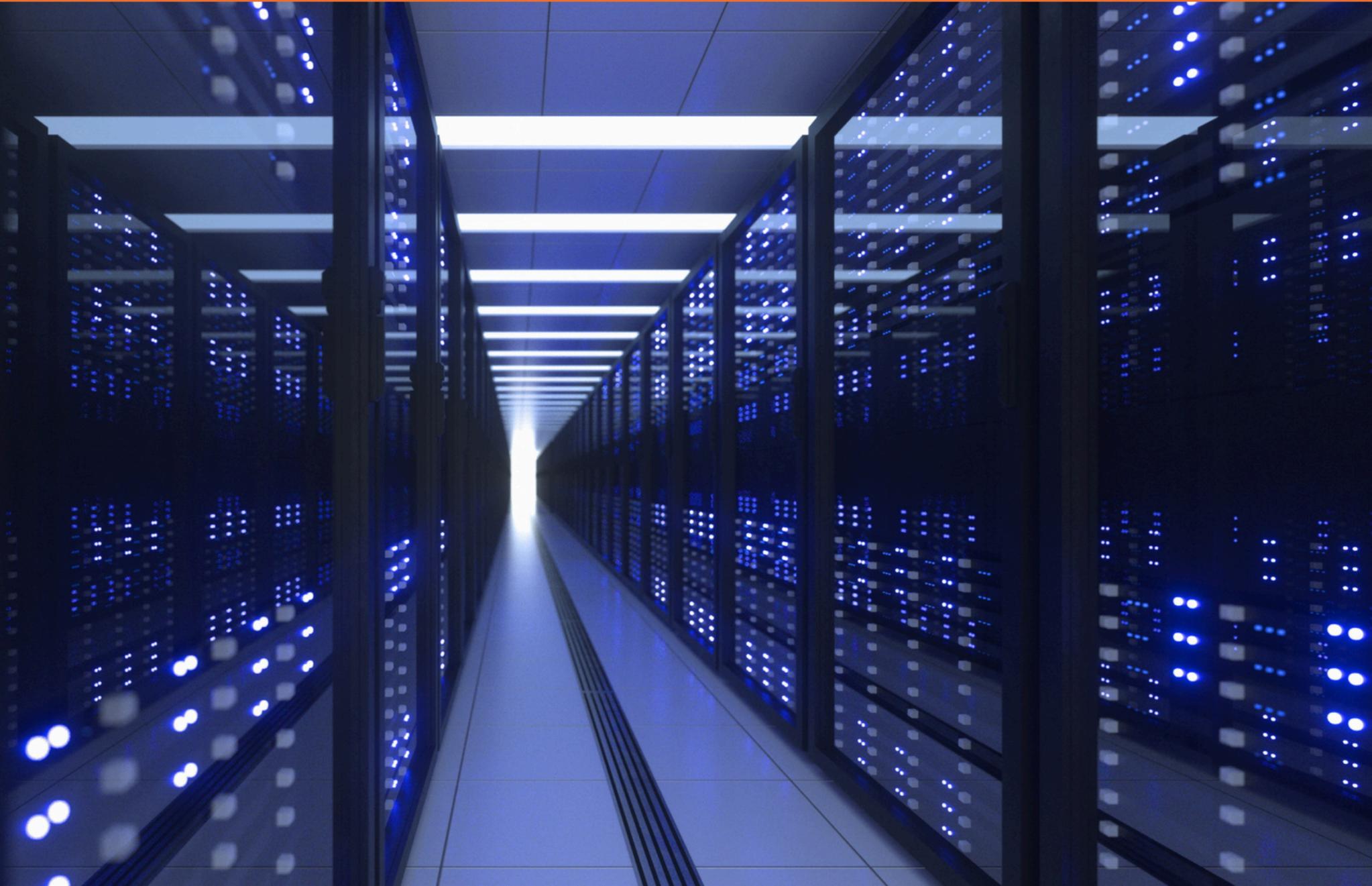


Data Center Real-Time Controller | iT-2000



EMS

Energy-Management-System

+

PMS

Power-Management-System

+

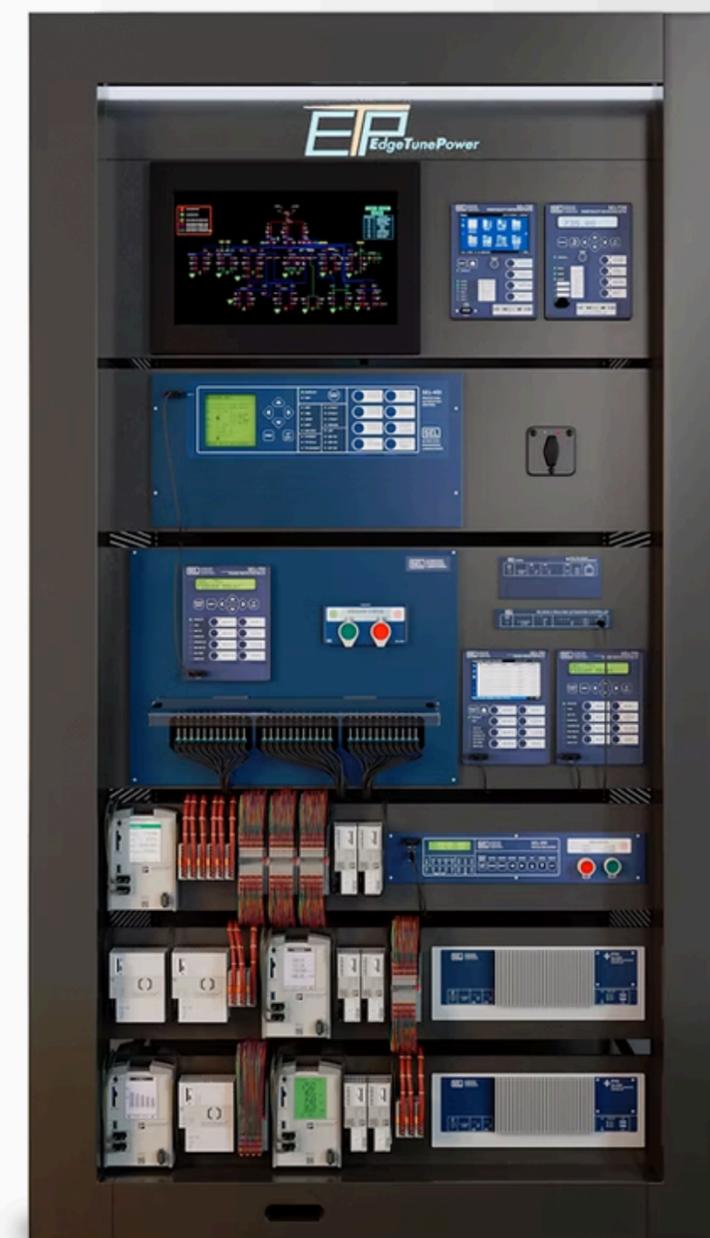
PPC

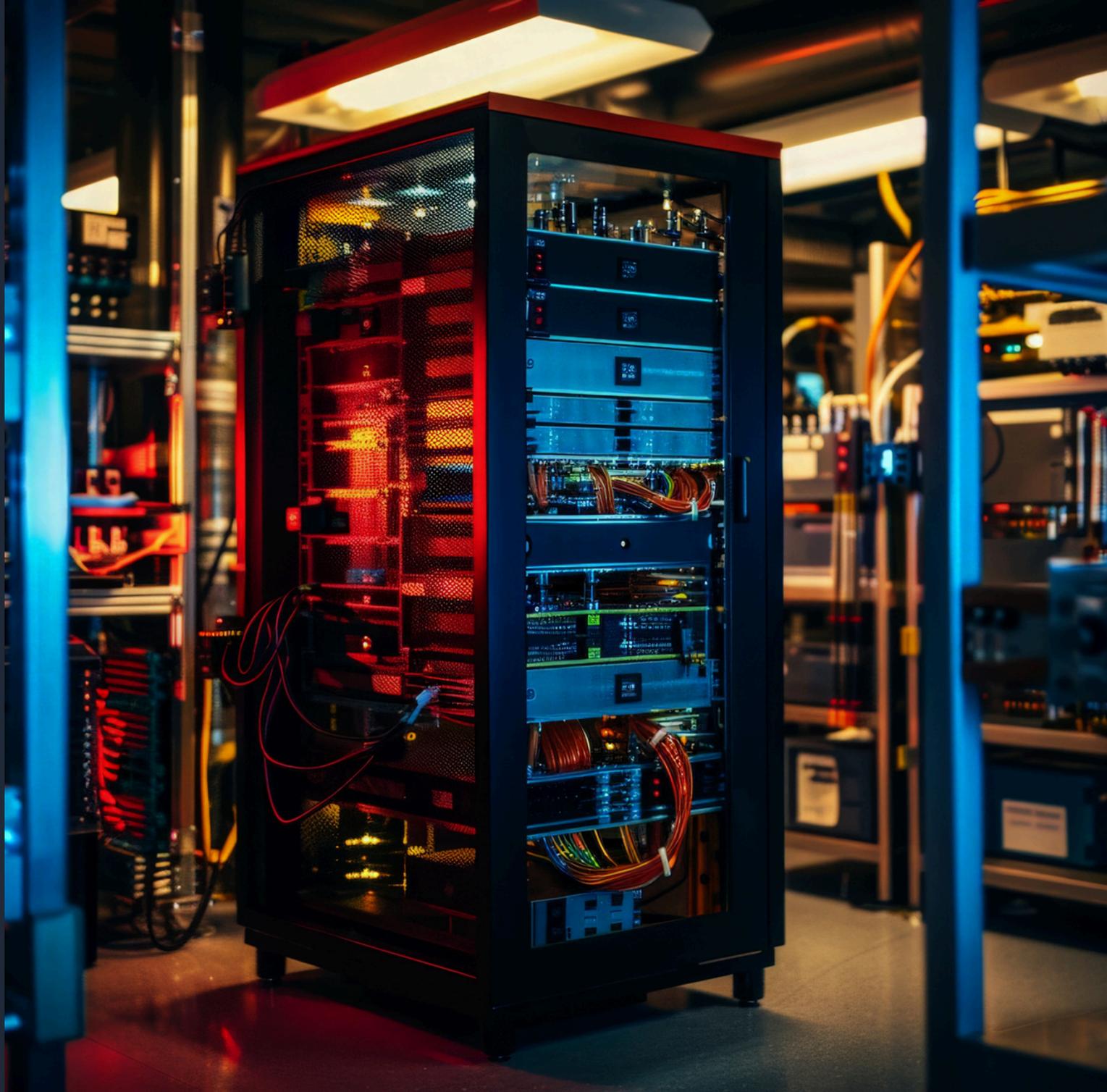
Power-Plant-Controller

End-to-End Control System

Revolutionizing Power Management for Mission Critical and Modern Applications

The iT-2000 Platform is a cutting-edge management solution that integrates Energy-Management-System (EMS), Power-Management-System (PMS), and Power-Plant-Controller (PPC) functions into one seamless platform. Designed for the complex demands of MW-level IBR-dominated systems, off-grid hydrogen production, and data centers, it ensures reliability, efficiency, and sustainability across operations.





COMPREHENSIVE CONTROL SYSTEM

EMS (Energy Management System):

Employs advanced optimization algorithms to balance energy flow efficiently, reducing waste and lowering costs. This ensures that energy is directed to where it's needed most, enhancing overall system performance.

PMS (Power Management System):

Focuses on maintaining operational continuity through real-time load balancing and adaptive control mechanisms. It prevents downtime even during peak power demands or sudden fluctuations.

PPC (Power Plant Controller):

Manages seamless coordination between energy generation, storage systems, and loads (dynamic/static). This ensures stability even when integrating intermittent renewable energy sources like solar or wind and intermittent data centres.

