GE Vernova

UR Family

Version 8.4x

Release Notes

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Overview

This document contains the release notes for firmware versions 8.40, 8.41, 8.42, 8.43, 8.44, 8.45 and for software versions 8.40, 8.41 and 8.42 of the GE Universal Relay (UR) family of products.

This release note is applicable to the products**:** B30, B90, C30, C60, C70, C95, D30, D60, F35, F60, G30, G60, L30, L60, L90, M60, N60, T35, T60

Date of release:

- Firmware 8.40: November 2022
- Software 8.40 November 2022
- Firmware 8.41: January 2023
- Firmware 8.42: April 2023
- Software 8.41: April 2023
- Firmware 8.43: June 2023
- Software 8.42: August 2023
- Firmware 8.44: March 2024
- Firmware 8.45: November 2024
- Firmware 8.46: July 2025

Note: Major firmware releases can introduce new protection and control elements that can affect the device's Modbus memory map. Check the summary of released features to find out if it applies to a particular release.

Highlights 8.40

- NEW - Added sensitive bus differential element to B30 relays
- NEW - Added new feature to allow reversing the CT polarity in firmware through a setting
- NEW – Added two Wattmetric Ground Fault elements in T60 relays
- NEW – Added "Force MU Out of Service" functionality to relays with Process Bus Module
- NEW – Added support for legacy fixed GOOSE

- NEW – Added IEC 61850 controllable double points (DPCSO)
- NEW – Added security events for the validation of the firmware binary on attempting to upgrade firmware

Highlights 8.41

- Optimized firmware for some elements to reduce load on CPU

Highlights 8.42

- Corrected simultaneous switching of more than one source from main to alternate banks
- Corrected partial blocking on loss of subscribed SV stream in relays with process bus module (PBM), after sources switched to the alternate banks
- Corrected reception of legacy fixed GOOSE messages in relays with bootloaders 7.01/7.02

Highlights 8.43

- NEW - Ground distance quadrilateral element with best polarization for top reactance line
- NEW - Ground distance Z1 security enhancements
- Fixed Process Bus Module FW to correctly identify multiple state changes in simultaneous IEC6850 GOOSE messages
- Corrected inaccuracy of metering transducer DCmA inputs
- Corrected the metering of RTD input channels after a soft reboot
- Corrected FW to prevent erroneous assertion of SV Processing Fail self-test on B30 with PBM
- Fixed reception of legacy fixed GOOSE in relays with bootloader version less than 7.05
- Fixed loss of Direct I/O communication when the input AC signals of one of the peer relays has lower frequency
- Fixed FW to prevent the shut-down of the ports connected to the Process Bus Module of a CISCO switch, when a relay with PBM is soft rebooted

Highlights 8.44

- 87L blocking /unblocking when PTP clock available on CPU and PBM ports
- Corrected PBM PRP mode being disabled after a minor firmware upgrade
- Corrected FW to publish IEC 61850 GOOSE message in test mode, after power cycling the relay immediately after setting test mode via MMS
- Corrected FW to prevent “PB Setting Error” messages in relays with PBM for specific scenarios
- Corrected quality field for simulated GOOSE messages published from the PBM ports

Highlights 8.45

- Corrected default state of the remote inputs after a reboot or receiving a new CID file

- Corrected FW to allow subscription to legacy fixed GOOSE messages from URPlus devices
- Added conditions for applying the charging current compensation in 87L line differential element.
- Corrected erroneous activation of the STUB BUS OP in breaker-and-a-half bus configuration.

Highlights 8.46

- Fixed firmware to prevent the MMS server from becoming unresponsive in certain scenarios
- Fixed FW in relays with IEC61850 to prevent an unexpected restart when a file is read via MMS without first reading the contents of the directory

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Firmware

In the following descriptions, a category letter is placed to the left of the title. See the table at the end of this document for descriptions of the categories.

Firmware 8.40

Bus Differential Systems – B30

N **Added sensitive ground bus differential element to B30 relays**

Products: B30

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In firmware version 8.40, a new sensitive ground bus differential element was added in B30 relays. This element is part of the same bus zone, defined by the bays-to-zone connections, with its own differential settings. It is intended for detecting and isolating single-phase to ground faults in ungrounded or impedance (resistive or Petersen's coil) grounded systems where ground fault current is significantly lower compared with a phase fault current. Element can operate from either measured IG current or from calculated IN current from each individual bay.

GE tracking number: 840-01

Line Differential Systems – L90, L30

M **Fixed 87L angle metering error in 50 Hz system using IEC 61850-9-2LE in a hybrid DSP/Process Bus Module configuration**

Products: L90, L30

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.30, in a system of 50 Hz nominal frequency, using a hybrid DSP-based relay communicating with a Process Bus Module-based relay, when using IEC 61850-9-2LE for the SV streams, the L90/L30 87L metering occasionally has a 1°-2.2° error. In firmware version 8.40, this issue is fixed

GE tracking number: 840-31

M **Fixed distance loop resistance and reactance actual values when line differential element is enabled**

Products: L90, L30

Impacted firmware: 7.22 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, enabling the 87L line differential element in L90/L30 will cause the distance loop resistance and reactance actual values to rotate. The distance loop impedance magnitude and angle actual values were correct and stable. In version 8.40, this issue of rotating distance loop resistance and reactance actual values is fixed.

GE tracking number: 840-35

Transformer – T60

N **Added two Wattmetric Ground Fault elements to T60 relays**

Products: T60
Impacted firmware: All
Corrected firmware: 8.40
Workaround: None
Description: In firmware version 8.40, two Wattmetric Ground Fault elements were added to T60 relays that include at least one CT bank and one VT bank.
GE tracking number: 840-3

Common Platform Functions

N **Added new feature to reverse the CT polarity in firmware through a setting**

Products: All except C30 and B90
Impacted firmware: All
Corrected firmware: 8.40
Workaround: None
Description: In firmware version 8.40, a CT polarity reversal feature was added. If a CT bank was incorrectly wired, the CT polarity reversal feature allows to reverse the CT polarity in firmware by settings configuration, without physically rewiring the CT bank. This feature allows to change single-phase polarity or all three phases together.
GE tracking number: 840-2

N **Added FORCE MU OUT OF SERVICE functionality to relays with Process Bus Module**

Products: All with process bus module
Impacted firmware: 7.80 to 8.30
Corrected firmware: 8.40
Workaround: None
Description: In previous versions, if the Merging Unit (MU) is taken out of service for maintenance, the SV stream is considered as lost and protection is blocked according to the setting **SV TRBL PRT BLOCK.**
In firmware version 8.40, a new setting **FORCE MU OUT OF SERVICE** was added to relays with Process Bus Module. This setting is intended specifically for forcing a faulty Merging Unit (MU) out of service in applications where a circuit can be energized from more than one side, such as breaker and a half application and the redundancy at MU level is not available. When the FlexLogic operand assigned to this setting is asserted, the current channels from the affected MU will be treated internally as “online” with sampled current values forced to ZEROs. The protection using respective source remains operational based on the current values sent by the other MU which is located on the closed breaker side. The affected MU voltage channels will be treated internally as “offline”, and protection configured to use these channels will be blocked.
GE tracking number: 840-4

N **Added security events for the validation of the firmware binary on attempting to upgrade firmware**

Products: All
Impacted firmware: 7.90 to 8.30
Corrected firmware: 8.30
Workaround: None

Description: In firmware version 7.90 and up, when attempting to upgrade firmware to the relay, EnerVista UR Setup validates the signature of the firmware binary, however the result does not produce a security event.

