

UNIGRID SA

Release Notes

Version 1.4 build 431

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1 INTRODUCTION

This document describes the release notes for the software tool UniGrid SA test platform.

From version 1.3 onwards the release procedures for the Test Suite(s) and UniGrid SA test platform are separate processes. This means that the release notes related to the Test Suite(s) are now moved to their own release documents.

2 RELEASE NOTES

2.1 Version 1.4 build 431

2.1.1 Features

- Goose Publisher Octet String encoder/decoder added
- License model simplified

2.1.2 Bug fixes

- Increased WCF buffer size, solves issues when large amounts of data are communicated in a short period e.g. sBr20 buffer overflow report handling.
- Fixed issue when parsing empty timestamp from SCL file
- Fixed issue where INT64 is getting converted to INT32 when using visitor pattern
- Fixed Encoding of implicit (negative) integers in Goose Publisher
- Fixed issue when data model GOCB object is empty if SCL contains IedName
- Removed Value to default button in data model
- Fixed Offset goose in data model defaults to False if not present in IED
- Fixed Writing of floating point values results in values without decimals
- Fixed Report TimeOfEntry where milliseconds are missing

2.1.3 Known Bugs and Issues

- INT64 over mms both Encoding and decoding are not working
- Reception of journals not working

2.2 Version 1.4 build 360

2.2.1 Features

- Released a SDK version for Unigrd. This allows to develop own features and scripts outside the scope of the DNV GL functionality.

2.2.2 Bug fixes

- JIRA US-524: Replace old Kema certificate with new DNV GL certificate.
- Fixed an issue where the Analyser needs to run with elevated rights, therefore the CLI needs to start with elevated rights too.
- Fixed an issue where the CLI starts the analyzer with the wrong path.

2.2.3 Known Bugs and Issues

- UnigrdCLI should be started with the same user credentials as configured (UI).

- Codemeter could prevent starting Unigrig SA with a valid license. Workaround is the remove the end date in the license; though the user should have a valid license.

2.3 Version 1.4 build 346

2.3.1 Features

- US-522: added support for a Test Suite SDK to support development and maintenance of Test Suites.

2.3.2 Bug Fixes

- US-553: Fixed issue in IEC 61850 Client module where the CommandTermination's negative were processed as AdditionalCauseDiagnostics. Changes in API cause an unavoidable backwards compatibility issue.

2.3.3 Known Bugs and Issues

- Some issue was found when installing on a Windows 8 64-bit machine.
- When communication to CMC is lost a complete restart of UniGrid SA is required.

2.4 Version 1.3 build 313

2.4.1 Features

- US-516: CLI module is missing option to open a specific test suite. Since now multiple suites will be implemented, it is necessary for the user to specify which suite to use. Usage, e.g.:
"UniGridCLI.exe --create-project Server61850Ed2Test
path\to\iec61850_ed2_server_v1p0tpcl1p2p4.suite --testcase sAss1" or the short form
"UniGridCLI.exe -cp Server61850Ed2Test path\to\iec61850_ed2_server_v1p0tpcl1p2p4.suite --
tc sAss1".

2.4.2 Bug Fixes

- US-512: data EntryTime encoding / decoding is wrong

2.4.3 Known bugs and issues

- Some issue was found when installing on a Windows 8 64-bit machine.
- When communication to CMC is lost a complete restart of UniGrid SA is required.

2.5 Version 1.2 build 305

2.5.1 Features

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2.4 The following is a detailed list of supported test cases per conformance block
 - Basic Exchange conformance block: sAss1, sAss2, sAss3, sAssN2, sAssN4, sAssN5
 - Server conformance block: sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv6, sSrv8, sSrv11, sSrv12, sSrv13, sSrvN1abcd, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3, sSrvN4
 - Dataset conformance block: sDs1, sDs10a, sDs15, sDsN1ae
 - Dataset Definition conformance block: sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs12, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10, sDsN11, sDsN12

