Real time digital simulation for the power industry
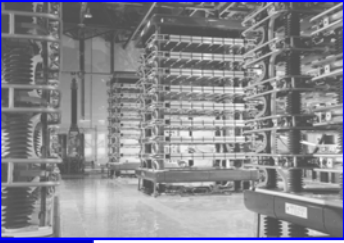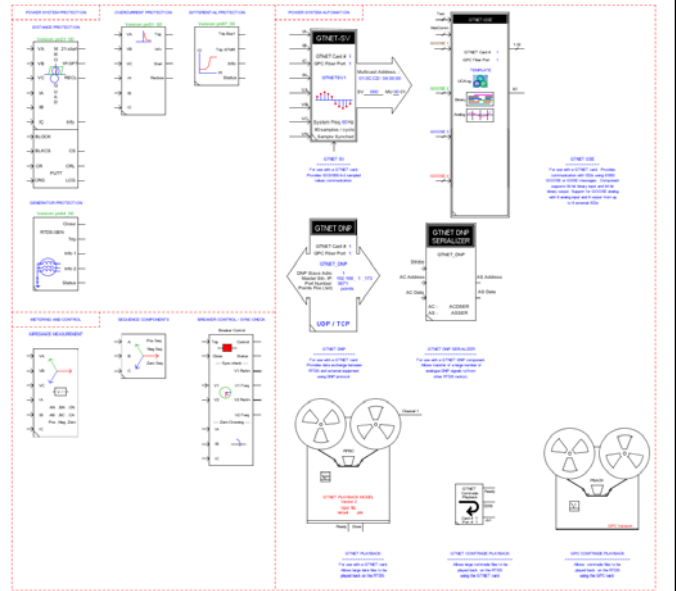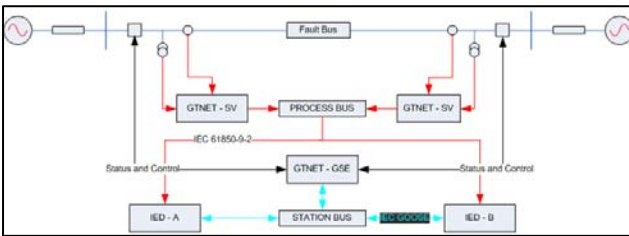
RTDS Protection and Automation Library

RTDS Technologies is pleased to announce the latest enhancements to its impressive library of components and software. A new Protection and Automation library contains the power system protection components, power system automation, and the metering and control components. Also available is a new IEC 61850 Substation Configuration Language (SCL) editor to be used with the GTNET-GSE. Certification of the new GTNET-GSE by KEMA is expected to be completed by the end of 2009. KEMA is a level 1 tester authorized by the UCA International Users Group, a not-for-profit users group dedicated to integration of CIM, Open Smart Grid, and IEC 61850 within the power industry. RTDS Technologies is an active participant and a corporate member within the UCAIug.

The RTDS® Simulator library of protection and automation tools is for use with GPC based simulation hardware and includes:

- New GTNET-GSE firmware
- Enhanced GTNET-GSE component with many new features
- SCD editor for use with GTNET-GSE
- New GTNET-SV firmware
- Distance Protection model
- Over Current Protection model
- Differential Protection model
- Generator Protection model
- Comprehensive Breaker Control model
- DNP slave and large file playback models
- Sequence and Impedance measurements

New! GTNET-GSE Firmware

The latest GTNET-GSE firmware and component doubles the number of binary inputs and outputs for GOOSE and GSSE. The number of external IEDs that can be subscribed to has increased from 5 to 8.

We have also added 8 GOOSE analog inputs and outputs to the component. The number of GOOSE datasets has increased from 1 to 4. The new firmware and component also gives access to the GOOSE transmit and receive "test" flag, "NdsComm" flag, and every bit in the detailed "quality" bitmap. We have also added a "time allowed to live" check on each of the GTNET-GSE inputs.

We have added these extra features without adding any additional latency to the device. The GTNET-GSE is still a very low latency deterministic device ready to handle all your IEC 61850 high speed GOOSE testing.

