

PELINDO DIGITAL TRANSFORMATION

To Enhance Efficiency, Cyber Security, and
Interoperability in Maritime Ecosystem

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01

About us



About us

Following the merger, PT Pelindo's operational area covers almost all regions in Indonesia



About us



PT Pelabuhan Indonesia (Persero) is a State-Owned Enterprise (BUMN) whose shares are 100% owned by the Ministry of State-Owned Enterprises representing the Republic of Indonesia. Operating in the port services industry, PT Pelindo is the largest port operator in Indonesia. PT Pelindo is a merger of Pelindo I, II, III, and IV.



VISION

To become a world-class leader in an integrated maritime ecosystem.



MISSION

To realize a national maritime ecosystem through improved network connectivity and service integration to support sustainable economic growth.

CONTAINER SERVICES



Container handling services involve loading and unloading activities from ship to owner delivery. Services include:

- Berth (Pier/Wharf)
- Storage Warehouse
- Container Yard
- Receiving/Delivery

NON CONTAINER SERVICES



Non-container handling services involve loading and unloading activities from ship to owner delivery. Services include:

- Berth (Pier/Wharf)
- Storage Warehouse
- Storage Yard
- Receiving/Delivery



LOGISTIC & HINTERLAND

Services outside the port area, including:

- Industrial Areas
- Warehousing
- Trucking
- Property
- Marina & Marine Tourism



MARINE & EQUIPMENT

Vessel services include operational activities for ships from entering to leaving the port. Vessel services include:

- Mooring Services
- Pilotage Services
- Tug Services
- Water Supply, Waste Collection, and Wastewater Services

02

Our Digitalization Journey



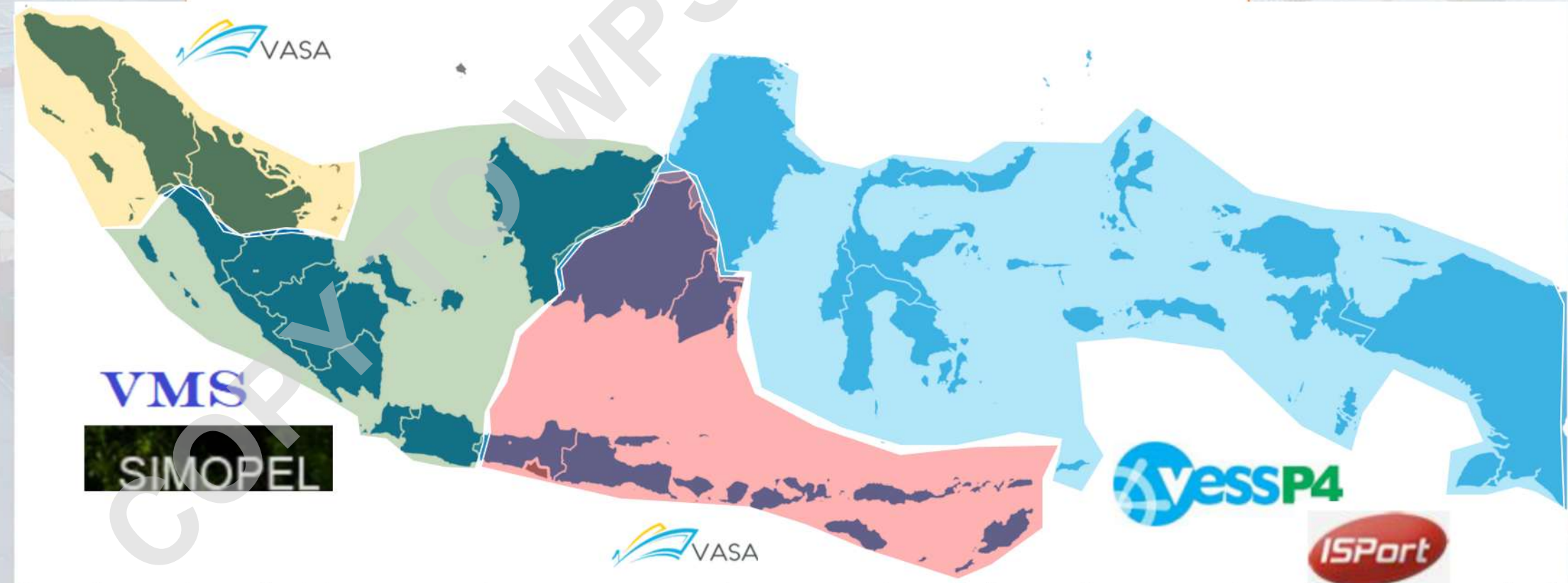
Digital Transformation: People-Centered Maritime Excellence



Company Vision
To become a world-class leader in an integrated maritime ecosystem.

