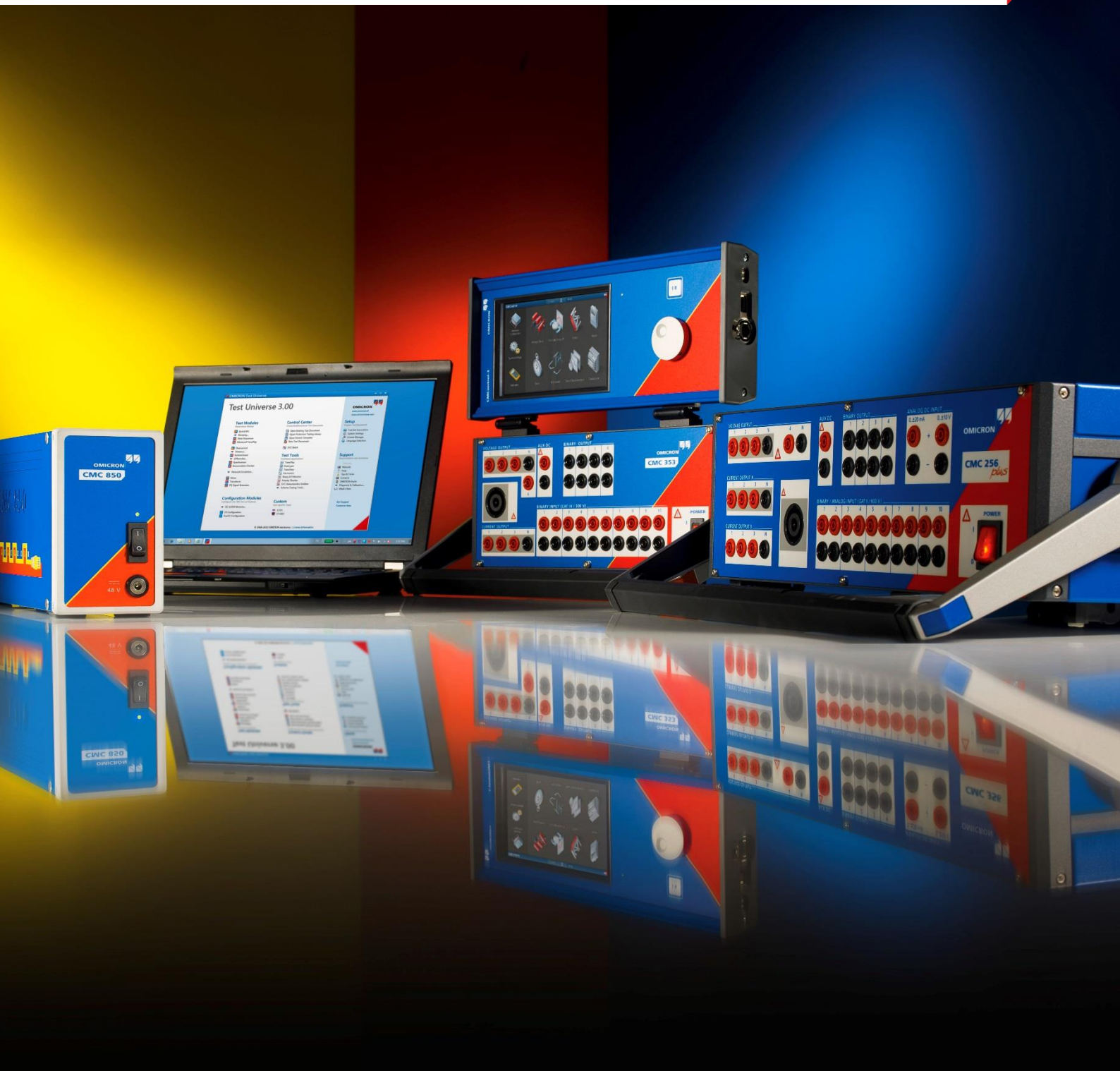
RelaySimTest

What’s New in Version 3.40 SR1

Compared to Version 3.30



1 Full support for configurable datasets in Sampled Values

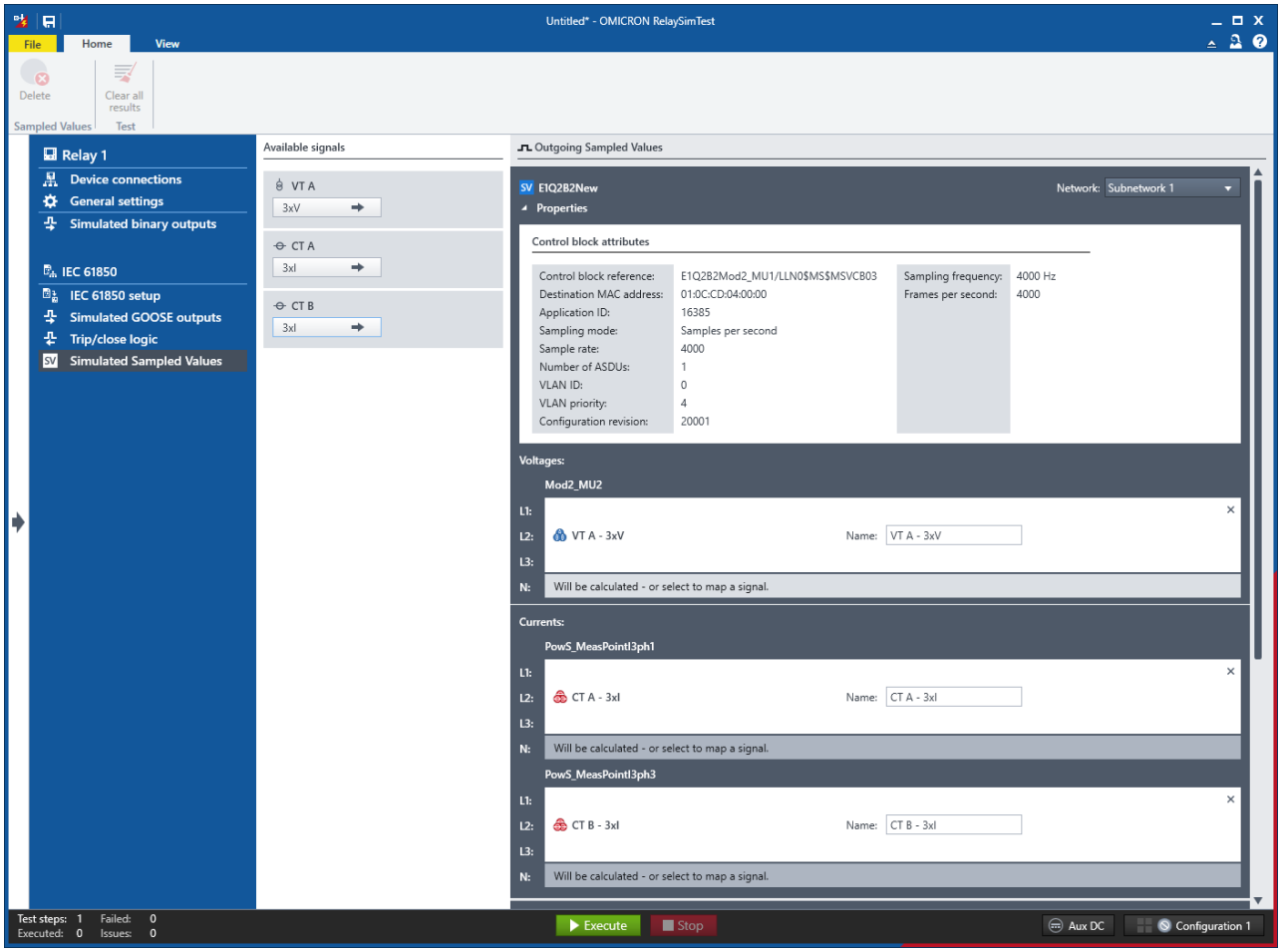
Since version 3.0 RelaySimTest has an outstanding support for testing protection systems with the IEC 61850 process bus. We extended the feature set with two new functionalities.
Sampled Value (SV) streams can now be simulated with flexible data sets according to IEC61850-9-2 and IEC 61869-9.
The configuration remains as intuitive as in previous versions.

1. The Merging Unit (the IED providing the SV stream) is imported as a simulated device from the SCL configuration file. This automatically imports the SV data set configuration. No manual configuration of the data set is required!
