08 / 2025

Release Notes for Lucullus® – 24.1.2

WHAT'S NEW

Securecell AG is pleased to announce the release of **Lucullus® version 24.1.2**, following the previous version 24.1.1. Version 24.1.2 introduces several new features and bug fixes. Key improvements include:

- **Support for Oracle Express Edition 23ai Free.**

- **Enhanced Execution Monitor usability**
  - Added the ability to set attributes in bulk for all loaded processes.
  - Display of the host (workstation) where each process was executed.

- **Changes in Graphical tool search capabilities to display by default "Process Finder", a powerful search tool.**

- **Extended REST API**
  - New endpoints to support the creation of samples in Lucullus®.
  - Improved endpoints for updating attributes in the Execution Monitor for running processes.

- **Updates to the Media Tool**
  - Added support for "Lot remarks."
  - Introduced a "Reset All Filters" function.

- **Device integration and driver enhancements**
  - New integrations include Horiba Aqualog, Chemometec XM30, MSPrima, and the Watson-Marlow Ethernet/IP Pump.
  - Improved support for existing instrument drivers.
  - Enhancement of Metaflex tag translation to allow import value tags patientID & patientID2 up to 30 characters and import of sample IDs

- **Improvements of Numera capabilities to cancel drawn of offline samples.**

- **Bugs**
  - Fixed issues related to Operation Tool impacting inability to open execution element window and activation of occurrence button when used port is selected.
  - Fixed inconsistency to define and edit profiles in **Operation Tool, Planning Tool and Execution Monitor**
  - Fixed issues limiting the logging of step chain to 100 events. Now all step chains can be logged without limit.
  - Fixed issues to correctly display in Execution Monitor, Planning and Graphical Tool, only the selected attributes that belong to a saved Attribute Set
  - Fixed issues in Web Application to correctly display and update port values in a running process.
  - Fixed issues that allowed users to rename lots with an existing lot name in Media Tool.
  - Fixed issues to allowing displaying and saving dosed values of "0" in Media Tool during lot creation.

Additionally, **Lucullus® version 24.1.2** is now designated as a **Long-Term Support (LTS)** release and is supported for use in regulated environments.

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NEW FEATURES

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-17595	Support tag translation for Metaflex internal sample ID on astm_e1394 daemon driver and SA importer	ASTM E1394, importdriver	Enable the import Vi-Cell MetaFlex's internal sample ID value into Lucullus as sample data via Staging Area functionality
LUC-17591	Increase length of patientID & patientID2 on astm_e1394 daemon	ASTM E1394, importdriver	Enable import full length of text from patientID & patientID2 tags from 15 characters to 30 characters
LUC-17519	Backport MSPrima/TCP into 24.1.x (from 24.2)	Device Drivers	Implement a new communication of msprima_driver, using modbus TCP instead of RTU
LUC-17086	Ethernet/IP driver enhancements in exceptions and errors handling	Device Drivers	Improving emerging exceptions and/or errors are properly caugth and handled to avoid no driver crashes/restart, or for the driver to be able to recover (means re-estasblish the communication channel to the device) after a connection lost. Addition of exceptions 'protocol error' and 'communication error' in execution monitor (by setting ERROR port of StatusSubX subdevice)
LUC-17071	Ethernet/IP error handling improvement	Device Drivers	Improving driver error handling by throwing an appropriate exception to be caught by the device driver in the case of socket errors (timeout while receiving data, or wrong/incomplete data received from the device). Reset or empty the socket before sending new requests to prevent reading stale data/responses from previous requests. Add additional check to verify that the received response code matches the request code
LUC-16916	Implementation of EtherNet/IP decoding responses for Watson-Marlow	Device Drivers	Implementing driver responses to the commands: Register session, list identity, get/set parameters
LUC-16914	Implement driver cycling logic for Watson-Marlow EtherNet/IP protocol/driver	Device Drivers	Implementing driver connectivity to Watson-Marlow OEM DriveSure 530 series pump device. Driver is notifying Execution Monitor of its status (i.e. 'ready'). Process values (parameters) listed in LUC-16857 can be read from the device and shown in Execution Monitor. and Control values (parameters) listed in LUC-16856 can be modified & read and shown in Execution Monitor
LUC-16913	Implementation of EtherNet/IP encoding requests for Watson-Marlow	Device Drivers	Design and documentation of available parameter attributes to check that commands are correctly encoded and test all commands required for W-M pump as specified in LUC-16856
LUC-16294	simplify transmission of string value between Lucullus and OPCUA-SDK	Device Drivers	We suspect that fom time to time errors appears in the malloc/free sequences of buffers used to exchange string values between Lucullus software and OPCUA SDK. As since Lucullus 23.1 the OPCUA SDK is also compiled together with the Lucullus code, we could get rid of the 'layer in the middle' (kernel/opcua/OpcUaClientLayer) or at least simplify it step by step. First steps is: • replace manually alloc/free of char buffer through usage of std::string member
LUC-17466	RTscan RT242 Barcode Scanner driver development	Device Drivers, Numera	Driver to read, display and log barcodes from RTscan RT242 Ultra Thin Fixed Mount Barcode Scanner in Lucullus for the purpose of acquiring barcode IDs in Lucullus for Numera operations
LUC-17089	Numera Flex2 Analyser Reservation - Numera driver	Device Drivers, Numera	Implementation of a solution to prevent the analyzer to start any other task while preparation steps have started on Numera to push a sample to it, by creating a 'reservation' mechanism between Numera processor (s7numera) and analyzer driver (analyzer_xy).