In firmware 8.40, in accordance with NERC CIP-010-3, when attempting to perform a firmware upgrade, the result of the firmware binary validation done by EnerVista UR Setup is recorded in a security event as follows:

- in a relay with CyberSentry, the relay records a security event in the file "SECURITY_EVENTS.CSV" and in the syslog.

- in a relay without CyberSentry, the relay records an event in the file FACTORY_EVENT.TXT.

GE tracking number: 840-7

M, G Fixed synchrocheck element to allow using the same source for both V1 and V2

Products: B30, C60, C95, D30, D60, F60, G30, G60, L30, L60, L90, N60, T60

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.30, the synchrocheck element cannot use the same source for both V1 and V2, as this will cause the frequency difference measurement to be zero in error.

In firmware version 8.40, this issue is fixed. Please consult the instruction manual on how to configure the relay to allow both V1 and V2 to use the same source in the synchrocheck element.

GE tracking number: 840-9

E Enhanced the synchrocheck element with pickup FlexLogic operands for the voltage difference, angle difference and frequency difference

Products: B30, C60, C95, D30, D60, F60, G30, G60, L30, L60, L90, N60, T60

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In firmware version 8.40, the synchrocheck element includes FlexLogic operands for the voltage difference, angle difference and frequency difference. These new operands are asserted when the respective difference is within the setting limit.

GE tracking number: 840-10

P Fixed delay of two cycles in healthy SV streams during loss of one or more SV streams.

Products: All with process bus module

Impacted firmware: 7.90 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In relays with Process Bus Module with multiple streams configured, the loss of any stream would cause the SV Stream Trouble self-test to be asserted for this stream and also cause a delay of two cycles in the processing of all the other healthy SV streams (current and voltages).

In version 8.40, this issue is fixed.

GE tracking number: 840-16

D Fixed Graphical Front Panel display to include the source demand and source frequency menus

Products: All with Graphical Front Panel, except for C30 and B90

Impacted firmware: 7.90 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, the Source Demand and Source Frequency actual values menus were not available with the Graphical Front Panel option. These menus were available with the Enhanced Front Panel option.

In firmware version 8.40, this issue is fixed.

GE tracking number: 840-17

G Fixed functionality of latched programable pushbuttons

Products: All

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.30, the latched programmable pushbuttons are losing their state after a reboot. In version 8.40, this issue is fixed.

GE tracking number: 840-27

G Fixed relay not retaining Test Mode after a reboot

Products: All

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.30, a relay in Test Mode will not retain this state after a reboot. In version 8.40, this issue is fixed.

GE tracking number: 840-28

R Fixed firmware in relays with CyberSentry to log security events when changing the role passwords

Products: All with CyberSentry

Impacted firmware: 7.00 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, a relay with CyberSentry did not record security events when changing the role passwords. In version 8.40, a relay with CyberSentry will log a security event and a message in the syslog when the role password is changed.

GE tracking number: 840-33

G Fixed cross-checking functionality issue in relays with Process Bus Module

Products: All with Process Bus Module

Impacted firmware: 7.80 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, in a relay with Process Bus Module, a specific sequence of interruption of the SV streams in a bank using cross-checking can result in the relay using the non-preferred stream for metering even if preferred stream is available. In version 8.40, this issue is fixed.

GE tracking number: 840-34

M Improved accuracy of the harmonics metering in relays with Process Bus Module

Products: C70, F35, F60, G30, G60, L30, N60, T60 with Process Bus Module

Impacted firmware: 7.80 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.40, the accuracy of the harmonics metering was improved in relays with Process Bus Module.

GE tracking number: 840-37

H **Improved operation of the VT Fuse Failure element during rare prolonged remote fault conditions**

Products: B30, C60, C70, C95, D30, D60, F30, F35, G630, G60, L30, L60, L90, M60, N60, T60

Impacted firmware: 7.20 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions the VT Fuse Failure element could unexpectedly assert during prolonged remote fault when negative sequence voltage gradually increased from below 0.1pu to above 0.1pu, if 50DD was not asserted. In version 8.40 this scenario is corrected by maintaining “Fault” state active.

GE tracking number: 840-41

F **Fixed incorrect Load Encroachment operation in relays with HardFiber when setting group is changed during load/fault condition**

Products: All with HardFiber

Impacted firmware: 7.00 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, in relays with HardFiber the Load Encroachment element could assert incorrectly when changing from one setting group where it correctly operated to another setting group where it was disabled. In version 8.40, this issue is fixed.

GE tracking number: 840-42

Communications

N **Added support for legacy fixed GOOSE**

Products: All with IEC 61850

Impacted firmware: 7.30 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: Up to version 7.30 the UR relay provided a GE proprietary version of the IEC 61850 GOOSE protocol, called fixed GOOSE, in addition to the configurable GOOSE. The fixed GOOSE functionality was removed in firmware version 7.30.

In firmware version 8.40, the fixed GOOSE functionality was re-introduced matching the implementation in firmware version 7.20.

GE tracking number: 840-5

N **Added IEC 61850 controllable double points (DPCSO) mapped to pairs of consecutive virtual inputs**

Products: All with IEC 61850

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: Firmware version 8.40 adds IEC 61850 controllable double points (DPCSO), which are mapped to pairs of consecutive virtual inputs.

GE tracking number: 840-6

E **Enhanced IEC 61850 LPHD, MMXN and RSYN logical nodes**

Products: All with IEC 61850

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In firmware version 8.40, the following IEC 61850 Logical Nodes (LN) were enhanced as follows:

1. The “hwRev” data attribute was added to the LPHD1.PhyNam logical node to indicate the type of CPU (T/U/V/W) of the relay.
2. The ACsrscMMXN#.Hz data object was added to the AcSrcMMXN logical nodes to indicate the source frequency.
3. The SynChkRSYN#.VInd, SynChkRSYN#.AInd, and SynChkRSYN#.HzInd data objects were added to the synchrocheck LN. They are mapped to the new voltage/angle/frequency pickup operands, respectively (see GE tracking number 840-10).

GE tracking number: 840-11

E **Enhanced firmware to allow closing of unused protocols/logical ports**

Products: All with CyberSentry software option for syslog, with IEC 61850 software option for the MMS protocol, with EGD software option for the EGD port, with Enhanced Front Panel for the RS232 port.

