OPAL·RT TECHNOLOGIES

RT20
VIRTUAL EDITION

OPAL-RT's 12th Conference on Real-Time Simulation

June 18-19, 2020 | 24h Conference
Starting at 9AM EDT

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Agenda

OPAL-RT's 12th Conference on Real-Time Simulation

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Starts: June 18th, 2020

Presentation type:

CORPORATE	TECHNICAL PRESENTATION	SPONSOR
PRODUCT FOCUS	MARKET FOCUS	PANEL

Montreal (EDT)	Paris (CEST)	Bangalore (IST)	Beijing (CST)	
09:00	15:00	18:30	21:00	**RT20 Opening Session** Jean Belanger, CEO & CTO, OPAL-RT TECHNOLOGIES Lise Laforce, Co-Founder, Executive Vice-President and OPAL-RT Europe's CEO Pierre-Francois Allaire, VP Sales & Marketing, OPAL-RT TECHNOLOGIES
09:30	15:30	19:00	21:30	
10:00	16:00	19:30	22:00	🇨🇦 **Real-time Applications in North America: Project Overviews, Trends and Perspectives** Martin Belanger, North America Sales Director, OPAL-RT TECHNOLOGIES
10:30	16:30	20:00	22:30	**Panel: Digital Twin to Increase Resilience of Power Grid** Taku Noda, Senior Research Scientist, CRIEPI Japan Dominic Kohler, Product Lifecycle Manager, Siemens Germany Henry Huang, Chairman - Technical Advisor, DOE Solar Energy Technologies Jean-Nicolas Paquin, Division Manager AXES, OPAL-RT TECHNOLOGIES Christopher Pritchard, Head of Product Management, Omicron Austria Jiang Teng, Senior Research Scientist, TU Ilmenau
11:00	17:00	20:30	23:00	

Montreal (EDT)	Paris (CEST)	Bangalore (IST)	Beijing (CST)			
11:30	17:30	21:00	23:30	🇨🇦 **Advanced Simulation Tools for Enabling Energy and Digital Transitions** Innocent Kamwa, Chef Expertises, Hydro-Québec (Research institute of Hydro-Québec)	🇨🇦 **Panel: Model-in-the-Loop (MIL) and Hardware-in-the-Loop for Autonomous Vehicle/ADAS Testing** Gilles Gallee, Business Development Director AD & Simulator, Ansys Nicholas Keel, Offering Manager - ADAS/AV Test, NI Denis Gingras, Professor, LIV - Université de Sherbrooke Dominique Gruyer, Research Director, IFSTTAR Herve Pollart, General Manager, OPAL-RT STI	
12:00	18:00	21:30	0:00	**Panel: The Role of Real-Time Simulation in Education** Dr. Antonello Monti, Director of the Institute for Automation of Complex Power Systems, E.ON Energy Research Center Dr. Graham Dudgeon, Principal Product Manager for Electrical Technology, Mathworks Olivier Tremblay, Expertise – Simulation et évolution des réseaux, Hydro-Quebec Dr. Tom Lee, Chief Education Officer, Quanser		🇨🇦 **New features of HYPERSIM** Etienne Leduc, HYPERSIM Product Owner, OPAL-RT TECHNOLOGIES"
12:30	18:30	22:00	0:30		🇧🇷 **Real-time Applications in Latin America: Project Overviews, Trends and Perspectives** Victor Hirata, Latin America Sales Director, OPAL-RT TECHNOLOGIES	