- Substitution conformance block: sSub1, sSub2, sSub3
 - Setting Group Selection conformance block: sSg1, sSg3, sSg11, sSgN1
 - Setting Group definition conformance block: sSg2, sSg4, sSg5, sSg6, sSg7, sSg8, sSg9, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5
 - Unbuffered Reporting conformance block: sRp1, sRp2, sRp3, sRp4, sRp5, sRp6, sRp7, sRp8, sRp9, sRp10, sRp11, sRp12, sRp13, sRp14, sRpN1, sRpN2, sRpN3, sRpN4, sRpN5, sRpN8
 - Buffered Reporting conformance block: sBr1, sBr2, sBr3, sBr4, sBr5, sBr6, sBr7, sBr8, sBr9, sBr10, sBr11, sBr12, sBr13, sBr14, sBr20, sBr21, sBr22, sBr23, sBr24, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8
 - GOOSE Publish conformance block: sGop1, sGop2a, sGop3, sGop4, sGop5, sGop6, sGop7, sGop10, sGop11, sGopN1
 - GOOSE Subscribe conformance block: sGos1, sGos2, sGos3, sGos4, sGos5, sGos6a, sGos6b, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6
 - Control conformance block: sCtl4, sCtl5, sCtl6, sCtl7, sCtl8, sCtl9, sCtl10, sCtl11, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl21, sCtl23, sCtl24, sCtl25, sCtl26, sDOs1, sDOs2, sSBOs1, sSBOs2, sSBOs6, sDOes1, sDOes2, sDOes4, sDOes5, sSBOes1, sSBOes2, sSBOes6, sSBOes8
 - Time Synchronisation conformance block: sTm1, sTm2, sTm3, sTm4, sTm5, sTmN1
 - File Transfer conformance block: sFt1, sFt2ab, sFt2c, sFt3, sFt4, sFt5, sFtN1ab, sFtN1c
- Upgraded installer with CodeMeter runtime version 6.40 from version 6.30d.
 - PNTSSE-499: Added feature to automatically manage the building of the data model
 - PNTSSE-563: Added a setting to control if the automatic Data Model building should be done using the SCL (when available) or discovery. Related to PNTSSE-499.
 - US-505: At start-up "Client1" is always initialized and "ExtraClient" only on scripts that need it. This prevents a long waiting time when waiting for both data models to be built. Related to PNTSSE-499.
 - US-422: Added code to allow rebuilding of a Data Model, both from SCL as well as from Discovery. This was previously not supported and would cause the tool to malfunction. Now the old model is cleaned before the new model is rebuilt.
 - PNTSSE-559: Improved the filling of writeable settings list to exclude items that are known not to be writeable, even when no SCL information is present.
 - PNTSSE-565: Added feature to automatically convert data type DataObjectReference to a string. This makes unnecessary to call the ToString() method in logging functions and others. The default method is to print the ACSI representation, i.e. "LD/LN.DO.DA [FC]". Cases that require the MMS representation, "LD/LN\$FC\$DO\$DA" still require explicitly calling the ToMMSString() method.
 - PNTSSE-564: Added two new TimeStamp formats to the Log Window. Time (without the date) and Time with milliseconds.
 - US-507: Added a feature to create a project directly from the CLI. Now you no longer need to have a previously saved project. Usage, e.g.: "UniGridCLI.exe --create-project Server61850Ed2Test --testcase sAss1" or the short form "UniGridCLI.exe -cp Server61850Ed2Test --tc sAss1".
 - US-508: Added a feature to import settings directly from the CLI. Related to US-507. Usage e.g.: "UniGridCLI.exe ... --import-settings "C:\settings.xml" ..." or the short form "UniGridCLI.exe ... --is "C:\settings.xml" ...".

2.5.2 Bug Fixes

- CM-7: Fixed several issues with GetAllDataValues, mainly affecting sSrv8 that was producing many error messages in the Log window, even when communication was ok.
- PNTSSE-440: related to CM-7.

