

ACONIS-2000E

INTEGRATED MACHINERY CONTROL & MONITORING SYSTEM

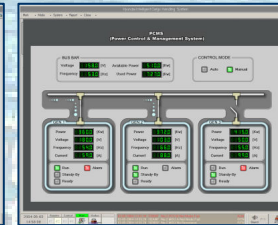
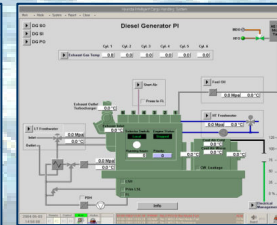
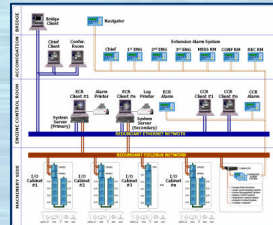
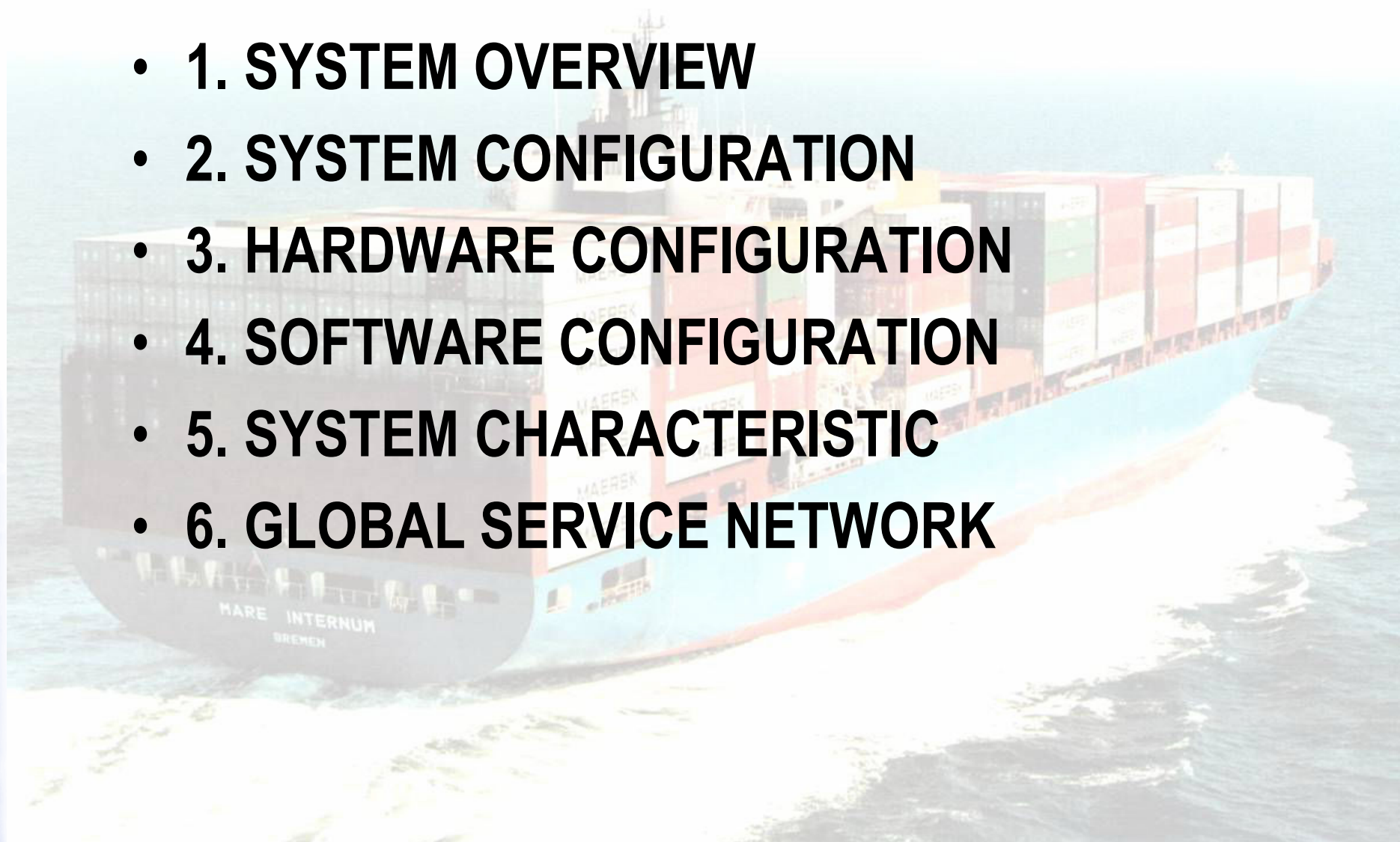


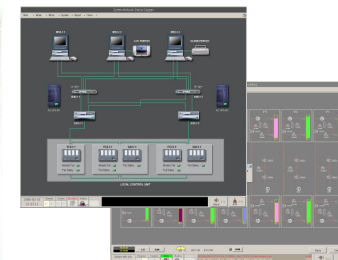
Table Contents

- **1. SYSTEM OVERVIEW**
- **2. SYSTEM CONFIGURATION**
- **3. HARDWARE CONFIGURATION**
- **4. SOFTWARE CONFIGURATION**
- **5. SYSTEM CHARACTERISTIC**
- **6. GLOBAL SERVICE NETWORK**