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, certain protocols and ports were enabled by default and could not be disabled. In firmware version 8.40, the following protocols and ports can now be disabled if unused: RS232, RS485, MMS protocol (logical TCP port 102), syslog (logical UDP port 514), EGD (logical UDP port 18246).

GE tracking number: 840-13

E **Fixed firmware to shut down TFTP when the TFTP main UDP port is set to “0”**

Products: All

Impacted firmware: 7.00 and up

Corrected firmware: 8.40

Workaround: If TFTP is not used, blocking the protocol by the firewall is recommended.

Description: In previous versions, setting the TFTP main UDP port to “0” does not completely shut down the TFTP protocol; reading data over TFTP using a random port number is still possible. Writing data over TFTP is never possible. In firmware 8.40, setting the TFTP main UDP port to “0” completely shuts down the TFTP protocol after rebooting the relay.

GE tracking number: 840-14

C **Corrected IEC 61850 local control status values (CSWI.Loc) provided via MMS for breakers and disconnect switches**

Products: All with IEC 61850

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In 8.30, the IEC 61850 local control status values (CSWI.Loc) provided via MMS were incorrect. This applies to both breaker controls and disconnect switch controls.

In firmware version 8.40, this issue is fixed.

GE tracking number: 840-18

C **Changed firmware to accept IEC 61850 GOOSE messages with security enabled**

Products: All with IEC 61850

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, the UR relay did not accept IEC 61850 GOOSE messages with security enabled.

In firmware version 8.40, the UR relay does not support security for IEC 61850 GOOSE messages, however it does accept such messages that include the security extension in the extended PDU as per IEC 62351-6.

GE tracking number: 840-19

C **Fixed firmware to consider as invalid IEC 61850 messages with TAL set to "0"**

Products: All with IEC 61850

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, UR relays accepted IEC 61850 GOOSE messages with the timeAllowedtoLive (TAL) field set to "0". In firmware version 8.40, the relay will drop IEC 61850 GOOSE messages with the TAL field set to "0".

GE tracking number: 840-20

C **Improved transmission of IEC 61850 fast GOOSE messages from main CPU**

Products: All with IEC 61850

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In firmware version 8.30, occasionally IEC61850 fast GOOSE message may not include all state changes. This is more likely to happen on a relay with many advanced features in use. In firmware version 8.40, this issue is fixed.

GE tracking number: 840-21

C **Changed firmware to retain the IEC 61850 "RxGOOSE Boolean ID" in incomplete configurations of RxGOOSE Boolean Inputs**

Products: All with IEC 61850

Impacted firmware: 8.30

Corrected firmware: 8.40

Workaround: None

Description: In version 8.30, when using IEC 61850 G2 configuration type, the "RxGOOSE Boolean ID" was discarded if the configuration of the RxGOOSE Boolean Inputs was incomplete. In firmware version 8.40, when using IEC 61850 G2 configuration the relay will retain the "RxGOOSE Boolean ID" even if the configuration of the respective RxGOOSE Boolean Input is incomplete.

GE tracking number: 840-22

C **Fixed the Process Bus Module firmware to correctly identify multiple state changes in simultaneous IEC 61850 GOOSE messages**

Products: All with Process Bus Module
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In firmware version 8.30, when subscribing to IEC 61850 GOOSE messages on the Process Bus Module, the relay may occasionally miss to correctly identify a state change if the two messages are almost simultaneous. In firmware version 8.40, this issue is fixed.
GE tracking number: 840-23

C **Corrected IEC 61850 quality data attribute when relay is in simulation mode**

Products: All with IEC 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In firmware version 8.30, the IEC 61850 quality data attribute was incorrect when the relay was in simulation mode. In firmware version 8.40, this issue is fixed.
GE tracking number: 840-24

C **Changed validation of IEC 61850 CID file when subscribing to Edition 1 published GOOSE messages**

Products: All with IEC 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In version 8.30, it was possible that a valid IEC 61850 CID file could be erroneously rejected if the GOOSE publisher for the subscribed messages was Edition 1. In version 8.40, this issue is fixed.
GE tracking number: 840-25

R **Clarified reason code 0x0020 in the IEC 61850 RxGOOSE Diagnostics webpage**

Products: All with IEEE 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In version 8.30, the reason code 0x0020 was not explained in sufficient detail. In version 8.40, the IEC 61850 RxGOOSE Diagnostics webpage clarifies that reason code 0x0020 indicates “Test bit” for Edition 1 and “Simulation bit” for Edition 2.
GE tracking number: 840-26

C **Fixed GGIO3.Ind#.stVal Boolean values read via MMS when mapped Boolean values were received through the Process Bus Module**

Products: All with Process Bus Module
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: Pressing Escape will resolve the issue.
Description: In version 8.30, GGIO3.Ind#.stVal Boolean values read via MMS could show values different from 0 and 1 if the mapped Boolean values were received through the Process Bus

Module. In version 8.40, this issue is fixed.
GE tracking number: 840-29

C **Removed length restriction for IEC 61850 IED description attribute (IED.desc)**

Products: All with IEC 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In version 8.30, the IEC 61850 IED description attribute (IED.desc) was limited to 64 characters. In version 8.40, this issue is fixed.
GE tracking number: 840-30

C **Corrected IEC 61850 MMS file services structure and supported services**

Products: All with IEC 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: In version 8.30, several discrepancies were found for the IEC 61850 MMS files services structure and supported services compared to previous releases. In version 8.40, this issue is fixed.
GE tracking number: 840-32

C **Fixed IEC 61850 mapping Gen.SecGSAL1.ST.Ina.cnt**

Products: All with IEC 61850
Impacted firmware: 7.30 to 8.30
Corrected firmware: 8.40
Workaround: None
Description: In previous versions, the IEC 61850 mapping of Gen.SecGSAL1.ST.Ina.cnt to the number of TCP sockets disconnected due to a timeout was incorrect. In version 8.40, this issue is fixed.
GE tracking number: 840-40

C **Fixed issue with multiple IEC 61850 GOOSE messages sharing the same dataset**

Products: All with IEC 61850
Impacted firmware: 8.30
Corrected firmware: 8.40
Workaround: None
Description: In version 8.30, if multiple IEC 61850 GOOSE messages published by a relay share the same dataset and the same dataset member is subscribed to multiple times, disabling one of the published GOOSE messages will affect the other messages as well. In version 8.40, this issue is fixed.
GE tracking number: 840-36

CyberSecurity

E **Enhanced security events with additional fields**

Products: All with CyberSecurity
Impacted firmware: 7.00 to 8.30
Corrected firmware: 8.40

Workaround: None

Description: In relays with CyberSentry software options security events are logged in the file SECURITY_EVENTS.CSV.

In firmware version 8.40, the security events were enhanced with the following fields: Category (matching IEC62443-4-2 CR2.8), Type (matching IEC62351-14) and Event Result.