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LUC-17088	Numera Flex2 Analyser Reservation - opcuaflex2_driver	Device Drivers, Numera	Improving driving efficiency by leveraging the newest OPC server version 4.1 of the FLEX2, command OPCSystemCommands->EXT_OLSTerminate->EXT_OLSTerminate. With this command, an analysis can be canceled after the EXT_OLSScheduleAnalysis is set to true. This feature helps unblock the FLEX2 instead of waiting for it to timeout for 15-20 minutes. To benefit from this feature, the Lucullus driver should send this command if Numera has an error and fails to deliver the sample to the analyzer.
LUC-17527	Handling of 'BlankFilePath' input argument for "StartAteemAcq" OPC tag	Device Drivers, Numera, OPC UA	Lucullus system (via Lucullus Aqualog driver) shall be able to provide Horiba Aqualog with value for 'BlankFilePath' input argument for "StartAteemAcq" OPC tag with each A-TEEM SampleType=Sample measurement. Analytical Method Parameter 'BlankFilePath' is renamed to 'BlankFile' Analytical Method Parameter 'BlankFile' is mandatory to define (same logic is applied as for other mandatory Analytical Method Parameters)
LUC-17332	Aqualog Num-Luc Error handling	Device Drivers, Numera, OPC UA	Implementation of Lucullus-Numera Horiba Aqualog driver Error handling including error handling for InstrumentState, handling for OPC nodes of NodeClass, Supporting Sequences for Lucullus Aqualog driver and Sampling Sequences for Lucullus Aqualog driver.
LUC-17331	Aqualog Num-Luc Sampling sequence	Device Drivers, Numera, OPC UA	Implement Sampling Sequences for Lucullus-Numera Horiba Aqualog driver. Sampling Sequences for Lucullus Aqualog driver, Execution order of of RSU & A-TEEM Analytical Methods in Lucullus, General Sampling sequence, RSU Sampling sequence and A-TEEM Sampling sequence
LUC-17330	Configuration of RSU & A-TEEM Analytical Methods in Lucullus	Device Drivers, Numera, OPC UA	Implement configuration of RSU and A-TEEM Analytical Methods for Lucullus-Numera Horiba Aqualog driver, including Configuration of RSU Analytical Methods in Lucullus and Configuration of A-TEEM Analytical Methods in Lucullus.
LUC-17266	Implementation of Directory set and check sequence at driver startup (Luc-Num Aqualog)	Device Drivers, Numera, OPC UA	Implementation of Directory (Corrections, SampleQ & Output) set and check sequence(s) at Lucullus-Numera Horiba Aqualog driver startup (initialization)
LUC-17265	Implementation of sample-related OPC UA tags of NodeClass=Variable (Luc-Num Aqualog)	Device Drivers, Numera, OPC UA	Implementation of all required OPC UA tags directly related to sample analysis activities of NodeClass=Method for Lucullus-Numera Horiba Aqualog driver to Write RSU acquisition, Write A-TEEM acquisition and Write Stop acquisition
LUC-17264	Implementation of non-sample-related OPC UA tags of NodeClass=Variable (Luc-Num Aqualog)	Device Drivers, Numera, OPC UA	Implement all required OPC UA tags not directly related to sample analysis activities of NodeClass=Method for Lucullus-Numera Horiba Aqualog driver to Read Instrument Connection Status, Write Instrument Initialization, Read Lamp Status, Tray Aqualog OPC tags, Read current Temperature of Sample Tray, Write Temperature control of Sample Tray, and Write Stirrer control of Sample Tray.
LUC-17263	Implementation of OPC UA tags of NodeClass=Variable (Luc-Num Aqualog)	Device Drivers, Numera, OPC UA	Implement all required OPC UA tags of NodeClass=Variable for Lucullus-Numera Horiba Aqualog driver to alloe Directory Control Aqualog OPC tags, Read & Write Corrections Directory, Read & Write SampleQ Directory, Read & Write Output Directory, Read Application Status and Read Instrument Status.
LUC-17516	XM30 & Numera-Lucullus errors and exception handling	Device Drivers, Numera, WebSocket	Implement errors and exception handling for XM30 and Numera-Lucullus on Lucullus XM30 Driver such as: (1) Unsuccessful request from Lucullus XM30 Driver to XM30 instrument. (2) XM30_DISPENSE_SAMPLE" Timeout. (3) Handling of request-response requests except those with id_type "scripting". (4) Handling of Lucullus XM30 driver errors. (5) Timeout on Numera Bubble sensor, and (6) Numera in Error Status

