

2026 WPSP

Advancing Fire and Explosion Preparedness at the South Korea's Largest Hazardous Materials Handling Port

Safety, Health, and Security

From Prevention to Response: A New Standard for Port Safety Management in South Korea



Overview of Ulsan Port

Ulsan Port: The Hub of International Trade
Driving South Korea's Industrial and Regional Economic Growth



Ulsan Port: The Hub of South Korea's Industrial Logistics!

- The Leading Port for Domestic Liquid Cargo Logistics**
(Handling Approx. 31.2% of South Korea's Liquid Cargo)
- Northeast Asia's Largest Liquid Cargo Port, Connecting Global Energy Hubs**

The Nation's Largest Liquid Logistics Hub Port

South Korea's No. 1 and Northeast Asia's Largest Liquid Cargo Handling Capacity **160 million tons**

An Industrial Port Driving Regional Economic Growth

Focused on Regional Value Creation and Production-Inducing Effects **1.7 Billion USD**

The Nation's No. 1 Tank Terminal Hub Port

South Korea's No. 1 Port, accounting for 50.5% of National Storage Capacity **4.54 million kl**

Quay Length
22,427m

Berthing Capacity
123 vessels
4,785,500 DWT

Water Area
116km²

Background

Ulsan Port Authority: Operator of the Nation's Largest Port for Liquid Cargo (Hazardous Materials)

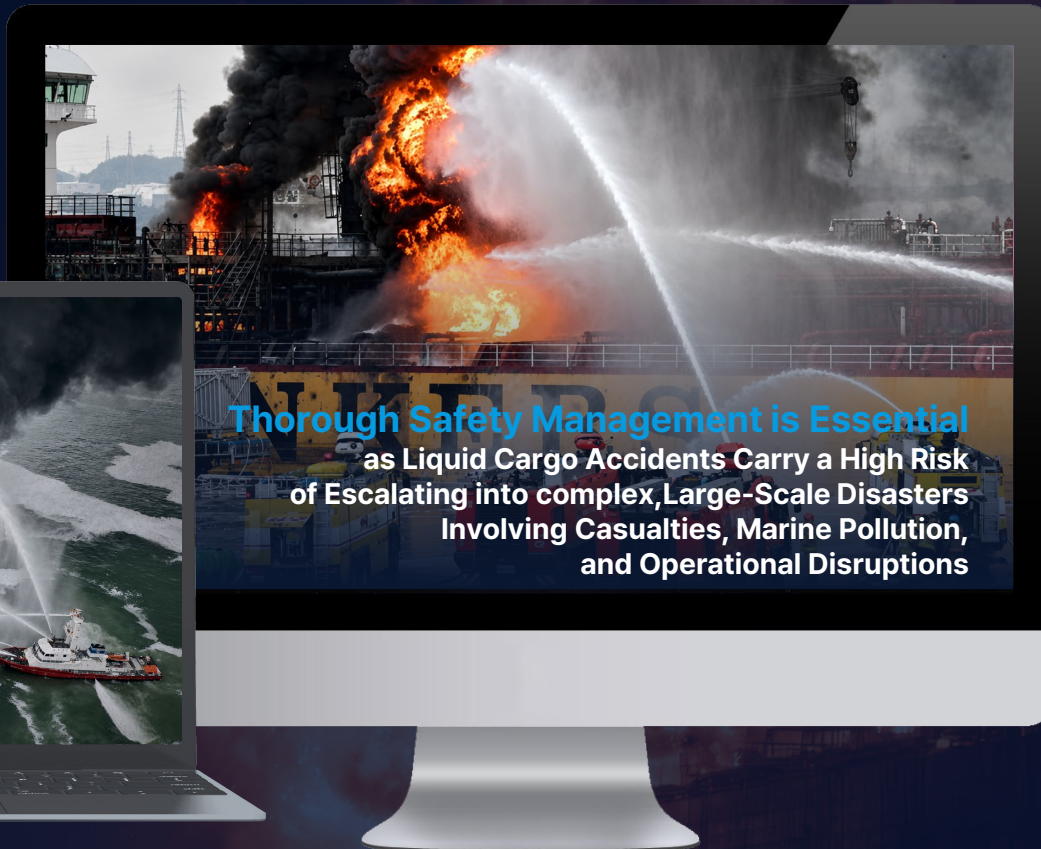


* As of 2025

A Core National Infrastructure with Inherent Risks of Major Fires and Explosions

Background

Major Accidents Involving Hazardous Material Carriers at Ulsan Port



Thorough Safety Management is Essential
as Liquid Cargo Accidents Carry a High Risk
of Escalating into complex, Large-Scale Disasters
Involving Casualties, Marine Pollution,
and Operational Disruptions