Digital Transformation

- People Capability Development
- Organization Alignment
- New Culture
- Process Improvement
- Technology Enablement



The diversity of ship operating systems that exist in each region are developed to suit the business processes in each region both independently and through third parties

Standardization of the Ship Operation System within PT Pelabuhan Indonesia (Persero), encourages the development of a platform that is complementary to all pre-merger systems from each region, through the joint development of business process blueprints by ship service process business players in all PT regions. Pelindo in Indonesia

The **Port Transformation Framework** includes **Pre-Transformation**, **Standardization**, followed by **Systemization** and **Integration**

Pre-Transformation



Gap Analysis

Gaps in meeting basic operational needs

Re-Layout

Struktur Organisasi

Mapping the condition and needs of the tool

Standardization



Standardized skills & competences for OPS workers

Operating Model based on Planning & Control

Standardized Equipment & Instructure

Safety Awareness

Systemization



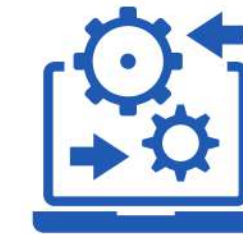
Systemized Operational Process (TOS) Implementation

High & Reliable Operational Performance

High & Reliable Operational Performance

Real time data & Information

Integration



Data Integration

Automated OPS Process

Environmental friendly equipment

Data Analytics

Automated OPS Process

Continues Improvement / Operational Excellence

PORT DIGITALIZATION INITIATIVES

Pelindo implements digitalization across all lines of business, starting from the sea sides, terminals, supporting operational processes, and even customer service processes.

Operation - Seaside

- INAPORTNET (Trans. Ministry)
- Vessel Management System
- Marine Operating System
- Vessel Traffic Service
- Phinisi (INAPORTNET integration)

Operation - Terminal

- Container TOS
- Non-Container TOS
- Car Terminal Operating System
- Autogate
- Integrated Planning & Controlling System
- Single Truck ID System

Operation - Supporting Area

- Behandle Operating System
- Warehouse Operating System

Back Office

- Enterprise Resource Planning (ERP)
- Data Quality System and Dashboard
- Pelindo Electronic Office

Customer

- Pelindo E-Service
- i-Hub – Single Platform untuk semua layanan



Strategic Digital Initiatives: Standardization, Security, and Integration

Unstandardized of business process and many variant of system as a background of **Phinnisi** product development. **Phinnisi** is a vessel services platform, that developed by internal Pelindo, **End-to-end System** for handling vessel services, from Ordering, Validating, Planning, Order Dispatching, Execute Log to Billing. **Order-to-Cash** and **Record-to-Report** in single platform

Multi Site & Centralized
standardize vessel service business process in all ports and skill to maintenance & support

Cloud Architecture
Applied For Scalable, high availability, and rapid deployment

Effective & Adaptive
Supported the flexible or specific business process in all ports, also continues improvement product

Cost Efficient
with affordable price option for operation and maintenance. Such as Volume basis usage