TAILORED FOR DIVERSE APPLICATIONS



Data Centers

- The iT-2000 optimizes power flow for high-density IT loads and cooling.
- It provides real-time monitoring of Data Centre GPUs, E-statcom Solutions, UPS System and Backup Generators.
- Its scalable architecture ensures data centers can expand without efficiency loss.



MW-Level IBR-Dominated Systems

- Balances variable energy inputs from solar, wind, and other renewable sources.
- Provides VPP operations at the POI and PCC for high-voltage systems.
- Damping low-frequency oscillations, including SSCI, SSO, and SSR.



Off-Grid Hydrogen Production Facilities

- Coordinates renewable energy inputs with storage systems for continuous operation of electrolyzers and liquefaction compressors.
- Reduces downtime by managing peak power demands seamlessly.



ENHANCED RELIABILITY THROUGH HIL TESTING

The iT-2000 Platform is rigorously validated through Hardware-in-the-Loop (HIL) testing, which simulates real-world scenarios to ensure reliability under dynamic conditions. This approach:

- Identifies potential risks and inefficiencies before deployment.
- Enhances system resilience for critical operations like data center management.
- Reduces implementation risks and guarantees optimized performance.
- Incorporating communication latencies during pre-field testing for interconnection to SCADA systems and IBR control systems.

By integrating the iT-2000, a data center can achieve up to a reduction in energy costs while improving system reliability and resiliency.



SUSTAINABILITY AND ENERGY EFFICIENCY



Renewable Energy Integration:

Smoothly incorporates solar, wind, and other renewable sources to reduce reliance on fossil fuels.



Energy Savings:

High-efficiency power flow and cooling solutions reduce energy consumption and operational costs.



Carbon Footprint Reduction:

Optimized energy usage minimizes environmental impact.

CYBERSECURITY AND REGULATORY COMPLIANCE



Cybersecurity:

Implements advanced measures to protect systems from potential cyber threats.



Regulatory Compliance:

Meets evolving industry standards and future interconnection requirements.



Disaster Recovery:

Maximizes data and operational continuity during unexpected disruptions.



KEY BENEFITS AT A GLANCE

The iT-2000 Platform is designed for the challenges of today and the opportunities of tomorrow. Its modular and flexible design ensures that your operations can scale with ease, adapting to new technologies and energy needs. Whether you're managing a state-of-the-art data center or a renewable-powered industrial facility, the iT-2000 empowers you to operate with efficiency, reliability, and sustainability.



For Data Centers:

- Maximized uptime for mission-critical applications.
- Proactive monitoring and predictive maintenance to minimize operation disruptions.
- Tailored power flow management for high-density IT environments.



For Industries:

- Seamless coordination between energy generation, storage, and consumption.
- Scalable and modular solutions for growing demands.
- Reduced Capital Expenditure (CapEx) via comprehensive pre-field testing.



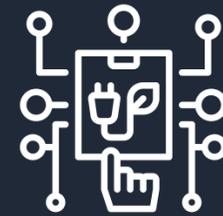
Efficient Connectivity

Timely interconnection of utility-scale IBRs to data centres and critical loads while complying with grid codes.



On-Site Management

Behind-the-meter and feed-in-tariff (FIT) operation of IBR-based power plants.



Power Management

Real-time power management between loads and energy sources.