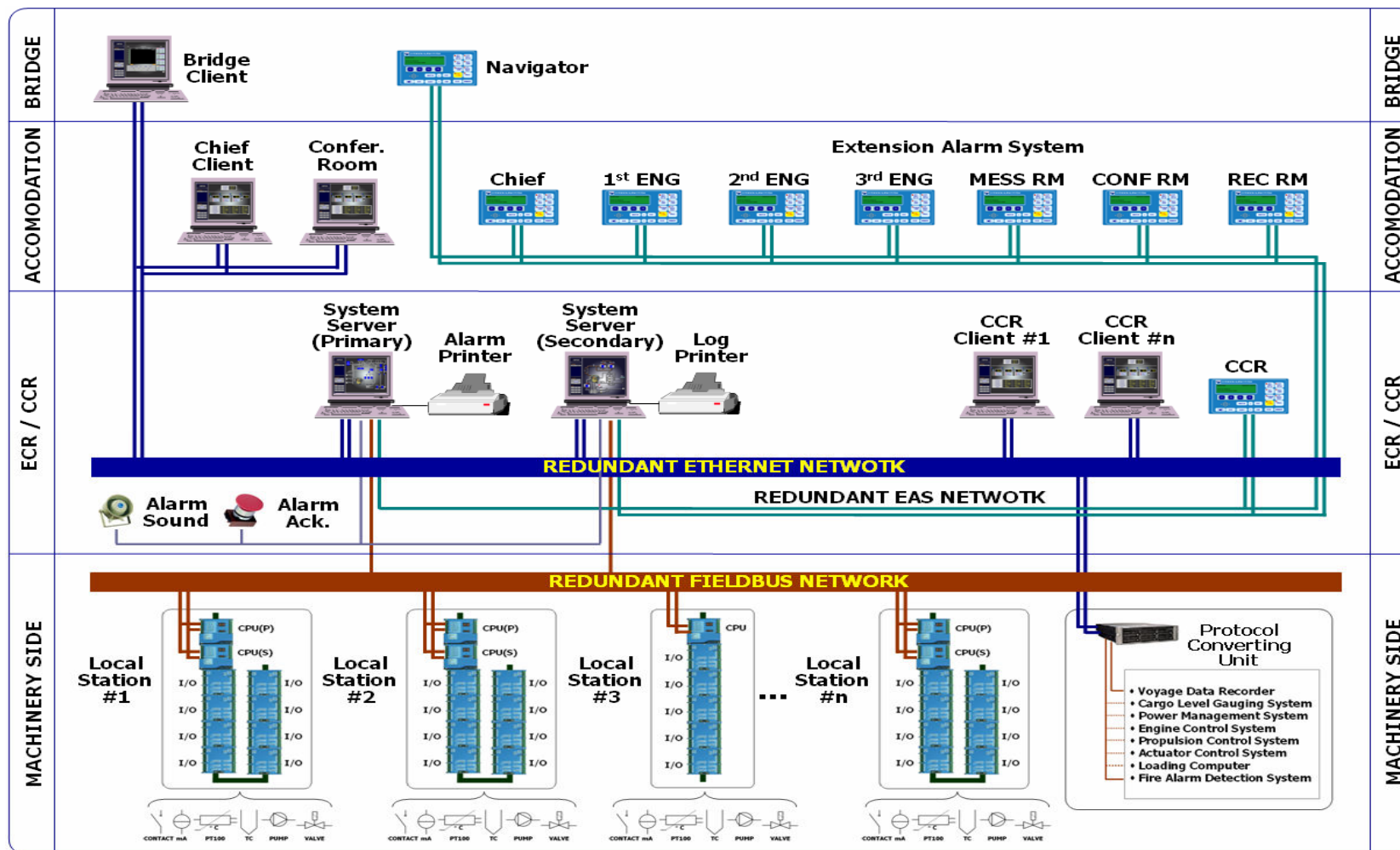
1. System Overview

- ICMS (Integrated Control and Monitoring System)
 - Machinery and cargo control and monitoring
- System Benefits for Shipowner
 - The benefits for the shipowner are focused on safety and reducing the cost of ownership ;
 - Easy to install and extension
 - Easy to learn and use
 - High quality product
 - Low maintenance cost
- System Benefits for Shipyard
 - The benefits for the shipyard are focused on total cost reduction during installation and commissioning ;
 - Saving the cable and cabling work
 - Simple to commissioning
 - Easy to other system interface