- PNTSSE-566: related to PNTSSE-559.
- US-489: Fixed issue in sSrvN1e that caused an assertion when no settings were configured.
- PNTSSE-503: related to CM-7.
- PNTSSE-464: fixed decoding issue with Dbpos when data model was built using SCL.
- PNTSSE-430: related to CM-7.
- PNTSSE-562: Fixed issue that caused script sDs2 to not find the created datasets.
- US-504: related to PNTSSE-464.
- PNTSSE-522: Fixed issue with parsing some SCL file causing the Data Model building to fail.
- PNTSSE-530: Added extra checks to script sSrvN1e.
- PNTSSE-572: Fixed several issues with scripts sSub1, sSub2 and sSub3. Mainly affecting the MX data types.
- PNTSSE-517: Fixed issue with setting group scripts that required optional settings as mandatory
- PNTSSE-525: Editorial correction on sGopN1 test case description
- PNTSSE-526: Fixed issue causing sBr11 to sometime miss a report
- PNTSSE-518: Fixed sRp11 and sBr11 to follow the test procedure steps more closely
- PNTSSE-529: Fixed issue in sDs11 and sDs12 where the wrong error code was validated
- PNTSSE-527: Fixed sRp14 and sBr14 to follow the test procedure steps more closely
- CM-28: Fixed issue with LocSta attributes. Affects multiple control test cases.
- PNTSSE-520: Fixed issue in sRp3 and sBr3 related to the Data Update event
- PNTSSE-528: Fixed script sTm5 to follow the test procedure steps more closely
- PNTSSE-558: Fixed issue with SetDataValues that would cause the Client Host to crash. Affected, e.g. sSrv6, sSrvN1e, sSrvN4.
- PNTSSE-498: Fixed issue where double / float settings were not saved correctly in the project.

2.5.3 Known bugs and issues

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2.4 however, the following is a detailed list of test cases which are not supported in this version:
 - Modelling conformance block: sMdl1, sMdl2, sMdl3, sMdl4, sMdl5, sMdl6, sMdl7, sMdl8, sMdl9, sMdl10, sMdl11, sMdl12, sMdl13, sMdl14
 - Basic Exchange conformance block: sAssN6
 - Server conformance block: sSrv9, sSrv10
 - Dataset conformance block: sDs10b, sDsN1b, sDsN13
 - Unbuffered Reporting conformance block: sRp15
 - Buffered Reporting conformance block: sBr15
 - Logging conformance block: sLog1, sLog2, sLog3, sLog4, sLog5, sLog6, sLog7, sLog8, sLog9, sLog10, sLog11, sLog12, sLogN1, sLogN2
 - GOOSE Publish conformance block: sGop2b, sGop9, sGopN2

- Control Conformance block: sCtl2, sCtl3, sCtl20, sDOns4, sDOns5, sSBOns4, sSBOns5, sSBOns7, sSBOes4, sSBOes5, sSBOes7
- Time Synchronisation conformance block: sTmN2
- Service Tracking conformance block: sTrk1, sTrk2, sTrk3, sTrk4, sTrk5, sTrk6, sTrk7, sTrk8, sTrk9, sTrk10, sTrk11, sTrk12, sTrk13, sTrk14, sTrk15, sTrk16, sTrk17
- sSrv8 is known to have some reliability issues on some systems due to differences in ordering of the variables.
- sSrv11 and sSrv12 are known to be buggy. Please do not rely on the results until a fix is issued.
- Some issue was found when installing on a Windows 8 64-bit machine.
- Scripts sRp3 and sBr3 do not cover all trigger conditions combinations.
- When communication to CMC is lost a complete restart of UniGrid SA is required.
- Several issues found in sSgN2, sSg10 and sSg12.
- Script sTrk7 may crash when deleting a file.
- Several scripts are not yet per TPCL 1.2.4, these will be the focus of the next release. E.g., sBrN4, sRpN4, sCtl5, sRp8, sBr8, sDsN11, sDsN12, sCtl11, sSg4, sSrv11, sSBOes1, sGop11, sGos4, sSBOns6, sTm1, sTm3, sCtl16, sGos6ab, sCtl26, sGos2, sGop6, sRp5, sBr5, sSgN4, sFtN1, sTrk7.