GE tracking number: 840-8

E **Changed firmware to store passwords salted and hashed**

Products: All

Impacted firmware: All

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, the passwords were stored in flash in plain text. This applies to local and remote settings and commands passwords in a relay without CyberSentry and to the role passwords in a relay with CyberSentry. In firmware version 8.40, the passwords are stored salted and hashed. When upgrading from a version lower than 8.40, the passwords are retained, salted and hashed. When downgrading from version 8.40 to a lower version, the passwords are defaulted and must be set again.

GE tracking number: 840-12

G **Fixed three cybersecurity vulnerabilities**

Products: All for CVE-2020-35198
All with IEC 61850 for CVE-2016-9841 and CVE-2016-9840

Impacted firmware: 7.00 and up for CVE-2020-35198
7.30 and up for CVE-2016-9841 and CVE-2016-9840

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, vulnerabilities CVE-2016-9841 and CVE-2016-9840 are present in the application firmware and vulnerability CVE-2020-35198 is present in the real-time operating system. In firmware version 8.40, these vulnerabilities have been fixed.

GE tracking number: 840-15

R **Added security events for changes to the BYPASS ACCESS setting in relays with CyberSentry**

Products: All with CyberSentry

Impacted firmware: 7.00 to 8.30

Corrected firmware: 8.40

Workaround: None

Description: In previous versions, in relays with CyberSentry software option changes to the **BYPASS ACCESS** setting did not generate security events. In version 8.40, this issue is fixed.

GE tracking number: 840-39

Firmware 8.41

Common Platform Functions

G **Optimized firmware to reduce load on CPU**

Products: All
Impacted firmware: 7.00 and higher
Corrected firmware: 8.41
Workaround: None
Description:
In previous versions, in complex configurations of specific order codes, L90, D60 and B30, the latter with Process Bus Module, the CPU utilization was higher than expected.
In firmware version 8.41, to allow more margin during dynamic system conditions the following elements were optimized to reduce unnecessary load on the CPU:

- Distance protection element: the frequency of the calculation of the loop impedance for actual values was reduced from eight times per power system cycle to once per power system cycle. These values are not used for protection.
- Contact outputs: optimized processing of contact outputs. This does not affect the functionality or performance of the contact outputs.
- IEC61850 GOOSE publishing: optimized the scan of the fast data set. This does not affect the functionality or performance of the IEC61850 GOOSE.
- Disconnect switch control element: the frequency of checking the status of the disconnect switches was reduced from eight times per power system cycle to twice per power system cycle

GE tracking number: 841-01

Firmware 8.42

Bus differential systems – B30

G **Corrected SV Stream Trouble errors in B30 relay with PBM and 24 feeders software option**

Products: B30 with PBM and 24 feeders software option
Impacted firmware: 8.40, 8.41
Corrected firmware: 8.42
Workaround Limit subscribing to no more than 21 SV streams with 6 bus differential zones.
Description:
In previous versions, a B30 relay with PBM with 24 feeders software option subscribing to more than 21 SV streams and using 6 bus differential zones asserts SV Stream Trouble for multiple streams. This problem is not present in B30 relays with PBM with 8 or 16 feeders, or with 24 feeders but with a less complex configuration.
GE tracking number: 842-01

Motor protection system – M60

G **Corrected partial blocking for the underpower element in M60 relays with PBM**

Products: M60 with PBM.
Impacted firmware: 7.90 and higher
Corrected firmware: 8.42
Workaround: None
Description:
In previous versions, in M60 relays with PBM, when using partial protection blocking (setting SV TRBL PRT BLOCK set to Partial), the underpower element was not blocked for the loss of the voltage bank, it was blocked only for the loss of the current bank.
GE tracking number: 842-02

Common Platform Functions

G **Corrected simultaneous switching of more than one source from main to alternate banks**

Products: All but C30
Impacted firmware: 8.30, 8.40, 8.41
Corrected firmware: 8.42
Workaround: None. If multiple sources are configured, avoid using the functionality of switching the sources from main to alternate CT/VT banks.
Description:
In previous versions, when several sources are switching from main to alternate banks simultaneously or within 3.6 seconds, only the first source switches correctly to the alternate bank, other sources may miss switching and remain with the previous bank assignment.
GE tracking number: 842-03

G **Corrected partial blocking on loss of subscribed SV stream in relays with PBM, after sources switched to the alternate banks**

Products: All products with PBM

Impacted firmware: 7.90 and higher

Corrected firmware: 8.42

Workaround: None.

Description:

In previous versions, in relays with PBM, after sources switched to alternate banks, the partial blocking feature will function incorrectly.

GE tracking number: 842-04

Common Protection & Control Elements

G **Corrected functionality of open pole detector element and phase selector element on a settings group change**

Products: D60, L60, L90

Impacted firmware: 7.90 and higher

Corrected firmware: 8.42

Workaround: Avoid using settings group control

Description:

The open pole detector and the phase selector elements are using the same source as the distance element, which is a grouped element. In previous versions, these elements were always using the source of the distance element in the active settings group at start-up.

GE tracking number: 842-05

Communications

C **Corrected reception of legacy fixed GOOSE messages in relays with bootloaders 7.01/7.02**

Products: All products with IEC 61850

Impacted firmware: 8.40 and 8.41

Corrected firmware: 8.42

Workaround: Upgrade the bootloader to version 7.05 or 7.06

Description:

In previous versions, relays with bootloaders 7.01 or 7.02 (for CPU modules without and with graphical front panel connector, respectively), fail to receive legacy fixed GOOSE messages. Reception of standard IEC61850 GOOSE messages is not affected.

GE tracking number: 842-06

Firmware 8.43

Bus differential system – B30

C **Corrected FW to prevent erroneous assertion of SV Processing Fail self-test on B30 with PBM**

Products: B30 with Process Bus Module
Impacted firmware: 7.90 to 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, a B30 relay with PBM may erroneously assert SV Processing Fail self-tests simultaneously on all the subscribed SV streams for a short period of time and then recover.
GE tracking number: 843-01

Line differential system - L90, L30

P **Corrected 3 degrees angle difference between local and remote phasors in 87L differential element when channel asymmetry compensation is enabled with PBM-DSP hybrid combination**

Products: L90, L30
Impacted firmware: 7.80 and up
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, with PBM-DSP hybrid combination enabling the setting “CHNL ASYM COMP” will cause an angle difference up to 3° between the local and remote 87L phasors.
GE tracking number: 843-02

Common Protection & Control Elements

F **Ground distance Z1 security enhancements**

Products: D30, D60, L60, L90, T60
Impacted firmware: All
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, especially with too low IN supervision setting, erroneous zero-sequence current during phase faults or switch-off transients may lead to ground distance zone 1 operation.
In firmware version 8.43, security improvements were made to ground distance zone 1 both MHO and QUAD, with standalone Phase Selector is used to supervise each ground distance loop.
GE tracking number: 843-03

F **Ground distance quadrilateral element validating I0 and I2 quantities and adaptively uses the best available quantity**

Products: D30, D60, L60, L90, T60

Impacted firmware: All

Corrected firmware: 8.43

Workaround: None

Description: In previous versions, the relay uses fixed I0 and I2 quantities for top reactance line comparator and directional comparators as per the setting even if it is not reliable when system conditions change.

