

**TRANSAS**

# **DMIS**

**Port Management Information Systems**

## **Management of Ports Using Innovative 3D Visualization Technologies**

**13th ASEAN Ports&Shipping 2015  
Jakarta/Indonesia**



# Port Management Information System

## Contents

- Transas Marine Profile
- Challenges for Port Efficiency
- PMIS Overview
- 3D Functionality
- Benefits/Conclusions



# Transas Marine

International High-Technology Corporation

Transas Marine is a global established player in the marine market with major references, global sales network, comprehensive products portfolio and involvement in large-scale R&D projects.



# Solutions

## High-Technology Marine Products



Onboard Navigation and Communication Systems



Charts and Data Services



Simulation Systems



Port and Vessel Traffic Management Systems



Training Solutions (ECDIS Training, Technical Trainings, CBT)



Global Service & Support Network



# Port Management Information System

## Challenges for Port Efficiency

- Labour inefficiency: over-manning, restrictive working practices, insufficient labour flexibility, and inadequate training
- Over-investment caused by inappropriate financial objectives, excessively large cash flow, failure to return profits to stakeholders, or under-pricing of the cost of capital
- Failure to dispose of assets which are surplus to requirements



# Port Management Information System

## Challenges for Port Efficiency

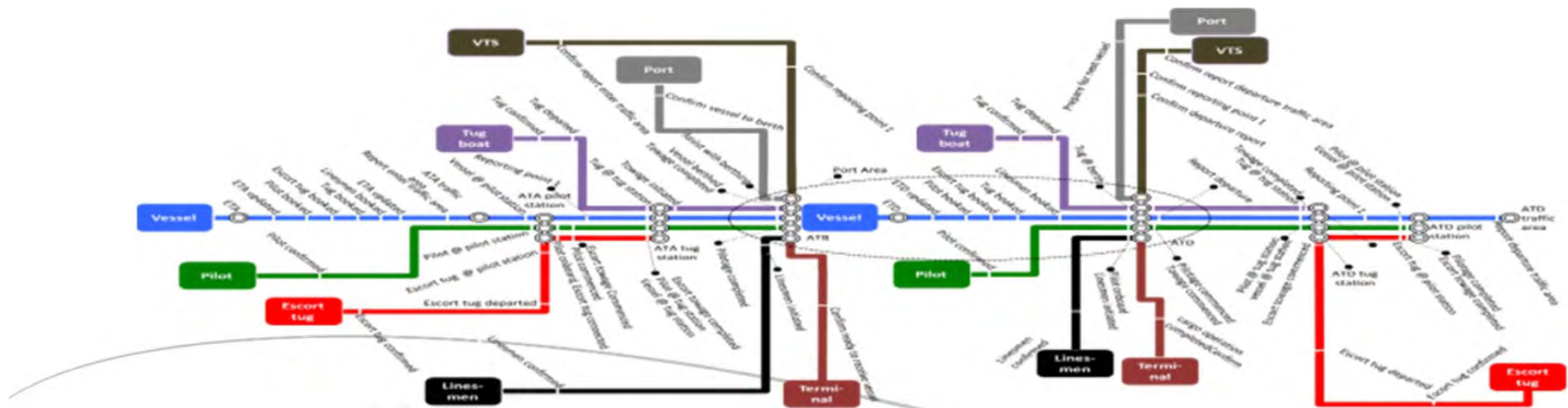
- Inappropriate choice of technology
- A mismatch between the capacities of different systems components in ports. Common examples are the mismatch between quay and yard capacities, and quay cranes which can handle cargo faster than the yard equipment
- Poor communications – and sometimes differences in working hours - between different stakeholders (including port authority departments)



# Port Management Information System

## IT Challenges for Port Efficiency

- The complexity of the port operations involving many activities by different actors and most are using non-compatible systems
- The efficient use of port assets, equipment and facilities, as well as measuring the efficiency of operations with improved dashboard & reporting tools
- Collecting data of all operations in time and as integrated for collaborative decision making
- Integration with 3rd party systems like VTS, PCS and distributing the data to different stakeholders



# Port Management Information System

## Overview

- Comprehensive system for real-time management of port operations
- Cloud/ Software as a Service (SaaS) and traditional client location installable services
- Vessel Call Management
- Berth Allocation Management
- Pilot & Tug Management
- Resources Management
- Billing and Customer Relationship Management Module
- Cargo Management Using 3D tools
- Integrated Live Port Map (Real-time view of port locations status)
- Seamless integration with VTS
- Possible further integration with Mobile Pilots Application & Simulation Software





## Efficient Solutions for Day-to Day Port Operations

### Vessel Traffic Management

- Vessel Information Management
- Arrival/Departure Notifications
- Port Services Management

### Commercial Operations Management

- Dynamic Offer Design
- Customized Billing and Tariff System
- Contract Management
- Subcontractors Management
- Reporting

### Vessel Calls Management

- Vessel Calls Planning
- Berth Management
- Vessel Call Documents Control
- Coordination of Agents Notifications
- Resources Allocation

