Webinar and Demo: New and improved IEC 61850 GOOSE features for the RTDS Simulator

Wednesday, August 25, 2021

Questions and Answers

Q1: Will the webinar recording and slides be made available?

Yes. The webinar recording and slides are available to all registrants. A link has been included with this document in the post-webinar email. If you would like to refer a colleague to this webinar, it can be accessed later On Demand, after having been aired, at https://www.rtds.com/events/webinar-iec-61850-goose/.

Q2: Will the demo cases be made available? How can they be accessed?

Yes. The demo cases are now available for users to access from the Downloads section of the RTDS Client Area. A help document is included with the case files. The case will also be included as a tutorial in an upcoming version release of the RSCAD FX software. In the meantime, if you have trouble accessing the demo cases, please contact marketing@rtds.com.

Q3: Which PTP profiles are supported by the GTSYNC card?

We recently increased the variety of PTP profiles that the GTSYNC supports, as PTP is becoming the synchronization method of choice for utilities, manufacturers, and research institutions. Currently the GTSYNC card supports IEEE 1588-2008 v2 Default Layer 2, IEEE C37.238-2011, IEC/IEEE 61850-9-3 Power Utility Profile, and IEEE C37.238-2017.

Q4: When the PTP clock is connected to the GTSYNC in holdover mode, will the GTNET-SV publisher indicate the correct 'SmpSynch' value?

It is assumed that the GTSYNC is using in the PTP slave mode with holdover enabled. During holdover, the "smpSynch" attribute in the SV messages remains unchanged according to IEC 61869-9 section 6.904.5.

Q5: Are you planning to include GSEv7 block into RSCADV5 in the future, or is it strictly for RSCAD FX?

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The GSE-v7 component and the ICT are only available in RSCAD FX. These new features are only supported when using NovaCor-based systems and GTNETx2 (rather than GTNETv1) hardware.

Q6: Is it possible to convert IEC 61850 component settings from RSCADV5 to the new ICT in RSCAD FX?

Yes. RSCAD FX includes a conversion tool (GSE converter) which automatically converts legacy components to GSE-v7 and sets the correct mode. You do not need to convert or re-configure the components manually.

Q7: If I convert the configured component, will it be converted to GSE-v7, or according to the old version to legacy mode? Or if I want to convert the old project to v7 mode, do I have to do the whole configuration again?

During the conversion (RSCAD v5 to RSCAD FX), all legacy GSE components (GTNET-GSE-v5 and GTNET-GSE-v6) are replaced by GTNET-GSE-v7 components in RSCAD FX draft. The operating mode of each GTNET-GSE-v7 component depends on RTDS simulation hardware on which the original RSCAD 5 draft case was run and saved. Please refer "*RSCAD FX Quick Start Guide*" for further information.

Q8: Is it possible to upgrade the GTNETV1 card to GTNETx2?

RTDS Simulator owner/operators who have an active hardware warranty have access to our hardware exchange program. The hardware exchange program allows users to exchange their GTNETv1 cards for new GTNETx2 cards at a significant discount. You can get in touch with us at marketing@rtds.com if you are interested in pursuing this for your institution.

Q9: Can we import the CID or ICD file of an actual IED into the new ICT, and simulate GOOSE or SV publishers using the GTNETx2?

We are currently working on implementing GOOSE emulation with imported CID/ICD files. This feature will be released soon. The SV implementation hasn't been considered yet, but it may be a future development.

Q10: Can you please briefly show the importation of a CID file from a real IED into the new ICT?

You can create new GOOSE subscription (add an Input section to a LN instance) from real IEDs. The *"ICT's User Manual"* (section 2.10.2) provides step-by-step instructions.

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Q11: Is the firmware version tied to the GSE component version in the project? So if I want to use GSE-v7 not in legacy mode, do I need to update the firmware of the GTNETx2 card?

Yes, if you want to use new GSE-v7 features it is required to upgrade the GTNET-GSE firmware. This is done in RSCAD's Firmware Upgrade Utility.

Q12: What do you mean by "non-RTDS SCL files"? Did I understand correctly that any external SCL configuration files can be freely imported into ICT?

Standard SCL files of other vendors are referred to as "non-RTDS SCL files", which can be imported into the ICT for GOOSE subscription. Please refer the *"ICT's User Manual"* (section 2.10.2) for more information.

Q13: Is the IEC 61850 Analyzer is only for GOOSE? It's not possible to analyze SV?

The GOOSE Analyzer tool is currently only implemented for GOOSE messages. We do not currently have plans to implement a Sampled Values analyzer.

Q14: Does the GOOSE Analyzer require a GTNET card for sniffing?

No. While the GOOSE Analyzer tool can be used in conjunction with the GTNET card, it can also sniff GOOSE messages directly from external devices.

Q15: How are data quality (validity - invalid - questionable) handled for incoming GOOSE and SV messages?

The GSE-v7 component and the ICT treat quality attributes (*q*) of incoming GOOSE similar to data attributes (*stVal*). Please refer the "ICT's User Manual" for more information. The demo case available in the Downloads section of the RTDS Client Area also shows how to handle quality attributes.

Q16: Can your product support IEC 61850 Logging Service?

We support MMS reporting services and control operations such as circuit breaker control. We don't support logging services specified in IEC 61850-7-2, however, you can get logs from reports depending on what you are interested in.

Q17: Can we use this to test bidirectional Microgrid Energy Management Systems?

Yes, the RTDS Simulator's GTNETx2 card supports several bidirectional industry standard protocols which can be used to test microgrid protection, control, and management

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systems. We have a video available on the RTDS Technologies Youtube channel showing the closed-loop testing of a bidirectional microgrid controller via DNP3 and GOOSE protocols, which you can watch at the following link: https://www.youtube.com/watch?v=ZuYeQiCsokk. If you're already an RTDS Simulator user, you may find the following webinar and demo video useful: https://www.youtube.com/watch?v=ByUyal_hoTU.

Q18: Do you have a model for CHP in RSCAD?

Yes – a combined heat and power generation system can be represented using the synchronous generator model in RSCAD. The Banshee Microgrid example case, available in RSCAD, includes a CHP plant with full controls.

If you have any further questions, please contact marketing@rtds.com.

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