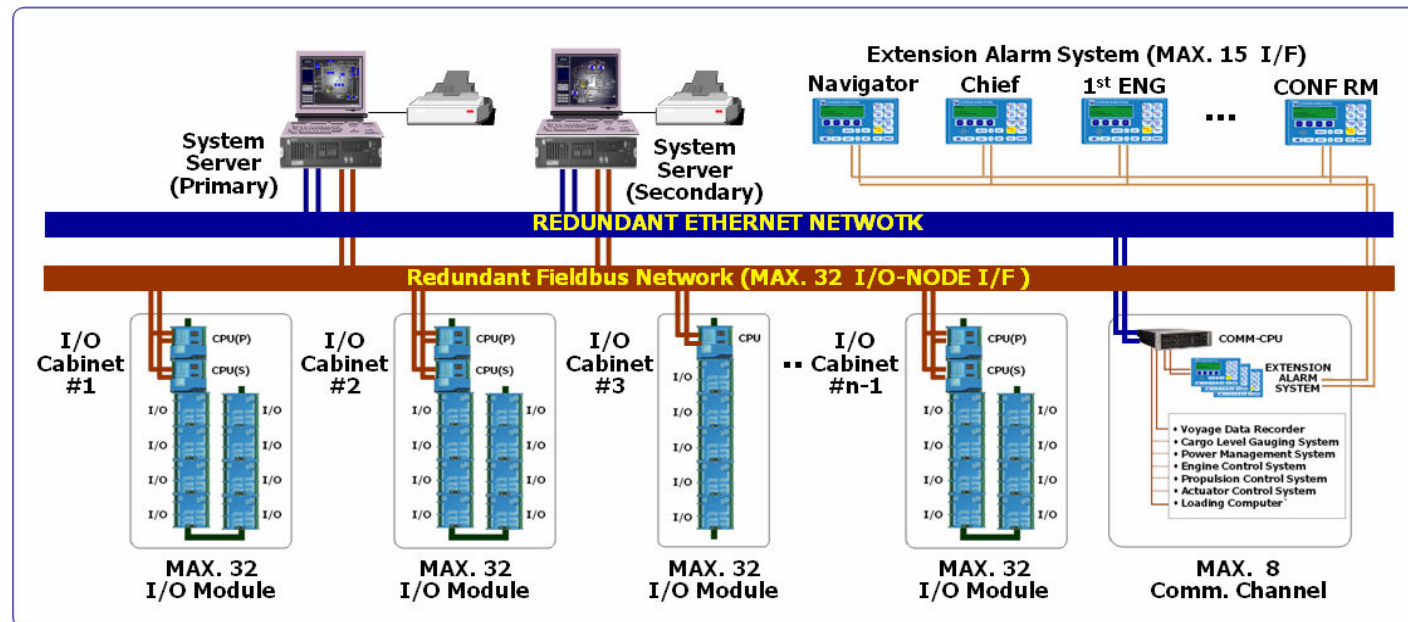
2. System Configuration

- System Capacity(1)



2. System Configuration

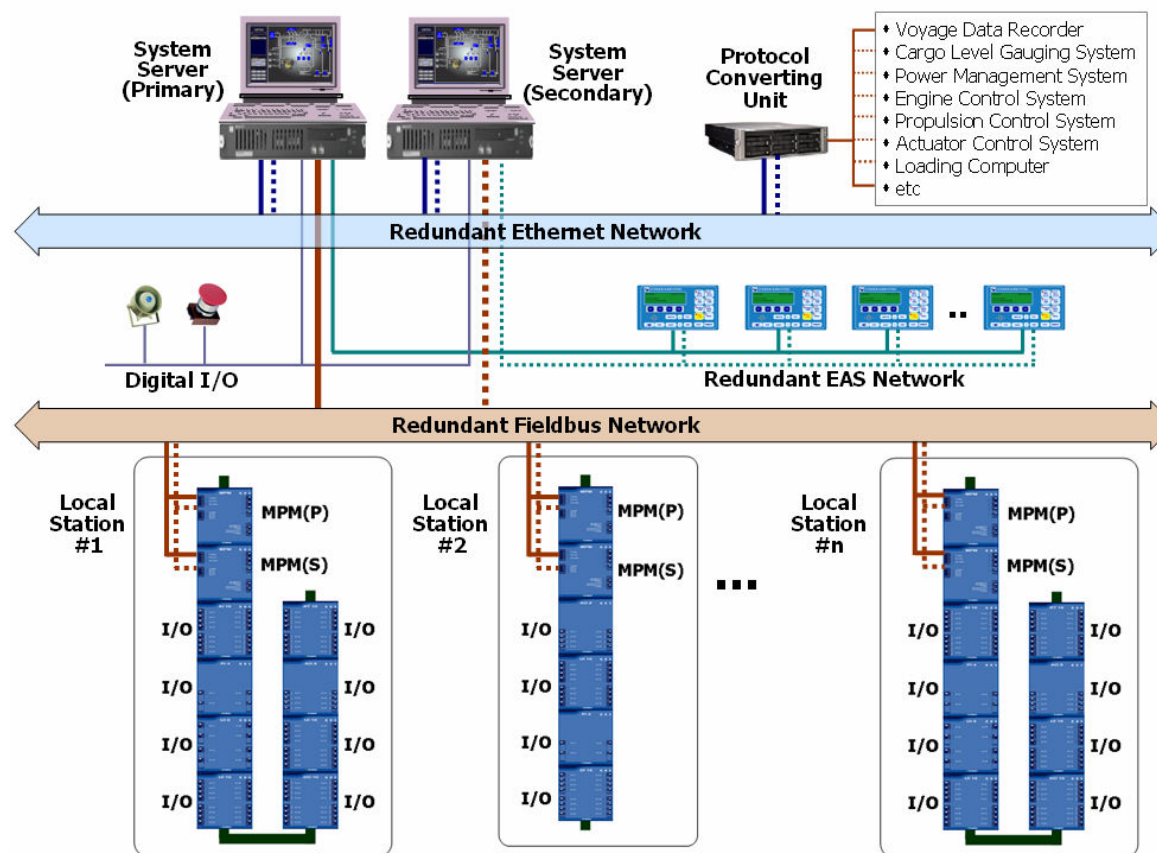
- System Capacity (2)



- I/O CPU Module in I/O Cabinet : 32 Stations (Max.)
- I/O Card Modules : 30 I/O Card Modules (Max.) per I/O CPU
 - Digital Input 16 Ch., Digital Output 16 Ch., Analog Input 16 Ch., Analog Output 8 Ch.
- Extension Alarm System Panels : 15 Panel (Max.)
- Communication CPU : RS232/422/485, Independent 8 Ch.