Grid Optimization

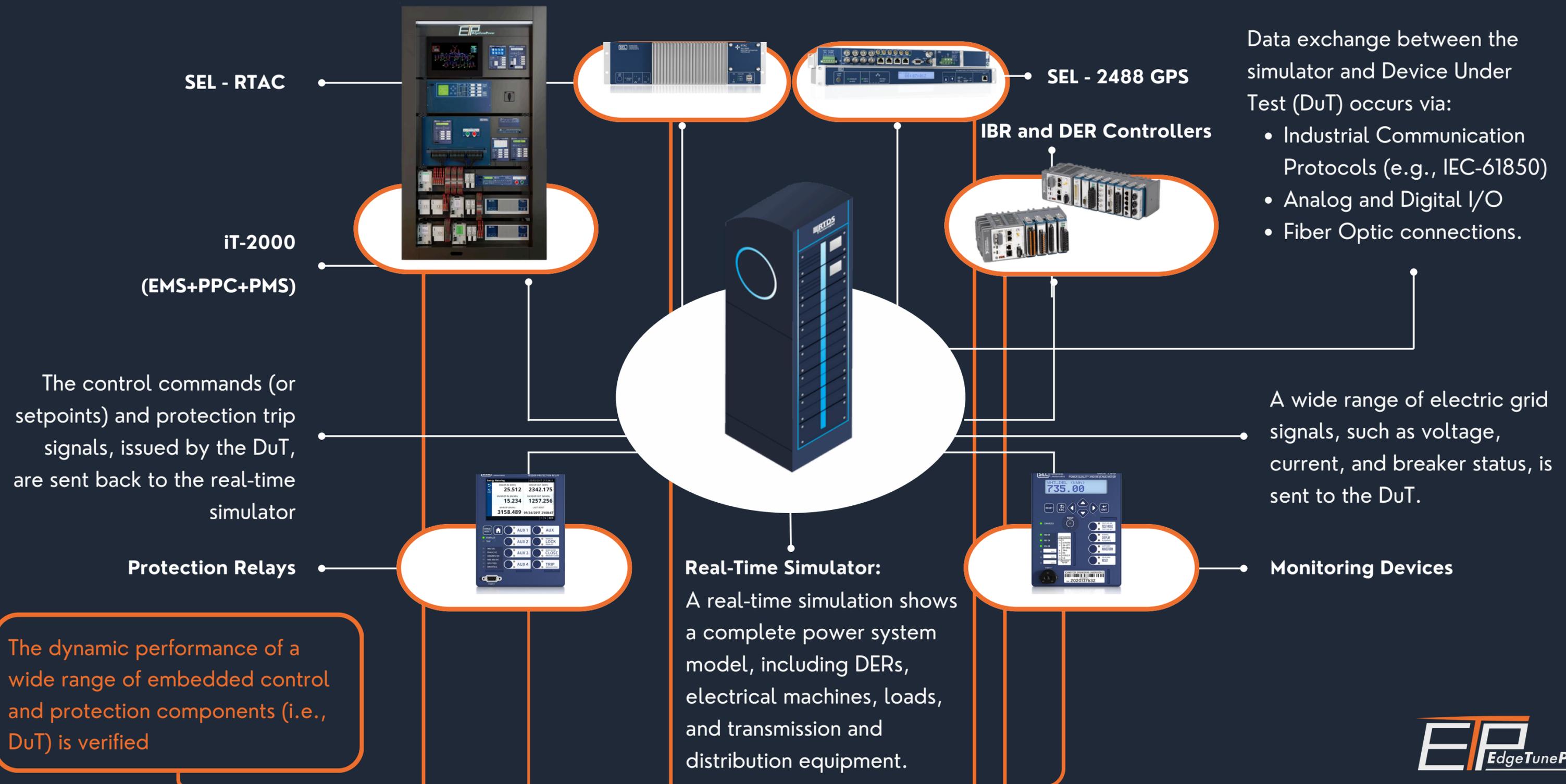
Operation of virtual power plants (VPPs) to maximize ROI for asset owners.