### Yard Operations Management

- Gate Entry-Exit Operations
- 3D Yard Display
- Yard Planning Control
- Dynamic Yard Definition
- Monitoring and Control of Warehousing Activities

### Cargo Operations Management

- Equipment Management
- Cargo Monitoring and Movement Plan
- Workforce Management
- Electronic Data Exchange (EDI)
- Customs Control Software

### Role-Based System Access

- Automatic Port System Authorization Level Identification
- Information Entry Definition

### Customer Relationship

- Inter-departmental and Customer Communication
- Job Requirement Entry System
- Kiosk and PC Control and Tracking System



**External Databases**  
VTS/AIS  
Management & Accounting software packages  
Mobile Pilot Application  
Simulation Software



**On-demand Applications**

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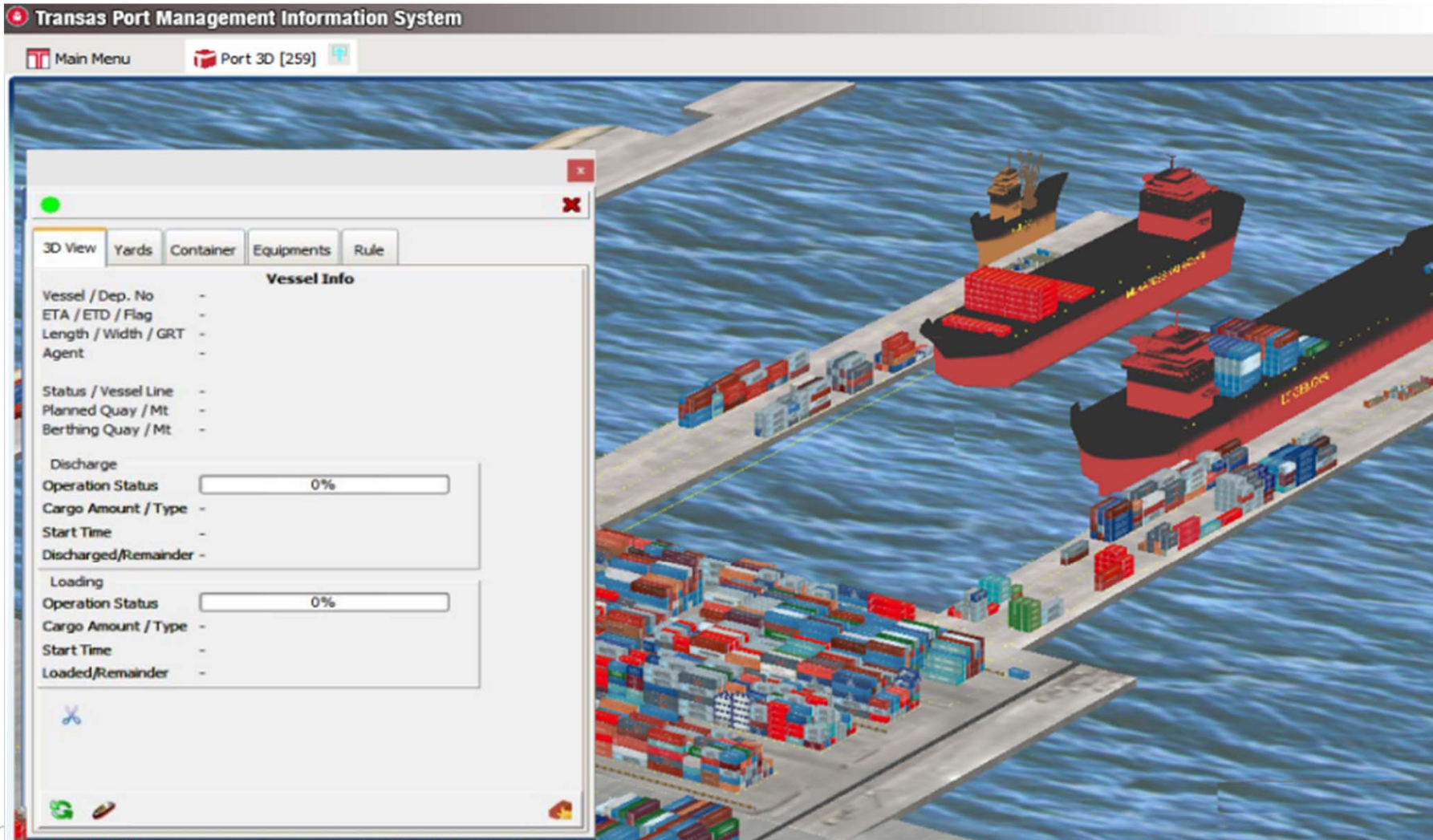
# Gates, Yard and Berth Management in 3D

## Interactive Display of a Terminal Layout Using 3D Drawing Tools

- 3D visualization of a terminal, including yard, buildings, warehouses, quay cranes, Cargo and vessels
- Cargo movement is monitored real-time in 3 dimensions
- Well-organised management of job orders using 3D display
- More optimized yard planning with a minimum number of operators
- 3D visual displays of all equipment (MHC, SSG, RTG, STACKER, Terminal Tractor etc.) identified in the system through the apparatus placed over Wireless Local AreaNetwork via the aid of GPS support
- Tracking of overall traffic within the port
- Maximizing berth productivity