Ordering

Validating

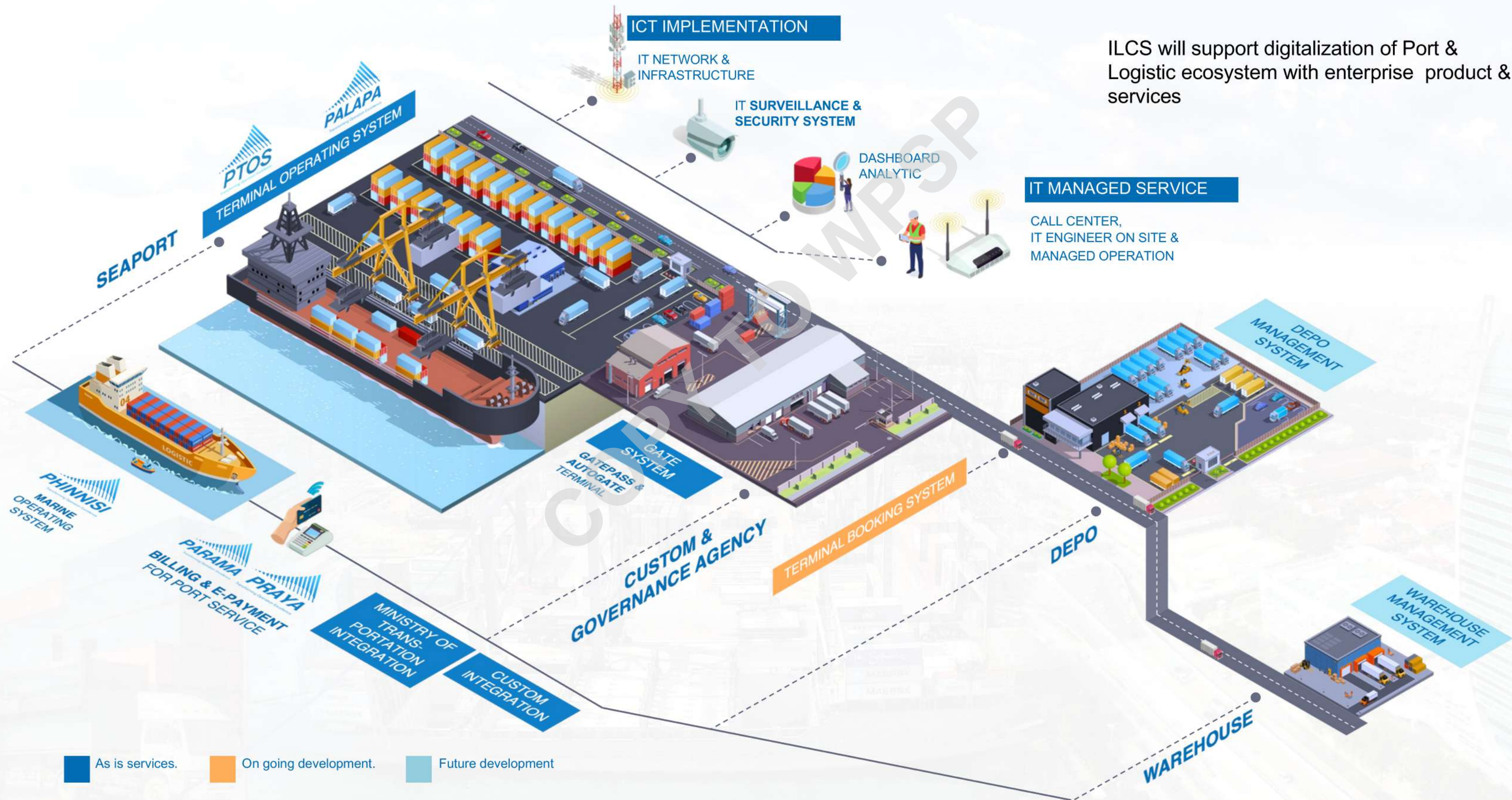
Planning

Order Dispatching

Execute Logging

Billing & Payment

DIGITAL PORT & LOGISTICS ECOSYSTEM



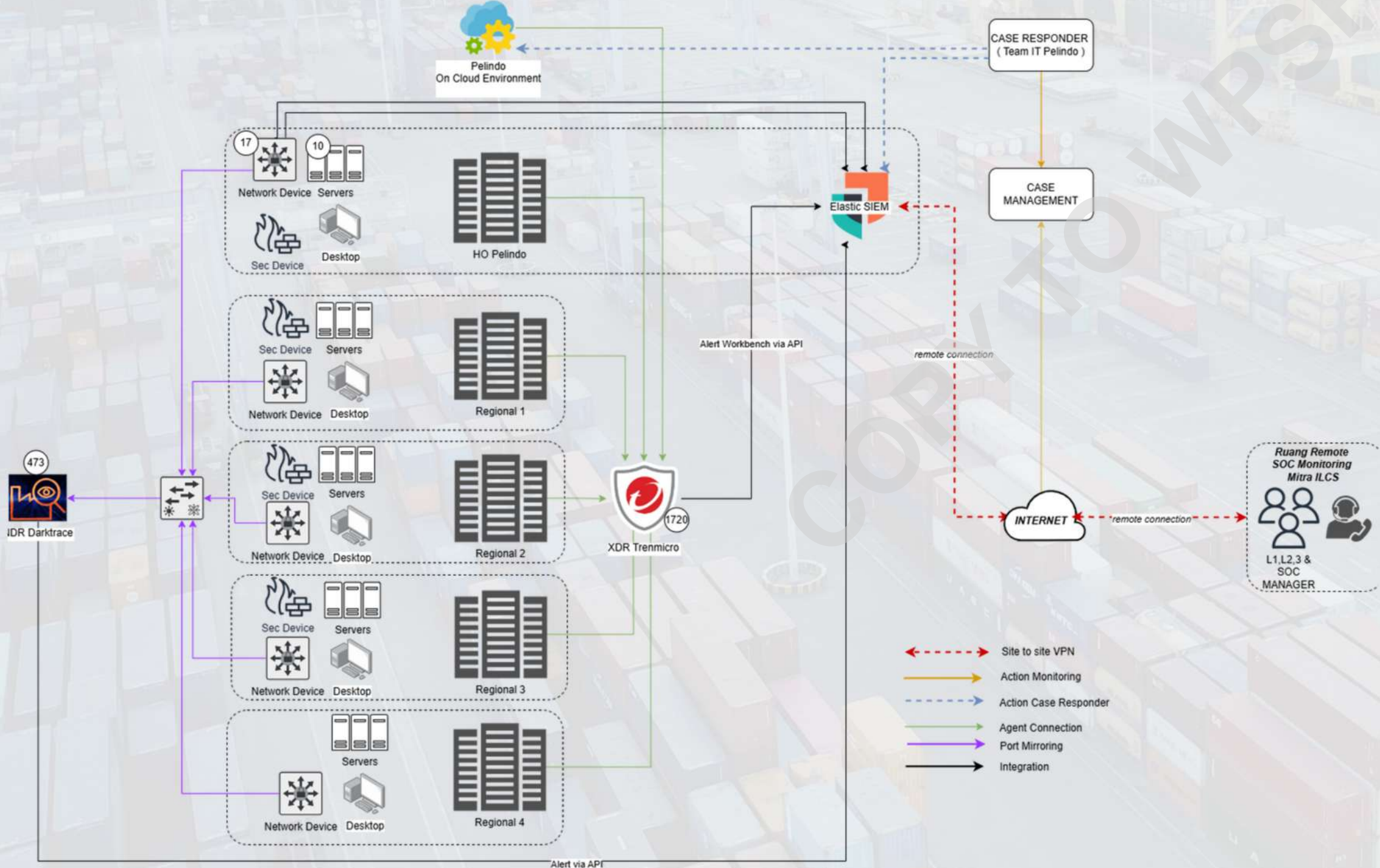
ILCS will support digitalization of Port & Logistic ecosystem with enterprise product & services

Strategic Digital Initiatives: Standardization, Security, and Integration



CYBER RISK INDEX

Security Operations Center (SOC) TOPOLOGY & ARCHITECTURE



Pelindo's cyber risk index, as reported by Trend Vision One, is at "Medium Risk" with a score of 59/100.

Key factors:

- High malware/exploit activity (mitigated).
- Irregular patching leaves some vulnerabilities unaddressed.
- Many endpoints are disconnected or poorly configured.
- Frequent use of non-work-related applications.

Strategic Digital Initiatives: Standardization, Security, and Integration



Pelindo-Hub is developed for customer front-end self-service. Pelindo-Hub provide container terminal service request and back-end services which integrated with the logistic ecosystem collaborated with government and business through NLE

