HIL2GO | Delivered faster than ever

At OPAL-RT, we get it: efficiency, reliability, and speed are everything in today's fast-paced engineering world. That's why we're here to reduce the delays and bottlenecks, so you can focus on what truly matters—pushing boundaries and realizing your vision.

Introducing our 4 game-changing bundles, "**HIL2GO.**" Designed to accelerate your journey from concept to implementation, these bundles empower you to kickstart your testing and validation instantly.

Our mission is simple: to democratize real-time simulation, breaking down barriers and making advanced capabilities accessible to engineers and innovators everywhere. Dive into our bundles, each a testament to our expertise, dedication, and commitment to your success.

Fast delivery

In addition to fast delivery in under just **4 weeks**, the bundle comes with a quick start guide for rapid system setup.

Affordable

Get real-time simulation at **reduced prices** with our standard configurations, making advanced technology accessible to all.

Training

Access our learning management system **for free**, with all the resources and training you need to maximize the potential of our products.

Support

Receive digital support and **localized assistance** from our expert team, standing by your side every step of the way to help you achieve success.
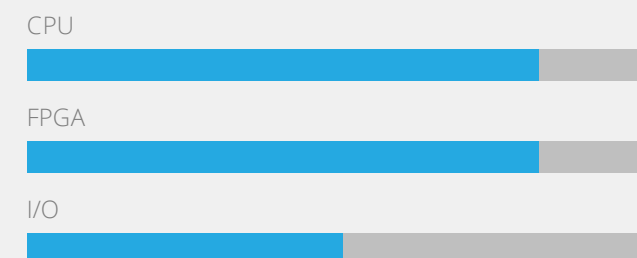
The HIL2GO hardware platforms.

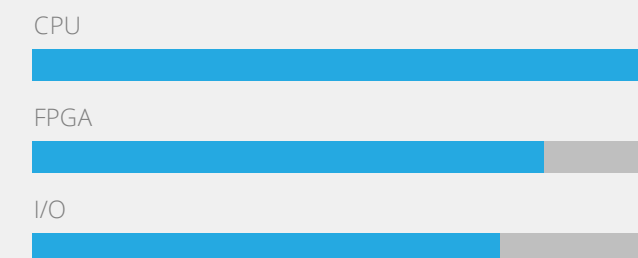### Entry-level
H2G-100

Best performance at an affordable price.

OP4512

CPU
FPGA
I/O

Compact mid-range
H2G-200

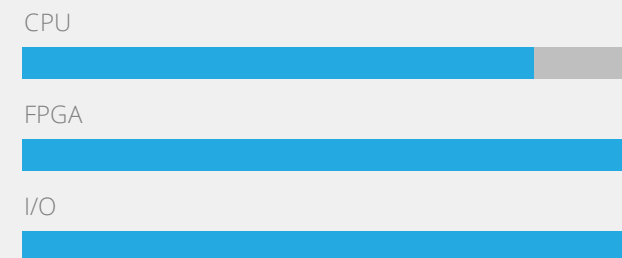A powerful all-in-one solution for HIL & RCP.

OP4610XG

CPU
FPGA
I/O

Modular & expandable for power electronics
H2G-310

Remarkable for high-frequency power electronics.

OP5020XG + OP4810-IO

CPU
FPGA
I/O
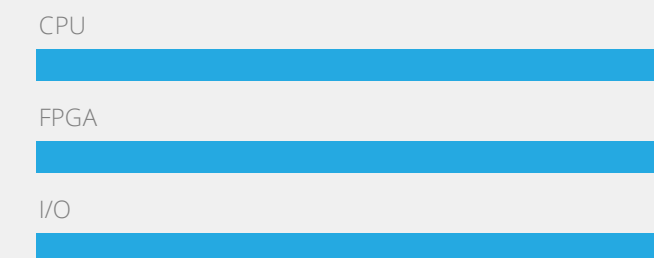
Modular & expandable for power systems
H2G-410

Ideal choice for large-scale power systems.