2.6 Version 1.1 build 296

2.6.1 Features

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2. The following is a detailed list of supported test cases per conformance block
 - Basic Exchange conformance block: sAss1, sAss2, sAss3, sAssN2, sAssN4, sAssN5
 - Server conformance block: sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrv11, sSrv12, sSrv13, sSrvN1abcd, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3, sSrvN4
 - Dataset conformance block: sDs1, sDs10a, sDs15, sDsN1ae
 - Dataset Definition conformance block: sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs12, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10, sDsN11, sDsN12
 - Substitution conformance block: sSub1, sSub2, sSub3
 - Setting Group Selection conformance block: sSg1, sSg3, sSg11, sSgN1
 - Setting Group definition conformance block: sSg2, sSg4, sSg5, sSg6, sSg7, sSg8, sSg9, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5
 - Unbuffered Reporting conformance block: sRp1, sRp2, sRp3, sRp4, sRp5, sRp6, sRp7, sRp8, sRp9, sRp10, sRp11, sRp12, sRp13, sRp14, sRpN1, sRpN2, sRpN3, sRpN4, sRpN5, sRpN8
 - Buffered Reporting conformance block: sBr1, sBr2, sBr3, sBr4, sBr5, sBr6, sBr7, sBr8, sBr9, sBr10, sBr11, sBr12, sBr13, sBr14, sBr20, sBr21, sBr22, sBr23, sBr24, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8
 - GOOSE Publish conformance block: sGop1, sGop2a, sGop3, sGop4, sGop5, sGop6, sGop7, sGop10, sGop11, sGopN1

- GOOSE Subscribe conformance block: sGos1, sGos2, sGos3, sGos4, sGos5, sGos6a, sGos6b, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6
 - Control conformance block: sCtl4, sCtl5, sCtl6, sCtl7, sCtl8, sCtl9, sCtl10, sCtl11, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl21, sCtl23, sCtl24, sCtl25, sCtl26, sDOns1, sDOns2, sSBOns1, sSBOns2, sSBOns6, sDOes1, sDOes2, sDOes4, sDOes5, sSBOes1, sSBOes2, sSBOes6, sSBOes8
 - Time Synchronisation conformance block: sTm1, sTm2, sTm3, sTm4, sTm5, sTmN1
 - File Transfer conformance block: sFt1, sFt2ab, sFt2c, sFt3, sFt4, sFt5, sFtN1ab, sFtN1c
- Added feature to export and import settings from and to a project
 - Updated the filling of settings from data model with BlkEna references for specific control models
 - Updated sSg5 to indicate the number of seconds on the step message
 - Updated sSgN4 to indicate the setting name in case of errors are found
 - Updated sRp12 script to use the currently configured Buffer Time to be more flexible to changes in timing
 - Added settings for BlkEna for specific control models
 - Improve description of several settings
 - Separated the handling of Loc and LocSta attributes creating new settings and functions. Affects scripts sCtl14 (DOes), sCtl16 (DOes), sCtl17 (DOes), sCtl15 (DOns), sCtl16 (DOns), sCtl17 (DOns), sCtl5 (DOns), sDOns1, sDOns2, sCtl16 (SBOes), sCtl17 (SBOes), sCtl5 (SBOes), sCtl16 (SBOns), sCtl17 (SBOns), sCtl5 (SBOns)
 - Changed some settings grouping, i.e. Group Connection Settings renamed to General Settings
 - Added direct interface to Omicron CMC engine
 - Split sFt2 script into ab and c parts, mandatory and conditional sections
 - Added extra checks to sBr23 script to detect more error conditions
 - Improved About and licensing screens
 - Updated CodeMeter screen and text when out of license
 - Added Editable feature, tool will require the Editable feature to be enabled to be able to edit scripts
 - Added extra checks to sGop2a script to detect more error conditions regarding the TAL and the slow retransmission
 - Minor tweaks to the User Interface (UI)
 - Added ValKind processing along with Checks, Guards and Matches for data model validation
 - Improved Client module host to prevent running forever under certain conditions
 - Improved data model
 - Changed default communication channel timeout to 2 hours, this should account for the longest running, single script execution otherwise the setting needs to be increased in the User Interface (UI)
 - Added delay, controlled by settings, to sAss3 and sAssN3 scripts

