

RTDS Technologies at the opening of the National HVDC Centre in Scotland



WHAT'S NEW: JULY 2017

NovaCor™: meet the technology and read about the first global installation at Scotland's National HVDC Centre
MODBUS protocol released for GTNETx2 card—and other new features of RSCAD

Upcoming Training Courses

We are currently accepting registrations for the following courses at rtds.com > **News & Events** > **Training Courses**.

INTRODUCTORY RTDS® SIMULATOR TRAINING

September 18-22, 2017
Winnipeg, Canada

ADVANCED APPLICATIONS TRAINING: IEC 61850

September 25-29, 2017
Winnipeg, Canada

Upcoming Events

IEEE PES General Meeting

Chicago, USA
July 16-20, 2017

IEC 61850 Europe 2017

Amsterdam, Netherlands
September 26-28, 2017

ESTS 2017

Platinum Sponsor

Arlington, Virginia, USA
August 15-17, 2017

CIGRE Canada 2017

Premiere Sponsor

Winnipeg, Canada
September 30-October 6, 2017

NEW PRODUCT ANNOUNCED

Meet NovaCor: the powerful new generation of simulation hardware for the RTDS Simulator

In case you somehow missed it, the newest generation of simulation hardware for the RTDS Simulator was released on April 3, 2017. Based on a powerful multicore processor, NovaCor is the world's fastest and most capable real time power system simulator.

Since the introduction of the RTDS Simulator as the world's first ever real time power system simulator in 1989, the system's hardware architecture has consisted of processors housed in rack-mounted cards which exchange data over a backplane. The NovaCor platform features an all-new architecture: for the first time ever, the simulator is based on rack-mounted chassis housing a powerful multicore POWER8 processor, designed by IBM to deliver performance for the some of the world's most demanding workloads. Rapid communication between the ten cores of each processor eliminates the need for backplane data transfer, allowing for much faster and more complex real time power system simulation than ever before.

Each NovaCor chassis has 2-3 times the simulation capacity of a fully loaded PB5-based rack. Hundreds of nodes can be solved on a single core. It also provides higher precision real time simulation than ever before, with timesteps reduced by up to 50%.

Single core simulation mode

NovaCor is capable of an all-new simulation mode where a full regular timestep power system simulation can be run on a single core. The network solution, power systems components, and control components are all stacked on one core. This makes NovaCor an even more accessible solution for power system simulation.

Compatibility

NovaCor can be connected to GTWIF-based RTDS Simulator racks containing PB5 and/or GPC processor cards. NovaCor is compatible with the existing Global Bus Hub, IRC Switch, and all GTIO hardware.

Hardware Exchange Program

Customers who participate in our Hardware Extended Warranty Program are eligible for the hardware exchange program, which allows customers to receive significant price reductions on the purchase of new hardware by exchanging their previous-generation hardware.

NovaCor hardware can be acquired by exchanging previous generation hardware through this program.



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Outcomes of the 2017 RTDS ATC

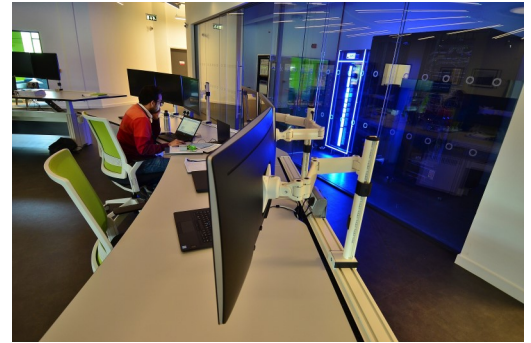
The first-ever RTDS Applications + Technology Conference (ATC) was a huge success. The event took place in Winnipeg, Manitoba – the birthplace and home of the RTDS Simulator. Over 3 and a half days, over 65 delegates shared their latest projects in real time power system simulation, participated in interactive workshops led by RTDS Technologies simulation experts, and enjoyed networking and social events.

The ATC was information-packed, with over 20 user presentations throughout the conference. Topics included power hardware in the loop studies at several power systems research centres throughout North America, HVDC control scheme testing by utilities, wide area measurement system development and testing, and more. Presentation files are now available for RTDS Simulator users and can be accessed by logging in to the RTDS online client area.

The conference took place shortly after the launch of the RTDS Simulator's new generation of simulation hardware: NovaCor. Delegates got a closer look at the new, multicore processor-based technology and received several presentations from RTDS Technologies experts regarding the development and simulation capabilities of the new platform.

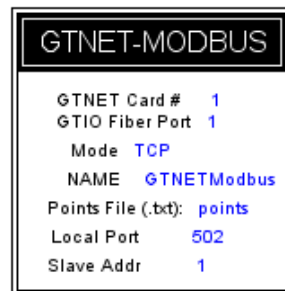
World's first NovaCor installation at the National HVDC Centre in Scotland

The first ever commercial installation of the NovaCor hardware platform was unveiled at the grand opening of Scotland's National HVDC Centre on April 26, 2017. The Centre aims to support and de-risk the deployment of HVDC schemes by combining expertise in HVDC modelling, real-time simulation capability, replica HVDC converters controls, and the experience and expertise of a transmission owner. It is a collaborative real-time simulation facility which will support the feasibility, specification, testing, operation and maintenance of HVDC transmission systems and de-risk control interactions.



The RTDS Simulator will support these efforts and will be a key part of the services offered by the Centre: undertaking detailed studies on the operation of HVDC and its impact on Great Britain's network, offering a range of HVDC-focused training courses, advising on the design and operation of HVDC schemes, and offering network diagnostic services following real network events.

MODBUS protocol released for GTNETx2



Modbus was introduced in the late 1970s and is used widely today in SCADA and system automation based applications to facilitate communication between a master station and a RTU. It uses the familiar master/slave concept by which the designated master has full control over the communication bus. The master will record outputs and read inputs from each of the slaves who will only respond when requested too by the master.

Previously, only the Modbus master station could be implemented within RSCAD software by using the scripting facility within Runtime. However, with the introduction of the new Modbus component and communication protocol for the GTNETx2, it is now possible to implement a Modbus slave within RSCAD software.

The new -Modbus component allows for Modbus communication over TCP/IP networks by using a GTNETx2 card configured with the Modbus protocol. The component supports three different variants of the Modbus protocol: Modbus TCP, Modbus RTU over TCP, and Modbus ASCII over TCP.

This new functionality now allows users to interface and test an external Modbus master with the RTDS Simulator.

New Features in RSCAD



- GTNET-MODBUS protocol has been added. This new firmware provides Modbus communication over TCP/IP networks using the GTNETx2 hardware. The component supports Modbus TCP, Modbus RTU over TCP, and Modbus ASCII over TCP.
- Microgrid sample cases have been added to the SAMPLES directory.
- A variable length pi model has been added: in this coupled pi model, the R, L, and C matrices can be scaled dynamically.
- The source model has been updated to include an option for specifying AC source parameters either at the source terminal or behind the impedance (as in PSCAD). An option for embedded breakers has been added.

Access presentations in the RTDS Client Area

You can access the full RSCAD release notes in the Client Area at support.rtds.com/clientarea/.

If you have an idea for a new feature, please send it to feedback@rtds.com. We want to hear from you!