In firmware version 8.43, the ground quadrilateral distance element first validating I0 and I2 quantities and if set signal is not reliable, it switches to another valid available quantity with the priority given to the quantity being set, i.e., I0 or I2 current.

GE tracking number: 843-04

M **Limited metered distance loop impedance magnitude to 655.35 Ohm**

Products: D30, D60, G60, L60, L90, T60

Impacted firmware: All

Corrected firmware: 8.43

Workaround: None

Description: In previous versions, the distance loop impedance magnitude values was limited to 9999.99 Ohm.

In firmware version 8.43, the distance loop impedance magnitude is limited to 655.35 Ohm.

GE tracking number: 843-05

Common Platform Functions

G **Fixed FW to prevent incorrect assertion of Storage Media Alarm and DOS Partition Alarm self-tests**

Products: All

Impacted firmware: 7.00 and up

Corrected firmware: 8.43

Workaround: None.

Description: In previous versions, occasionally the relay incorrectly asserted “Storage Media Alarm” or/ and “DOS Partition Alarm” self-tests. Both self-tests are minor self-tests.

In firmware version 8.43, the FW was fixed to prevent incorrect assertion of “Storage Media Alarm” or/ and “DOS Partition Alarm” self-tests.

GE tracking number: 843-06

G **Increased the frequency of checking for open/ close disconnect switch commands to eight times per power system cycle**

Products: All except for B90

Impacted firmware: 8.41, 8.42

Corrected firmware: 8.43

Workaround: Apply the open/ close disconnect switch commands for at least half a power-system cycle.

Description: In previous versions, the open/ close commands for the disconnect switch had to last at least half a power system cycle to be applied. An open/close disconnect switch command driven by a self-resetting virtual input, which lasts only for one-eighth of a power system cycle, could be intermittently missed in the affected versions. This issue was introduced in v8.41, GE tracking number 841-1.

In firmware version 8.43, the open/ close commands for the disconnect switch elements are checked eight times per power system cycle. The status of the disconnect switch is updated twice

per power system cycle.
GE tracking number: 843-07

M **Corrected inaccuracy of metering transducer DCmA inputs**

Products: All with DCmA input modules
Impacted firmware: 8.30, 8.40, 8.41, 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, occasionally after bootup transducer DCmA inputs could measure inaccurate values that would be corrected with an additional reboot of the relay.
GE tracking number: 843-08

M **Corrected the metering of RTD input channels after a soft reboot**

Products: All with RTD input modules
Impacted firmware: 8.30, 8.40, 8.41, 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, occasionally after a soft reboot RTD channels 1 and 2 could meter inaccurate values.
GE tracking number: 843-09

G **Corrected partial blocking functionality for the Demand element**

Products: The following products with PBM: B30, C60, C95, D60, F35, F60, G60, L60, L90
Impacted firmware: 7.90 to 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, on a relay with PBM the demand metering was reset when one of the subscribed SV streams was lost, even if the relay was set to partial blocking.
GE tracking number: 843-10

G **Corrected FW to allow issuing of open/ close disconnect switch commands from the GFP when “SWITCH BLK BYPASS” setting is enabled**

Products: All with Graphical Front Panel except B90
Impacted firmware: 8.30, 8.40, 8.41 and 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, in relays with GFP if the setting “SWITCH BLK BYPASS” is enabled, the relay does not allow to issue the open/ close disconnect switch commands from the GFP. Issuing open/close disconnect switch commands over communication channels is still functional.
GE tracking number: 843-11

D **Corrected FW to prevent entering dates beyond year 2106 from the front panel**

Products: All
Impacted firmware: All
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, entering a date beyond year 2106 from the front panel was possible after which the relay shows an incorrect date.

GE tracking number: 843-12

D **Corrected FW to prevent an unexpected restart when configuring the "IED MODE" from the graphical front panel in relays using Polish language**

Products: All with Graphical Front Panel
Impacted firmware: 8.30, 8.40, 8.41 and 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, in relays with GFP using Polish language displays configuring the setting "IED MODE" from the front panel would cause an unexpected restart. Changing this setting over communication channels is functional.
GE tracking number: 843-13

R **Added security events for "Clear" commands issued from an Enhanced Front Panel (EFP)**

Products: All with CyberSentry software option
Impacted firmware: 7.00 and up
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, in relays with cybersecurity issuing "Clear" commands (e.g., Clear Event Records, Clear Oscillography) from an EFP did not record a corresponding security event in the file SECURITY_EVENTS.CSV. The issue is not present when issuing the commands from a GFP or using a communication channel.
GE tracking number: 843-14

Communications

C **Fixed PBM FW to correctly identify multiple state changes in simultaneous IEC61850 GOOSE messages**

Products: All with PBM
Impacted firmware: 8.40, 8.41 and 8.42
Corrected firmware: 8.43
Workaround: Restrict the number of simultaneous state changes for PBM GOOSE to no more than four.
Description: In previous versions, when subscribing to IEC61850 GOOSE messages on the PBM, the relay may occasionally miss to correctly identify a state change if there are more than four simultaneous state changes.
GE tracking number: 843-15

C **Corrected the IEC61850 deadband for transducer DCmA input channels (TDCInGGIO1.AnIn)**

Products: All with IEC 61850 software option and DCmA input modules
Impacted firmware: 8.30, 8.40, 8.41 and 8.42
Corrected firmware: 8.43
Workaround: None
Description: In previous versions, the IEC61850 deadband for the transducer DCmA input channels (TDCInGGIO1.AnIn) was incorrectly calculated.
GE tracking number: 843-17

C **Fixed reception of legacy fixed GOOSE in relays with bootloader version less than 7.05**

Products: All with IEC 61850 software option

Impacted firmware: 8.40, 8.41 and 8.42

Corrected firmware: 8.43

Workaround: Upgrade the bootloader to the latest version (7.05 or 7.06, depending on the CPU hardware module)

Description: In previous versions, relays with bootloader versions less than 7.05 may not receive all the subscribed legacy fixed GOOSE messages.

GE tracking number: 843-18

C **Fixed loss of Direct I/O communication when the input AC signals of one of the peer relays has lower frequency**

Products: All with direct inputs and outputs modules

Impacted firmware: All

Corrected firmware: 8.43

Workaround: None

Description: In previous versions, if the input AC signals of one of the relays communicating over direct I/O have significantly lower frequency, the peer relay will assert the “Direct Communication Path Incomplete” self-test due to power cycle duration is significantly different at peer relays. For example, this may happen if the nominal system frequency is 60 Hz in one relay and the frequency of the AC signals in one of the relays is 35 Hz or below.