OP5025XG + OP4810-IO

CPU
FPGA
I/O

HIL2GO | Software Platforms

Real-time simulation software platforms for innovation.

HIL2GO comes with our advanced, flexible, and scalable software platform RT-LAB or HYPERSIM. OPAL-RT software platforms allow engineers to address the 2 major factors currently affecting product development across all industries: time-to-market and increasing system complexity.

### Bring Simulink® models to real time with RT-LAB.

Fully integrated with MATLAB/Simulink®, RT-LAB enables Simulink models to interact with the real world in real-time. This makes RT-LAB ideal for engineers needing to rapidly develop and validate their applications in real-time, regardless of complexity.
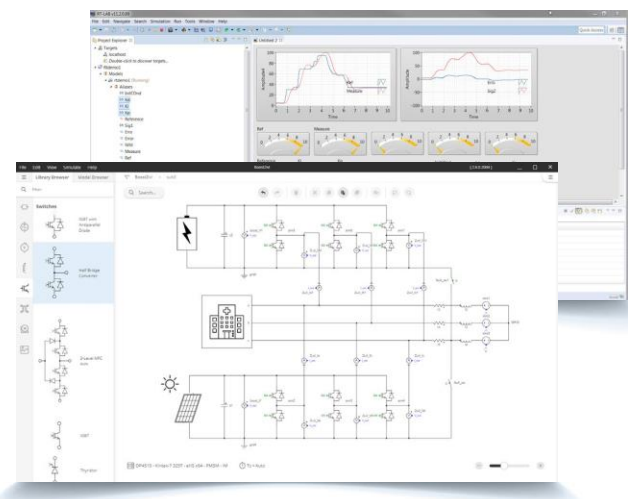
HYPERSIM: The power system simulator of tomorrow.

With its efficient signal processing and powerful test automation capabilities, HYPERSIM helps engineers model their microgrid simulation project in one tool, run accelerated simulations for in-depth EMT analysis on their personal computer, and move to real-time for large-scale Hardware-in-the-Loop (HIL) testing.
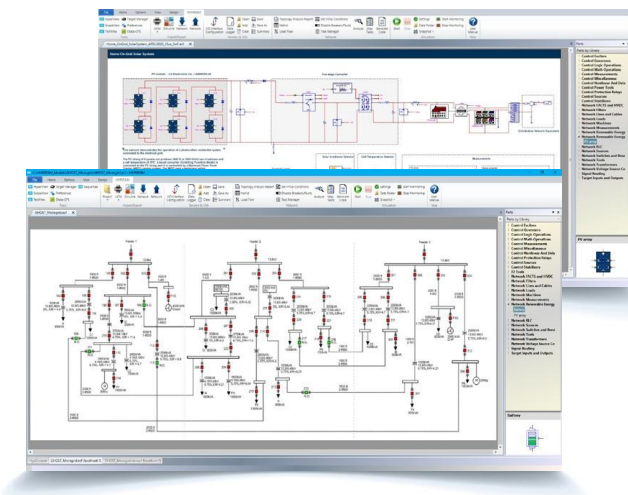
Work with the fastest FPGA-based power electronics toolbox in the industry.

Each HIL2GO comes with eHS—a generic and reprogrammable FPGA-based electrical solver that simplifies FPGA usage for HIL simulation, without the need for coding or mathematical modeling.

eHS High-Performance (Gen5): Redefining speed, power, and accuracy of real-time FPGA simulation.

The new generation of eHS, eHS Gen5, offers outstanding simulation speed and accuracy, for a wide range of high-frequency converter applications. Its **90ns time step and 625ps gate pulse sampling resolution** make it ideal for real-time simulation of user-defined resonant converter topologies.

No decoupling

Avoid instabilities and the manual struggles of artificially decoupling networks. Run up to 21 3-phase converter models (128 switches) or 250 grid nodes @ 500 ns on the same FPGA core.
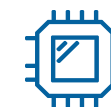
FPGA cores scaling

Have larger models or need to run faster? Efficient parallelization algorithms ensure you can connect multiple FPGA-based simulators.