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13:00	19:00	22:30	1:00	**Performance Assessment of a Wide Area Damping Controller Using Real-Time Hardware-in-the-Loop Simulation** 🇺🇸 Hossein Hooshyar, Technical Leader, EPRI	**Performance Evaluation Method of Phasor Measurement Unit Using Real Time Simulation** 🇧🇷 José Eduardo Alves, Researcher, CEPEL	**OPAL-RT's Microgrid Test Bench & 4-Quadrant Power Amplifier** 🇨🇦 Christophe Brayet, Global Product Manager, OPAL-RT TECHNOLOGIES
13:30	19:30	23:00	1:30	**Flexgrid at Berkeley Lab: a Flexible Testbed for Power-HIL Experiments** 🇺🇸 Maxime Baudette & Christoph Gehbauer, Berkeley		**Challenges & Key Considerations for Power Hardware-in-the-Loop (PHIL) Testbeds** 🇨🇦 Mathieu Hainault, Customer Solutions Architect, OPAL-RT TECHNOLOGIES
14:00	20:00	23:30	2:00	**Power Electronic Hardware-in-the-loop (PE-HIL) for HVDC Systems** 🇺🇸 Suman Debnath, R&D Staff, Oak Ridge National Laboratory	**Implementation of Multiport Frequency Dependent Network Equivalents (FDNE) on FPGA Hardware for Efficient Representation of Very Large Power Systems in Real Time** 🇧🇷 Henildo Barros, João José Rodrigues de Oliveira, and Felipe Dicler - Operador Nacional do Sistema Elétrico (ONS)	
14:30	20:30	0:00	2:30	**Modeling the impact of GIC neutral blocking devices on distance protection relay operations for transmission lines** 🇺🇸 Emilio Piesciorovsky, Professional Technical Staff, Oak Ridge National Laboratory GIES	**Projects developed in Smart Grid Group (SG2) Based on OPAL-RT** 🇧🇷 Camila Gehrke, Professor, Universidade Federal da Paraíba (UFPB)	

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15:00	21:00	0:30	3:00	**Voltage Source Converter Models for Real-Time Simulation and HIL Testing of Microgrids** 🇨🇦 Wei Li, Simulation Specialist, OPAL-RT TECHNOLOGIES	**Implementation of a Real-Time Digital Simulation Platform to Train Operators in Phasor Domain (Dynamic Simulator)** 🇪🇨 Diego Alejandro Aguas Revelo, Researcher and Technical Specialist in Power System Operation, CENACE	🇨🇦
15:30	21:30	1:00	3:30	**D&V Electronics: Testing the Future** 🇨🇦 David Eddy, General Manager, D&V Mathieu Hainault, Customer Solutions Architect, OPAL-RT TECHNOLOGIES	**Testbed for Power System Stabilizer Tuning Using Synchrophasor Measurements and eMEGASIM** 🇪🇨 Jaime Cepeda, Technical Development Manager, Operador Nacional de Electricidad CENACE	**New features of RT-LAB: ePHASORSIM, Artemis & eHS** Vincent Lapointe, Product Manager, OPAL-RT TECHNOLOGIES
16:00	22:00	1:30	4:00	**Control algorithm evaluation of stacked low inertia medium voltage inverters using CHIL in Opal-RT environment** 🇺🇸 Rajendra Prasad Kandula, Senior Research Faculty, Georgia Institute	**Multi-FPGA Simulation for Modern Power Systems: Hardware in the Loop Testing** 🇨🇦 Amine Yamane, Power Systems RT Simulation Expert, OPAL-RT TECHNOLOGIES	
16:30	22:30	2:00	4:30	**Automation of Control Validation Using RT-LAB's API** 🇺🇸 Anuradha Ogale, Power Electronics Engineer, Johnson Controls	**HYPERSIM: Co-simulating Cyber-physical Energy Systems for Hydro-Quebec's IEC 61850-based Substation Digitalization Program** 🇨🇦 Chuma Francis Mugombozi, Researcher, Hydro-Québec (Research institute of Hydro-Québec)	
17:00	23:00	2:30	5:00	**Power Electronics Switches Modeling in Real-time and HIL Tests for DERs and Microgrid Studies** 🇨🇦 Syed Qaseem Ali, Team Lead - T&D-DER, OPAL-RT TECHNOLOGIES	**NI & OPAL-RT's platform-based approach to high fidelity, turnkey HIL solutions** 🇺🇸 Dr. Ben Black, Offering Manager - Automotive Validation, NI	**OPAL-RT's Intelligent Mobility: Robotics and off-road Vehicles** 🇨🇦 Dr. Danielle Nasrallah, Technical Lead - Adv. Control & Intelligent Mobility, OPAL-RT
17:30	23:30	3:00	5:30	**Rapid Control Prototyping (RCP) Assessed Boost Mode Operation of a 15 kW SiC-based 380:480 V Matrix Converter** 🇺🇸 Boran Fan, Research scholar, Virginia Tech	**HIL Simulation for Hybrid Electric Vehicles with NI and PI Innovo ECU** 🇧🇷 Bruno Cesar, Integration Specialist, OPAL-RT TECHNOLOGIES	