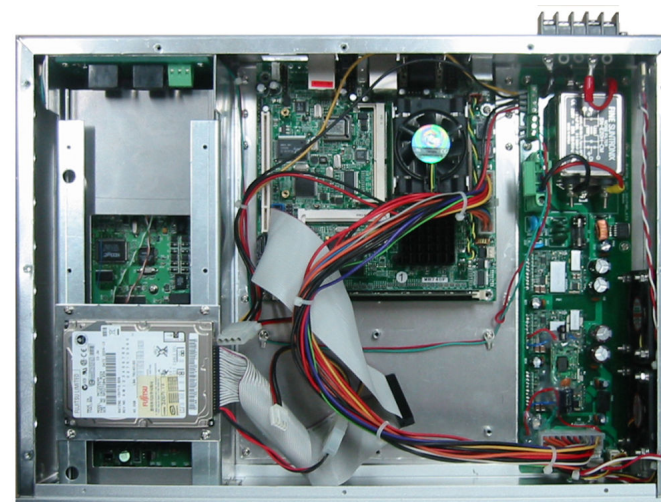
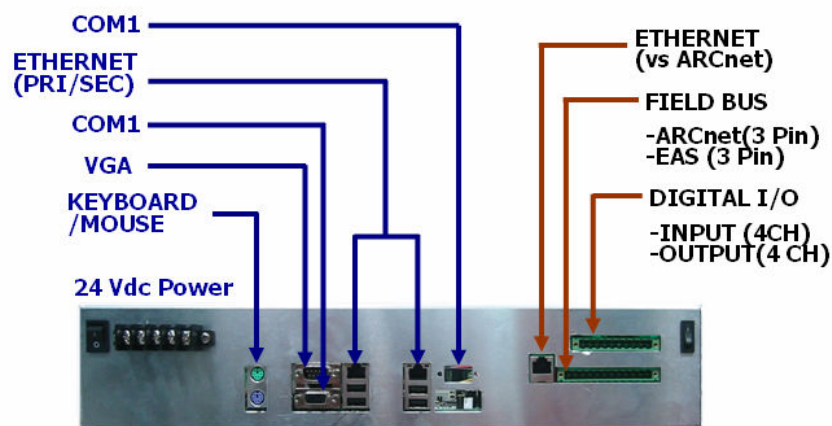
2. System Configuration

- System Redundancy Function
 - System & Network Configuration
 - System : System Server, MPM
 - Network : Ethernet, Fieldbus, EAS, Process I/O Bus



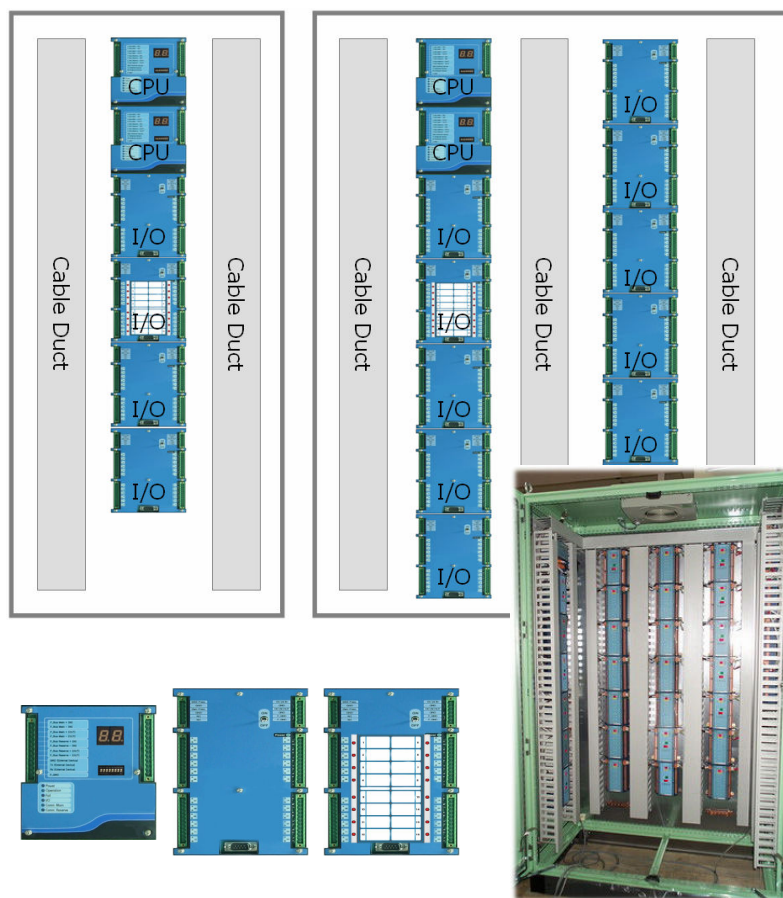
3. Hardware Configuration

- Server & Graphic Client System
 - Embedded Industrial-PC System
 - Industrial AMD Geode™ NX 1750 (1.4 GHz) Processor based
 - Low Power Consumption, Long-term Manufacturing/Support
 - FSB : 266MHz, Op.Temp. : 95 °C, Power Consumption : 14W
 - Industrial NX DB1750 & SIS (741CX/964) Chipset based System
 - SDRAM DDR 333(for Notebook) PCI, USB 2.0 (#5), Ethernet(10/100/Gigabit), Serial-ATA (#2), Serial (#2, RS232/422/485 based)



3. Hardware Configuration

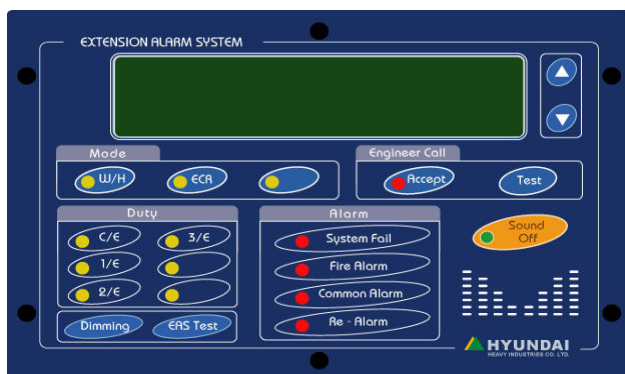
- I/O Cabinet Configuration
 - Main I/O Control Unit and Local I/O Control Unit



- I/O CPU Modules
 - Redundant Field-bus Network, 5 Mbps (Max.), ARCnet Field-bus Protocol
 - Embedded Real-time Operating System
 - Redundant CPU & Communication
- I/O CARD Modules
 - 8 Bit Embedded RISC Processor
 - Digital Input 16 Ch., DC 24V
 - Digital Output 16 Ch., Dry Contact
 - Analog Input 16 Ch., RTD/4~20mA, 0~5V, 1~5V
 - Analog Output 8 Ch., 4~20mA, 0~5V, 1~5V
 - Universal I/O 8 Ch. : DI, AI

