



FINCANTIERI DELFI ILS ShipView 2.0

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Agenda

- Company Overview
- ShipView 2.0
- ShipView 2.0 & OSIsoft PI System
- Future plan and next steps
- Conclusions



Company Overview

Fincantieri – The sea ahead



- One of the largest shipbuilding groups in the world
- Leader in the construction of cruise ships, large ferries and naval vessels
- Fincantieri strategic asset is to invest substantial resources in R&D not just to meet customer requirements but also to anticipate them
- SHIPVIEW is part of **Fincantieri Digital Transformation**

Our mission: achieve the best operational availability with a cost-effectiveness approach

Ship Integrated Logistic Support from the initial project phases throughout the whole service life

Products and services

- LOGISTICS STUDIES
- TECHNICAL PUBLICATIONS
- SPARE PARTS MANAGEMENT
- TRAINING
- ON-SITE SERVICES SUPPORT
- SYSTEM DESIGN

Portfolio – Results



- FREMM Frigates for ITALIAN NAVY
- CAVOUR Aircraft Carrier for ITALIAN NAVY
- Patrol Vessels for TURKISH COASTGUARD
- Patrol Vessels for IRAQI NAVY
- Patrol Vessels for UAE NAVY
- Fleet tankers for INDIAN NAVY
- Nuclear waste Carrier for RUSSIAN NAVY
- Landing Ship for ALGERIAN NAVY

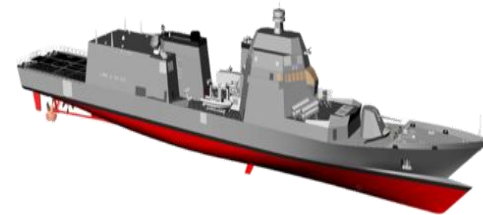


Portfolio – Current challenges



Italian Navy Fleet

- 7 Offshore Patrol Vessels
- 1 Landing Platform Dock
- 1 Logistic Support Ship
- 4 additional FREMM Frigates