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18:00	0:00	3:30	6:00	**OPAL-RT TECHNOLOGIES Applications in Control and Energy Systems: Research in Engineering at Saint Mary's University** 🇨🇦 Adel Merabet, Associate Professor, Saint Mary's University	**PI Innovo: Innovation in the Making** 🇺🇸 Dwight Hansell, Vice President of Business Development, PI Innovo
18:30	0:30	4:00	6:30	**Virtual Robotics Training and the Next Generation Workforce** 🇺🇸 Jennifer Javornik, Vice President, Filament Games	**Motor Control Software testing and Validation using OPAL-RT HIL** 🇺🇸 Rambabu Surada, Engineer - Motor Controls Team, Lucid Motors
19:00	1:00	4:30	7:00	**PNNL Cyber-physical research laboratory overview and co-simulation case study of a Hardware-in-the-loop (HIL) microgrid for cybersecurity experimentation** 🇺🇸 Aditya Ashok, Senior Research Engineer, Pacific Northwest National Laboratory	**Proud Users: Karma Automotive** 🇺🇸 Dr. Geng Niu, Director - eDrive and Power Electronics, Karma Automotive Saleh Ziaieinejad, Algorithm Design Engineer (Motor Controls), Karma Automotive
19:30	1:30	5:00	7:30	**Real-time Applications in Australia: Project Overviews, Trends and Perspectives** 🇦🇺 Christy Genganantha, Australia and New Zealand Channel Manager, OPAL-RT TECHNOLOGIES Dr. Georgios Konstantinou, Senior Lecture, UNSW Dayan Rathnayake, PhD Candidate, Monash University	
20:00	2:00	5:30	8:00	**Real-Time Synthetic Network of the Australian National Electricity Market** 🇦🇺 Felipe Arrano-Vargas, PhD Candidate, UNSW Sydney	
20:30	2:30	6:00	8:30		
21:00	3:00	6:30	9:00	**Real-time Applications in Asia: Project Overviews, Trends and Perspectives** Benoit Marcoux, Business Development Manager – Asia, OPAL-RT TECHNOLOGIES	**Keliang's Developments in Real-time Simulation Industry [Mandarin]** 🇨🇳 Yijun Zou, Vice-President, Shanghai Keliang Information Tech. & Co.,Ltd.

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21:30	3:30	7:00	9:30		**A Glimpse of Recent Applications in Real-time Simulation: Multi-domain and Multi-timescale Co-Simulation [Mandarin]** Weihua Wang, Chief Representative of Asia-Pacifc Technical Center, OPAL-RT TECHNOLOGIES
22:00	4:00	7:30	10:00		**Key Technology & Real-time simulation of Demand-sided Integrated Energy [Mandarin]** Guixiong He, Power Consumption & Energy Efficiency Research Institute of CEPRI
22:30	4:30	8:00	10:30		**Real-time simulation of HVDC [Mandarin]** Chang Lin, Chief Engineer, Simulation Center of Global Energy Interconnection Research Institute Co., Ltd (GEIRI)
23:00	5:00	8:30	11:00		**HIL of Islanded HVDC microgrid Mandarin]** Hongbiao Li, Manager of integrated enery department, Keliang
23:30	5:30	9:00	11:30	**Real-time Applications in India: Project Overviews, Trends and Perspectives** Girish Najundaiah, General Director, OPAL-RT India	**Real-time simulation testing of integrated energy [Mandarin]** Hongbiao Li, Manager of integrated enery department, Keliang
00:00	6:00	9:30	12:00	**Simulation of ERG, PGCIL System Using ePHASORSIM on RT-LAB platform: Overview and Issues** Dr. Sanjoy Kumar Parida, Associate Professor, IIT PATNA	
00:30	6:30	10:00	12:30	**Application of Fractional Order PID Controller for Power Quality Improvement Under Non-Stationary Load Conditions** Bharat Singh Rajpurohit, Associate Professor, Indian Institute of Technology Mandi	