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LUC-17493	Implementation of XM30 driver Numera sampling sequence	Device Drivers, Numera, WebSocket	Implementation of Lucullus - XM30 Sample Analysis Data Management to provide (1) Configuration of Acquisition Options in Lucullus. (2) Retrieval and forwarding of Sample ID, Dilution & Acquisition Options values. (3) Numera - Luccullus - XM30 Sample Analysis Sequence, and (4) Numera, Lucullus, XM30 Sampling and Sample Analysis sequence
LUC-17422	Implementation of XM30 driver initialization and supporting read and write commands	Device Drivers, Numera, WebSocket	Implement XM30 driver to initialize driver (authorization and instrument initialisation sequence), read state (read status of consumables, read hibernation info), and Lucullus XM30 Supporting Write Commands (manual (on-demand) initialization, manual sample analysis abort)
LUC-17316	Support for Integer, Float & Double Array Datatype in OPC UA driver	Device Drivers, OPC UA	Enable integration of OPC UA tags with DataType IntegerArray, FloatArray & DoubleArray using OPC UA universal driver in Lucullus for the purpose of data acquisition
LUC-16295	Functionality to set attribute values for multiple processes in one command	Execution Monitor	In Execution monitor, Attributes tab an additional column named 'Set All' is implemented after column Unit and before first column for a process (values). User can enter (but not immediately set) a value in column 'Set All', the system (Lucullus) then propagates (copy) same value to all columns of all loaded processes in Execution Monitor. User can set attribute values in bulk for all loaded processes after (entering value in column 'Set All' and) confirming with confirmation button. User can undo bulk entered & propagated (but not yet set) attribute values for all loaded processes with undo button
LUC-16284	Include process name as 'Sample ID' within BSM requests	Execution Monitor, External Sampling Interface, Sample Management	The BSM requests 'createParentSample' and 'modifyParentAndChildSampleUsingObj' should also contain a <propertiesList> element with: • element 'propertyName' equal to 'Sample ID' • element 'propertyValue' equal to the process name
LUC-16392	Add Hostname information to Process details/description in Desktop UI	Execution Monitor, Graphic Tool	Implement additional information read-only field "Host" in Process description window in Execution Monitor and Graphic tool, between Process Group and State field which displays name of the host where selected process is running (same information as already available in SysAdmin tool -> System State -> Busy devices)
LUC-16368	Add Hostname information to Process details/description	Execution Monitor, Graphic Tool, REST API V1, Web-Application	Implement additional information read-only field "Host" in Process description.
LUC-17069	Drawn Numera samples should be able to be cancelled in Execution Monitor	Execution Monitor, Numera, Sample Management	Enabling cancellation of "drawn" samples in the Execution Monitor by Numera
LUC-16328	Rename Staging Area " Assign…" button to "Assign to process"	Graphic Tool, Sample Management, Staging Area	Relabeling of "Assing" button in Staging Area to "Assign to process"
LUC-16457	Ultrospec parser, end to end implementation.	Graphic Tool, Staging Area, System Administration Tool	Enablement of monitoring (acquire, log and visualize) sample data from Ultrospec 7500 & Ultrospec 2100 Photometers via Resolution CFR Software in Lucullus through Staging Area functionality in order to evaluate bioprocess sample measurement results.
LUC-16776	Process Finder as a go-to process search functionality	Graphic Tool, UI	Implementation of a search functionality similar to "Process finder" in the Graphic tool application, including reordering process finder in graphical tool file menu and addition of a toolbar icon.