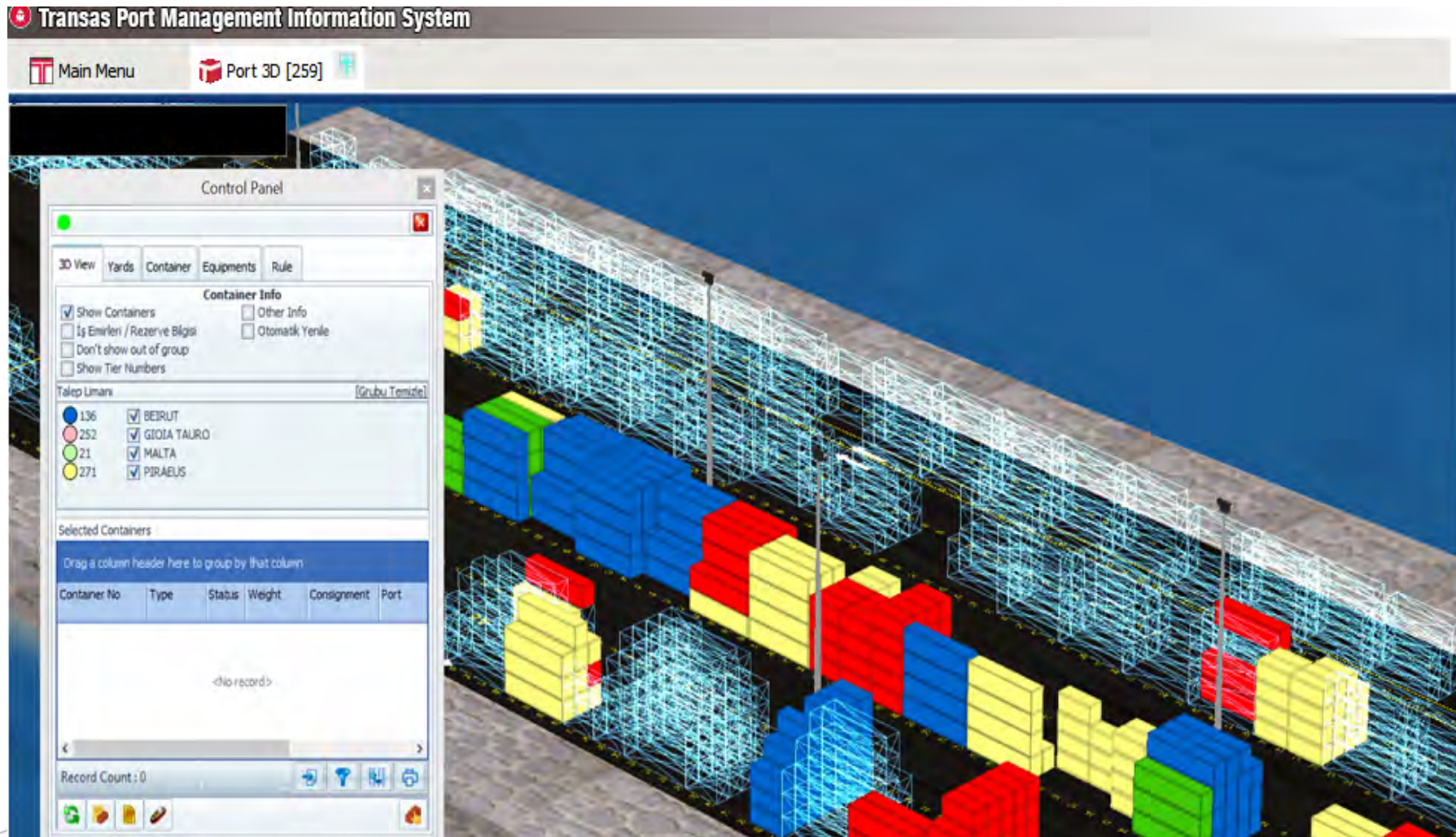
# Berth Management

## Berth Allocation in 3D



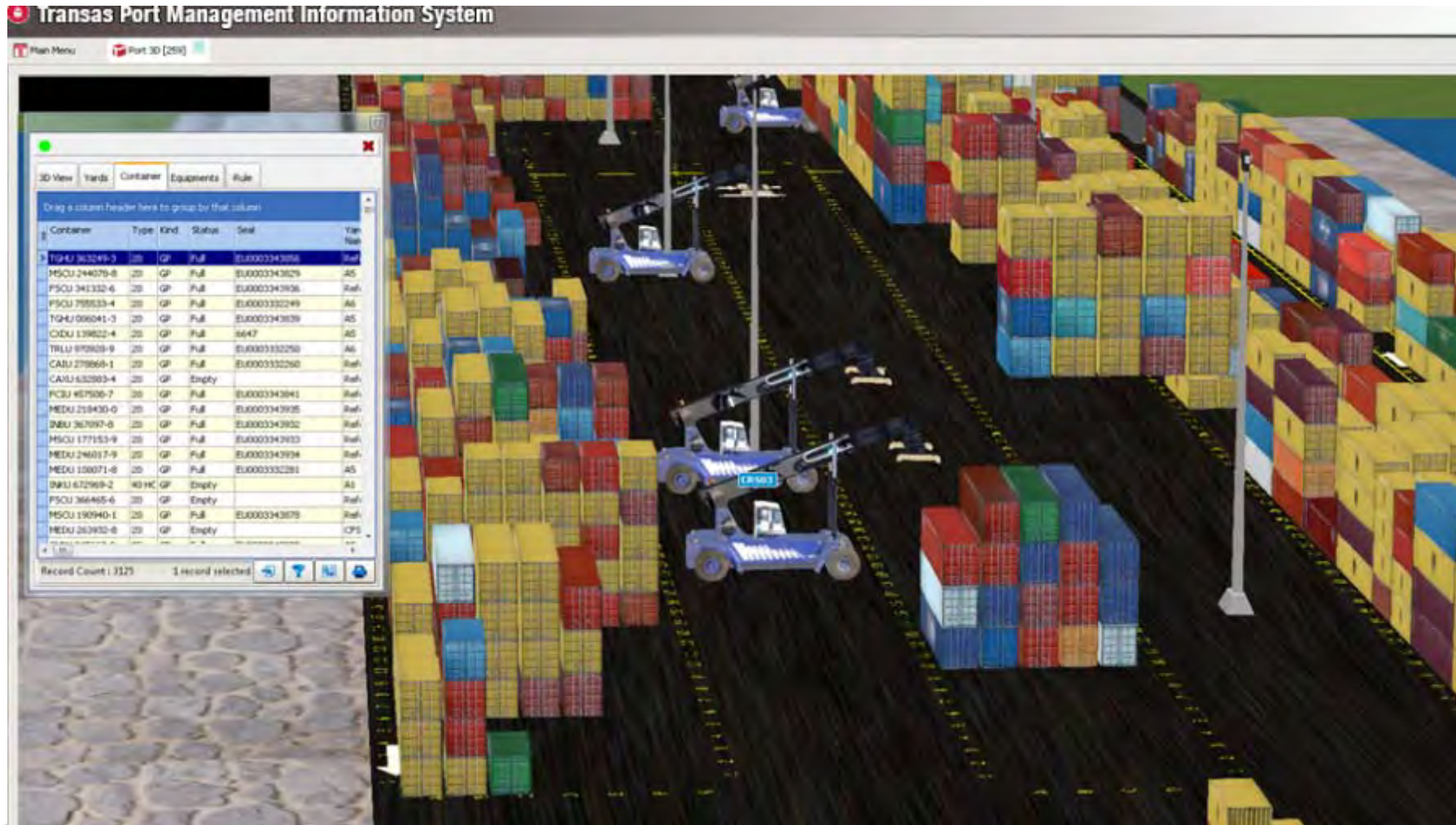
# Yard Operations

## 3D Visualization of Containers



# Terminal Operations System

## 3D Visualization of Container Terminal



# Reporting and Dashboards



# VTS Operation Module

VTS software is integrated with PMIS in order to monitor vessels traffic within a port at any given date and time with 3D functionality

- Full-scale 3-dimensional view of the navigational situation in a port
- VTS operator is provided with 3D presentation of a current port environment
- Vessel movement (arrival/turnaround/departure) and information on 3D display
- Traffic images are fully interactive for adjusting both the angle and position of view
- Enhance navigation, particularly when used in poor visibility, debriefing, training, planning and security situations
- Ideal functionality for analysis and debriefing of incidents on a port territory as well as incident prevention