- Added feature to Command Line Interface (CLI) Module so that it is possible to run the selected scripts, previously saved, in the project. Use `-rs` or `--run-selected` execution options
- Improved the Command Line Interface (CLI) Module so that all executed scripts are printed to console at end of execution with the name, result, execution start time and execution duration. These are separated by commas so that it is easy to export into a csv file for processing
- Removed several log details to improve readability at the expense of information loss
- Refactored script `sCtl17` so that the behaviour is visible on the main test case function
- Improved `sTm1` and `sTm4` scripts to re-start the Time Server automatically at end of execution to minimize downtime and re-synch time
- Improved performance of dropdown Graphical User Interface (GUI) settings by limiting them to 100 values
- API: improvements to the scripts namespaces, separated the 'base' code from the 'IEC61850' code specific for IEC 61850 testing
- API: refactored the management of clients, when creating a client (for a two-party association connection) the function `SetupClient` should always be used. This function requires a client name that should be "ExtraClient" or should follow the convention of "ClientX" where X should be an index. "ExtraClient" uses the configure Secondary IP address/NIC while the remaining clients use the Primary IP address/NIC.

2.6.2 Bugs Fixed

- Fixed issue in `ValKind` processing in the communication module
- Fixed issue in `sCtl10` (DOes) attempting to select a Direct execute object
- Fixed issue in `sCtl10` (DOes) where message wrongly referred to `DOns` object
- Fixed issue in `sCtl10` (DOes) where the ability for DUT to operate to the same position, or not, was not considered
- Fixed issue in `sCtl14` (DOes) where the operation was not done properly by 2 different clients
- Fixed issue in `sCtl16` (DOes) where the `operTimeout` value was fixed instead of configured or read from data model
- Fixed issue in `sCtl19` (DOes) where the `BlkEna` attribute was not validated properly
- Fixed issue in `sCtl19` (DOns) where the `BlkEna` attribute was not validated properly
- Fixed issue in `sDOns1` where the `operate` was using the wrong command
- Fixed issue in `sCtl10` (SBOes) where the ability for DUT to operate to the same position, or not, was not considered
- Fixed issue in `sCtl19` (SBOes) where the `BlkEna` attribute was not validated properly
- Fixed issue in `sCtl9` (SBOes) where the `operTimeout` value was fixed instead of configured or read from data model
- Fixed issue in `sCtl11` (SBOs) where the `sboTimeout` value was not considered

- Fixed issue in sCtl19 (SBOs) where the BlkEna attribute was not validated properly
- Fixed issue in sCtl7 (SBOs) where the operTimeout value was not considered
- Fixed issue in sCtl9 (SBOs) where the operTimeout value was not considered
- Reverted sSrvN3 to require a non-null setting as opposed to randomly select one setting value
- Fixed sSgN3 script to not require settings configuration
- Fixed the control sequence, used in control scripts, so that it rolls over when reaching the maximum value
- Fixed issue with SNTP server module which caused the execution path to be wrong
- Fixed issue with sAssN3 causing more clients than needed to be used in testing
- Fixed issue in sDsN1cd where the association was wrongly managed
- Fixed issue in sDsN1ae where the association was wrongly managed
- Fixed issue in sCtl9 (SBOs) where the select response was not properly validated
- Fixed issue in Check function used in Maximum Hierarchy validation scripts
- Fixed issue in sAss3 and sAssN3 which caused the Analyzer to not start even when enabled
- Fixed issue in sAss3 and sAssN3 which caused the additional processes to not stop correctly
- Fixed issue in sTm5 where the SNTP IP address was wrongly compared to the local IP address
- Removed some unnecessary settings
- Fixed issue in data model causing conflicts and duplication of nodes due to wrong name comparison algorithm
- Fixed issue in sGop4 where the Max and Min Time were unsigned as opposed to integers
- Fixed issue in Check for the Goose destination MAC
- Fixed issue with the handling of sessions
- Fixed issue in sSrv6 regarding the new ValKind processing and validation feature
- Fixed issue Command Line Interface (CLI) Module so that it does not stop on the first error code found
- Fixed issue in Command Line Interface (CLI) Module so that running script groups is possible
- Fixed issue where the SNTP TimeServer module was not disposed correctly
- Fixed issue in data model processing, when building from SCL, where the Setting Group ResvTms had the wrong data type (integer instead of unsigned)
- Fixed issue in Setting Group definition where script result would be flagged as failed when certain settings were not configured (even when not applicable). Affects scripts sSg2, sSg3, sSg4, sSg5, sSg7, sSg8, sSg9, sSg11, sSg10, sSg12, sSgN2, sSgN3, sSgN4
- Fixed issue that could cause the Command Line Interface (CLI) Module to run forever when a script would crash during execution