Picosecond oversampling

625ps oversampling with interpolating converter models ensures the highest sampling resolution and accuracy available.

Co-simulation ready

Combine performance and capability, reserving the FPGA for high frequency switching modeling, and CPU for larger network system simulation.

A streamlined user interface.

A modern Schematic Editor facilitates modelling of power electronics and assignment of analog/digital I/Os. Integrated with Simulink and HYPERSIM, controls can also be virtualized for Software-in- the-Loop (SIL) testing.
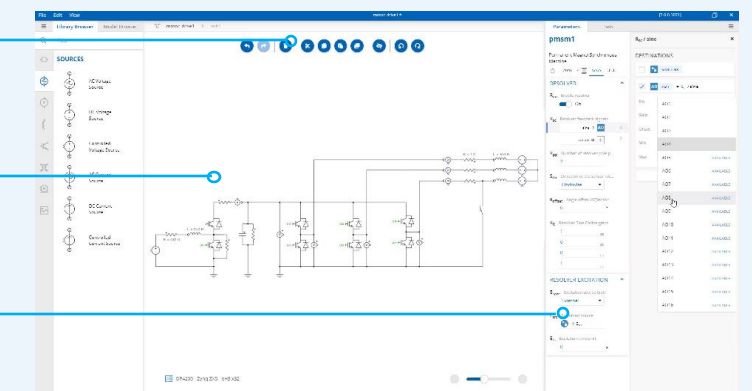
Button Header
Complete diagram actions quickly and easily.

Work Area
Easily assemble and manipulate models.

**Parameters Side Bar**
Edit parameters of the selected components.

HIL2GO | Technical specifications

	Entry-level H2G-100	Compact mid-range H2G-200	Modular & expandable H2G-310	Large-scale HIL H2G-410
General				
Hardware platform	OP4512	OP4610XG	OP5020XG + OP4810-IO	OP5025XG + OP4810-IO
Software platform	RT-LAB	RT-LAB	RT-LAB	HYPERSIM
CPU cores	Intel 4 cores – 3.7 GHz	AMD 6 cores – 3.8 GHz	Intel 4 cores – 3.7 GHz	AMD 6 cores – 3.8 GHz
FPGA	Kintex7® - 410T	Kintex7® - 410T	VERSAL® VM1302 – 703K	VERSAL® VM1302 – 703K
HOST license	✓	✓	✓	✓
Real-time core activated	3 cores	3 cores	3 cores	Hypersim Core Basic 60 single-phase nodes (expandable to 240 single-phase nodes)
Software toolbox	eHSx16 Standard	eHSx16 Standard	eHSx16 Standard	eHSx16 Standard
I/O				
Digital	32 DIO	64 DIO	64 DIO TTL	32DI 30V/32DO 30V
Analog	16 AIN – 2 MSPS 16 AOUT – 1MSPS	16 AIN – 2 MSPS 16 AOUT – 1MSPS	32 AIN – 5 MSPS 32 AOUT – 10 MSPS	16 AIN – 2 MSPS 48 AOUT – 1MSPS
Total I/O counts	64	96	128	128

Benefit from over 25 years of real-time simulation experience.