2019 Stolt Groenland Explosion at Yeompo Quay

**Fire and Explosion in Tank No. 9
of the Mother Vessel**

Awaiting Transshipment; 18 Injured (1 Serious, 17 Minor)



Post-Accident Improvement Efforts

**Pioneering the Establishment of a Specialized
Safety Management System for Ulsan Port**

**by Advancing Fire and Explosion Preparedness
at the Nation's Largest Hazardous Materials Handling Port**

Project Objectives

Pioneering the Establishment of a Specialized Safety Management System for Ulsan Port

by Advancing Fire and Explosion Preparedness at the Nation's Largest Hazardous Materials Handling Port

1



PREVENTION
**Strengthening
the Prevention
System**

2



RESPONSE
**Enhancing Response
Capabilities**

Key Content and Implementation Strategies



PREVENTION

Strengthening the Prevention System

1-1

Operating the 'Maritime Safety Belt'

a Cooperative Framework among the Private Sector, Government, and Public Enterprises to Strengthen Port Safety Management

1-2

Enhancing Accident Prevention and Establishing a Monitoring System

by Providing Ulsan Port-Specific Weather Information

1-3

Establishing a Joint Response System

for Marine Chemical Accidents(Explosions/Fires) and

Actively Securing Fire Extinguishing Agents

1-4

Establishing an Institutional Safety Net

against Ship and Hazardous Material Fires and Explosions at Ulsan Port



RESPONSE

Enhancing Response Capabilities

2-1

Advancing Actual Disaster Preparedness

Through Type-Specific Disaster Training and Feedback Systems at Ulsan Port

2-2

Drastically Improving Safety Management Capabilities

by Introducing the Nation's Largest Fireboat and Operating It 24/7

Key Content and Implementation Strategies

1-1 Strengthening the Prevention System |

Operating the 'Maritime Safety Belt' a Cooperative Framework among the Private Sector, Government, and Public Enterprises to Strengthen Port Safety Management

Unique Characteristics and Challenges of Port Safety Management: Due to the Diverse

- Supervisory and Operational Entities Inherent to Port Safety Management, it is challenging for a single agency to implement safety policies and projects



Signing of the Ulsan Port Maritime Safety Belt Agreement (May 2014) and 12 Consecutive Years of Continuous Operation

- Continuous Expansion of Participating Organizations (13 → 19) and Active Collaboration
- Sustained Collaborative Activities, Including Joint Disaster Response Drills among the Private Sector, Government, and Public Enterprises, and the Production of Ship Fire Response Safety Videos



Signed MOU to Establish the Maritime Safety Belt



Held Regular Meetings of the Maritime Safety Belt Council

Maritime Safety Belt



Key Content and Implementation Strategies

1-2 Strengthening the Prevention System | Enhancing Accident Prevention and Establishing a Monitoring System by Providing Ulsan Port-Specific Information

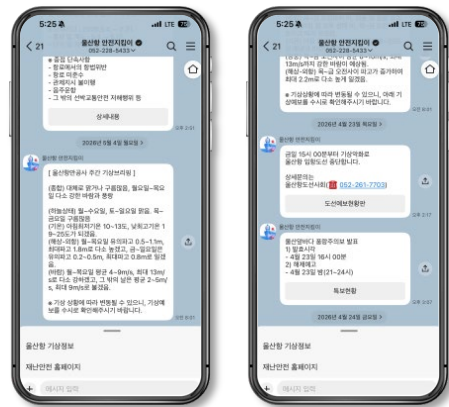
A First Among Ports!

24/7 Operation of the Ulsan Port Safety Guardian (SNS)

Achieved a Satisfaction Score of **97.02**

Two-Way Communication of Safety Information via KakaoTalk

Ulsan Port Authority Launches KakaoTalk Plus Friend 'Ulsan Port Safety Guardian'



The Ulsan Port Authority (UPA) launched the KakaoTalk Plus Friend 'Ulsan Port Safety Guardian' on the 10th to prevent accidents caused by severe weather.