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-17554	Importdriver for Horiba Aqualog Staging Area data acquisition	importdriver, Staging Area, System Administration Tool	Sample measurement result reading and file creation via aqualog_driver for the purpose of Staging Area data acquisition (LUC-17545) will assure aqualog_driver.exe (1) reads out result of selected Horiba Aqualog sample measurement result OPC UA tags and (2) creates a JSON file of with the content of selected Horiba Aqualog sample measurement results in JSON. Once result file is created importdriver.exe shall import and parse said JSON file in Lucullus Staging Area
LUC-17287	XM30 Import Source	importdriver, Staging Area, System Administration Tool, XM30	Allow to monitor (acquire, log and visualize) sample data from Chemometec XcytoMatic® 30 (XM30) via its REST API in Lucullus through Staging Area functionality in order to evaluate process sample measurement results.
LUC-17053	Skeleton driver for websocket protocol	LDDK	Creation of a skeleton driver for hardware devices using Web-Socket communication protocol, including documentation.
LUC-17052	Skeleton driver for OPC UA universal driver	LDDK	Creation of a skeleton driver for hardware devices using OPC UA communication protocol, including documentation.
LUC-16952	Reset all Filters in List Recipes & List Lots	Media Tool	Enabling user to easily reset all filters selected in List Recipes (Recipe Finder) and List Lot (Lot Finder) menus (i.e. with one or two clicks)
LUC-16951	Add Remark column to List Lots table view	Media Tool	Enabling users to o read descriptive remark of each created lot from Lots List table (overview)
LUC-17068	s7numera driver should not process samples from non-running processes	Numera	Implementation of a solution to prevent Numera from processing samples of a not-running processes.
LUC-17545	Sample measurement result reading and file creation via aqualog_driver for the purpose of Staging Area data acquisition	OPC UA	Extend the existing aqualog_driver.exe and importdriver.exe to be able to: 1. read out result of selected Horiba Aqualog sample measurement result OPC UA tags, and, 2. create a JSON file of with the content of selected Horiba Aqualog sample measurement results in JSON
LUC-16518	Updating Attribute values through REST API doesn't work with Transition condition	Operation Controller, REST API V1	Enablement of attribute values updates through REST API and ensure that those values meet Operation/Function Transition condition, Operation/Function can proceed to next step
LUC-17505	GET Analytical Methods additional info (Analytical Method Parameters)	REST API V1	Enable, via Lucullus REST API, to retrieve extended information of all defined Analytical Methods, including (but not limited to) details of Analytical Method Parameters. Create a new end point GET /rest/opal/fullanalyticalmethods that extend existing REST API endpoint GET /rest/opal/analytical-methods response to include: If Analytical Method is active or not ("Active" T/F) to which Equipment is assigned to ("Equipment") If controlled by Numera ("Numera Control T/F) Numera Type ("Numera Type") Which Ports are assigned to it ("Selected Ports": "Key Analyte", "Logical Port") Which Parameters are defined per Analytical Method ("Parameters": "Parameter", "Unit", "Type", Default Value")
LUC-17498	Draw selected Sample (PUT) with Numera-related parameters	REST API V1	Allow to specify Numera-related sample drawing parameters when drawing sample via REST API request Extend existing REST API endpoint PUT /rest/opal/samples/<-sampleId> request to include payload JSON Parameters: • Numera selection • Autosampler position definition • Drawn On (timestamp) definition • Sampled Volume definition