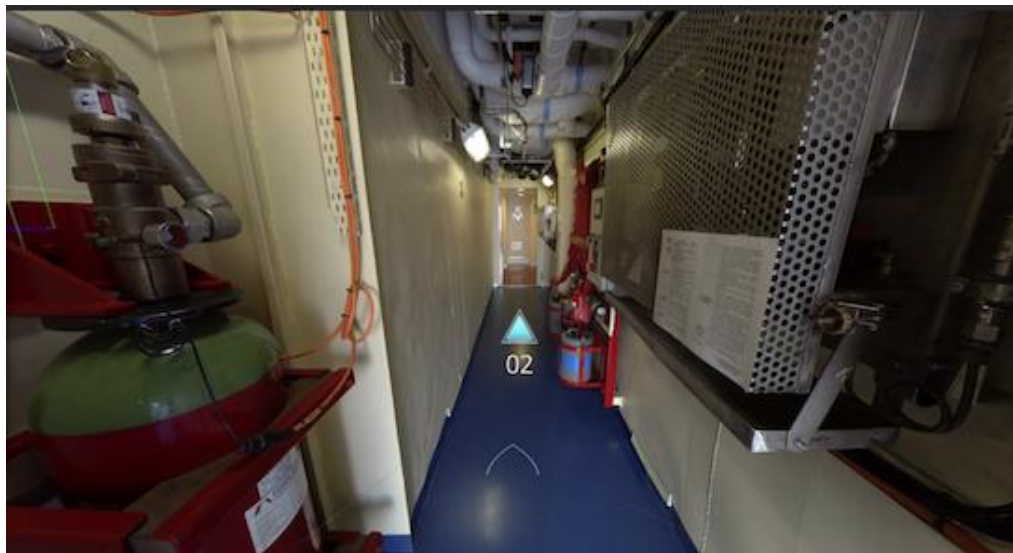
Qatar Navy fleet

- 2 Offshore Patrol Vessels
- 1 Landing Platform Dock
- 4 Corvettes



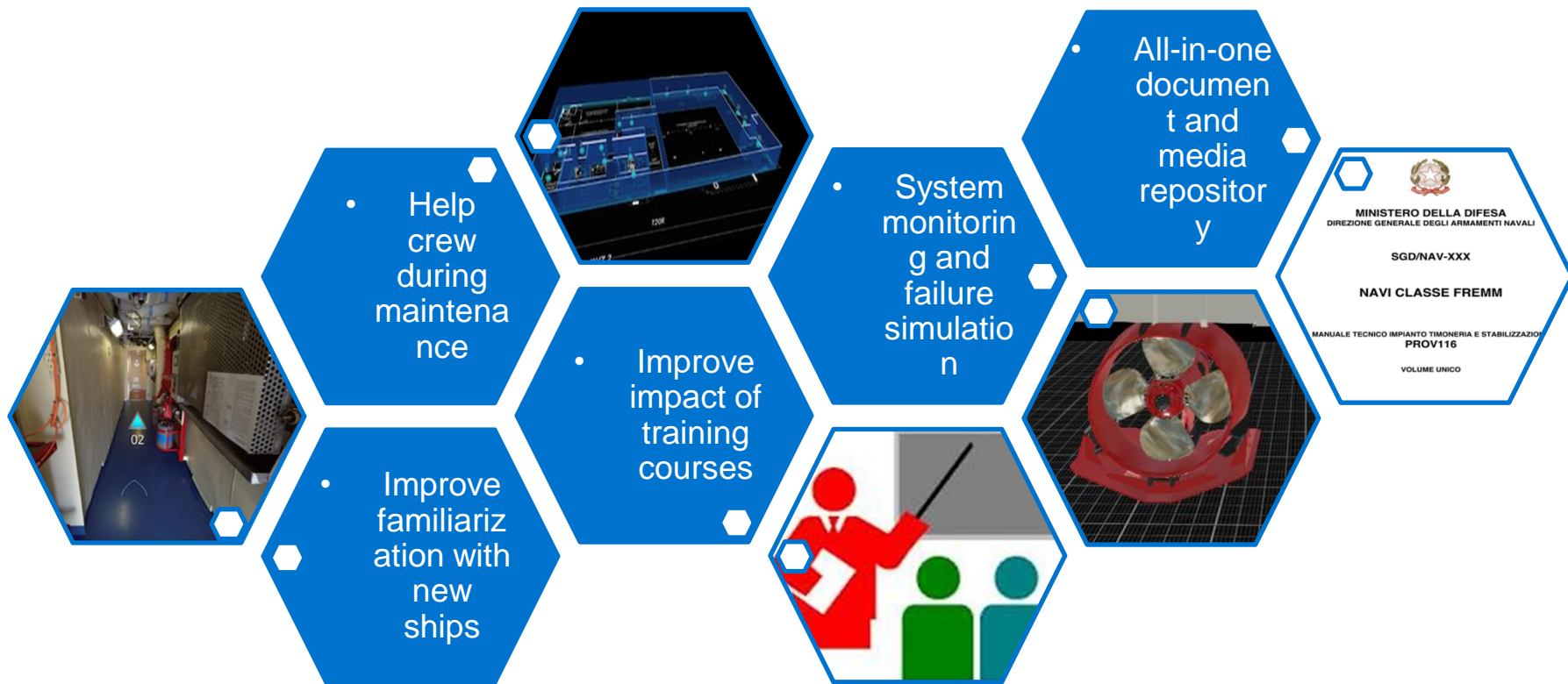
Other Navys

- 4 Patrol Vessel - Bangladesh Coastguard
- 1 Polar Vessel for Norwegian Navy



SHIPVIEW

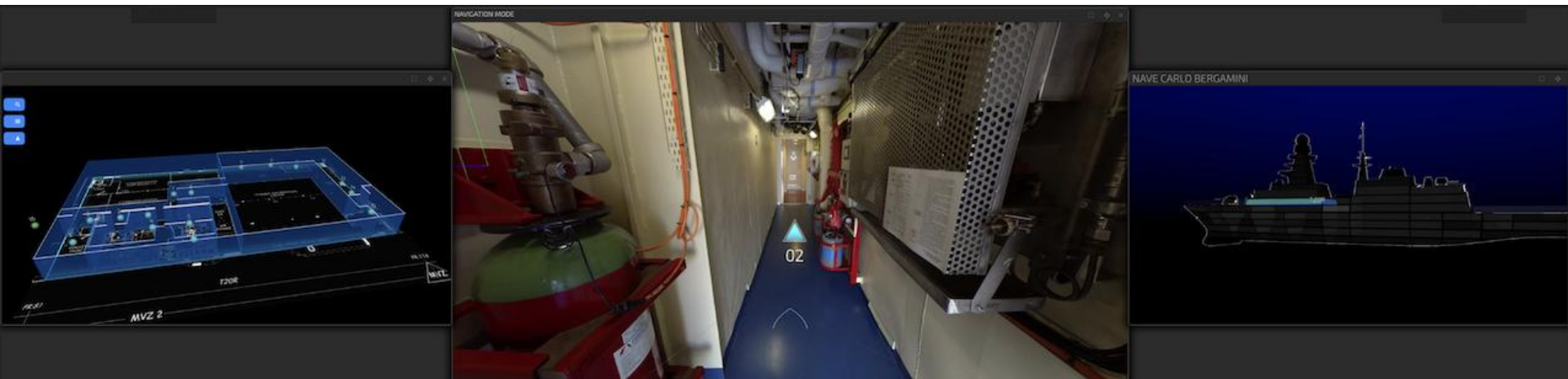
Matching physical reality with virtual reality



Overview

SHIPVIEW

- Developed for the operators training and crews familiarization with new ships
- An immersive virtual navigation on board of the vessel