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01:00	7:00	10:30	13:00	Hardware Implementation of AC/DC Microgrid Using OPAL-RT Sukumar Mishra, Professor, IIT Delhi	Simulation and Modeling of offshore Wind Farm [Mandarin] Wenming Gong, PhD, Senior Engineer, EPRI of China Southern Grid
01:30	7:30	11:00	13:30	HIL Simulation for Control Applications Dr. Amitava Gupta, Professor, Jadavpur University Kolkata	HIL simulation for large-scale integrated grid [Mandarin] Linlin Wu, Deputy Director, Smart Grid & New Energy Institute of China North EPRI
02:00	8:00	11:30	14:00	Power Electronics Applications for Hydropower Plants Thanga Raj Chelliah, Associate Professor, Indian Institute of Technology Roorkee	Using HIL Simulation in Testing of Photovoltaic Applications [Mandarin] Xiaolin Zhang, Nanjing New Energy Institute of CEPRI
02:30	8:30	12:00	14:30	Realization of Hybrid Nine-Level Inverter Using RT-LAB in HIL Sanjiv Kumar, Assistant Professor, Harcourt Butler Technical University	Real-time Simulation: Evolution, Projects and Perspectives in Europe Timo Roesch, Director Business Development and Marketing, OPAL-RT Germany Yoann Mougenot, Sales Director, OPAL-RT Europe
03:00	9:00	12:30	15:00	Electric Vehicles Chargers Dr. Mukesh Singh, Associate Professor, Thapar University Patiala — Modern Power Systems: New Dynamics and New Tools Antonello Monti, Director of the Institute for Automation of Complex Power Systems, E.ON Energy Research	SESLAB, a Virtual Environment for Developing and Testing Smart Energy Systems Pedro Rodriguez, Professor, LOYOLATECH - Universidad Loyola — AIT's Approach for System Level Testing and Validation of Smart Grid Applications Catalin Gavriluta and Georg Lauss, Research Engineers, AIT Austrian Institute of Technology

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03:30	9:30	13:00	15:30		**Testing of PAC Solutions in HIL Using HYPERSIM** João Saragoça, PAC Systems Researcher, R&D Nester	**Specialized Inverter Controls, Testing and Multi-domain Simulation at FIEK's Lab in Budapest** David Raisz, Associate Professor - Head of Lab, Budapest University of Technology and Economics (BME)	**Performance Validation of A Novel Single-Phase Micro-inverter for PV Systems Using Real-Time Simulation** Mahmoud Gaafar, Assistant Professor, APEARC - Aswan University
04:00	10:00	13:30	16:00		**Power Grid Simulation and Impedance Spectroscopy** Gernot Pammer, CTO, EGSTON Power Electronics GmbH	**ROCOF-based Under Frequency Load Shedding in Low Inertia Power Systems** Frigo Guglielmo, PostDoc Researcher, EPFL Yihui Zuo, Phd Student, EPFL	**Current-type Power Hardware in the Loop (PHIL) Evaluation for Smart Transformer Application** Sante Pugliese, Post-doctoral researcher, Kiel University
04:30	10:30	14:00	16:30	**Implementation of Distribution Network State Estimator Using Hybrid Measurements from IIT's Kanpur 11KV Network Modeled in HYPERSIM** Rajarshi Dutta, PhD Scholar, IIT KANPUR	**Power-Hardware-in-the-Loop Tests of DC Systems in Scaled Laboratory Environments** Marc René Lotz, Research Associate, Ostfalia University of Applied Sciences	**Development of a Technical Ancillary Services Controller in Real-time Co-simulation Platform** Katja SIRVIÖ, Project researcher - VEBIC FREESI, University of Vaasa	**Hardware-in-the-Loop Relay Testing with Reduced GB Transmission System Model** Peter Imris, Research Assistant, Brunel University London
05:00	11:00	14:30	17:00	**Real-Time Communication in a Hybrid Microgrid System with Centralized Control System Under Power Imbalance** Dinesh Varma Tekumalla, Research Scholar, Indian Institute of Technology Kharagpur	**DC Grid Protection Demonstration** Philipp Ruffing, Team Leader DC Systems, RWTH Aachen University	**ANSI 21 Distance Relay HIL Testing** Joaquin Pulido, Electrical Design Engineer, SCLE SFE	**Real Time Simulation of Wind Turbines for HIL Testing at the Dynamic Nacelle Laboratory** Adam Zuga, Automation Engineer and Group Leader, Fraunhofer IWES