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-17497	Create new Sample (POST) incl. Analytical Method Parameter Values & related info definition	REST API V1	Enable, via Lucullus REST API, to create a new sample and specify all user-definable sample information including selection of Analytical Method and its Parameters and their values Extend existing REST API endpoint POST /rest/opal/samples to include: (1) selection of Analytical Methods and (2) definition of values for Parameters for each selected Analytical Methods
LUC-17495	GET Sample Analytical Method Parameter Values & related info	REST API V1	Extend existing REST API endpoint GET /rest/opal/samples/<-sampleId> response to include Analytical Method Parameter Names, Units & Values (& data type for values) for selected Analytical Methods per Aliquot
LUC-16609	Improve signal cache memory consumption and management	REST API V1	Improvement of time in getting the signals data when calling the /signals end point by implementation of a cache. In case a lot of big signals are requested at the same time it might generate an "out of memory" error (the old signals are released only every 60 seconds). Replace that implementation with a more robust and customizable cache implementation: ehcache. We want to keep the release time to 60 seconds but there we want to set a maximum size of 300 MB. If possible use the xml configuration file so that the parametrization can be easily changed by restarting the application.
LUC-15273	Relabel StagingArea Import Filter Choices	Staging Area, System Administration Tool, UI	While working on ConfigAPI some discrepancies were observed in labels of StagingArea Import Filter Choices. To clearly identify correct StagingArea Import Filter Choices, they shall be relabeled according to the below table. Where the StagingArea Import Filter Choice label name is structured as follows: • For device-specific Import Filters: Manufacturer + Device Full name + "(" + supported data format +")" • Exception when single StagingArea Import Filter Choice supports multiple devices within the same device series (e.g. FLEX & FLEX2), Series Name + "series" shall be applied • For generic Import Filters: "Generic" + Import Filter Description (+"(" + supported data format +")", if applicable) • Labels shall be ordered alphabetically

BUG FIXES

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-18126	Key Attributes not shown in process planner	ConfigAPI, Execution Monitor, Graphic Tool, Java Library, Planning Tool	Fixed errors causing issues to display attributes in process planners. This issues were only affecting new installations and not visible on upgraded ones.
LUC-16509	Activation of operation fails after having added another reactor	Database, Operation Tool, Oracle Schema	Fixed issues related to the activation of multiple reactors within the same operation.
LUC-16800	Lucullus desktop icon missing in newer versions of Linux OS 8	Deployment	Fixing issueon Linux OS 8, were after installation or update to current Lucullus version, no icon can be found on the desktop.
LUC-16573	Fix crashing NumeraProcessor	Device Drivers	Solving NumeraProcessor crashes when mandatory Numera ports are not or wrongly (incorrect channel-id) configured. This is caused by missing proper initialisation of the corresponding member (index of the port within S_LogiPortListView) within class NumeraMethod. • A plausibility check should also be added everywhere in code where SI->LPL is accessed. • Being working on this, more logfile output should be generated showing which parameter values are interpreted and which decision are made depending on those values
LUC-17421	Only 1st sample processed, subsequent samples not processed by Agilent	Device Drivers, Numera	Fix errors preventing sequential uptake of samples from Agilent HPLC. Instrument should understand to begin an uptake and analysis of the sample fragment, as scheduled in Lucullus
LUC-17340	Numera is executing seq2 when it is not scheduled	Device Drivers, Numera	Fixing error of Numera executing seq2 when it is not scheduled/ planned
LUC-16990	AgilentLC driver: Wrong state value reported to operation	Device Drivers, Numera	Fixing issues related the display value of the internal state in the driver is not defined in operation, it is instead defined by driver itself
LUC-16000	Attributes tab in Online tool is not aligned	Execution Monitor	Fixed error In Execution Monitor in tap Attributes the rows of reactor/process attribute values are not aligned with row of corresponding attribute Name & Unit columns.
LUC-16977	Phase number displayed instead of Phase name in Events table	Execution Monitor, Graphic Tool	Fixing faulty behaviour causing that when there is a Phase change (initiated by users), Lucullus is tracking the old value of the Phase with the Phase number instead of the Phase name.
LUC-16901	Attributes of type "Choice" show ID instead of Actual value in Events table column "New Value"	Execution Monitor, Graphic Tool	Fix issues related to incorrect display of updated attributes in the column "New Value" in the execution and graphical tool
LUC-16742	Loading attribute sets does include more attributes than specified	Execution Monitor, Graphic Tool, Planning Tool	Fixed issues to allow the application of "Attribute Set" in Execution Monitor, Planning and Graphic tool only Attributes saved as part of Attribute Set are shown
LUC-16935	Data point in sample monitoring tab graph not greyed out	Execution Monitor, Graphic Tool, Sample Management	Fixing display errors of a data point belonging to only an invalidated import group should be greyed out in the sample monitoring tab's graph
LUC-16893	Graphic Tool crashes if selecting Sample Monitoring	Execution Monitor, Graphic Tool, Sample Management	Fixed issues related to Graphical tool crashed when Sample Monitoren is selected and running.
LUC-16409	Step chain interactions stop to be logged after some time	Execution Monitor, Logger	Fix errors causing that only 100 step chain interactions are logged, then logging is stopped. Now there is no limit for step chain logging, every single step needs to be logged and no change to shared memory structure