03

**Implementation
Results**



Improvement Performance

Gross Productivity *Increased by Avg 74%* and Port Stay *Reduced by Avg. 32%*

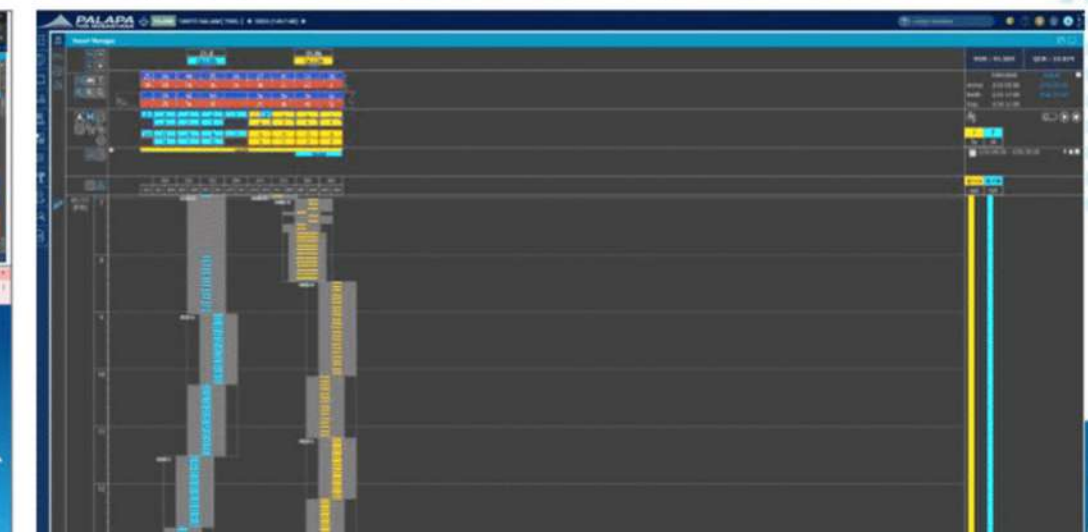
Increased Performance in Pelindo Cont. Terminals...

Terminal	Productivity BSH (Box Ship Hour)*			Vessel Port Stay (Hours)*	
	Before	After		Before	After
		Avg	Highest		
Belawan	20	38	61	55	32
Makassar	20	34	63	38	22
Ambon	12	26	35	37	24
Sorong	10	25	34	72	24
Nilam	25	35	58	21	18
Jayapura	18	36	52	36	17
Pantoloan	22	25	35	16	15
Tarakan	12	15	21	31	27
Perawang	8	19	32	35	19
Kupang	14	27	49	29	16
Semarang(Dom)	28	46	79	17	15
Bitung	20	31	40	42	23
TP1 Zona 3	18	24	44	23	20
TP2 Domestik	22	32	47	22	19