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05:30	11:30	15:00	17:30	**Importance of Power System Simulations in Real Time** — Preeti Gupta, Research Scholar, UIET Panjab University	**Hybrid RCP and PHIL Setup for Parallel Converters for Analysis and Damping of Subsynchronous Oscillations** — Malte Eggers, Research Assistant, Technische Universität Berlin	**Multi-Agent-Based Real-Time Infrastructure for Energy: Modeling and Simulation of a Farm Microgrid** — Dr. Pedro Faria, Researcher, Polytechnic of Porto	
06:00	12:00	15:30	18:00	Design and Development of Advanced Research Modules in Power Electronics Applications for Power Systems — Pavitra Shukl, PhD Research Scholar, Indian Institute of Technology Delhi	**Experimental Verification of Smart Grid Functions with Hardware-in-the-Loop Simulations** — Rajkumar Palaniappan, Research Assistant, TU Dortmund	**Real-time Cost Optimisation for Power Management in Microgrids** — Marcos Eduardo Cruz Victorio, PhD Student, Durham University	Early-stage Development of Adaptive Mechatronic Systems Through Simulation-based Optimization and Mechanical Hardware-in-the-Loop Testing — Jonathan Millitzer, Group Manager Active Control, Fraunhofer LBF
06:30	12:30	16:00	18:30	**Lights off as a Tribute to Health System Heroes: Opportunities to Improve Grid Security with Real-time Simulation Technology** — Shravana Musunuri, Team Leader, OPAL-RT India	**Multi-FPGA Real Time Simulation of Power Electronics Systems** — Andrea Benigni, Professor, Forschungszentrum Jülich	**Ancillary services in distribution systems: modeling and validation with RT-LAB** — Grazia Todeschini, Senior Lecturer, Swansea University	**Real-time Evaluation of Grid Service Virtualization for Resilient Operation of Power Systems** — Felipe Castro and Carsten Krueger, OFFIS - Institute for
07:00	13:00	16:30	19:00	**Recent Developments and Applications of JMAG-RT: A High-fidelity Motor Model for HIL/MIL** — Takashi Yamada, CTO, JMAG Div. / JSOL Corp.	**The Design of a Fast Hardware-in-the-Loop Framework to Perform High Frequency Interdependency Phenomena** — Matthias Klee, Research Assistant, Fraunhofer IEE	**Design of a Cyber-physical Co-simulation Platform for a Digital Substation** — Stephan Ruhe, Research Associate, Fraunhofer IOSB-AST	**HIL tests: Possibility for Verification of Functional Safety in Safety-critical Systems** — Gotz Dittmar, Interim Manager, Götz Dittmar Interim Management
07:30	13:30	17:00	19:30				
08:00	14:00	17:30	20:00	RT20 Closing Session — Jean Belanger, CEO & CTO, OPAL-RT TECHNOLOGIES; Pierre-Francois Allaire, VP Sales & Marketing, OPAL-RT TECHNOLOGIES			

On Demand Presentations

Some of RT20 speakers have created on demand video presentations for you to access at any time! On demand presentations will be available at the beginning of the event.