# VTS Integration

## Vessel Information and Movement in 3D format

Unknown vessel status

Vessel entering a VTS area

Crossing the reporting lines  
Vessel identification

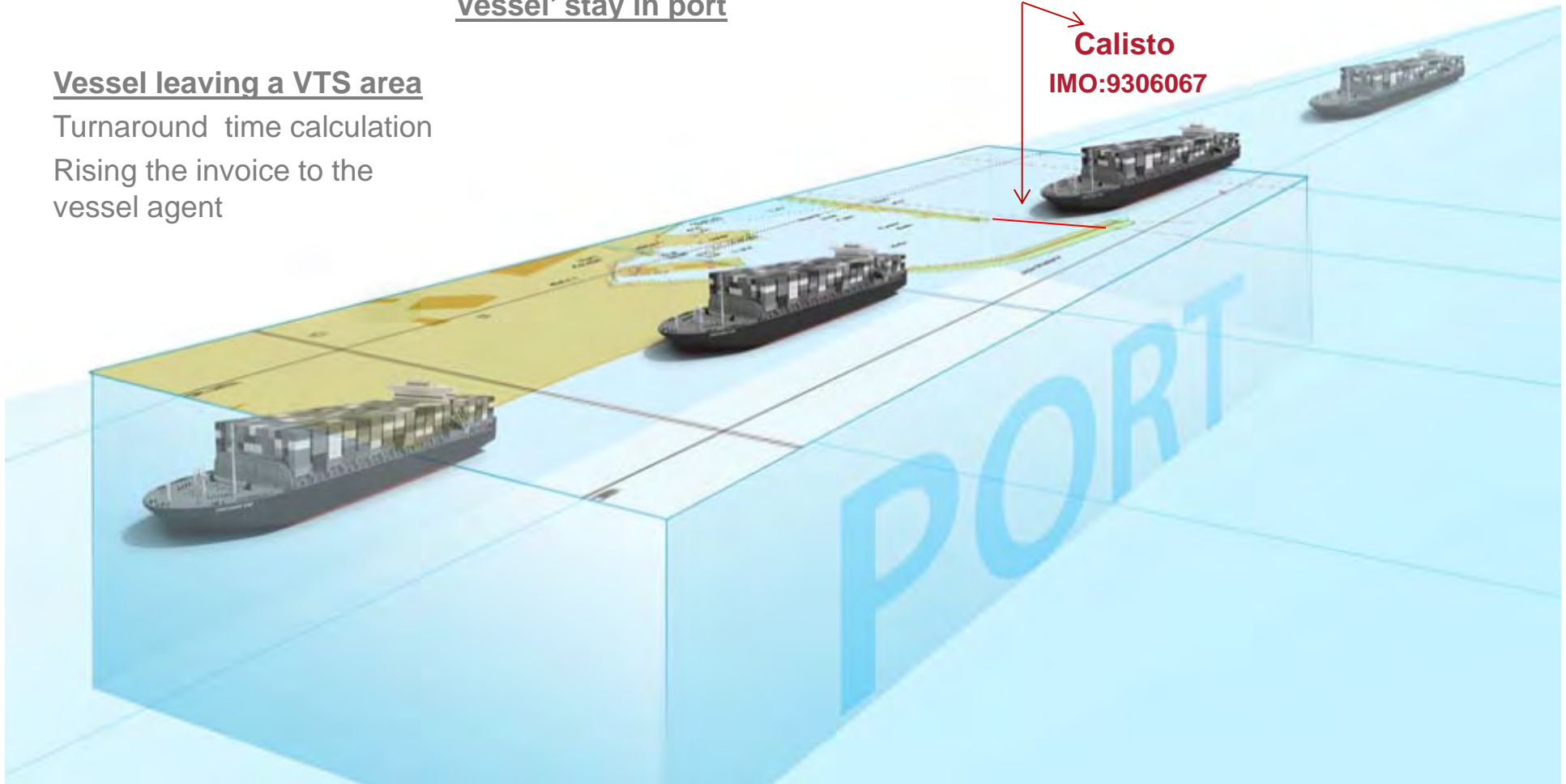
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Vessel' stay in port