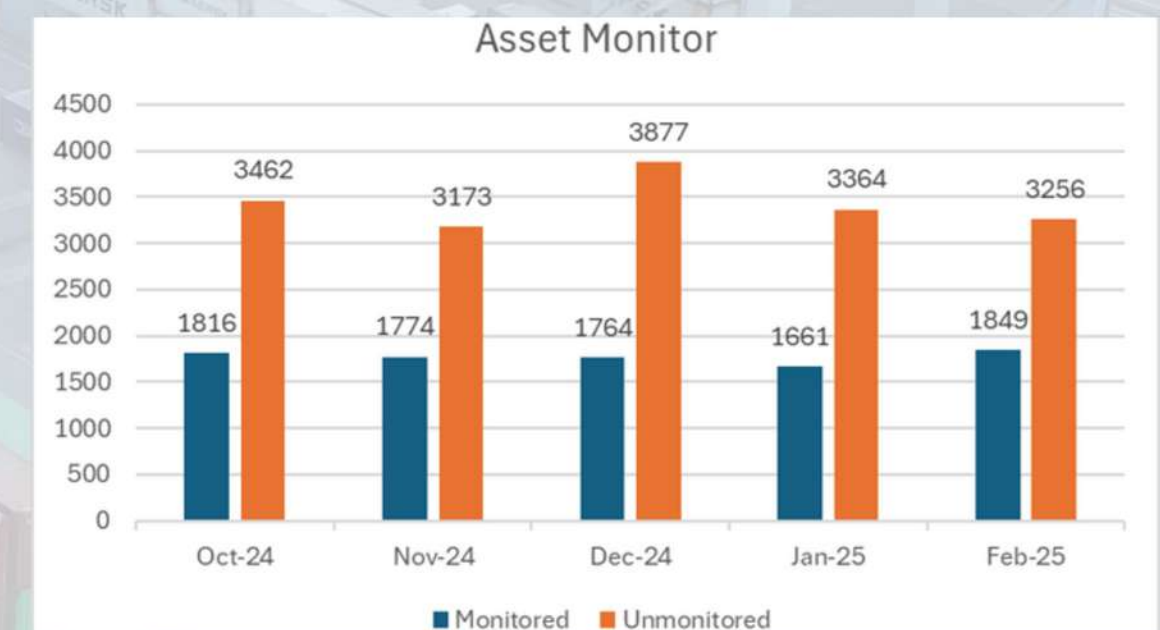
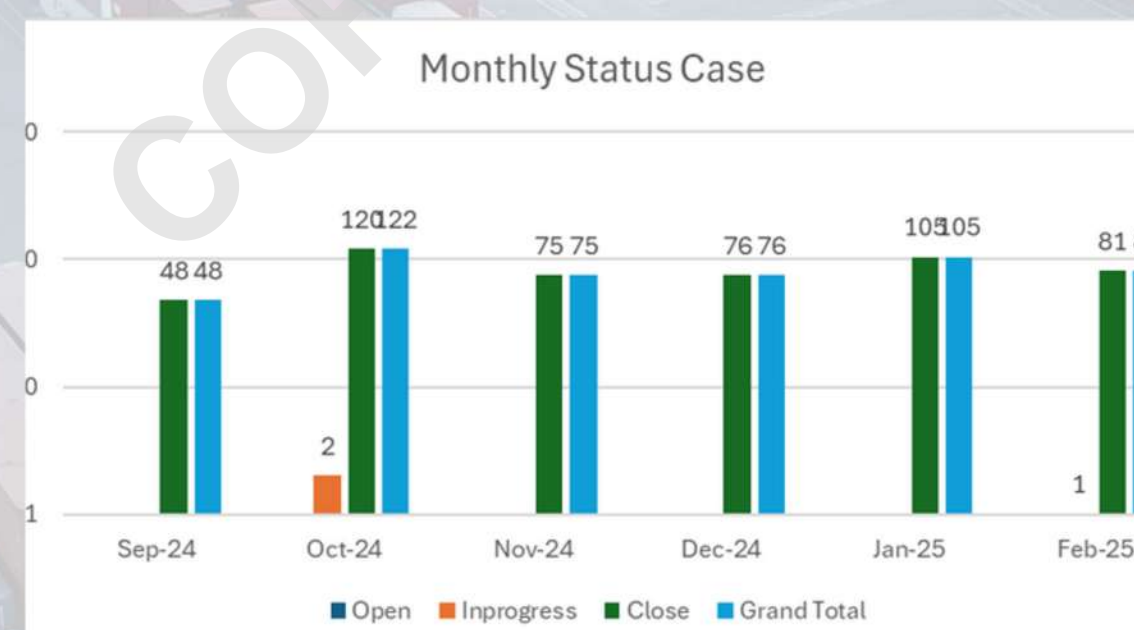
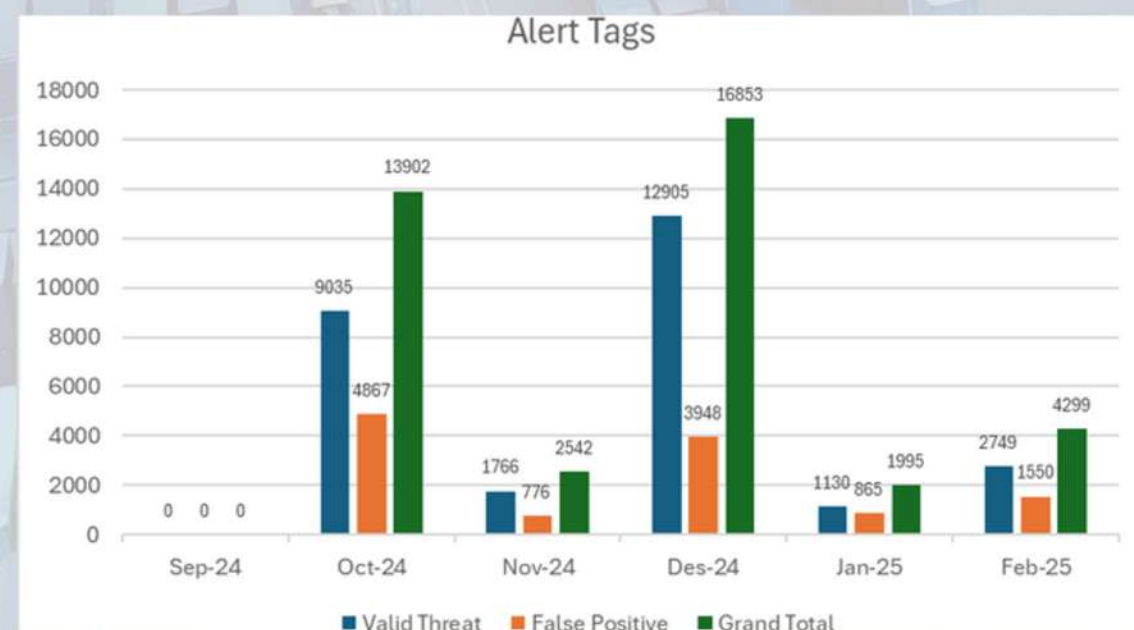
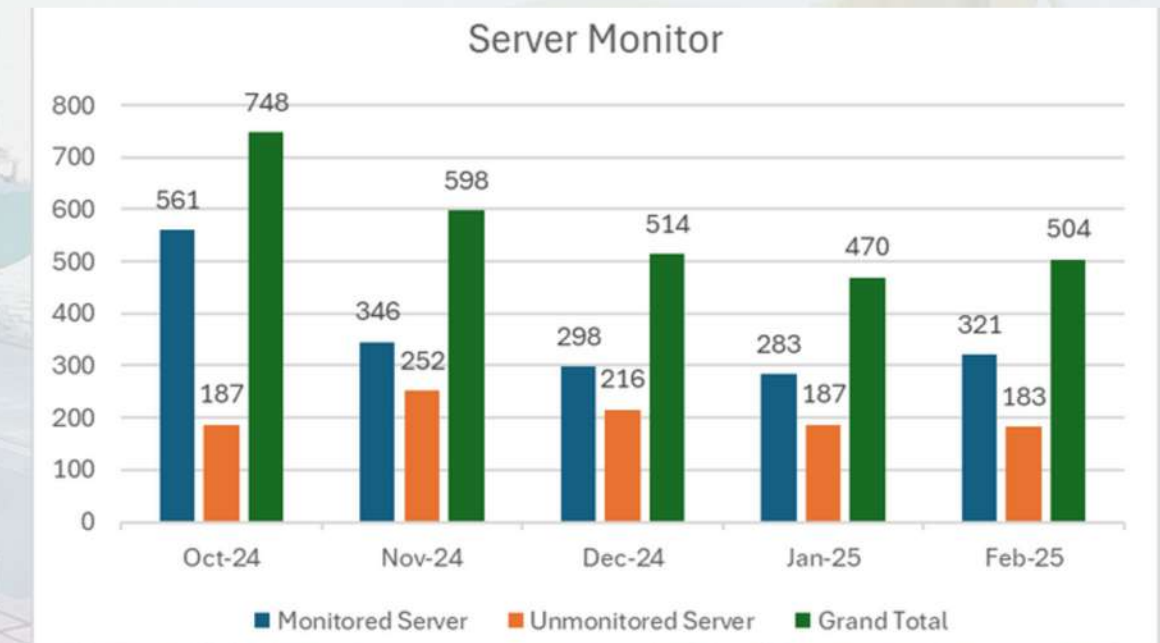
- Dynamic Planning (Yard & ...)
- Smart Vision Monitoring
- Planning & Control Modules
- Performance Report
- Multiterminal Modules
- VMT, Pager & Mobile Apps
- Operation Report