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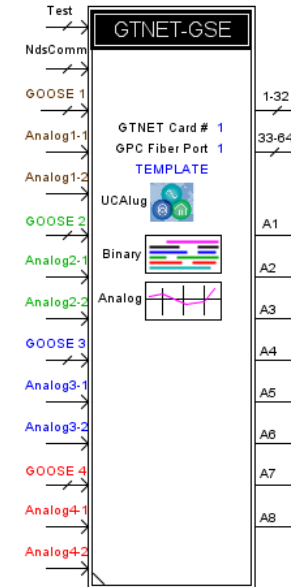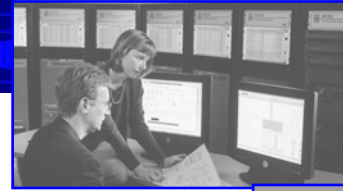
New! SCD Editor for the GTNET-GSE

RSCAD now boasts an embedded SCL configuration tool used to create the Substation Configuration Description (SCD) files. The SCD files are an XML based file conforming to the IEC 61850 standard.

This new SCD Editor makes it easier than ever to configure the GTNET-GSE without the added expense of a third party SCL tool. Import, Export, Delete, and Edit the information without leaving RSCAD.
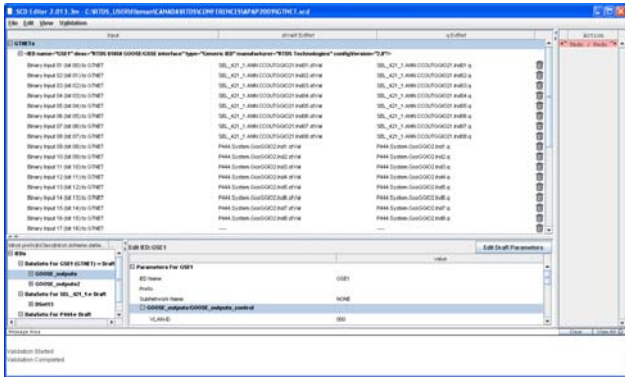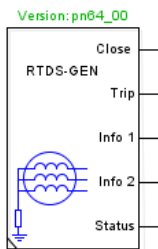

New! GTNET-SV

The latest GTNET-GSE firmware and component provides access to the "SmpSynch" flag in the IEC 61850-9-2 data. This new addition enhances the already existing feature of complete control over the detail "quality" bitmap of the IEC 61850-9-2 messages.

New! Generator Protection Relay Model

The latest addition to the relay model library is a comprehensive generator protection model. This new model uses the threading technique developed by RTDS Technologies which allows the component to provide virtually the same functions found in physical relays.

Existing Protective Relay Models

The RTDS library of relay models provides a collection of distance, over current and differential relays. Comprehensive algorithms are used in each of the RTDS relays providing many monitoring points to help evaluate the performance during system faults.

The distance relay uses a positive sequence memory polarizing voltage and is suitable for providing the distance protection function on single breaker transmission lines with single or three pole tripping and reclosing schemes. There is provision for communication aided tripping schemes, out of step, breaker failure, and a secondary arc extinguish detection algorithm to aid in high speed single pole auto reclose schemes.

The over current relay provides 50P, 50N, 51/67P, 51/67N, 46, 79, and Breaker Fail functions.

The differential relay is suitable for providing the protection function on bus and transformers and can include up to two 2 slope differential characteristics (87B1 and 87B2), one transformer and one bus 2 slope differential characteristic (87B1 and 87T), or a single bus or transformer differential element.
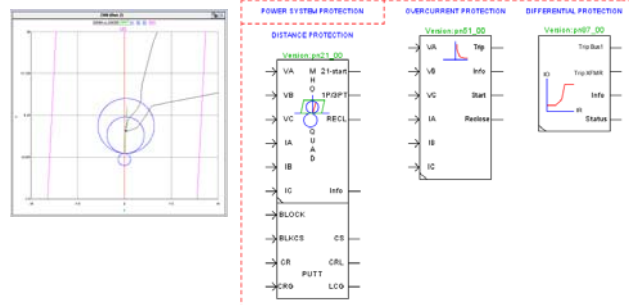
New! Breaker Control Model

The breaker control model provides many control features in one easy to use component.
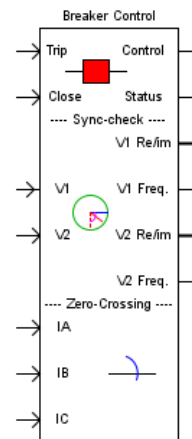
- Internal and external Trip/Close signals
- 1 pole / 3 pole operation with pickup and dropout timers on each phase
- Synchro-check with breaker advance closing
- Zero crossing detection of breaker currents
- Pre-insertion resistor control
- Metering of system and sync voltages

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