Global Leader

Connected Smart Ship
Hyundai Heavy Industries & Accenture

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1. Smart Ship

- History
- VoC & Challenges of Maritime Industry
- Our Solution
Smart Ship History

**Smart Ship 1.0**
(2010 ~ 2012)
Remote Monitoring System of Engine based on SAN
- International Standard of ‘Ship Area Network’
- More than 200 Contract (2015.8)

**Smart Ship 2.0**
(2013 ~ )
‘Eco-Safe-Efficient Navigation’ Services
- On board Solutions
- Integrating services on HHI platform

? Extend the value chains for customer benefits
- ACONIS-DS with ISIG (Intra Ship Integrated Gateway)
- Contract 195 ships, Delivery 104 ships (Sep. 2015)
Smart Ship History: A Service

Ship (EMS)
- PMS: Power Management System
- ISIG: Intra-ship Integrated Gateway
- Sensor Alarm
- Engine Load
- HiMSEN Engine
- Local Alarm
- Marine Engineer

Office (ERMS)
- ERMS Server
- [Alert Alarm]
  - Push Service (e-mail)
- Status Report
- Analysis Report
- Service Engineer
- Ship Owner
- Proactive Protection/Maneuvering by using Alarm System
- Operation Data based Engine Status Monitoring


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Smart Ship - Manufacturer’s Perspective

**On Ship Solution**
- Economic Navigation
- Hull Stress / Motion Monitor
- Ship Collision Avoidance

**Sensors & On-board Systems**
- Sensors
- Ship Area Network
- On Board Solutions...

**Machinery & Equipment**
- Machinery
- Equipment

**Economic, Safe, and Efficient Vessels**
- Economic Navigation
- Trim Optimization
- Alarm Monitoring

**Lack of Solution Integration**

**Limited Functional Features**

**Engineering-Oriented**

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Voice & Challenges of Maritime Industry

- **Fleet Owner**
  - "one-stop life-time vessel main tenance services"

- **Shipbuilder**
  - "growing demand for aftermar ket services"

- **Ship Class**
  - "through-life vessel service"

- **Insurance**
  - "transparent vessel history information"

- **Shipping Liner**
  - "what’s next after all our effor ts to save costs?"

- **Port Operator**
  - "schedule coordination with liners... and port productivity"

- **Land Logistics**
  - "door-to-door cargo visibility"

- **Bunker Supplier**
  - "customer service level and inv entory management"
Voice & Challenges of Maritime Industry

- Maritime players are looking for opportunities to optimize operation and to energize business with innovative technologies to overcome challenges.

**Strive for Turnaround & Efficiency**
- Over capacity may continue
- Decreased margin
- Compliance pressure for green & safety

**Innovation & IoT Enabled Transformation**
- Broadband satellites
- Sensors, IoT, Big Data, Digital Technologies
- New capability and new business models to disrupt traditional businesses

**Maritime Trends to Overcome Challenges**
- Laser Focus on Cost Reduction in Each Value chain
- Strengthen Competitiveness
- Optimize Energy, Productivity and Operational Efficiency
- Innovation & Visibility of Logistics Network
- Growth and Optimization by Advanced Analytics
- Sustainability and Safety
Smart

Accenture and HHI
to build IoT ships

Smart

Digital Ship

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- Navigation

Part of Euronav Alliance for the "powerpass"
LED lights to change the face of traction - 4
"Hyundai Heavy Industries - through which the company aims to develop a new range of connected ships equipped for the Internet of Things"

K

Global consulting firm Accenture is set to expand its presence in the maritime consulting market through a partnership with Korean shipbuilder Hyundai Heavy Industries - through which the company aims to develop a new range of connected ships equipped for the Internet of Things"
Connected Smart Ship
2. Connected Smart Ship

- Industry Value Chain
- Features & Services
- Hi-VaaS (Ship Data Integrated Platform)
- VDM (Vessel Data Model)
Ultimately, the Connected Smart Ship will help various maritime stakeholders to improve operations and create new businesses.
“Connected Smart Ship” – Features

- Ship Owner
- Shipping Carrier
- Port Terminal
- Logistics
- Ship Builder
- Insurance, Vetting, Broker...

Platform Based & Integrated Solution

Connected Ecosystem

Business-Focused Services
Create a foundation platform to transfer not only partial but **whole data available from vessel** to shore; delivering continuous innovational services to ship owners.

- Store and transfer data using HHI standardized Vessel Data Model (VDM)
- Utilize IEC 61850 Reference Model

**Onboarding Test Result**

6,700 sensor data points (Max: 30,000)
Based on 14,000TEU
Landscape of Connected Smart Ship

**Platform based services to allow** track & monitor ships in real time, analyze & support performance/efficiency/safety of ship operation with equipment sensors & voyage data.

**Ship owners and operators can** manage ship & critical parts more effectively with real time monitor and predictive diagnostics.

**Connected ship also allow** broader visibility & efficiency of end-to-end logistics to maritime stakeholders by integrating shipment, sailing, freight, port, and ground logistics data.

**Increase efficiency** by real time monitoring during sailing and providing end-to-end data integration

**Reduced operations cost** through Optimized Voyage & shipping Operation in overall value chain, and through proactive predictive maintenance with more real-time service, with more analytics

**Increase revenue** by additional value add feature options, upsell pricing strategy for connected capabilities and New Business Convergence