OPAL-RT TECHNOLOGIES

Success Story

E.ON Energy Research Center builds first interface between OPAL-RT and RTDS Technologies real-time simulators, opens a new era of collaborative research opportunities.

1. Context

The mission of the E.ON Energy Research Center at RWTH Aachen University, Germany, is to study the potentials of energy savings, energy efficiency and sustainable energy supplies. Being a public-private partnership between industry and the scientific community, the E.ON Energy Research Center strongly believes in the collaboration between research facilities.

It was in this spirit, that Dr. Antonello Monti, Director of the Institute for Automation of Complex Power Systems research lab at the E.ON Energy Research Center, looked for ways to create synergy between different simulation platforms used by the scientific community.

2. Collaboration

The E.ON Energy Research Center acquired the OPAL-RT real-time eMEGAsim and HYPERSIM real-time digital power system simulators in 2013. Dr. Monti knew that OPAL-RT's vision has been from the start to democratize real-time simulation and to one day, put simulators and HIL equipment on every engineer's desk. So when he approached OPAL-RT to conduct compatibility tests with RTDS Technologies, the company offered its support.

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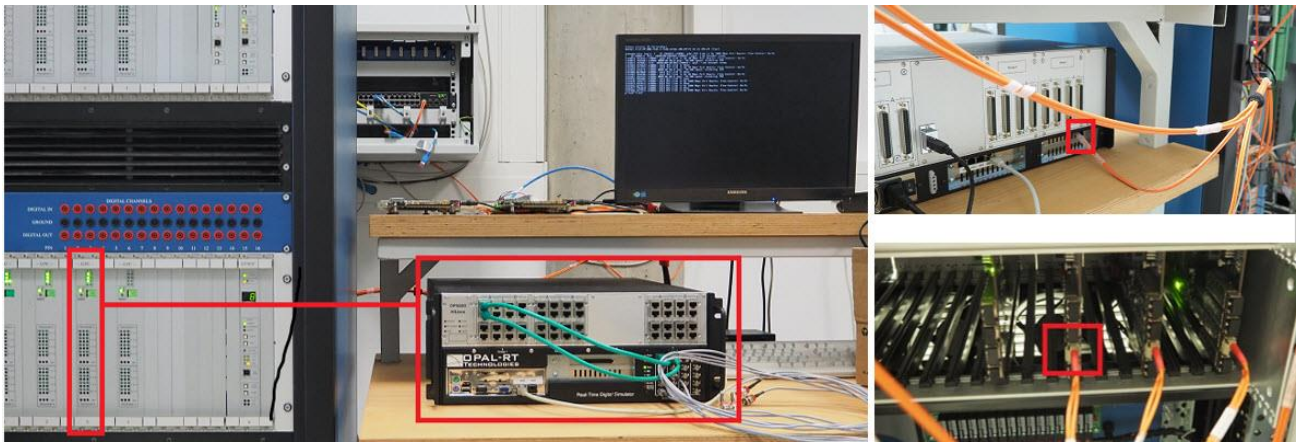

3. Results

Dr. Monti's team successfully interfaced OPAL-RT real-time eMEGAsim and HYPERSIM real-time digital power system simulators with the simulator of RTDS Technologies with a high-speed optical fiber interface. Running at 2 Gbits/s, the interface enables the simulation of power grids using both technologies. This innovative achievement enables RTDS simulator owners to increase the capability of their simulator by interfacing the high-performance HYPERSIM simulators developed by OPAL-RT and IREQ, the research center of Hydro-Québec, in a cost-effective manner.

As a result, several real-time simulation laboratories are now able to share equipment to perform collaborative research not possible before. "I envision, in a near future, the development of a new way to perform research supported by interconnected real-time simulation infrastructures: we are just at the beginning, but this is a great day for the research in future power grids", commented Dr. Monti.

"These two families of real time simulators are predominantly used by scientific community across the world. Now, they can exercise flexibility in choices and get the best of both worlds, without being forced to limit themselves to any one family of simulators. Such innovation illustrates the true openness of OPAL-RT solution and mind-set" adds M. Jean Bélanger, CEO and CTO of OPAL-RT.