GE tracking number: 843-19

C **Fixed FW to prevent the shut-down of the ports connected to the PBM of a CISCO switch, when a relay with PBM is soft rebooted**

Products: All with Process Bus Module

Impacted firmware: 7.80 to 8.42

Corrected firmware: 8.43

Workaround: Avoid a soft reboot of a relay with PBM in systems using CISCO switches connected to the PBM

Description: In previous versions, a soft reboot of a relay with PBM may cause certain CISCO switches to shut-down the ports connected to the PBM.

GE tracking number: 843-20

C **Corrected FW to prevent toggling of IEC 61850 LGOS.St when there is a mismatch in ConfRevNum with simulated GOOSE**

Products: All with IEC 61850 software option

Impacted firmware: 8.30, 8.40, 8.41 and 8.42

Corrected firmware: 8.43

Workaround: None

Description: : In previous versions, when IEC 61850 simulated GOOSE (LPHD.Sim.stVal =True) with mismatch in ConfRevNum is published, along with regular GOOSE, the LGOS1.St of the subscriber relay is toggling.

GE tracking number: 843-21

C **Improved time synchronization of SV streams in relays with PBM**

Products: All with Process Bus Module except for L90

Impacted firmware: 7.90 to 8.42

Corrected firmware: 8.43

Workaround: None

Description: In previous versions, in relays with PBM other than L90 after the loss and the recovery of the reference SV stream the relay asserted SV Stream Trouble for the remaining healthy streams.

In firmware version 8.43, this issue is resolved by improving the algorithm of selecting the reference SV stream.

GE tracking number: 843-22

Firmware 8.44

Line Differential Systems – L90, L30

G **87L blocking /unblocking when PTP clock available on CPU and PBM ports.**

Products: L90, L30
Impacted firmware: 7.80 to 8.43
Corrected firmware: 8.44, 8.50
Workaround: None
Description: In previous firmware releases when PTP clock was available on both CPU and PBM ports and subsequently PTP clock was lost on the CPU port, the 87L would use incorrectly PBM PTP clock for asymmetry compensation, which could result in 87L synchronization error. In 8.5 firmware release the firmware was changed to block 87L if relays is using PBM PTP clock and asymmetry compensation is enabled.
GE tracking number: 850-4

Communications

C **Corrected PBM PRP mode being disabled after a minor firmware upgrade**

Products: All with Process Bus Module
Impacted firmware: 7.80 to 8.43
Corrected firmware: 8.44, 8.50
Workaround: None
Description: In previous versions, after a minor firmware upgrade the PBM PRP mode was disabled. Rebooting the relay solves the problem. In firmware version 8.50, this issue is fixed.
GE tracking number: 850-26

C **Corrected FW to publish IEC 61850 GOOSE message in test mode, after power cycling the relay immediately after setting test mode via MMS**

Products: All with IEC 61850 software option
Impacted firmware: 8.30 to 8.43, 8.50
Corrected firmware: 8.44, 8.51
Workaround: Avoid power cycling the relay immediately after setting test mode via MMS
Description : In previous versions, a relay will publish IEC 61850 GOOSE messages that will not indicate test mode, if it is power cycled immediately (within one second) of setting the relay in test mode via MMS.
GE tracking number: 844-1

C **Corrected FW to prevent “PB Setting Error” messages in relays with PBM for specific scenarios**

Products Impacted: All products with PBM
Impacted firmware: 7.80 to 8.43, 8.50
Corrected firmware: 8.44, 8.51
Workaround: Change a setting that affects the PBM and will change the CID file length, e.g., lengthen or shorten the IED name.
Description: In previous versions, under specific scenarios when configuring a relay, the CID file

will be accepted but the relay will fail to configure the PBM asserting “PB SETTING ERROR: Check SCL Log”.

GE tracking number: 844-2

C **Corrected quality field for simulated GOOSE messages published from the PBM ports**

Products Impacted: All products with PBM

Impacted firmware: 8.40 to 8.43, 8.50

Corrected: firmware 8.44, 8.51

Workaround: None

Description: In previous versions, simulated GOOSE messages with questionable quality published by the PBM were published with “invalid” quality instead of “questionable”. This issue is present when switching from Q.VALIDITY Invalid to Questionable. Other combinations are working correctly.

This issue affects only the PBM, the quality of the simulated GOOSE messages published by the main CPU is correct.

GE tracking number: 844-3

Firmware 8.45

Line Differential Systems – L90, L30

G **Added conditions for applying the charging current compensation in 87L line differential element.**

Products: L90, L30
Impacted firmware: All
Corrected firmware: 8.45, 8.50
Workaround: Perform manual settings validation
Description: In firmware version 8.45 the charging current compensation is applied only if zero sequence capacitive reactance value is greater than or equal to the positive sequence capacitive reactance value (Xc0 >= Xc1) and both are strictly positive. Prior to this release these conditions were not validated, allowing users to use incorrect settings values.

F **Corrected erroneous activation of the STUB BUS OP in breaker-and-a-half bus configuration.**

Products: L90, L30
Impacted firmware: All
Corrected firmware: 8.45, 8.60
Workaround: Perform manual settings validation
Description: In previous versions, under rare intermittent assertion of contact input controlling activation of the stub bus conditions an erroneous stub bus operation may be activated resulting in an undesired 87L DIFF OP activation. In firmware versions 8.45, this issue is fixed.

Communications

C **Corrected default state of the remote inputs after a reboot or receiving a new CID file**

Products: All products with IEC 61850
Impacted firmware: 8.40 to 8.44, 8.50, 8.51onwards
Corrected firmware: 8.45, 8.60
Workaround: None
Description: After a reboot or after applying a new CID file the relay did not correctly apply the default state of the remote inputs when they were defined as “ON”. In firmware versions 8.45, this issue is fixed.

C **Corrected FW to allow subscription to legacy fixed GOOSE messages from URPlus devices.**

Products: All products
Impacted firmware: 8.40 to 8.44 and 8.51
Corrected firmware: 8.45, 8.60
Workaround: None
Description: In previous versions, the subscription to legacy fixed GOOSE messages from URPlus devices did not work. In firmware version 8.45, this issue is fixed, and UR relay can subscribe to legacy fixed GOOSE messages from URPlus relays.

Firmware 8.46

Communications

G **Fixed firmware to prevent the MMS server from becoming unresponsive in certain scenarios.**

Category: C

Products: All products with IEC 61850 software option

Impacted firmware: 8.4x, 8.5x, 8.6x

Corrected firmware: 8.46

Workaround: None

Description: This applies to relays with IEC 61850 SW option. Occasionally after many cycles of connecting to the MMS server in the UR relay, reading oscillography files, and disconnecting, the MMS server in the UR relay stops responding to the MMS client. The only way to recover the MMS server functionality is by rebooting the relay. This issue was resolved in firmware 8.46.