E-learning: take your skills to the next level.
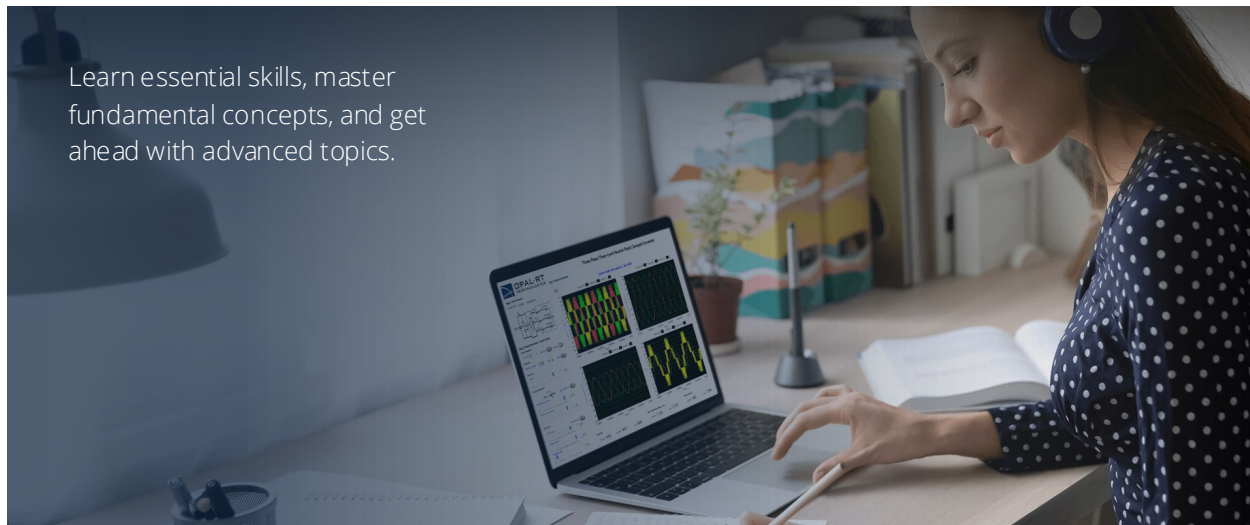
Learn essential skills, master fundamental concepts, and get ahead with advanced topics.

Each **HIL2GO** comes with **free access to our e-learning platform**, providing practical and theoretical training on crucial tools and methodologies for real-time simulation and Hardware-in-the-Loop (HIL) testing of critical systems.

Tutored e-learning

An online training course that includes remote Q&A time with an OPAL-RT instructor.

Self-paced e-learning

An online training course that is taken at your own pace. Self-paced e-learning courses are free for OPAL-RT customers.

Helping the world build better products.

Here at OPAL-RT, we empower engineers and researchers with accessible, cutting-edge, real-time simulation technology to accelerate the development of better products and more reliable energy transmission.

Since 1997, industries including automotive, aerospace, power electronics, and power generation have increasingly turned to us, transforming our company into a world leader in real-time simulation and Hardware-in-the-Loop (HIL) testing equipment for electrical, electro-mechanical, and power electronics systems.


* Part of customers.

We're here to make sure that you get the most out of your OPAL-RT real-time system.

From design to commissioning, consulting, training, and maintenance, OPAL-RT can help you all the way through your real-time project, ensuring its success.

We offer professional services to address all levels of engineering, simulation, and rapid prototyping challenges in aerospace, automotive design, robotics, advanced control, process control, and electromechanical systems.