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-16465	Profile cannot be created nor edited in Operation Tool	Execution Monitor, Online Tool, Operation Tool, Planning Tool	Fixed inconsistent behaviour: • When a Profile is created in the Operation Tool in a yellow Step, Lucullus blocks the user from defining Profile points (options greyed out, not possible to modify the 2 existing points) • When a Profile is created in the Operation Tool in a blue Step, it works without any issues. • When a Profile is created ad-hoc in the Online Tool (Ports tab), Lucullus blocks the user from defining Profile points exactly in the same way as for a yellow Step in the Online Tool.
LUC-16895	logger does not recover on database issues or after connection POOL got offline	Logger	Fixing issues related to database logger to allow logger to start and run correctly even if there is a database incident, allow logger to correctly write the data files in LUCHOME/dump/*.dat during incidents, and to ensure that logger does correctly write back data to the database after the database incident was fixed.
LUC-16979	Duplicate Lot names are not prevented for renaming of lots	Media Tool	Preventing Lucullus to allow renaming of lots to non-unique Lot names.
LUC-16971	Actual value 0 not stored in Lot view and not tracked in Lot History	Media Tool	Fixing issues preventing entering value 0 in Actual field and not storing it when reopening Lot. Lot History does not keep track of writing 0 into the Actual field. (Mutation Action with description "Edited Actual: ValuethatwasEntered, time..." missing.)
LUC-17579	s7numera selects incorrect process type in some seq1+seq2 scenarios	Numera	The new process type calculation logic does not work correctly in some scenarios when a sample requires sequence 1 followed by sequence 2. The affected process types are 11X and 16X. In these cases, s7numera sends process types 110 and 160. These values never correct as they are missing the channel ID (pump number), which is encoded as the last digit. This is most probably caused by a bug in the s7numera. The type of the analytical device incorrectly plays a role for process type selection. Specifically, having a indirect analysis (sequence 2) affects the chosen process type, even though it should not. The correct factor is processing parameter value (ON/OFF) for direct analyzers
LUC-17341	Incorrect Timeout Warning displayed in Lucullus	Numera	Correct mistmatches issues between Numera and Lucullus when timeout warning is provoked in Numera, causing missalingment in displaying/doing and what is shown in Lucullus (Numera status on Sample List).
LUC-16790	Wrong OPC item name for attributes	OPC Bridge	Fixed OPC Bridge service attributeswhere their OPC item name is wrong
LUC-17129	REST-API opens more than one connection to the OPC Bridge	OPC Client, REST API V1	Implementation of a solution to solve REST-API opening more than one single connection to the OPC Bridge on the workstations by Implement timeout on client socket in REST-API. Ensure unique access to open connection functionality in REST-API. Implement workflow: connect - data transfer - disconnect, in REST-API
LUC-16852	OPC Bridge service non responsive	OPC Server	Fixed OPC Bridge service to allow recovery of service when it becomes non responsive.
LUC-17315	Devices unavailable in Execution tab of Steps in Operation Tool	Operation Tool	Fixing errors causing that not all Reactors and Devices are visible in the the "Output Ports" pane of a Step, as well as fix that not all available Ports can be linked to another Port / Attribute by "Copy Value" or "Logical Port Reference".
LUC-16944	Find Occurrence button not working in Step Chain in Operation tool	Operation Tool	Fixing issues that affect the activation of "Find Occurrence" button when a used port is selected
LUC-16720	Unable to Edit Action in Step in Operation tool	Operation Tool	Fixed issue for selected operations Edit Action doesn't open Execution Element window in Operation tool Step Definition in Lucullus 24.1.2 and possibly also 24.1.1.