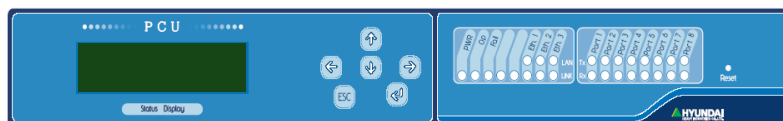
3. Hardware Configuration

- Extension Alarm System



- Extension Alarm System Modules
 - 4 line text LCD
 - Redundant Field-bus Communication
 - LCD/LED, Day and Night/Brightness Control

- Communication System



- Communication CPU Modules
 - Redundant Ethernet Network
 - RS232, RS422, RS485 Interface
 - Communication Protocols :
 - NMEA-0183, IEC61162-1, Modbus ASC/BIN
 - Maker's Communication Protocols

4. Software Configuration

- Overview

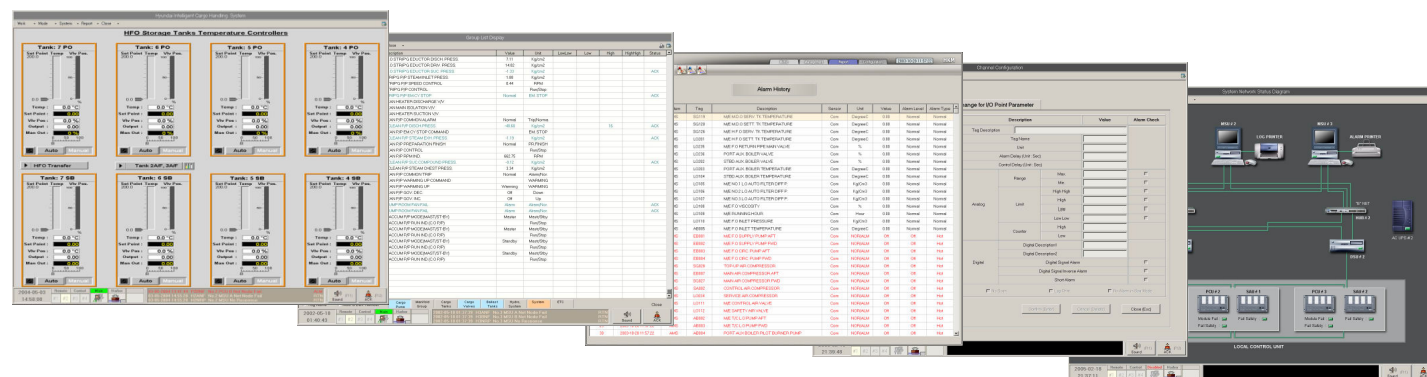
System	Specification	
Integrated Monitoring & Control System	Operating System	Microsoft Windows-2000/XP
	Server System	Redundant Server
	Database	Standard SQL Database
	Report/Log	Report/Log Generator
	Communication (Operator Workstation)	Redundant Ethernet, 10/100 Mbps
	Communication (I/O Processor Controller)	Redundant ARCnet Field-bus, 1 ~ 5Mbps

System	Functions
Applicable Controls	PI/PID Controls
	Valve Control
	Pump Control
Expansible Systems	Power Management System
	Cargo & Ballast Control/Monitoring System
	Ship Performance System
	Reefer Container Monitoring System
	Hull Stress Monitoring System
Miscellaneous	Incorporated with Integrated Bridge System
	Interface to VDR/AIS
	Interface to various Computer systems