The 'Ulsan Port Safety Guardian' provides a free, specialized daily weather forecast for Ulsan Port. Unlike the Korea Meteorological Administration's broad regional forecasts, this is expected to be highly accurate as it is specifically tailored to Ulsan Port.

Ulsan Port workers can check wind speed, wave height, and other conditions up to 7 days in advance, allowing them to establish more efficient work and vessel operation plans and promptly respond to severe weather.

The Only One in the Nation!

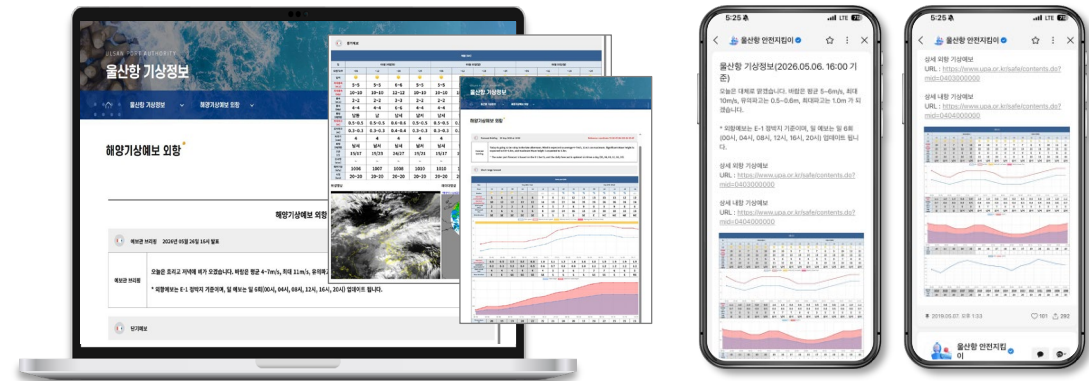
Operation of the Ulsan Port Smart Disaster Prevention Weather Information Service

Achieved a User Satisfaction Score of **97.32**

Detailed Information Provided for Ulsan Outer/Inner Ports



Providing Ulsan Port-Specific Weather Information in Collaboration with Specialized Meteorological Agencies



Key Content and Implementation Strategies

1-3 Strengthening the Prevention System | Establishing a Joint Response System for Marine Chemical Accidents (Explosions/Fires) and Actively Securing Fire Extinguishing Agents

Compared to the 73.7 tons of alcohol-resistant foam required to respond to marine chemical accidents, the Ulsan Coast Guard currently holds only 39.7 tons.

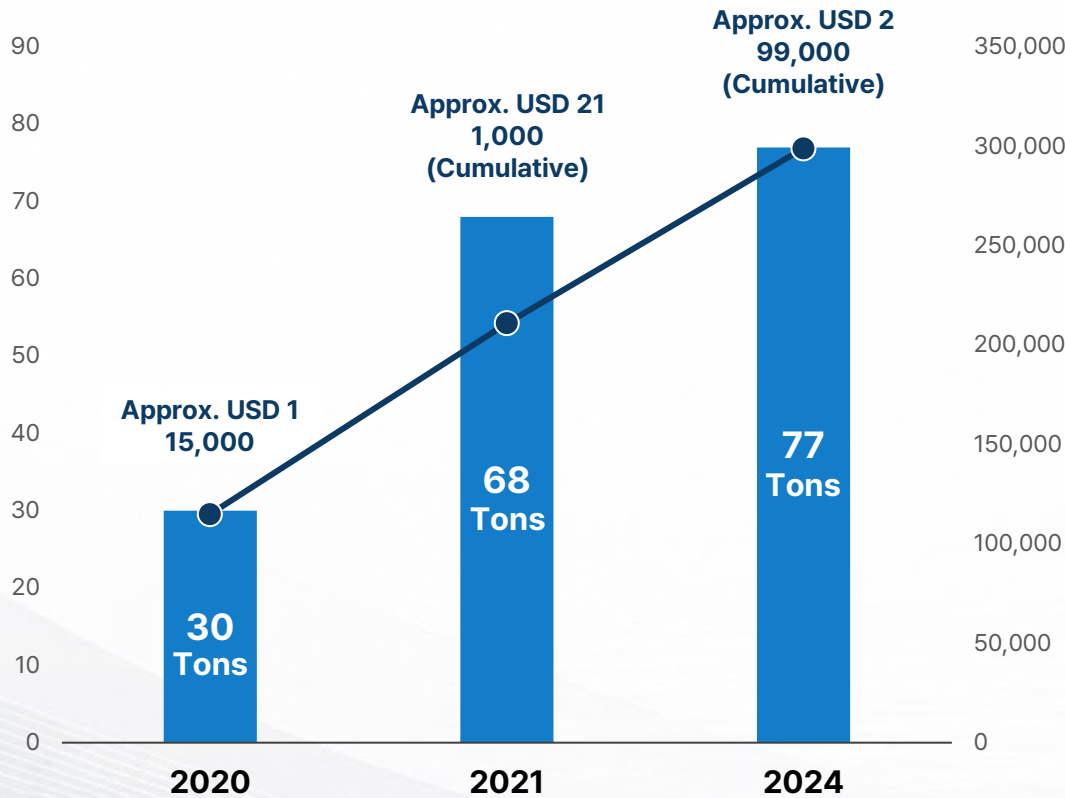
Promoting a Project to Expand Reserves within Ulsan Port



