

# JT solutions

Solutions & Technology

# 1. Smart Factory

## MES (Manufacturing Execution System)

- ◆ Supply Chain and BOM management system
- ◆ Product management system
  - Production and defect monitoring
  - Facility operation status
- ◆ Process management system
  - Process status management
  - Inventory management
- ◆ PLC-based process monitoring automation
- ◆ PLC & SCADA- based process automation
  - Data collection
  - Facility automation
  - Remote control systems
- ◆ Automation of data collection using standard Protocol
  - PLC & SCADA- based process automation
    - └ Standard protocol: OPC , MODBUS , S7 etc. I
- ◆ Automated data collection for manufacturer, supply chain and process

# 1. Smart Factory

## RMS (Remote Monitoring System)

- ◆ **Data processing, analysis and search using**
  - open Source Big Data systems such as Elastic Search and Log Stash
- ◆ **Big data management using Hadoop**
  - Comprehensive data management for ship and plant
  - Operational data for ship and plant
  - Collection and integrated management for Event/Log data
- ◆ **Analysis and monitoring of ship and plant data**
  - Monitor operation status
  - Monitor Event/Log of ship and plant
  - Provide alarm in ship and plant operations
- ◆ **Visualization using Kendo UI Tools**
  - Overview (DashBoard)
  - Analog Data Trend
  - Graphic User Interface
- ◆ **User access control**
- ◆ **Personalized UI for user/group**

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## AI (FDS – Fault Diagnosis System)

### ◆ Customized the RNN classifier

- Able to analyze status of the engine in operational environments
- Able to analyze status for various engines and parts
- Maximize efficiency by classification

### ◆ Real time operational data

- Collect real time data from engine power plant
- Collect data from ships in operation
- Build classification by operational data

### ◆ FDS – Fault Diagnosis System

- Apply Machine Learning to predict failure
- Collect feedback from expert

### ◆ Prediction and management of engine parts life cycle

- Manages engine part life span
- Applies machine learning to predict life span

### ◆ C.B.M (Condition Based Maintenance)

- Improve maintenance via prediction of failure and idle status

# 1. Smart Factory

## PCS (Plant Control System)

### ◆ DCS, SCADA and PLC System

- Design & Construction
- FAT (Field Acceptance Test)
- SAT (Site Acceptance Test)
- Commissioning
- Plant Maintenance

### ◆ PAS (Process Automation System)

- Process Control
- Process Monitoring

### ◆ – Process Remote Control

### ◆ SIS (Safety Instrument System)

### ◆ FGS (Fire and Gas System)