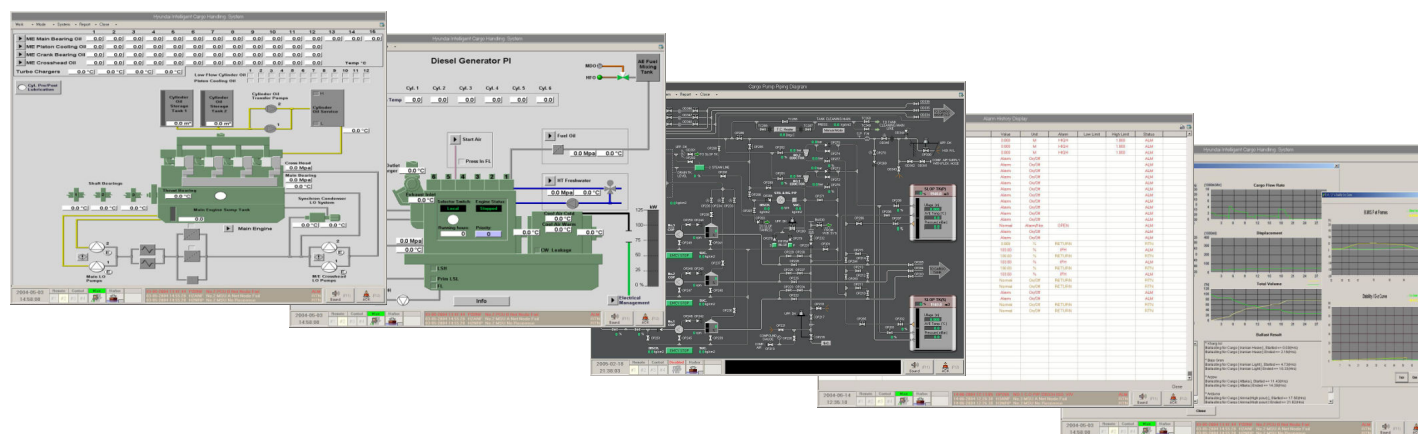


4. Software Configuration

- Graphic Display System (1)
 - Standard Graphic Display

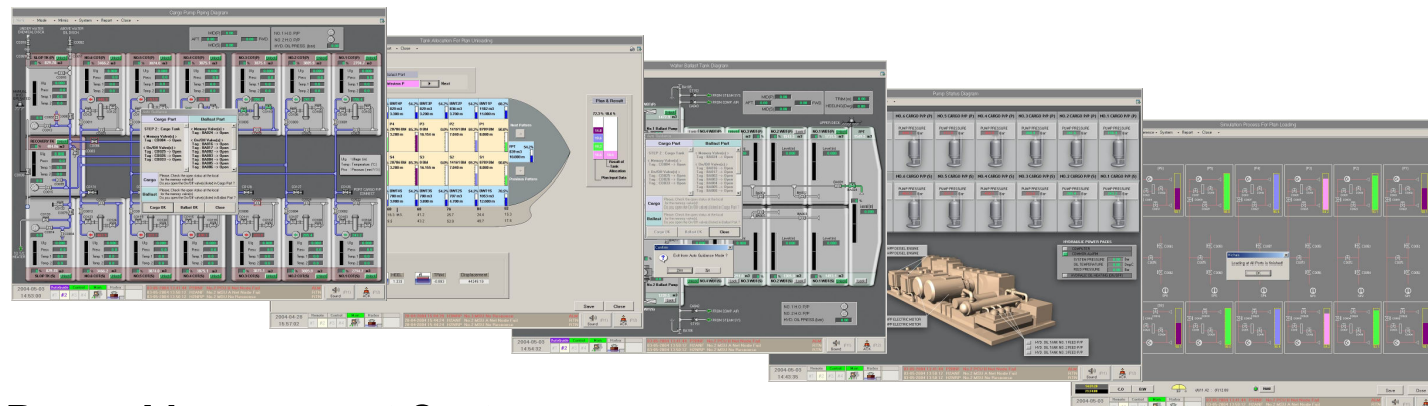


- Machinery Alarm & Monitoring System

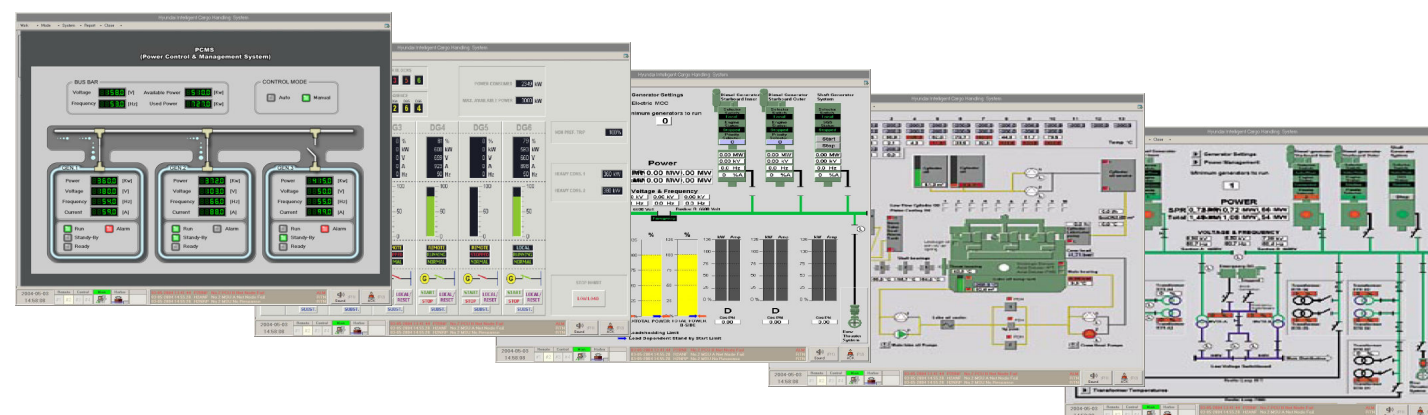


4. Software Configuration

- Graphic Display System (2)
 - Cargo Monitoring System



- Power Management System



5. System Characteristic

The modular concept of ACONIS-2000E allows flexibility in system architecture, from low complexity to highly integrated systems.

- Highlights
 - *EASY TO INSTALL AND EXTENSION, EASY TO LEARN AND USE*
 - *DISTRIBUTED I/O ACQUISITION AND CONTROL PROCESSING(DCS)*
 - *NO SPECIAL MAINTENANCE SKILL REQUIRED*
 - *REDUNDANT NETWORK(LAN) AND REDUNDANT FIELD-BUS(ARCnet) COMMUNICATION*
 - *INDUSTRIAL STANDARD WINDOWS BASED SERVER*
 - *EASY INTEGRATION AND EXTENSION WITH OTHER SHIPBOARD DEVICE & SYSTEMS*