- Interactive contents available during the walk
- Remote monitoring of ship parameters
- Remote maintenance assistance



Virtual world ILS contents

SHIPVIEW

Common resources

- Technical manuals
- Functional diagrams
- Spare parts catalogue

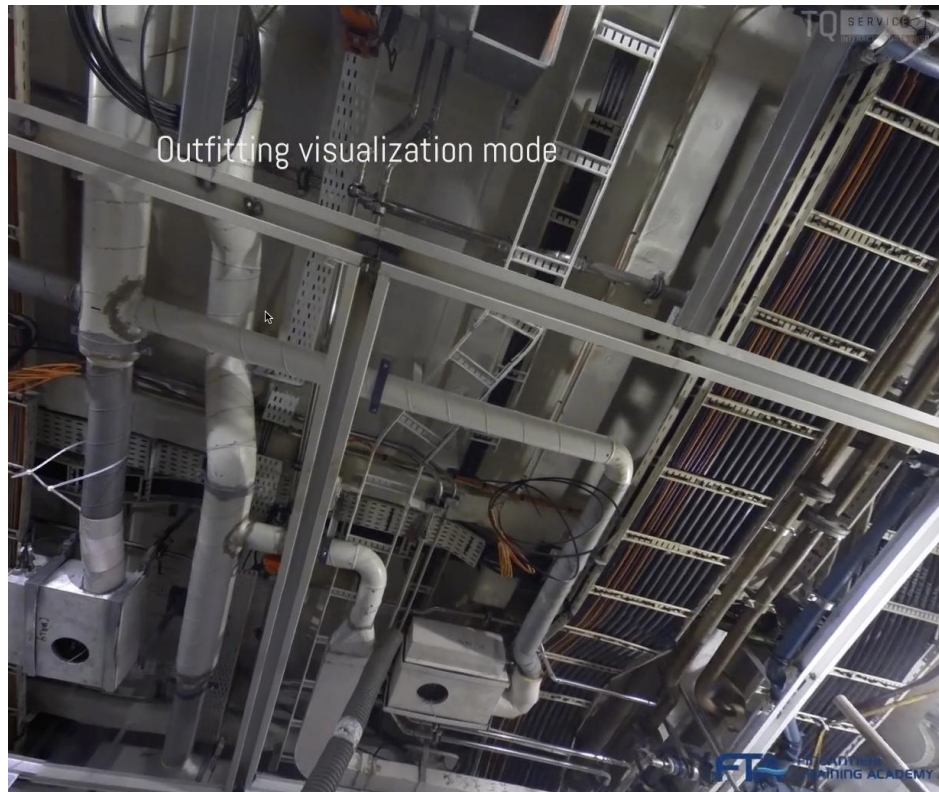
Additional information

- Videos of operating instruction
- Maintenance procedures videos
- 3D drawings and exploded views
- Operating parameters
- Maintenance simulation
- Online assistance from shore



