

RAMMS™ Solutions

COMMAND Management System SPECIFICATIONS

PRODUCT SNAPSHOT

Operational Description

RAMMS COMMAND MANGEMENT SYSTEM is based on Foreseer® by EATON, a highly customizable web based software platform that has been in production for over 25 years and connected to billions of data points worldwide to monitor, trend, analyze, predict, and store data.

RAMMS Command Management System provides real time one second resolution monitoring of all active components in the RAMMS MODULE and has the ability to connect to external sources and to support data collection and monitoring of systems such as:

Power

Electrical distribution equipment (SWGR, SWDB, panels) power meters, branch circuit monitors, trip units, protective relays, UPS, generators, PDU, RPP, CRP, ATS, STS, VFD, and PLC.

Environmental

HVAC, chillers, pumps, condensers, temp/humidity, flow, and chilled water.

Systems and Sub-systems

BAS, leak detection, fuel management, battery monitoring, security, fire suppression, weather monitoring, and photovoltaic systems.

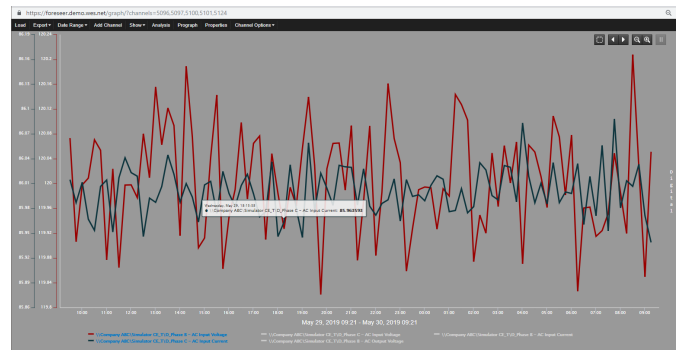
WAGES

Water, Air, Gas, Electric, and Steam

PRODUCT OVERVIEW

Open communications 64 bit architecture

- Polling and logging all integrated systems, devices, and parameters up to once per second
- Vendor-neutral software with an extensive library of device drivers available • ModbusTCP or RTU, BACnet IP, OPC, LON, SNMP, proprietary protocols and others upon request
- Each server can support up to 3,000 devices or 500,000 channels
- Dashboard, device, single line, and floor plan webviews
- Email alarm notifications and standard reports

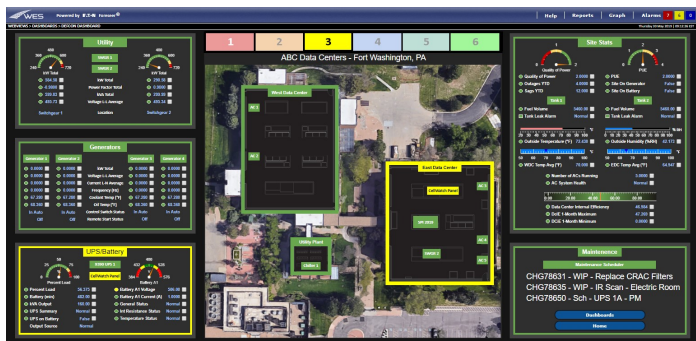


System Functionality

- Dynamic one-line diagrams
- True redundancy or high availability
- Full graphics editing with web editors software
- Manager of Manager (MOM) for expansion beyond 5,000 devices and 500,000 channels
- Data Acquisition Engine (DAE)
- Sequence of events recorder with 1msec precision

Database Functionality

- All Data points stored in historian
- Data archived with 1-minute resolution based upon 1-second polling, max, min, average, last capability.
- Immediate Web access to 6 Month window.
- Capacity allows for 5-Year history of base system.



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Included Components and Services

Each RAMMS System ships with a complete COMMAND Management System that include all base functionality, hardware and capability to connect to remote facilities.

Hardware

Dell PowerEdge R530 Server (Or Equal) with RAID 5, 2.4 GHz processor, 8 GB Ram, 2 TB Hard Drive and Dual Hot-plug redundant power supply (or similar).

Included Software

- Microsoft Windows Server 2016
- SQL Server 2016 Express
- Eaton Foreseer Version 7.0, C-Class, 15000 Channel
- Device Drivers for all RAMMS Components
- Device Drivers and Integration services for 5 discrete remote devices (Power Meters, Generators, UPS, HVAC, ETC)

Enhancements and Additional Services

Hardware

Customer Specified Server, Cold, Warm, Hot Failover, Additional redundancy arrangements, Clustered, VM, Cloud

Software

- Custom API Integration
- Device additions: Up to 5000 per server
- Additional Server Arrangements
- Custom Dashboards and Analytics
- Custom Reporting
- Automation Control

Expanded Solutions

Each COMMAND Management System is designed and tested to allow for robust expansion based upon application. Expanded solutions are additional scope elements which can be added at deployment or a future date.

Power Analytics Paladin

Paladin Microgrid Power Management Systems (MPMS) is responsible for real-time control and optimization. It is the first commercial software platform designed specifically for online management of next-generation hybrid power infrastructure (including traditional utility power and on-premise power generation) to ensure energy optimization in multi-energy source sites. MPMS also assists in public and private energy transactions.

Fore-site™

A revolutionary and unique approach to linking facility data and advanced analytics with artificial intelligence to yield unprecedented insight into your facility and operations.

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- Advanced Analytics
- Anomaly Detection, Correlation and Review
- Custom reporting, analysis and advanced professional services

Forescout

Forescout is the first unified device visibility and control platform for converging IT and OT networks. It enables organizations to gain complete situational awareness of all devices in their interconnected environment and orchestrate actions to mitigate both their cyber and operational risk.

Integration Service Partner

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