2. The current transformers (CT) and voltage transformers (VT) are selected from the power system.
3. Finally, the CT and VT signals are mapped to the data set via select and click.

With this *RelaySimTest* offers full flexibility for many applications and challenges:

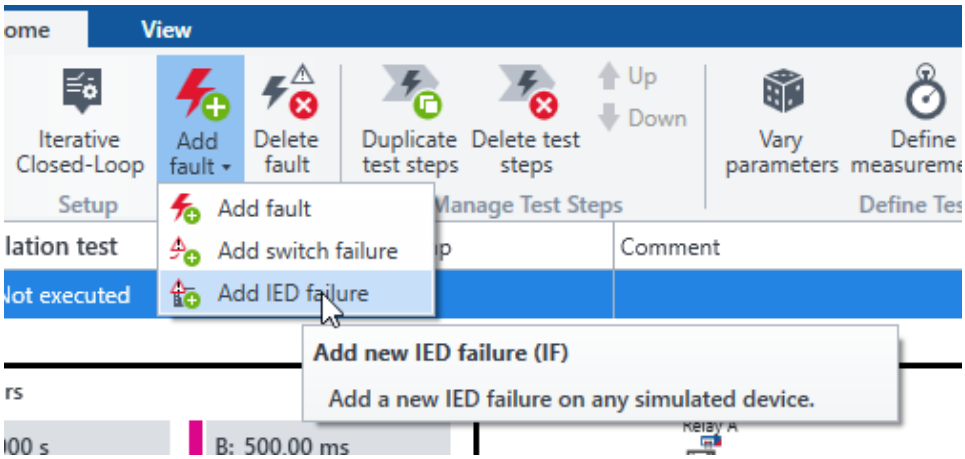
- Single phase bus voltage plus three phase line voltage in one data set for sync-checks
- All kinds of transformer configurations, e.g., three phase current from the primary and secondary transformer side plus current from the star point CT in one dataset (seven phases)
- Only four currents per dataset and per bay for busbar differential protection
- Different polarity between neutral and three phase current within one dataset