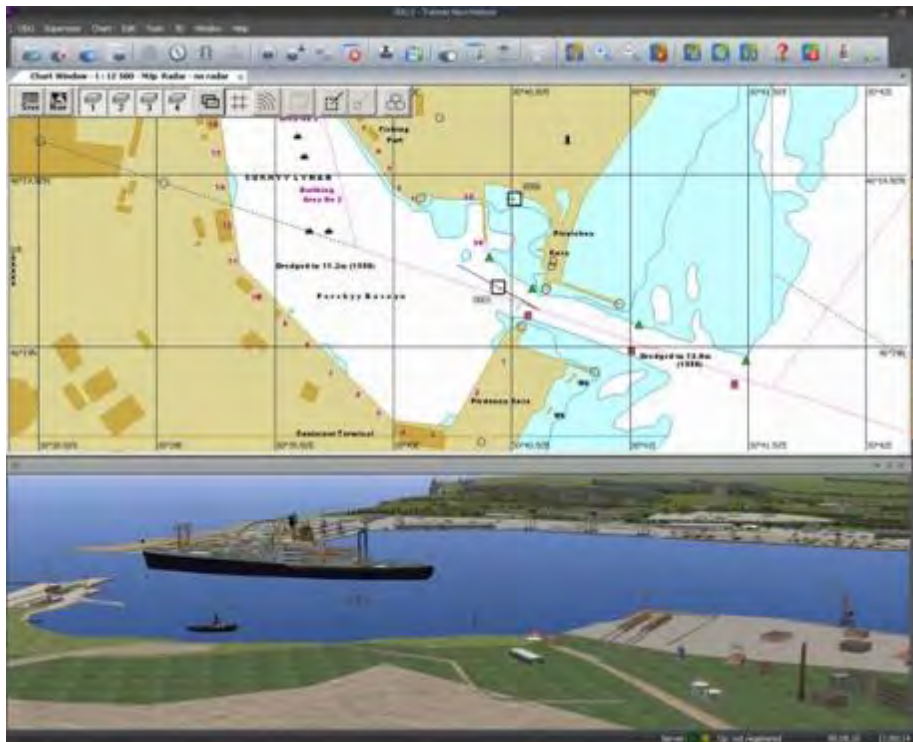
Vessel leaving a VTS area

Turnaround time calculation  
Rising the invoice to the vessel agent

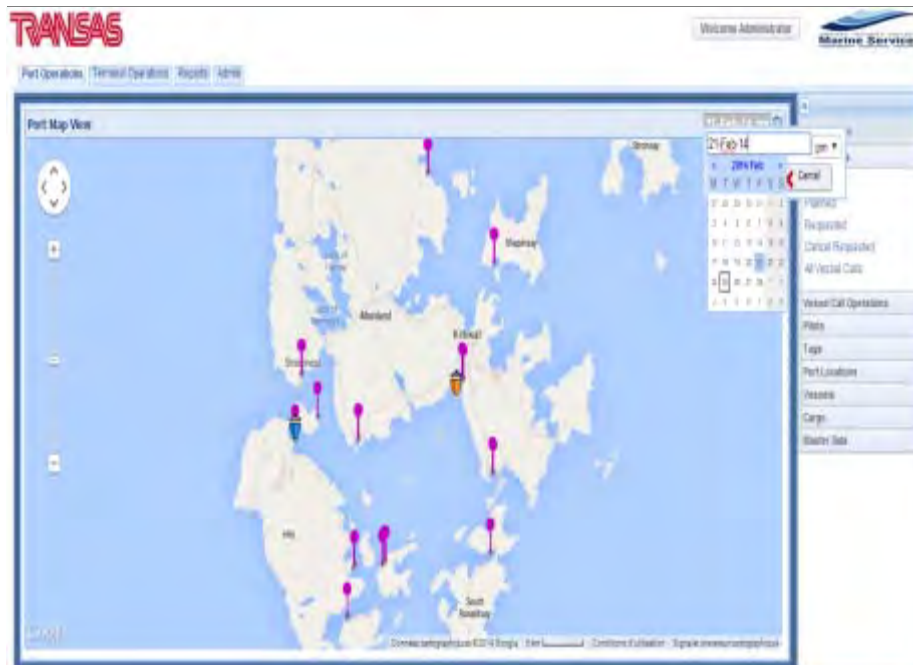
**Calisto**  
**IMO:9306067**







3D VTS is particularly helpful to monitor narrow or turning areas within a port with the use of virtual distance lines and circles



3D picture updates in real-time mode and enables VTS operator to control the position of the camera online in 3D window