Behind the scenes

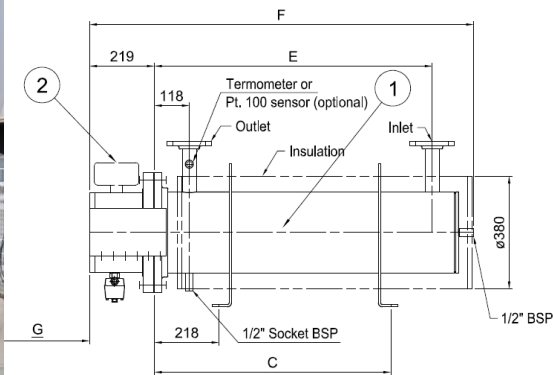
SHIPVIEW

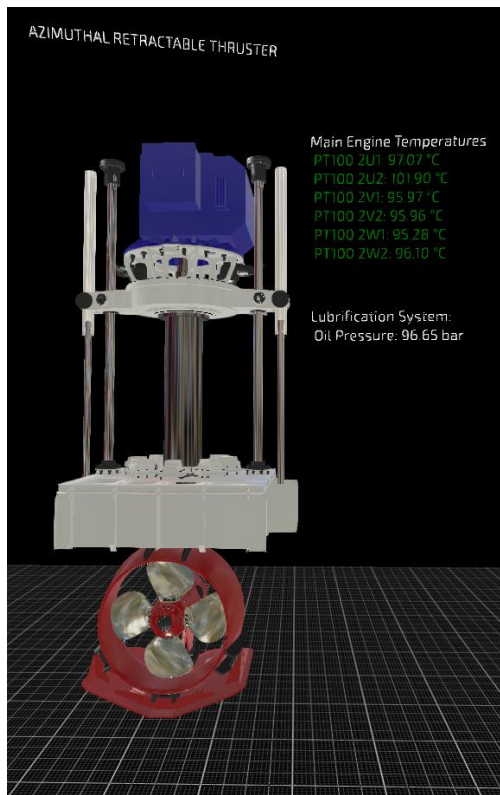


Training - Today

SHIPVIEW

- **Topics to cover on a system**
 - ▶ What is?
 - ▶ Where is?
 - ▶ How it works?
 - ▶ Maintenance
 - ▶ Troubleshooting
- **Training plan**
 - ▶ Lessons in classroom
 - ▶ Photos
 - ▶ Diagrams
 - ▶ On board visit
 - ▶ **Usually it is not allowed to operate real equipment**





- Fully immersive and interactive experience
- Virtual simulation of onboard operations and maintenance with real historical parameters
- Manuals and media available during the operations
- Train every crew with the same tool

Today

- Technical publications
- Photos
- Diagrams and drawings
- Poor expertise shore support

Tomorrow

- Digitalized resources
- Explaining video
- Real time parameter monitoring
- Exploded 3D views
- Expertise shore support
- Possibility to show outfitting
- All in one tool to get ship data