- Fixed issue in the Command Line Interface (CLI) Module where the starting script could, sometimes, overlap with the previously ending script possibly causing issues
- Fixed issue in Check function to validate data model and if data model has been built from SCL file (as opposed to discovery)
- Fixed timing issues in scripts sRp3 integrity, sGos3, sBr20, sBr8_ST, sCtl26 (DOes), sRp11 and sRp8_ST
- Fixed issue in script sCtl13 (DOes) where the Select result was not validated
- Fixed issue in script sCtl14 (DOes) with retrieving initial script settings
- Fixed issue in scripts sCtl16 (DOes), sCtl17 (DOes), sCtl16 (SBOes), sCtl17 (SBOes), sCtl16 (SBOs) and sCtl17 (SBOs) with using the LocSta as opposed to Loc
- Fixed issue in script sCtl16 (DOes) with using the LocSta as opposed to Loc
- Fixed issue in script sCtl6 (SBOes) operating to the old position as opposed to the new position
- Fixed issue in Check functions for hierarchy, affecting scripts sDs15, sRp15 and sBr15
- Fixed issue in encoding of DataModeBehaviour, particularly noticeable when using the RCB quality change using Controllable equipment. Affected, e.g., sRp3 and sBr3 for Quality Change scripts
- Fixed issue in the management of Clients that could potentially lead to a crash.

2.6.3 Known bugs and issues

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2 however, the following is a detailed list of test cases which are not supported in this version:
 - Modelling conformance block: sMdl1, sMdl2, sMdl3, sMdl4, sMdl5, sMdl6, sMdl7, sMdl8, sMdl9, sMdl10, sMdl11, sMdl12, sMdl13, sMdl14
 - Basic Exchange conformance block: sAssN6
 - Server conformance block: sSrv6, sSrv9, sSrv10
 - Dataset conformance block: sDs10b, sDsN1b, sDsN13
 - Unbuffered Reporting conformance block: sRp15
 - Buffered Reporting conformance block: sBr15
 - Logging conformance block: sLog1, sLog2, sLog3, sLog4, sLog5, sLog6, sLog7, sLog8, sLog9, sLog10, sLog11, sLog12, sLogN1, sLogN2
 - GOOSE Publish conformance block: sGop2b, sGop9, sGopN2
 - Control Conformance block: sCtl2, sCtl3, sCtl20, sDOs4, sDOs5, sSBOs4, sSBOs5, sSBOs7, sSBOes4, sSBOes5, sSBOes7
 - Time Synchronisation conformance block: sTmN2
 - Service Tracking conformance block: sTrk1, sTrk2, sTrk3, sTrk4, sTrk5, sTrk6, sTrk7, sTrk8, sTrk9, sTrk10, sTrk11, sTrk12, sTrk13, sTrk14, sTrk15, sTrk16, sTrk17