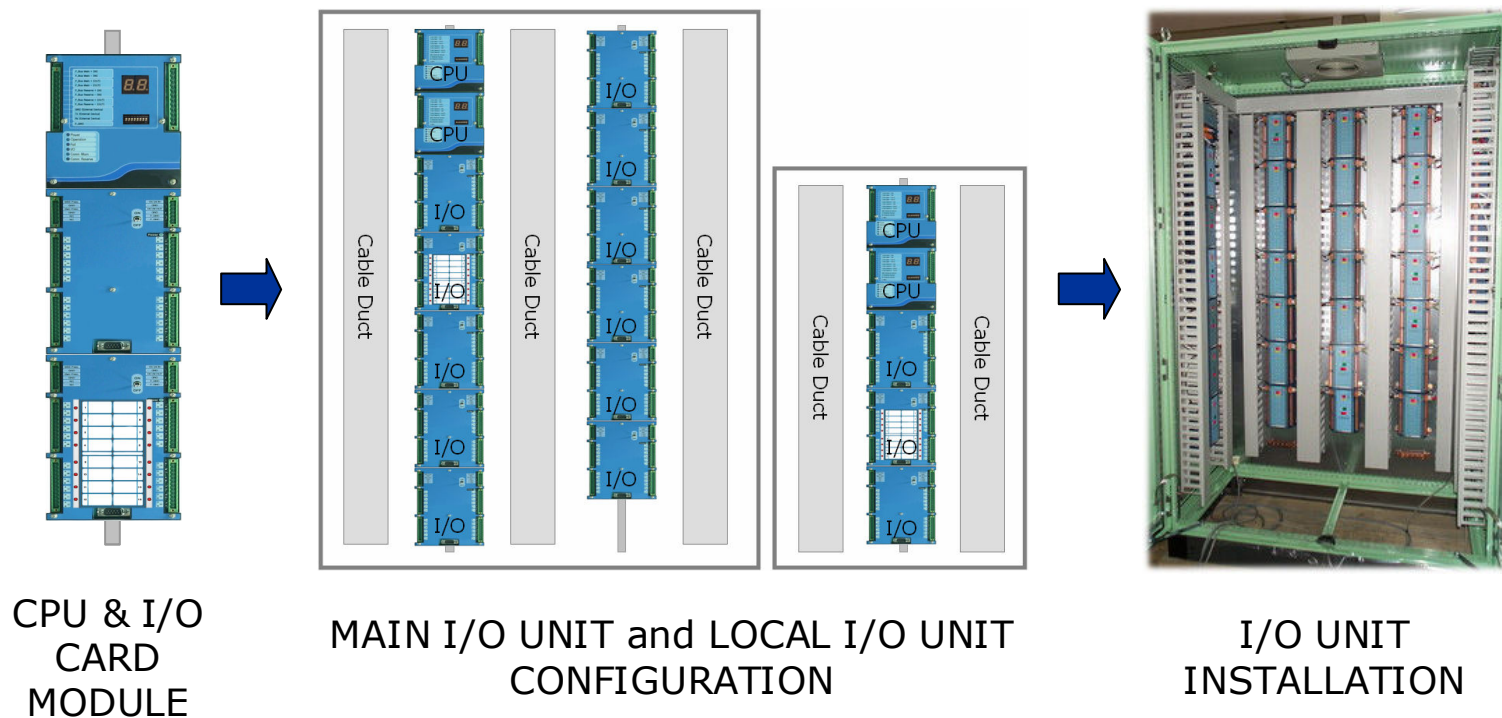
5. System Characteristic

- System Engineering
 - Easy to Install and Extension with Client Graphic Systems
 - ECR/CCR and Bridge, other Officer/Engineer/Public Rooms
 - Easy to Install and Extension with I/O Processing
 - Redundant/Hot Backup I/O Processing Unit (I/O CPU, Field-bus)
 - Basic Input/Output Card (DI/DO/AI : 16 Ch., AO : 8 Ch.,)
 - Reliable Diagnostic Function (DI/DO/AI/AO), Wire break Function (DI)
 - Universal Input/Output Card 16 Ch. (DI/DO/AI/AO)
 - Easy to Integrate and Extension with Other Systems
 - Other Shipboard System Interface by Communication System
 - RS232/RS422/RS485, NMEA/IEC61162-1/Modbus and Maker's Protocol



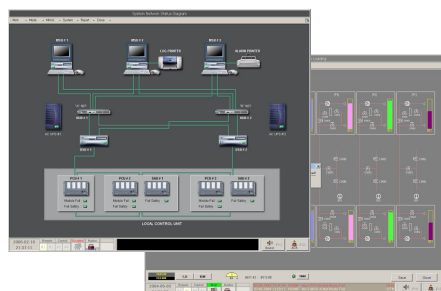
5. System Characteristic

- System Installation
 - Easy to Install and Extension with Module-based System(DIN)



5. System Characteristic

- System Commissioning
 - On-line System Check and Easy to confirm in Client Graphic Display
 - System Status & Monitoring, Parameter Tuning ;
 - I/O Channel Information, I/O Parameter Modification



Engine Control Room



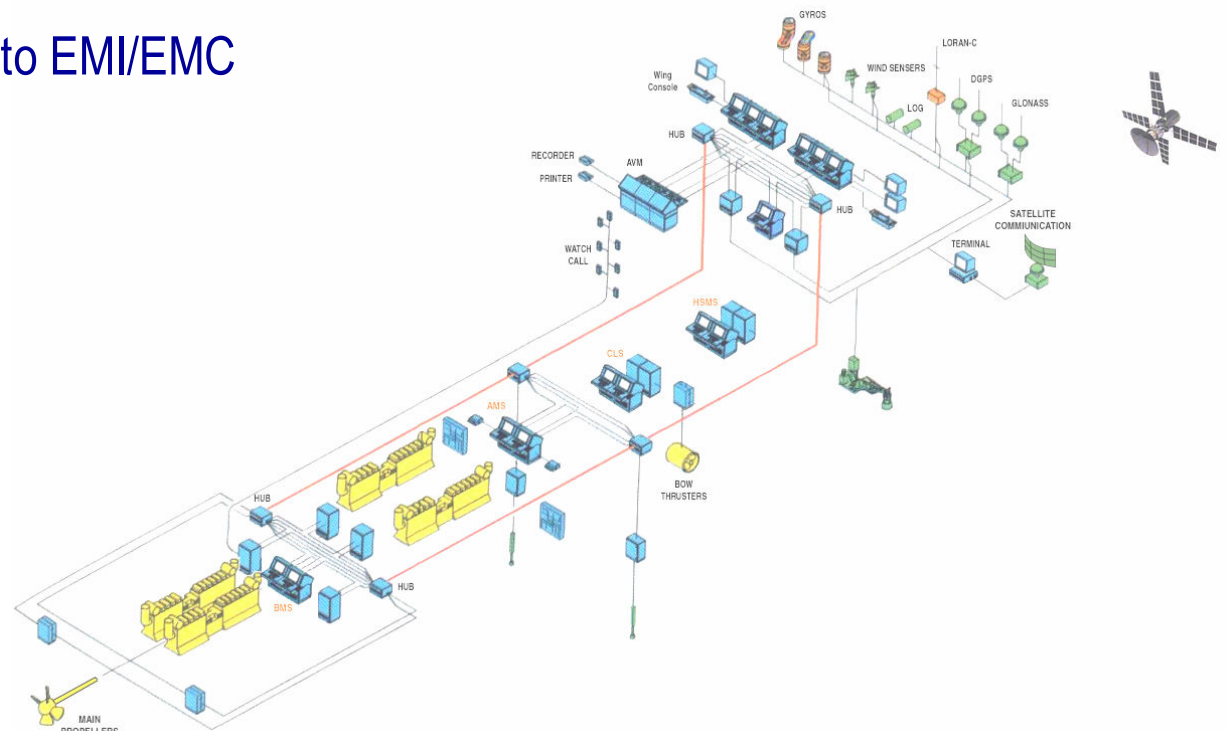
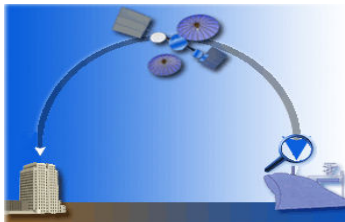
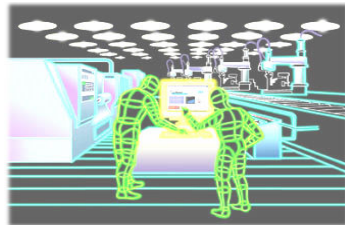
Main & Local I/O Unit