Main strengths

SHIPVIEW

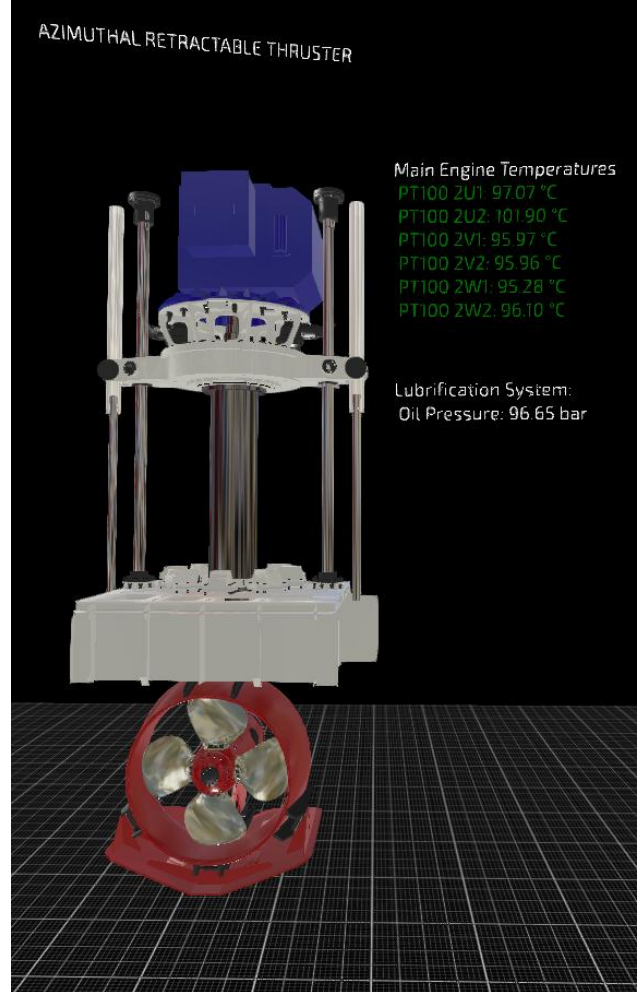
- Improve the effectiveness of the training and familiarization courses offering a realistic and fully immersive experience
- Mapping the vessels during the mounting phase to support the troubleshooting and the maintenance activities for the whole life cycle
- Real time ship parameter monitoring
- Training cost reduced
- Train infinite crews with the same tool