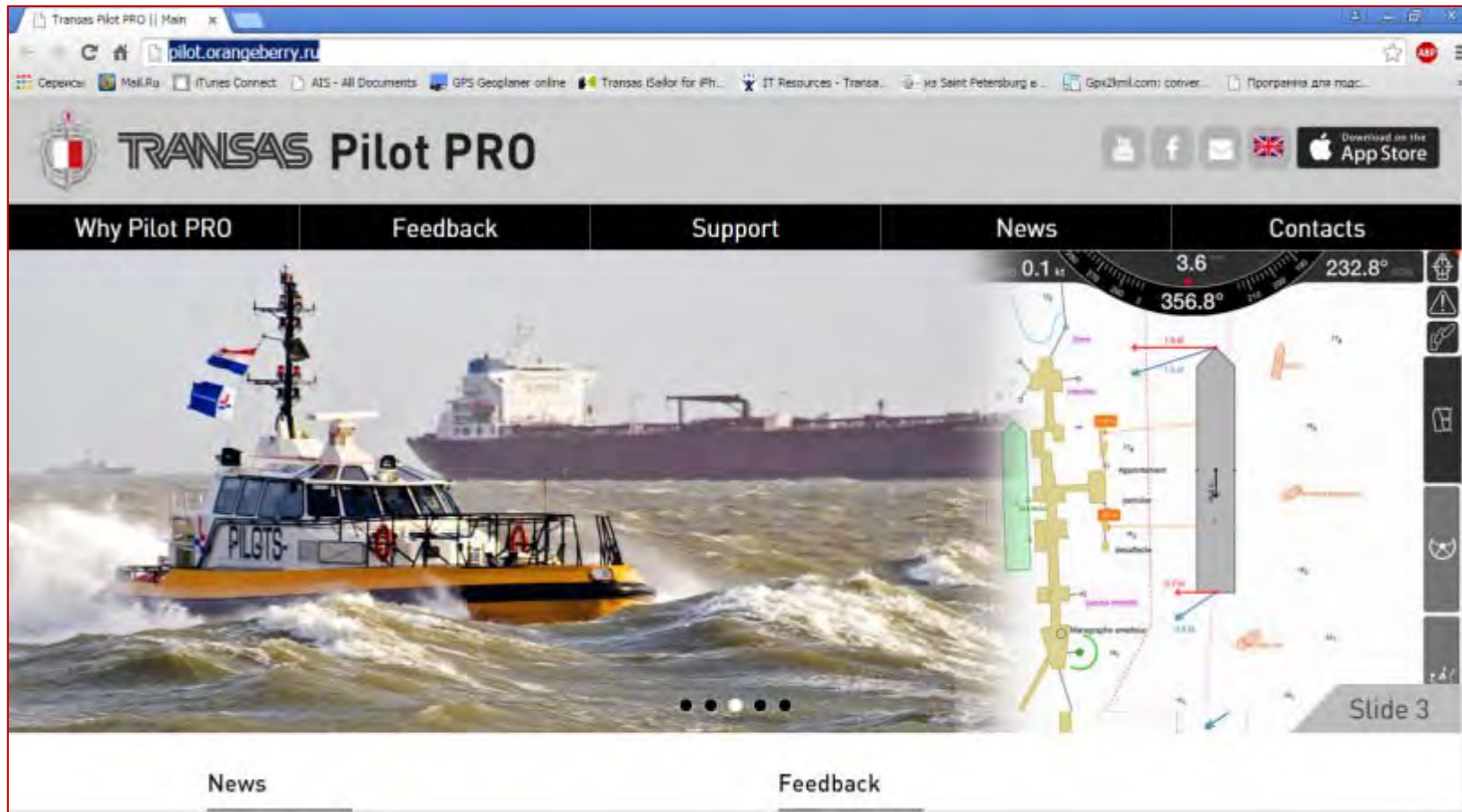
# Transas Pilot Pro

## Main Functions and Benefits

- Vector TX97 Chart Format
- Direct Chart Updates into App
- AIS Class A support via Pilot Plug
- AIS Targets on charts.
- CPA/TCPA calculations
- Support of the 3rd party NMEA sensors over Wi-Fi
- Integration with Transas PMIS



# Transas Pilot Pro

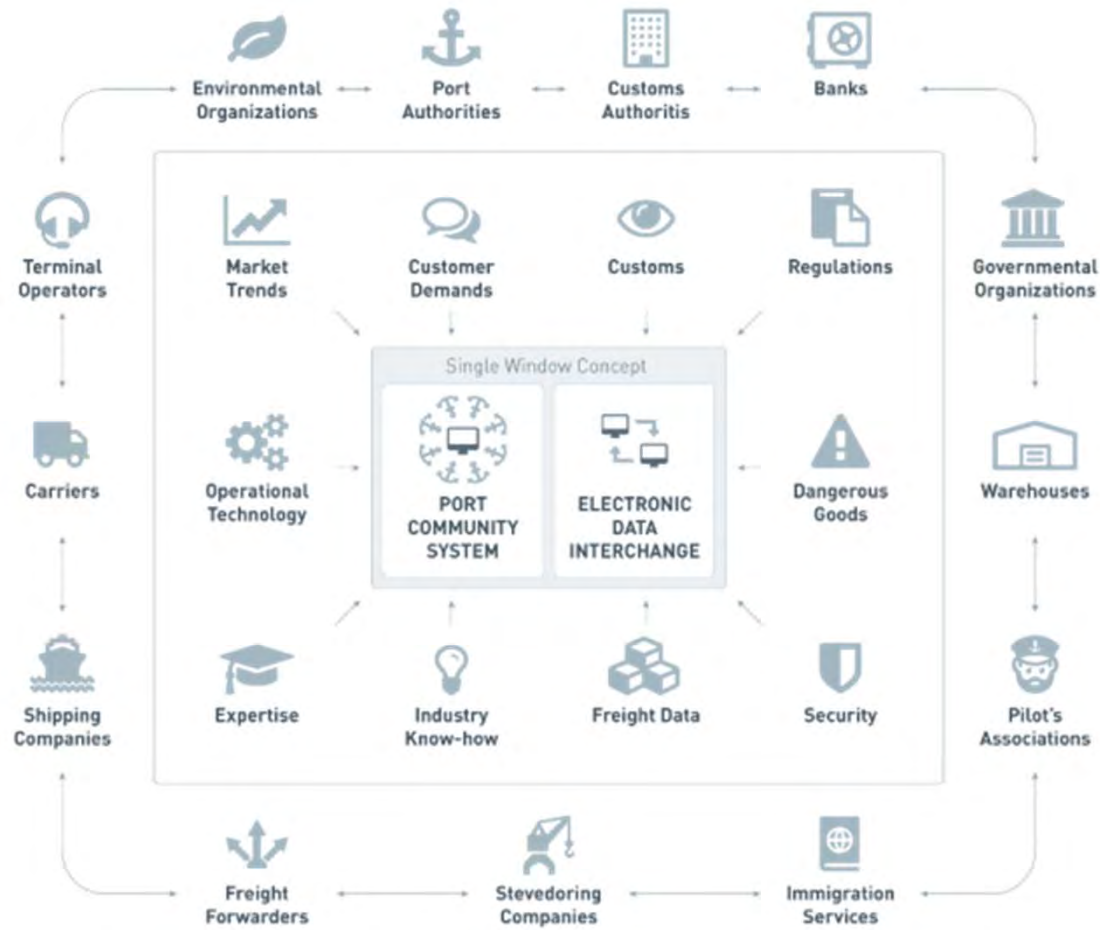


[www.transaspilot.com](http://www.transaspilot.com)