Automating RT-LAB PHIL Experiments to Conduct DER Interconnection Conformance Tests, Parametrized Fault Experiments, and Cybersecurity Research 🇺🇸 Jay Johnson, Principal Member of Technical Staff,and Adam Summers , Member of Technical Staff. Sandia National Laboratories	**Digital and Analog Hybrid simulation of Large-scale AC/DC Grid** 🇨🇳 Yiying Zhu, Director of Digital and Analog Hybrid Simulation Laboratory of Simulation Center, China Electric Power Research Institute	**Real Time Validation of Wind Energy Conversion Systems Under Wind Speed Conditions in Tamaulipas, Mexico** 🇲🇽 Nadia M Salgado-Herrera, Associate Researcher, Instituto de Energías Renovables (IER-UNAM)
Hardware Implementation of Direct Power Control Schemes on RT-LAB Platform 🇮🇳 Monalisa Pattnaik, Assistant Professor, NIT ROURKELA	**Rapid Control Prototyping Platform for Muliphase Series Capacitor Converter** 🇪🇸 Oihane Cunado, APERT research team collaborator student, UPV EHU	**Why OPAL-RT's Technology is the Best Solution for Evaluation of PEM Fuel Cells** 🇷🇴 Raboaca Maria Simona, ICSI, Romania
Innovative SCADA Cybersecurity Training Using Network Digital Twins 🇺🇸 Lloyd Wihl, Director, Application Engineering, Scalable Network Technologies	**HIL Testbed: Designing Grid Codes and Ancillary Services to Electric Vehicle Mobile Energy Storage** 🇯🇵 Yutaka Ota, Professor, Osaka University	**Real-Time Cyber-Physical Simulation of the Electric Power Grid** 🇨🇦 Shijia Li, Team Lead - Protection & Smart Grid, OPAL-RT TECHNOLOGIES
PHIL Testing Experience at KIT: Experimental Validations of New Technologies 🇩🇪 Sebastian Hubschneider, Research Associate, Karlsruhe Institute of Technology (KIT)	**Power Hardware In the Loop Infrastructure at KIT: Research Focus and Testing Possibilities** 🇩🇪 Simon Waczowicz, Head of Research Platform Energy, Karlsruhe Institute of Technology (KIT)	**Considerations for Performing Power-Hardware-in-the-Loop Based Motor Emulation: Modeling and Control** 🇨🇦 Amit Kumar KS, Graduate Research Assistant - PHIL R&D, OPAL-RT TECHNOLOGIES
A Real-time Pedagogical Platform for Protection Relaying Study 🇩🇿 Mohammed Latroch, Doctoral student, National Polytechnic School of Oran (ENPO - Maurice Audin)	**Using HYPERSIM's New Power Electronics Library to Simulate a Home On-Grid PV Panel System** 🇨🇦 Leonardo Montealegre, Researcher, Hydro-Québec Research Institute	**STATCOM Real-Time Implementation Based on a Novel Cascaded Multilevel Converter Topology** 🇧🇷 Renner Sartório Camargo, Professor, Instituto Federal do Espírito Santo
A Novel Technique of Maximum Power Point Tracking Controller for Real-time Wind Energy Systems 🇮🇳 Mohammad Junaid Khan, Assistant Professor, MEC Nuh Haryana	**Hardware-in-the Loop Simulation for Tuning and Testing** 🇹🇷 Özgür Tanidir, Senior Researcher, TUBITAK	**A multiphysics real-time simulator for model-based design of a DC shipboard microgrid** 🇮🇹 Giacomo-Piero Schiapparelli, PhD Student, University of Genova
NERGICA | How digital twins can contribute to the effective integration of renewable energy in off-grid networks (Available at 18:00 EDT) 🇨🇦 Ege Dundar, Research and innovation analyst, Nergica	**Real time implementation of Power Electronics Systems Using OPAL-RT** 🇮🇳 Dr. Abdul Hamid Bhat, Professor, NIT Srinagar, J & K	

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The company's business covers the full life cycle of projects, including requirements analysis, collaborative development, model-based system R&D consulting, system integration & project implementation, training, and on-site technical services. After years' accumulation and dedication, KeLiang has bloomed into a market-leading supplier in the industry, offering professional engineering services and simulation & test systems like Integrated Energy Simulation System (IESS), SIL. PRCP, PHIL, TestBench and so on.

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Imperix develops high-end control equipment and prototyping hardware for power electronics, drives, smart grids and related topics. Its products are designed to accelerate the implementation of laboratory-scale power converters and facilitate the derivation of high-quality experimental results. The company also offers various levels of integration services, ranging from the delivery of plug-and-play hardware and software to that of fully customized systems involving specialized control software algorithms.

Austrian-based EGSTON Power Electronics offers a revolutionary Digital Power Amplifier System for P-HIL applications. This system offers a full span bandwidth of 5kHz and can generate harmonics up to 15kHz. A modular design allows power ratings up to 1,2 MVA. The COMPISO P-HIL System offers full flexibility and can be used as an AC source/sink, DC source/sink, smart grid, aerospace grid, PV-panel, battery or electrical machine emulator.

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Pi Innovo has over 25 years of systems, controls, software and electronics design engineering experience for production and prototype applications.

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Bronze sponsors

Based in Culver City, California, SCALABLE provides network design, modeling and analysis tools, cyber training systems and engineering support services to commercial enterprises, government and defense agencies, research organizations and educational institutions around the world.