SHIPVIEW & OSIsoft PI

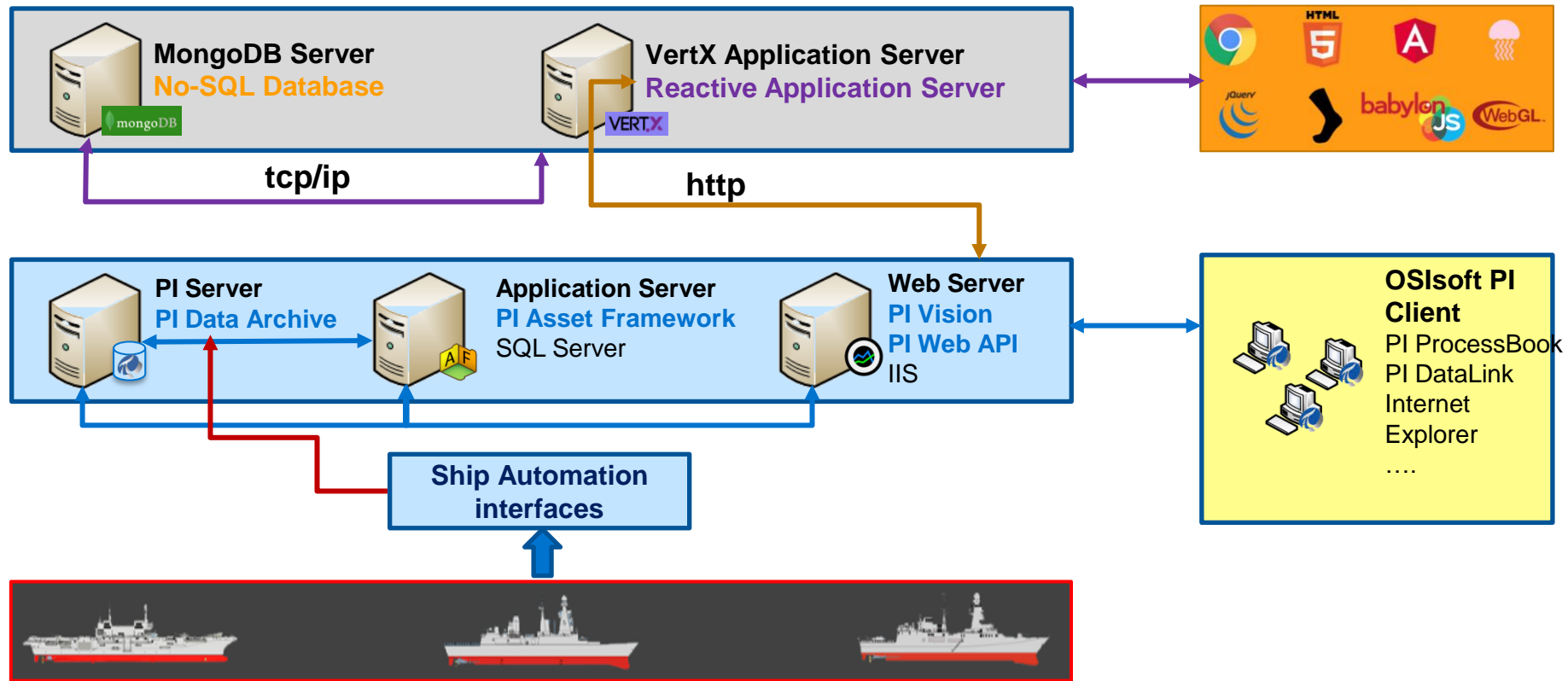
PI for SHIPVIEW

- Realtime data view on ship virtual model
- Maintenance procedures docs on events
- Equipment Simulation
- Operating Procedure review and Failure Data Analysis based on historical data
- Remote technical support
 - ▶ Augmented/Virtual Reality
 - ▶ realtime 3D view

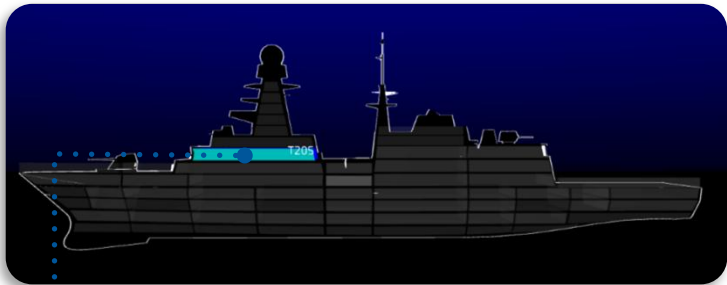


System Architecture

SHIPVIEW



SHIPVIEW Data Model



ROOM

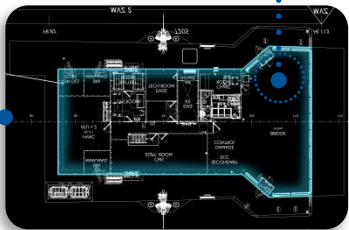
name

POV

[implicit 3D pos]

3D scenes

map



BUBBLE

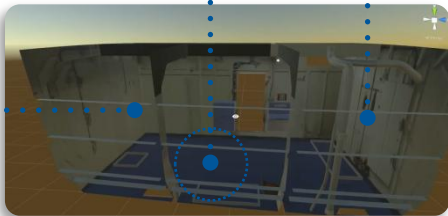
name

type: WT/OT/etc...

2D pos: [x,y]

3D pos: [x,y,z]

texture: [path]



SHAPE

name

3D positions: [x,y,z]

MMContent

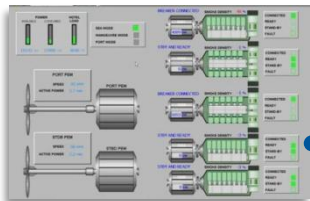
3D Asset

name

3D pos: [x,y,z]