<http://pilot.orangeberry.ru/>

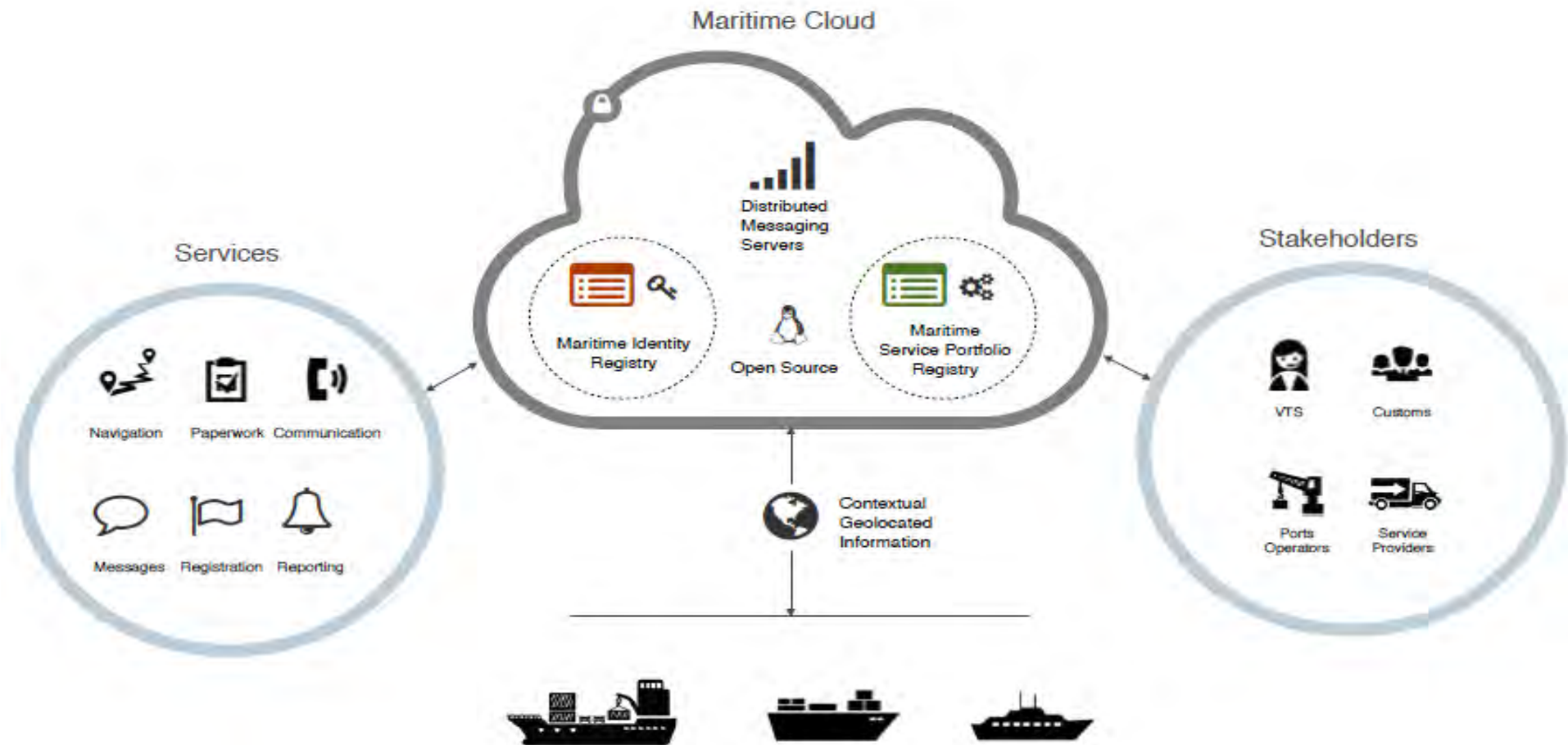
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# Transas Port Community System



# e-Navigation Infrastructure

## Maritime Cloud



# Value-Added Services

Transas, the leading expert in Port and Vessel Traffic Management solutions, offers its customers a complete range of value added services including:

- Analysis of port requirements and future system design
- Development of on-demand applications
- Project Management
- Business Consulting
- Comprehensive support services and assistance 24/7



# Benefits of 3D Technology and Integration with PMIS

- Realistic representation of a port environment
- Improved supervision and optimization of all port operations
- Enhanced convenience of data interpretation
- Higher level of port control and stability
- Increased employee and stakeholder satisfaction
- Increased productivity while decreasing the man-power requirements
- Cost efficient solution

# Benefits/Conclusions

## Innovative Approach Towards Port Management

- Accurate, reliable, and secure solutions
- Enhanced collaboration with port stakeholders
- Optimised port logistics processes
- Streamlined administrative procedures
- Reduced paperwork and duplication of work





# Benefits/Conclusions

## Innovative Approach Towards Port Management

- Compliance with EU/International PMIS related regulations
- Organisational productivity and service quality through efficient knowledge management
- Fast adaptation to changing business environment
- Acquisition of innovative skills and practices
- Significant cost reduction



**Thank You!**

**Emre Cebeciođlu**  
**emre.cebecioglu@transas.com**



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