SCALABLE solutions integrate simulated virtual network models with physical hardware and applications, allowing users to reduce the time, cost and risks of developing, testing and deploying large, sophisticated wired and wireless networks and new communications equipment, and train personnel on cyber defense. More information on the company is available at scalable-networks.com.

OFFIS has been founded in 1991 and is an application-oriented institute conducting basic research through to transfer of results bringing solutions to the industry. For many years OFFIS has been researching and developing ICT-based concepts and prototypical systems for the energy industry and energy efficiency. Thus, for example decisive contributions were made to the IT/OT integration of decentralized generator units into an energy management, for the energy efficiency in the IT from the computer chip to the computer center and for the management of large IT system landscapes in the energy supply which conform to the standards. To validate user-oriented and application-oriented solutions, OFFIS established living labs infrastructures such as "Smart Energy Simulation and Automation (SESA) – Lab" with its unique capability for multi-domain large scale real-time simulations.

OMICRON is an international company serving the electrical power industry with innovative testing and monitoring solutions. The application of our products allows users to assess the condition of the primary and secondary equipment on their systems with complete confidence. Customers in more than 160 countries rely on our high quality products on a daily basis.

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Neosoft Technologies is a software and electronic engineering company specialized in system integration involving instrumentation and control. Neosoft has proven its expertise in a variety of system delivered including high-speed data acquisition and analysis, embedded systems, machine vision system, Hardware-in-the-loop (HIL) simulators, automated test systems (ATE), database and geographic information system (GIS) systems. Neosoft have a great team of qualified professionals in the field of Software and Electronics ready to help for your simple and complex projects.

Propulsion Québec mobilise tous les acteurs de la filière autour de projets concertés ayant pour objectif de positionner le Québec parmi les leaders mondiaux du développement et du déploiement des modes de transport terrestre favorisant le transport intelligent et électrique. Créé en 2017, cette grappe compte aujourd'hui près de 160 membres de différents secteurs et déploie ses ressources selon sept chantiers distincts visant à développer et soutenir des projets innovants. La grappe bénéficie de l'appui financier du gouvernement du Québec, du gouvernement du Canada, de la Communauté métropolitaine de Montréal (CMM), du Fonds de solidarité de la FTQ et de la Ville de Québec.

D&V Electronics designs and manufactures leading edge test solutions for all components of an electrified powertrain and for all stages of the product life cycle, from R&D through to end of line production and aftermarket. Its worldwide customer base includes OEMs, Tier 1 & 2 manufacturers, universities, government institutions and test centers. D&V Electronics has supplied high quality testing expertise, technology, and support to customers in over 90 countries for over 20 years.

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Festo Didactic is the world-leading provider in the field of technical education. As a global partner for educational institutions, governments, state organizations and companies around the world, we design and implement training centers and laboratories, educational equipment and programs that train people to perform in highly dynamic and complex environments.

The product and service portfolio offers customers holistic education solutions for all areas of technology in factory and process automation, such as pneumatics, hydraulics, electrical engineering, power systems, renewable energies, production technology, mechanical engineering, mechatronics, CNC, HVAC and telecommunications.

SPHEREA PUISSANCE PLUS

In a world where dependence on fossil energy will greatly decrease during the century, PUISSANCE PLUS puts its unique know-how at the service of the challenges of energy transformation and the e-mobility of the world of tomorrow. To meet these challenges, PUISSANCE PLUS relies on its technological innovation capabilities, the main driver of its growth.

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comemso is an innovative company that has established itself in the automotive and e-mobility sector. We are happy to get customer requirements as the basis for new products, complement them with our innovative know-how and thus create new systems with outstanding functions.

QUANSER — INNOVATE·EDUCATE

Quanser is the world leader in innovative technology for engineering education and research. With roots in control, mechatronics, and robotics, Quanser is at the forefront of the global movement in education transformation in the face of unprecedented opportunities and challenges triggered by autonomous robotics, IoT, Industry 4.0, and cyber-physical systems. Quanser is unique in its approach. Deploying an extensive portfolio of advanced technology and IP, Quanser has distinguished itself as the only commercial organization that offers a comprehensive, academically sound platform for delivering programs in these progressive fields in a timely and rational way. Increasingly Quanser is playing a leadership role within the global community of progressive education leadership as our academic achievements have positioned the company as true colleagues as opposed to conventional vendors.