G **Fixed FW in relays with IEC61850 to prevent an unexpected restart when a file is read via MMS without first reading the contents of the directory.**

Category: B, C

Products: All products with IEC61850.

Impacted firmware: 8.30 to 8.60

Corrected firmware: 8.46, 8.61

Workaround: Before reading a file via MMS, first read the contents of the directory

Description: In previous versions, if an attempt is made to read a file, like a COMTRADE oscillography file, via MMS without first reading the contents of the directory the relay experiences an unexpected restart.

Software

Software 8.40

Added IEC 61850 controllable double points (DPCSO) mapped to pairs of consecutive virtual inputs

Workaround: None
Description: DPCSO1 - DPCSO64 are double control points and operate on pairs of Virtual Inputs Latched. Thus DPCSO1 - DPCSO64 map to 128 Virtual Inputs Latched and an operation of one attribute DPCSO always operate on two Virtual Inputs Latched, one Virtual Input of the pair is set to "1" and the other Virtual Input of the pair is set to "0". In version 8.40, 64 DPCSO was implemented in GGIO2 logical node.

Added support for legacy fixed GOOSE

Workaround: None
Description: Fixed GOOSE is re-introduced in version 8.40 to cover publishing, subscription, conversion of setting, printing and comparison, import-export, actual values.

Enhanced LPHD, MMXN and RSYN logical nodes

Workaround: None
Description: In EnerVista UR Setup version 8.40, the following logical nodes were enhanced:

1. “hwRev” is now supported in the LPHD logical node.
2. MMXN logical nodes now support frequency measurement readings.
3. SyncChkRSYN logical node now supports data objects for Voltage different, angle difference and frequency difference

Added new feature to reverse the CT polarity in firmware through a setting

Workaround: None
Description: Reversal of CT Polarity through a setting has been implemented in software version 8.40.

Added support for sensitive ground bus differential element to B30 relays

Workaround: None
Description: B30 sensitive bus differential has been implemented

Added support for “Force MU Out of Service” functionality to relays with Process Bus Module

Workaround: None
Description: New setting **FORCE MU OUT OF SERVICE** has been implemented in SV Config.

Added two Wattmetric Ground Fault elements to T60 relays

Workaround: None
Description: Two Wattmetric Ground Fault elements have been added for T60.

Added settings validation in the synchrocheck element to allow the use of the same source for both V1 and V2

Workaround: None
Description: EnerVista UR Setup added settings validation in the synchrocheck element for the case when the same source is used for both V1 and V2.

Added support for security events for the validation of the firmware binary on attempting to upgrade firmware

Workaround: None
Description: On attempting a firmware upgrade, EnerVista UR Setup will write the result of the verification of the signature of the binary firmware file to a relay with firmware 8.40. This allows the relay to record security events and syslog messages for the validation of the binary firmware file image.

Added support to allow closing of unused protocols/logical ports

Workaround: None
Description: In software version 8.40, EnerVista UR Setup includes settings to allow the closing of the following ports/protocols: RS232, RS485, MMS, syslog, and EGD.

Partial Export/Import feature: "Direct I/P 2-*" operands are missing from the generated exported xml file

Workaround: None
Description: Direct I/P operands were used in FlexLogic Equation Editor, it was not being exported into the xml file in the previous software version. In version 8.40, this has been corrected.

UR Setup crashes when attempting to add the given third-party ICD file

Workaround: None
Description: A particular third-party ICD file was not possible to add using the “Add IED” feature in UR Setup. This issue has now been corrected in UR Setup version 8.40.

UR Setup conversion defaults Process Bus Module and IEC 61850 settings when the offline device folder resides in a network drive

Workaround: None
Description: Previously, if the offline device file was located on a network drive, and then undergoes a file conversion, the configured Process Bus Module settings and IEC 61850 settings will be set to default. This has now been corrected in UR Setup version 8.40.

Local access now working on Basic Security relay

Workaround: None
Description: In a relay with Basic Security, when Remote Settings access was “Disabled”, and Local Settings Access was “ON”, UR Setup reports an error when trying to change settings using the serial port connection. In UR Setup 8.40, this issue has been corrected.

Fixed the loss of changes made to Logic Designer documents when the offline device resides on a removable drive

Workaround: None
Description: Previously, when the offline device resides in a removable drive, graphical customizations in Logic Designer would be lost after closing and reopening UR Setup or during file conversion. In UR Setup 8.40, this issue no longer occurs.

Created a single Merged Remote IED for RxGOOSE and SV configuration from the same CID file

Workaround: None

Description: Previously, when RxGOOSE and SV are configured from a same Merged Unit, only a single Remote IED (for the MU) could be created in the CID file. In UR Setup 8.40 this has been corrected.

Bus replica Isolator settings in B30 become grayed out once saved

Workaround: None

Description: Previously, some Isolator settings became grayed out after saving and reopening. In UR Setup 8.40 this has been corrected.

Implemented the preservation of the name semantics from the MU CID file

Workaround: None

Description: Previously, when the Merging Unit CID file was imported to configure the RxSV elements, UR Setup did not preserve the name semantics from the Merging Unit SCL file. In UR Setup 8.40 this has been corrected.

Restricted setting ALTERNATE FREQ AND PHS REFERENCE to sources 1 to 6 in B30 with Process Bus Module

Workaround: None

Description: In EnerVista UR Setup 8.40, for B30 order codes with Process Bus Module the range of the setting **ALTERNATE FREQ AND PHS REFERENCE** has been restricted to SRC1 to SRC6.

Corrected the valKind type for SPCSO and DPCSO CtlModel

Workaround: None

Description: Previously, the incorrect valKind type was populated for SPCSO and DPCSO CtlModel in UR CID files. In UR Setup 8.40 this has been corrected.

Parsing message with progress bar is displayed in status bar even after compare is done

Workaround: None

Description: Previously, a parsing message with progress bar is displayed in the status bar even after the comparison is complete. In UR Setup 8.40 this has been corrected.

RptRFLO instance 1 is unselected from Data Model, the LN Type is changed to RFLO_7 from RFLO_8

Workaround: None

Description: Previously, LNType would unexpectedly chang to RFLO_7 from RFLO_8 if RptRFLO instance 1 is unselected from the Data Model. In UR Setup 8.40 this has been corrected.

Software 8.41

Updated Polish translation

Some strings used to display UR setup were updated to improve clarity in Polish language

Updated the L60 user manual for Synchroncheck specs change v1.12

The Synchrochecks specification was changed to version 1.12. The V2 source can be the same or different with respect to the V1 source. The “same source” feature is not supported in the L60. A note was added in the L60 user manual according to the spec update.

UR Setup crashes while configuring the Breaker Fail flex operands to Trip Bus elements.

A UR Setup crash was noticed while configuring the Breaker Fail flex operands to Trip Bus elements from Protection summary screen on B30 Process Bus devices. This issue has been resolved.

