

envisage\* Energy Management System

Background

To manage rising energy costs and the constant demand to keep mission-critical systems operating efficiently, GE Industrial Solutions is introducing the next generation energy management system (EMS), GE envisage, to provide a *virtual window* to analyze and control the facility's real-time power usage – onsite or through a web browser or mobile device.

Based on the proven CIMPLICITY platform, envisage was developed from decades of experience in networking, software, electrical engineering, and switchgear installation and service for corporate, government, and nonprofit customers of all sizes. This system offers the most comprehensive, customizable EMS software solution from the most responsive and experienced services resource team anywhere.

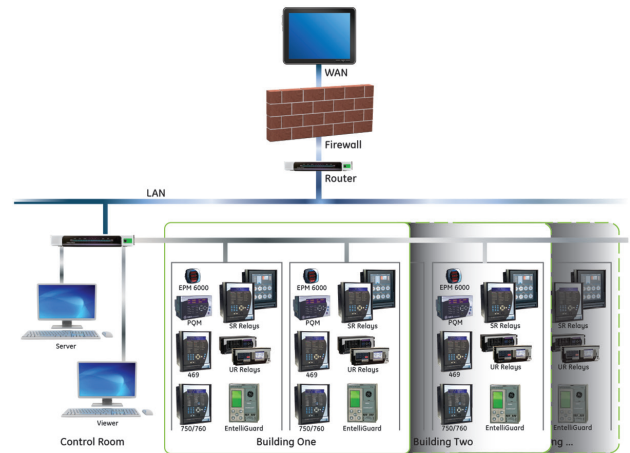
Connect all your equipment to a single “nerve center”

envisage can communicate with a wide number of GE and non-GE devices, including meters, trip units, generators, transformers, drives, relays, and switches. The software supports the latest industry protocols, as well as over 100 Proficy-supported protocols. GE also has a successful track-record of networking to existing equipment while minimizing the cost of adding new hardware.

envisage is remarkably scalable and forward compatible in accommodating changes to electrical lineups and expansions in the facility. New equipment can be brought online literally in seconds. The integrated envisage solution then monitors energy consumption, analyzes collected data, receives automatic warnings of device events, performs advanced harmonics analysis, allocates energy costs, and even manages loads. It provides an accurate and easy-to-understand graphical representation of the facility to help you make informed, timely decisions.



This intelligent system is at the ready 24/7 to give owners, managers, and engineers a secure and complete check of the quality and reliability of the power source, with email and text message alerts if needed.



Technical description

envisage is comprised of three major components:

1. Computer software and hardware to aggregate, manage, and display the data.
2. A communications interface, or network, sharing information via standard protocols between the software and the metering devices.
3. Metering/recording devices affixed to, or incorporated in, intelligent electrical components, regardless of manufacturer.

Examples of each of these system components are provided below:

Software & Hardware	Communications		Intelligent Equipment & Devices
	Networks	Protocols	
<ul style="list-style-type: none"> <li>• Computer workstations</li> <li>• envisage software</li> </ul>	<ul style="list-style-type: none"> <li>• Ethernet</li> <li>• TCP/IP</li> <li>• Serial</li> </ul>	<ul style="list-style-type: none"> <li>• Modbus</li> <li>• TCP/IP</li> <li>• Modbus RTU</li> <li>• DNP</li> <li>• Profinet</li> <li>• BacNet</li> <li>• IEC61850</li> </ul>	<ul style="list-style-type: none"> <li>• Meters</li> <li>• Trip units</li> <li>• UPS</li> <li>• Solar chargers</li> <li>• CRAC units</li> <li>• ATS</li> <li>• PSG</li> <li>• PDU</li> <li>• Generators</li> <li>• VFD</li> <li>• PLC</li> <li>• Protective relays</li> <li>• “Smart” power strips</li> </ul>

## Customizable modules

The complete envisage solution offers a choice of four customizable modules that can be standardized: Monitoring, Power Analytics, Energy Tracker, and Control & Automation. The current version features enhanced communication and integration among the separate modules. By optimizing the methods that control both processes and equipment, assets can be utilized more effectively and efficiently.

### envisage Monitoring

- Unlimited devices
- Intelligent energy devices
- Building management devices
- Web access and mobile app

### envisage Power Analytics

- Waveform capture and analysis
- Sophisticated analysis of multiple devices to pinpoint problems
- Identify necessary power quality improvements

### envisage Energy Tracker

- Total energy and peak demand
- Coincident demand reporting
- Energy profiling, load analysis reports
- Virtual metering
- Custom rate structures available

### envisage Control & Automation

- Open/close breakers remotely to eliminate arc flash hazard
- Automatically manage loads
- Compatible with the latest cyber-security initiatives
- Shut down unnecessary systems during peak usage to avoid penalty

## Who benefits?

envisage is ideal for anyone concerned with advancing efficiency and minimizing the downtime caused by power transients.

- **Data centers** – envisage offers root cause analyses required by stakeholders who seek assurances about the reliability and quality of the facility's electricity supply
- **Hospitals** – envisage can help lower energy costs, electrical outages, and regulatory compliance – custom JCAHO reporting saves labor and provides required records
- **Industrial** – Large power-intensive industries such as oil and gas, mining, and food and beverage seeking to control energy costs
- **Commercial** – Buildings designed to comply with LEED certification

## Minimum Server Requirements

- Intel dual core 2.0 (Dell Precision™ Workstation 360)
- 4 GB dual-channel memory
- Microsoft® Windows® XP SP3, Server 2003, Win 7, Server 2012 or Win 8 x32 or x64
- Internet Explorer 8.0 version
- 200 GB hard drive
- 1 GB Ethernet card (static IP addresses only - no DHCP support)
- Email server connectivity if configuring for email reports
- Uninterruptible Power Supply to PC

## Comprehensive package

The GE team provides complete integration service capabilities, along with software and hardware components, for every phase of the project and ongoing support. GE can fulfill the entire project scope including software, network switches, PLCs, engineering and installation services, connection diagrams, conduit schedules, and onsite startup. Trust GE to safeguard mission-critical loads and improve reliability.



For more information, contact GE:  
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