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2.7.1 Features

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2. The following is a detailed list of supported test cases per conformance block
 - Basic Exchange conformance block: sAss1, sAss2, sAss3, sAssN2, sAssN4, sAssN5
 - Server conformance block: sSrv1, sSrv2, sSrv3, sSrv4, sSrv5, sSrv8, sSrv11, sSrv12, sSrv13, sSrvN1abcd, sSrvN1e, sSrvN1f, sSrvN2, sSrvN3, sSrvN4
 - Dataset conformance block: sDs1, sDs10a, sDs15, sDsN1ae
 - Dataset Definition conformance block: sDs2, sDs3, sDs4, sDs5, sDs6, sDs7, sDs8, sDs9, sDs11, sDs12, sDs13, sDs14, sDsN1cd, sDsN2, sDsN3, sDsN4, sDsN5, sDsN6, sDsN7, sDsN8, sDsN9, sDsN10, sDsN11, sDsN12
 - Substitution conformance block: sSub1, sSub2, sSub3
 - Setting Group Selection conformance block: sSg1, sSg3, sSg11, sSgN1
 - Setting Group definition conformance block: sSg2, sSg4, sSg5, sSg6, sSg7, sSg8, sSg9, sSg10, sSg12, sSgN2, sSgN3, sSgN4, sSgN5
 - Unbuffered Reporting conformance block: sRp1, sRp2, sRp3, sRp4, sRp5, sRp6, sRp7, sRp8, sRp9, sRp10, sRp11, sRp12, sRp13, sRp14, sRpN1, sRpN2, sRpN3, sRpN4, sRpN5, sRpN8
 - Buffered Reporting conformance block: sBr1, sBr2, sBr3, sBr4, sBr5, sBr6, sBr7, sBr8, sBr9, sBr10, sBr11, sBr12, sBr13, sBr14, sBr20, sBr21, sBr22, sBr23, sBr24, sBr25, sBr26, sBr27, sBr28, sBrN1, sBrN2, sBrN3, sBrN4, sBrN5, sBrN8
 - GOOSE Publish conformance block: sGop1, sGop2a, sGop3, sGop4, sGop5, sGop6, sGop7, sGop10, sGop11, sGopN1
 - GOOSE Subscribe conformance block: sGos1, sGos2, sGos3, sGos4, sGos5, sGos6a, sGos6b, sGos7, sGosN1, sGosN2, sGosN3, sGosN4, sGosN5, sGosN6
 - Control conformance block: sCtl4, sCtl5, sCtl6, sCtl7, sCtl8, sCtl9, sCtl10, sCtl11, sCtl15, sCtl16, sCtl17, sCtl18, sCtl19, sCtl21, sCtl23, sCtl24, sCtl25, sCtl26, sDOns1, sDOns2, sSBOns1, sSBOns2, sSBOns6, sDOes1, sDOes2, sDOes4, sDOes5, sSBOes1, sSBOes2, sSBOes6, sSBOes8
 - Time Synchronisation conformance block: sTm1, sTm2, sTm3, sTm4, sTm5, sTmN1
 - File Transfer conformance block: sFt1, sFt2ab, sFt2c, sFt3, sFt4, sFt5, sFtN1ab, sFtN1c

2.7.2 Bug fixes

None to document since it is the initial release.

2.7.3 Known bugs and issues

- The current Test Suite version supports IEC 61850 Test Procedures revision 1.0 TPCL 1.2 however, the following is a detailed list of test cases which are not supported in this version:
 - Modelling conformance block: sMdl1, sMdl2, sMdl3, sMdl4, sMdl5, sMdl6, sMdl7, sMdl8, sMdl9, sMdl10, sMdl11, sMdl12, sMdl13, sMdl14
 - Basic Exchange conformance block: sAssN3, sAssN6
 - Server conformance block: sSrv6, sSrv9, sSrv10
 - Dataset conformance block: sDs10b, sDsN1b, sDsN13
 - Unbuffered Reporting conformance block: sRp15

- Buffered Reporting conformance block: sBr15
- Logging conformance block: sLog1, sLog2, sLog3, sLog4, sLog5, sLog6, sLog7, sLog8, sLog9, sLog10, sLog11, sLog12, sLogN1, sLogN2
- GOOSE Publish conformance block: sGop2b, sGop9, sGopN2
- Control Conformance block: sCtl2, sCtl3, sCtl20, sDOns4, sDOns5, sSBOns4, sSBOns5, sSBOns7, sSBOes4, sSBOes5, sSBOes7
- Time Synchronisation conformance block: sTmN2
- Service Tracking conformance block: sTrk1, sTrk2, sTrk3, sTrk4, sTrk5, sTrk6, sTrk7, sTrk8, sTrk9, sTrk10, sTrk11, sTrk12, sTrk13, sTrk14, sTrk15, sTrk16, sTrk17

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