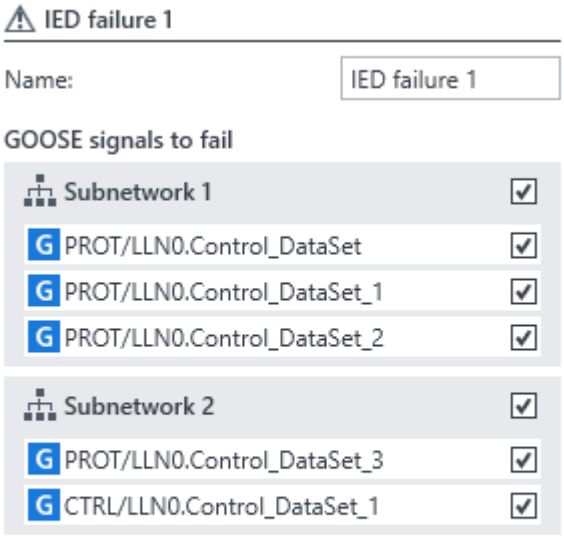
Up to four SV-Streams and 32 values (24 with distinct signals) can be simulated with one CMC. By adding further test sets to the configuration of *RelaySimTest*, this number can be extended to fit any scheme testing need.



2 Simulation of IED GOOSE failure

To test the backup or fallback logic of a scheme, during a GOOSE error, an IED failure can be placed on a simulated device. The simulation of the selected GOOSE message will be stopped and the time to live (TTL) expires.



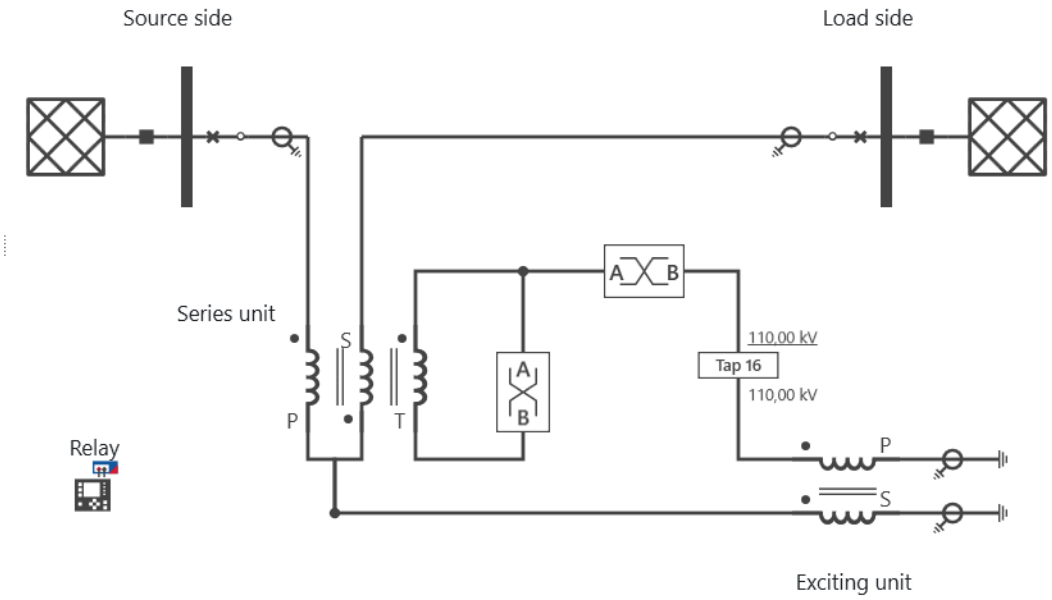


3 Open-winding transformer for modelling two-core phase shifting transformers and other challenges

We introduced two new elements – two and three-open-winding transformers, which can be used to model for example two-core phase shifting transformers (two-core PST) in *RelaySimTest*. While two-core PSTs are an edge case, some of our customers were challenged testing the corresponding protection scheme.
Other use cases for the new elements include:

- Transformers with three-phase CTs at the neutral side of the Wye winding
- Transformers with CTs directly in the Delta winding

The new elements support the existing advanced transformer testing features, such as simulation of internal faults and saturation and require the *Adv. Transformer Feature* license.
As these elements are used for specialist cases, we suggest checking out the upcoming Application Note or contact our technical support in case of questions.



4 Bug fixes in RelaySimTest 3.40

4.1 SR1

Fixed bugs:

- Fixed issue with Wi-Fi connection.
- Fixed "Add switch failure" within breaker context menu.
- Fixed duplication error that occurred under special power system conditions.
- Fixed issue where certain faults on parallel lines caused an error in the traveling wave simulation.

Performance improvements:

- Improved performance when many widgets are used.
- Improved performance when many GOOSE messages and SMV streams are mapped.

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