Can no longer create a version** (SPR #68507) Since version 15.0.0 and the introduction of the 3-digits scheme for project and lib versioning, it is no longer possible to create a version having a Major or Minor number greater than 100. It is still possible to update and load versions, but creating a new version on top of an existing one leads to a fatal error when exceeding this limit. [Edit: Fixed in 15.1.1 and 15.0.3]	**General > Version management** 15.1.0 Also in: 15.0.0
[Fixed] Data overwritten (SPR #68507) Since Release 15.0.0, when using the mode *Append after last row* for an Excel file, newly exported data can overwrite data exported during an earlier export. The issue is due to an incorrect calculation of the last non-empty cell in the Excel file. [Edit: Fixed in 15.1.1]	**Data Export** 15.1.0 Also in: 15.0.0
[Fixed] Missing component registration Since Release 15.0.0, the component registration is not executed automatically after installing a patch. On computers with other versions of PcVue or other products installed (such as FrontVue), fatal errors and other unexpected behaviors can occur due to the fact that the proper version of a component may not be registered within the operating system. The issue affects all Maintenance Releases of 15.0 and 15.1 up to 15.1.4 if it is installed via a cumulative patch. In such a case, a workaround is to run the Component Registration Tool manually after installation. If you have used an installation other than a patch, the component registration is done automatically. [Edit: Fixed in 15.1.4]	**Installation** 15.1.0 Also in: 15.0.0

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PcVue 15 Release Notes

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