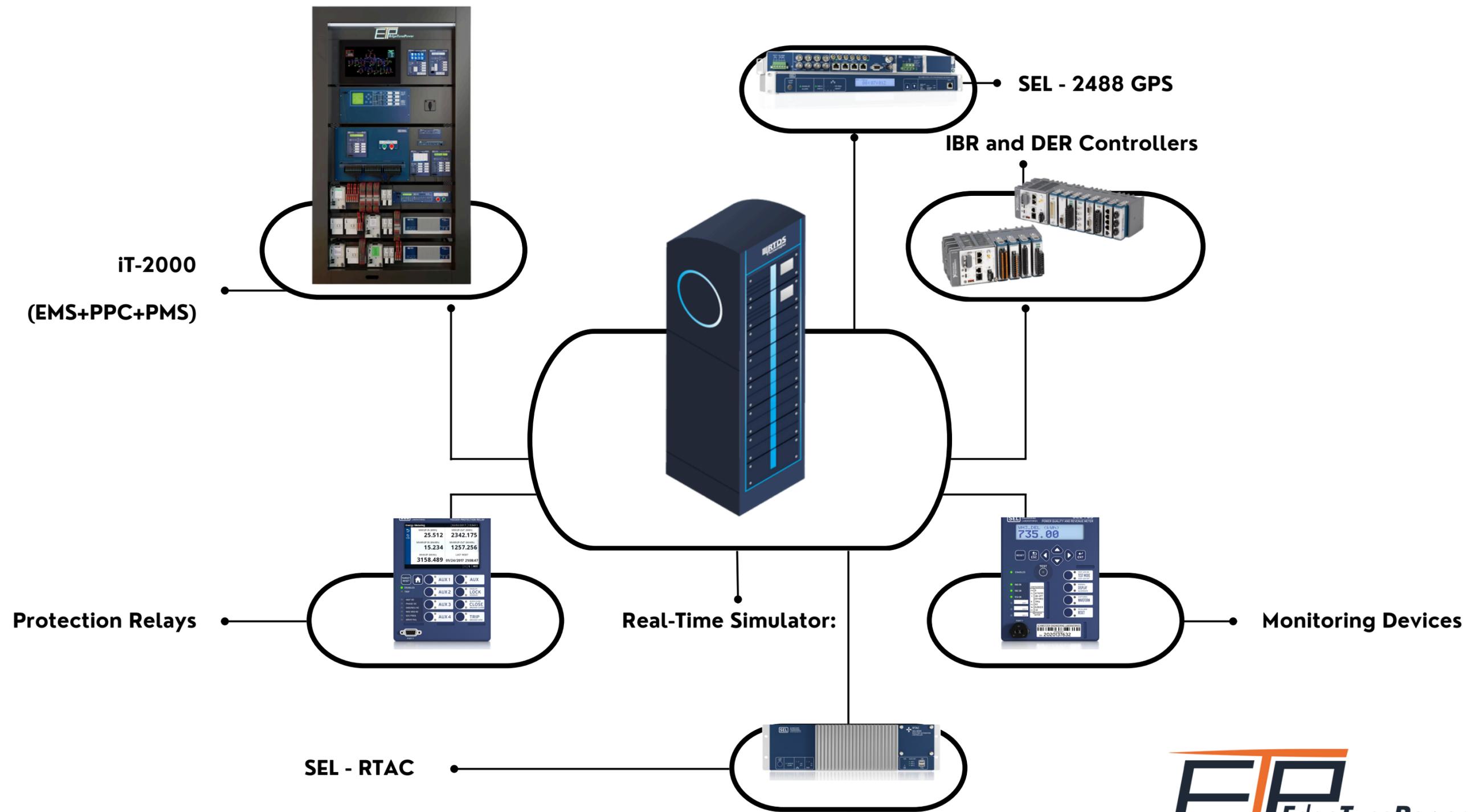
APPLICATIONS

SMART ENERGY SOLUTIONS FOR IBR-BASED, MW-LEVEL POWER PLANTS AND DATA CENTRES.

Comprehensive solutions for IBR interconnection, data centres, off-grid hydrogen production facilities, on-site management, power optimization, and grid reliability.

REAL-TIME POWER SYSTEM TESTING WITH IT-2000







CONTACT US

GET YOUR FREE DEMO TODAY AND
EXPLORE OUR ENERGY SOLUTIONS!

Toronto: 2425 Matheson Blvd E 8th Floor,
Mississauga, ON L4W 5K4 (REGUS), Room
817

Vancouver: 1021 Kennedy Avenue,
North Vancouver, BC, V7R1L6, Canada

Laboratory: Unit 213, 2030 Marine Drive,
North Vancouver, B.C., V7P 1V7, Canada

info@edgetunepower.com
www.edgetunepower.com