[HFSM + 3D] js

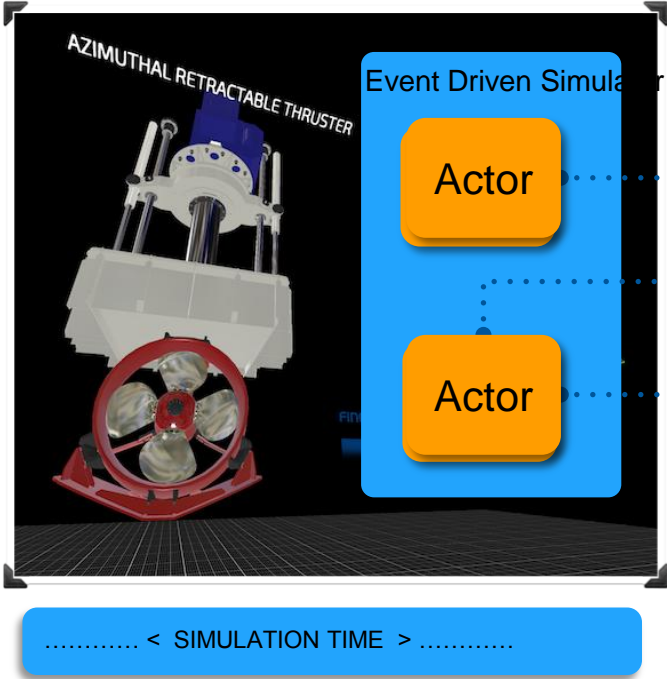
OSISoft AF Template



System Automation

SHIPVIEW

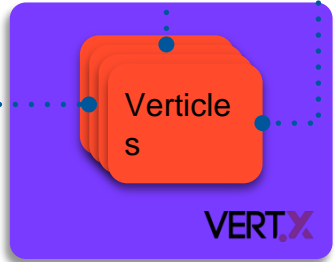
Simulation Model



Event Bus over http

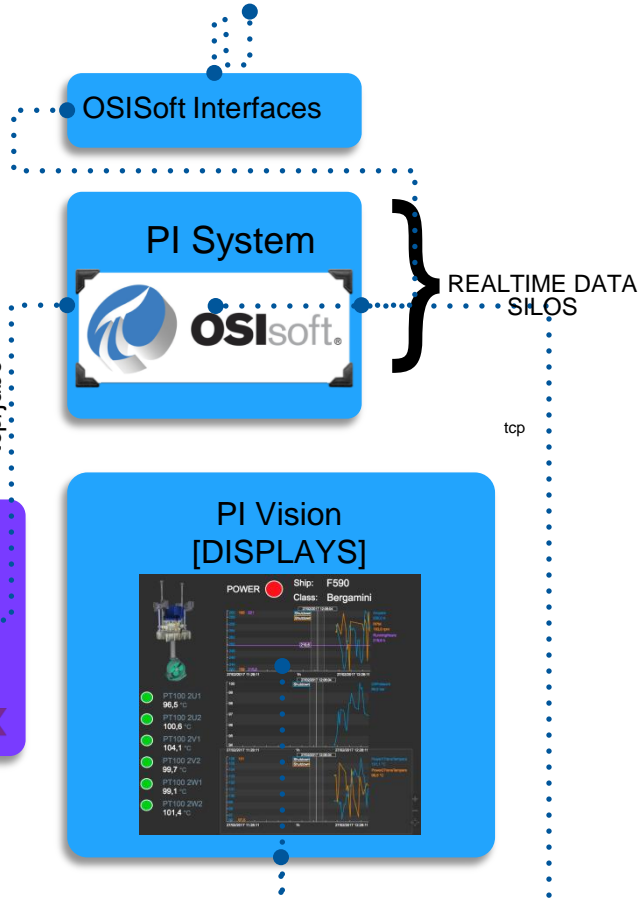
Event Bus over http

tcp/jdbc



http

[SHIP AUTOMATION]



Training room

SHIPVIEW



VIDEO

Provide operators and maintainers a
all-in-one tool



Training / Familiarization

Real time data

Defects analysis and prediction

Document repository

Technical support

Challenge

SHIPVIEW integrated with the OSIsoft realtime data asset platform:

High quality 360° pictures with vessel's layout model

"Behind the scenes" mode to show outfitting

Technical documentation linked with every equipment

3D interactive model for every equipment/plant

Augmented Reality trough visor and controllers



Solutions

All in one system able to provide all
information to support

Training / Familiarization

Maintenance

Trouble shooting

Outfitting

Real time data monitoring



Results

Focused on modeling, simulation and analysis based on real time data.



Items and system real time recognition

AI support during maintenance

Remote Support from naval base

Operational data sharing with onshore expertise

Failure data analysis

Next steps

Summary

COMPANY and GOAL

DELFI ILS has to support the logistics in a highly complex system delivery adopting SHIPVIEW as a single, scalable and extensible platform



CHALLENGE

A single tool to manage all the information

- Data fragmentation & heterogeneity
- Ship automation integration
- Simulation functionalities

SOLUTION

SHIPVIEW: 3D Localized Multi Media Asset Manager

- Visual reference to reality
- Embedded real-time data as well as data support to simulation
- Visual reference to technical docs

RESULTS

Entire ship information assets in one place ready to use

- Process data (real-time and for simulation)
- 200 operative manuals
- 40K spare parts
- 10K operative procedures video
- 6K technical drawings

Contact Information

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감사합니다

Danke

谢谢

Merci

Gracias

Thank You

ありがとう

Спасибо

Obrigado