UR Setup crashes when importing a particular CID file

The UR Setup crashed when importing a CID file, which contains an extra private node in the dataset. We changed the CID file validation rules for this use case.

Modified UR Setup pop up message

A UR Setup IEC61850 pop up message stating “*No more than 6 fast datasets can be used by Report Control*” is incorrect and was changed. It now reads “*No more than 6 report control blocks can be configured with fast datasets*”

Only display the valid voltage banks (first 2) for selection in Bay Phase VT

The dropdown menus for Phase VT (only available for IY software option) in Bay Sources used to display all the voltage banks. In 8.41, the software was updated to display only the valid voltage banks (first 2, configured in AC Banks section) for selection.

SV Stream Configuration Window: ‘Alternate Banks’ settings behavior in URPC 8.40

An issue was introduced in 8.40 where the 2 Polarity settings being added indirectly caused incorrect settings (nominal values) being used for validation. This issue has been resolved.

B30X Offline to Online creates sAddr warnings

A problem was occurring in the B30X with ‘IY’ software option, whereby an Adif data object was instantiated unexpectedly. This issue has been resolved.

PC SW couldn’t load SLD configuration to relay

This problem only occurred for devices with “gfp” in the name. This is because “gfp” was a keyword used by UR Setup, and it was incompatible to have this string in device names. This problem has been fixed, so you can now have gfp in device names if required.

Software 8.42

Updated the digital signature of the USB driver with a new certificate.

Workaround: None

Description: The certificate of the USB driver should not be expired. UR Setup 8.42 updated the digital signature of the USB driver and ensured that a valid certificate is used.

Subscribe to a remote IED with a particular CID file causes UR Setup to produce an invalid CID file.

Workaround: Move dataset to first AccessPoint node.

Description: When using UR Setup 8.41 and earlier versions to subscribe to a remote IED with a particular CID file which contains 3 different AccessPoint nodes, UR Setup generates an invalid CID file which is rejected by UR Relay. UR Setup 8.42 modified UR Setup CID file parsing logic to handle multiple AccessPoint nodes.

Reword error message for dataset member which exceeds the maximum allowed data objects (DO) size.

Workaround: None

Description: The current error message does not show the maximum allowed DO size in dataset. UR Setup 8.42 reworded error message to show the maximum allowed DO size in dataset.

Instruction manual updates

The instruction manual for UR 8.4x states that there is support for leap seconds for the IRIG-B and PTP real-time protocols. This feature was removed due to last minute issues and released in UR 8.50.

When reading the 8.4x instruction manuals, please be aware that any reference to leap second support is not valid.

Upgrade

Compatibility

The current firmware runs on the T, U, V, and W CPU modules. View the order code to determine the CPU module in the relay. For example, in C60-V03-HPH-H6H, the relay has a V CPU module.

The graphical front panel requires a T, U, V, or W CPU module that has two connector slots on the front of the module. One connector allows a basic or enhanced front panel to be connected, and the other connector allows a graphical front panel.

The current firmware release is not compatible with previous UR CPU hardware (CPU types A, B, D, E, G, H, J, K, N, and S).

The current firmware release requires EnerVista UR Setup software version 8.0x or higher. GE suggests use of the latest available version of the software.

Upgrade

When upgrading both EnerVista software and UR firmware, upgrade the software first. Upgrade of the software takes about five minutes. When upgrading EnerVista software on a computer with Windows Server 2012, its Release 2 needs the KB2919355 update first. Follow the instructions described in the following link

https://www.microsoft.com/en-US/download/details.aspx?id=42334

The firmware can be upgraded over an Ethernet connection or a serial connection (RS-232, RS-485, or USB in relays with graphical front panel) and may take between 10 to 60 minutes depending on the relay's order code and the channel used for the firmware upgrade.

Any DSP manufactured between 1 September 2011 and 1 December 2015 installed in a relay with firmware version 7.25 or higher minor revision, 7.32 or higher minor revision, 7.40 or higher minor revision, 7.60 or higher minor/major revision must be sent back to the factory for updates before updating the firmware. This is to prevent potential nuisance alarms ('Module Failure 31' or 'Diagnostic Alarm', depending on firmware version).

To upgrade the software:

1. If a beta version of the EnerVista UR Setup software is installed, uninstall it, for example using the Windows Control Panel.
2. Download the new software from http://www.gegridsolutions.com/app/ViewFiles.aspx?prod=urfamily&type=7
   The software is a .exe file.
3. Install the new software by (double-)clicking the file.
4. Refresh the order code in EnerVista under the **Device Setup** button.

To upgrade the firmware:

1. Download the firmware from http://www.gegridsolutions.com/app/ViewFiles.aspx?prod=urfamily&type=7
   The firmware is a .SFD file.
2. Under **Settings > Product Setup > Security > Access Supervision** or **Settings > Product Setup > Security > Supervisory**, the **Lock Firmware** setting needs to be disabled.

3. In the EnerVista software, navigate to **Maintenance > Update Firmware** and select the .SFD file. For any issues, see a UR instruction manual.
   When the upgrade finishes, the relay restarts.
4. Reconnect the EnerVista software to the relay and refresh the order code in EnerVista under the **Device Setup** button.
5. Convert any existing settings file, then load the converted settings to the relay. See the instruction manual for information.
6. Set the device to "Programmed" under **Settings > Product Setup > Installation** to put it into service.
7. If you changed the **Lock Firmware** setting, reset it.

Categories

This document uses the following categories to classify changes.

Revision categories

Code	Category	Description
A	Hardware change	This change may require hardware to be updated and/or replaced
N	New feature	A separate feature added to the relay. Changes to existing features even if they significantly expand the functionality are not in this category.
G	Change	A neutral change that does not add new value and is not correcting any known problem
E	Enhancement	Modification of an existing feature bringing extra value to the application
D	Changed, incomplete, or false faceplate indications	Changes to, or problems with text messages, LEDs, and user pushbuttons
R	Changed, incomplete, or false relay records	Changes to, or problems with relay records (oscillography, demand, fault reports, and so on)
C	Protocols and communications	Changes to, or problems with protocols or communication features
M	Metering	Metering out of specification or other metering problems
P	Protection out of specification	Protection operates correctly but does not meet published specifications (example: delayed trip)
U	Unavailability of protection	Protection not available in a self-demonstrating way so that corrective actions can be taken immediately
H	Hidden failure to trip	Protection does not operate when appropriate
F	False trip	Protection operates when it is not appropriate
B	Unexpected restart	Relay restarts unexpectedly

For further assistance

For product support, contact the information and call center as follows:

GE Grid Solutions
650 Markland Street
Markham, Ontario
Canada L6C 0M1
Worldwide telephone: +1 905 927 7070
Europe/Middle East/Africa telephone: +34 94 485 88 54
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Worldwide e-mail: multilin.tech@ge.com
Europe e-mail: multilin.tech.euro@ge.com
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