Our pride: The trust of industry leaders worldwide.
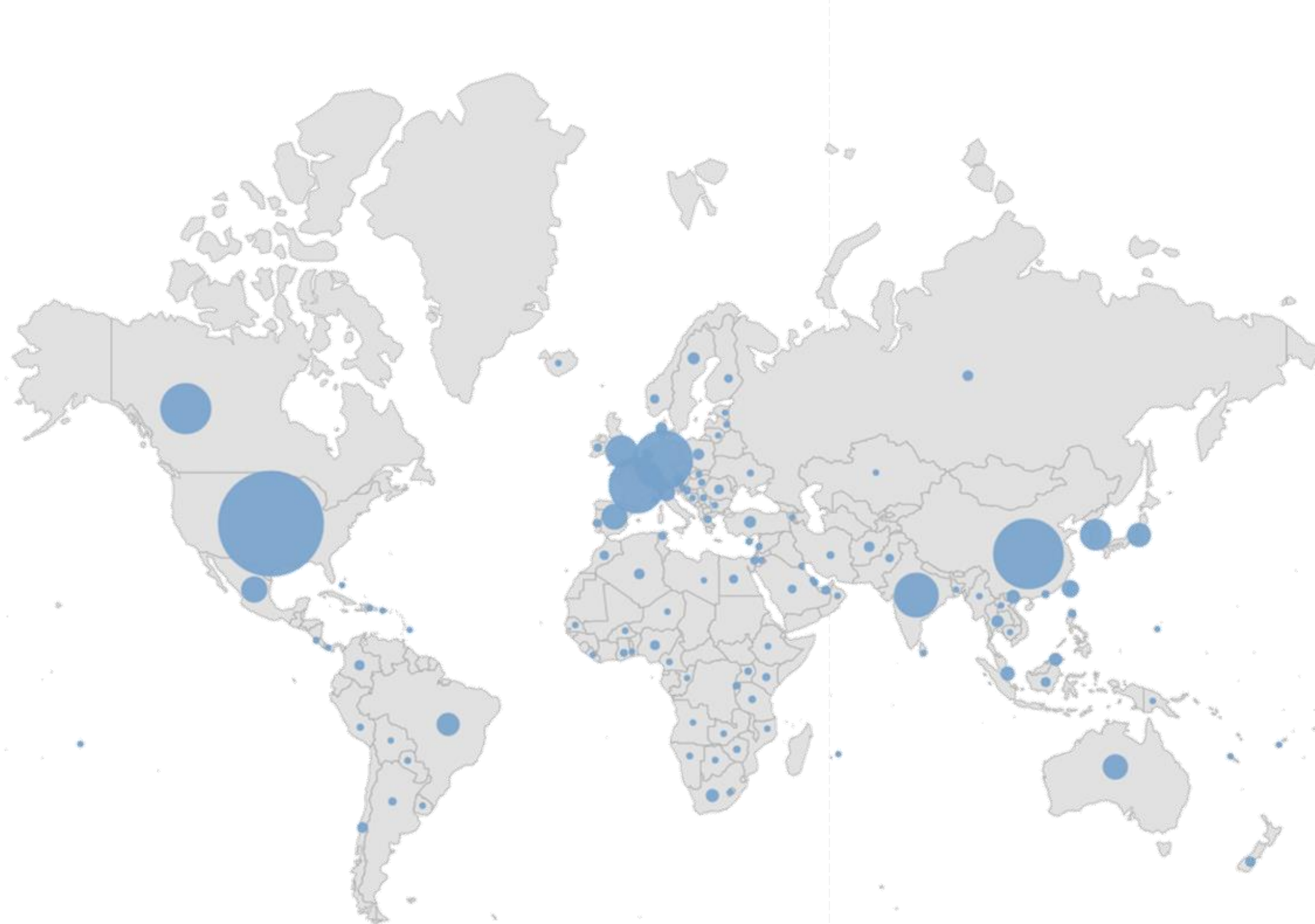
8000+

Since 1997, OPAL-RT has earned the trust of over 8000 customers, including Fortune 500 companies, academic institutions, and laboratories. *

9000+

Our key products has earned over 9000 mentions in technical papers. This impressive number represents the recognition of the academic field. **

117

Thousands of users currently run OPAL-RT in 117 countries and regions around the world. *

*   Data Reference: OPAL-RT Customer System (2024 JUN).
** Data Reference: Google Scholar results of RT-LAB, HYPERSIM and OP5700 (2024 JUN).

About Us

Founded in 1997, OPAL-RT TECHNOLOGIES is the leading developer of open real-time digital simulators and Hardware-In-the-Loop testing equipment for electrical, electro-mechanical, and power electronic systems.

OPAL-RT simulators are used by engineers and researchers at leading manufacturers, utilities, universities, and research centres around the world.

OPAL-RT's unique technological approach integrates parallel distributed computing with commercial off-the-shelf technologies.

The company's core software, RT-LAB and HYPERSIM, enables users to rapidly develop models suitable for real-time simulation, while minimizing initial investment and their cost of ownership. OPAL-RT also develops mathematical solvers and models specialized for accurate simulation of power electronic systems and electrical grids. RT-LAB, HYPERSIM, and OPAL-RT solvers and models are integrated with advanced field programmable gate array (FPGA) I/O and processing boards to create complete solutions for RCP and HIL testing.

OPAL-RT
TECHNOLOGIES

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