- Billing Engine
- E-Payment
- Multitenant
- Report Management
- Open Integration
- Tariff Management
- User configurable charge calculation



Measurable Impact: Enhanced Digital Security Visibility, Monitoring, and Response

SLA	Performance Target First Response Time	Alerts			Alert Total	First Response Time Fullfilment	Over SLA	Achieved SLA
		Severity	Valid Threat	False Positive				
First Response Time	15 Minutes	Low	5	68	73	4299	0	100%
		Medium	326	1458	1784			
		High	0	1	1			
		Critical	2418	23	2441			
Total			2749	1550	4299	4299	0	100%



Creating a reliable platform for **seamless collaboration** between customers and stakeholders within the logistics ecosystem

Maritime Hub Connect



Cargo Owner



Shipping Lines



Freight Forwarding



Trucking

QUOTATIONS AND COMPARISONS

ORDERING

MATCHING AND PAYMENT

TRACK AND TRACE

SUPPLY CHAIN CONTROL TOWER



Desktop app



Mobile app

INTER-MODAL TRANSPORT

CUSTOMS BROKERAGE

FCL / LCL / TRUCKLOAD

INFORMATION SHARING

INSIGHTS



Web Based



Paperless

Port Authority



Custom & Inspection



Quarantine



Other Stakeholders





ILCS

Our invaluable IT arm, ensuring seamless execution of digital solutions.

CLOUD Principals

Empowering us with resilient infrastructure and driving innovation.

World Class Consultants

Offering strategic guidance that aligns technology with our vision.

THANK YOU

COPY TO WPSP