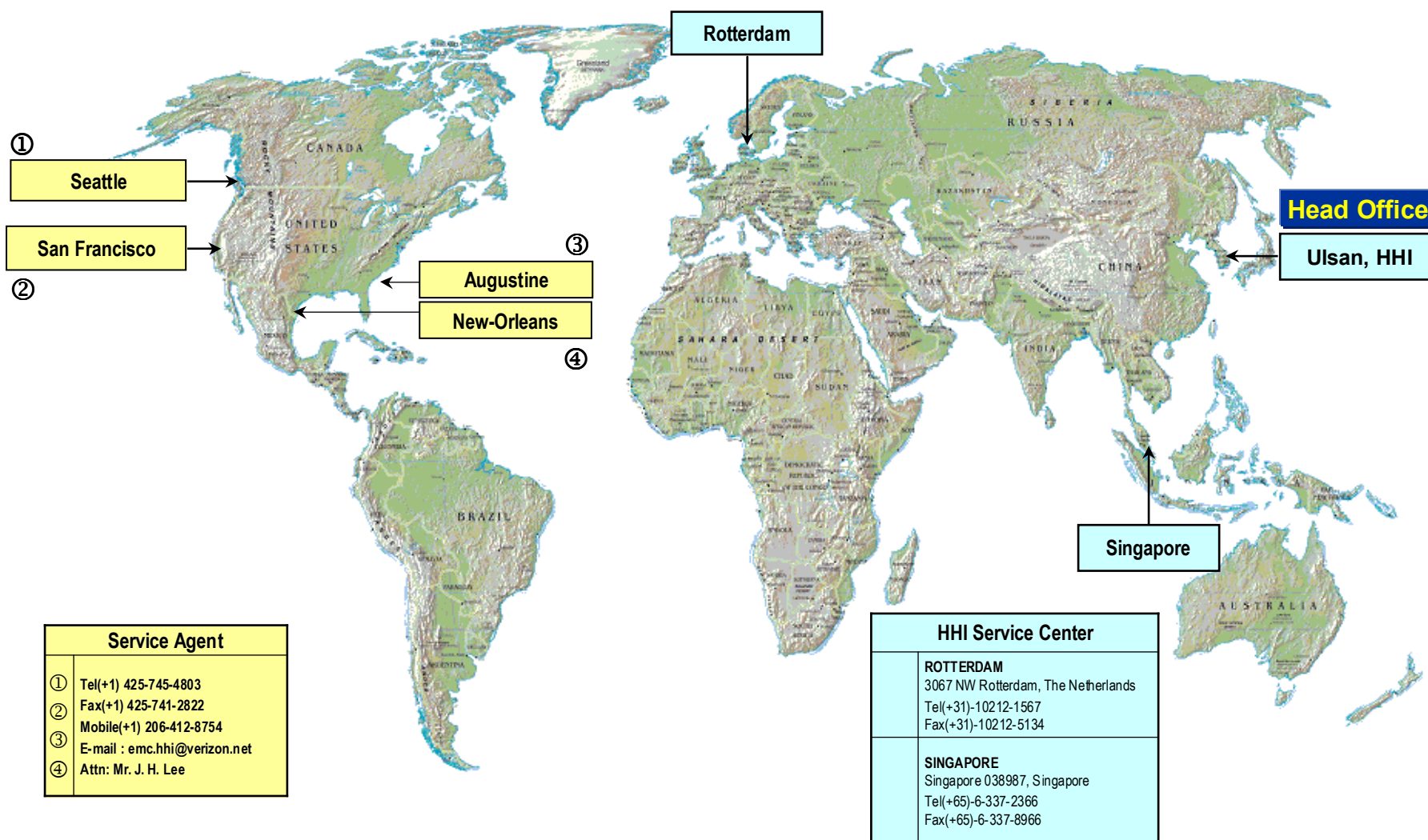
System Status
Check in Notebook

5. System Characteristic

- System Maintenance
 - For Low Maintenance Cost ;
 - On-line System Check
 - On-line Channel/Parameter Modification
 - Live Insertion and Extraction with I/O CPU and I/O Card
 - High Reliability System to EMI/EMC



6. Global Service Network



Thank You Very Much !