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LUC-16379	Operations can not share the same name of local attributes. They also error out silently.	Operation Tool	Fixing issues allowing operations to have same name of local attributes.
LUC-16372	Can not delete randomly operations. When we can't we don't know the reason.	Operation Tool	Addition of error message to prevent deletion of operation used. When attempting to deleted an operation the system displays the message "Cannot delete operation, it has already been used and is referenced in events and audits".
LUC-16367	Newly created local attributes can not be used after verifying the operation.	Operation Tool	Fixed inconsistencies in the usage of local operation attributes in step chain tab.
LUC-17328	Reactors created by cloning not selected in default Logger operation	Operation Tool, System Administration Tool	Fix reactor errors that were created via Clone Reactor functionality and are not automatically selected in default Logger operation
LUC-17571	Return all the signal if endInxed is not provided	REST API V1	When calling /signals/1234?startIndex=12

An error is returned saying that endIndex must be bigger than startIndex.

Change that behaviour by handling this case returning the signal until the end (the same has to happen if endIndex==0) |
LUC-17472	Getting comments throws an exception	REST API V1	Fixed error when calling /comments on DB NullPointerException and Add more null check where missing.
LUC-17407	Getting comments throws an exception	REST API V1	Fix ArrayOutOfBounds errors and if there are places where nullPointer exception can happen. Default pagination feature added to this end point as well to avoid long waiting time in case of installations with a lot of comments
LUC-17359	No proper initial and final index when calling signal with reduction method	REST API V1	Fix indexing errors when calling the analyze API from Luculus with reductionMethod. This fix prevents improper initial and final indexing from the previous calls and avoidance of the api loopings and sending duplicate information.
LUC-17102	Evaluation license cannot be set via REST	REST API V1	Correcting error displaying that the license is not active when trying to set a new evaluation license or Demo license via REST API.
LUC-17011	realTime Signal data not accessible via REST / opcbridgeservice	REST API V1	Fixing errors related to quering for selected port/signal data of a running process via REST API signals endpoint returns no time series data, even though data exists as clearly seen from Luculus desktop application, and quering for selected port/signal data of a running process via REST API signals endpoint has realTime flag set to FALSE
LUC-16188	Duration not in realtime	REST API V1	When calling _/processes?running=true_ end point the duration of the running process is not correct (it seems it is taken from the DB and not via OPC bridge).

Refactor the end point to return the correct duration as for _/processes/[id]_ end point |
| LUC-15651 | When an exception is thrown nothing is logged by API | REST API V1 | In at least one place in the REST interface when an exception is thrown nothing is printed in the log.

This cause the end point to return "internal server error" (correct behaviour) without any details in the log file about what went wrong.

The spotted place where this happens is: OperationResource.java line 112

ensure that the exception stack (or a better error message) is logged every time an exception is handled. |

KEY	SUMMARY	COMPONENT/S	DESCRIPTION
LUC-16557	Lucullus Web still fails to display signals in Luc v24.1.1	REST API V1, Web-Application	Fixed issues after update to Lucullus version 24.1.1. related to display of signals
LUC-16184	Lucullus Web fails to display signals, but API call responses have signal values	REST API V1, Web-Application	Fixed issues related to Lucullus Web failure to display signal despite having values
LUC-16327	Sample column in Staging Area isn't refreshed after unassignment	Sample Management, Staging Area	Fixing issues to allow Sample column in Staging Area to be refreshed after unassignment. When using Unassign function (button) in Staging Area, List Imported Samples view, both values in Process and sample column are removed
LUC-17644	Import sources - Incorrect reparsing logic	Staging Area	Correct errors when reparsing data to favor invalidation of old results rather than deletio, avoid invalidation of import results from other import sources when they match on sampleIDName + sampleDate, and avoid of crashing the staging area if the aggregated record cannot be found
LUC-16366	Inconsistent rules for Label Printer Name validation	System Administration Tool	Fixing inconsistencies in label printer name validation to forbid spaces in printer names when creating and editing a printer
LUC-15204	Delete Unit button not working	System Administration Tool	Fixing issues to ensure that newly created unit which has no associations with other resources (child records) is deleted and not visible in SysAdmin tool, and to ensure that newly created unit which has no associations with other resources (child records) is deleted from DB (in table S_UNITTAB)
LUC-16456	Web Application - Monitoring - Port values are not displayed	Web Application	On web application with admin or non admin user, loading a process using the port TEMP_PV, in the left panel, where Tile can be configured, select the ports for pH PV and SP In the right panel select the port pH_PV to show on the graph. In the left panel the value for PV pH_PV isn't shown. The same happens when changing this value in the running process on Online tool. Initial Investigation - when the port is added twice, then web expects the device and sub device info to pick the right one. But device and subdevice are added only when we have multiport device configuration where the same port is configured twice in the reactor. This wont be the case and web will fail to display the value or over the first one.