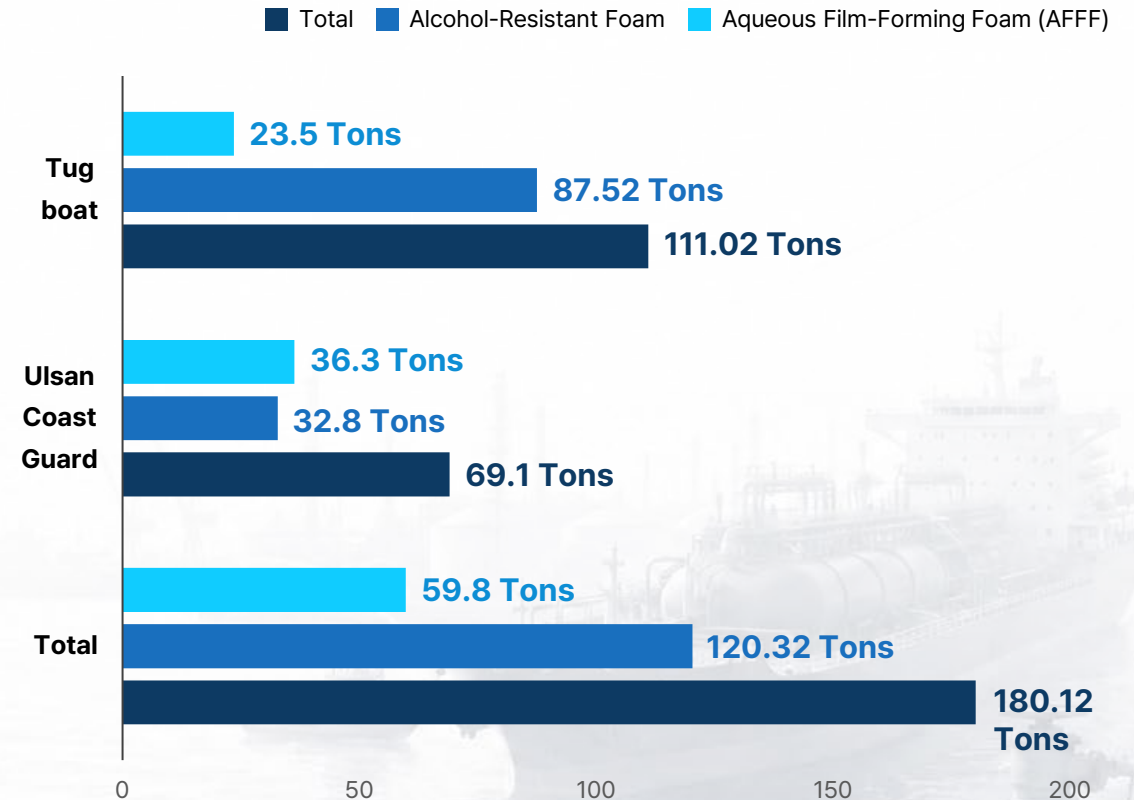
Key Content and Implementation Strategies

1-3 Strengthening the Prevention System | Establishing a Joint Response System for Marine Chemical Accidents (Explosions/Fires) and Actively Securing Fire Extinguishing Agents

UPA Purchase Volume and Total Project Cost (Cumulative)



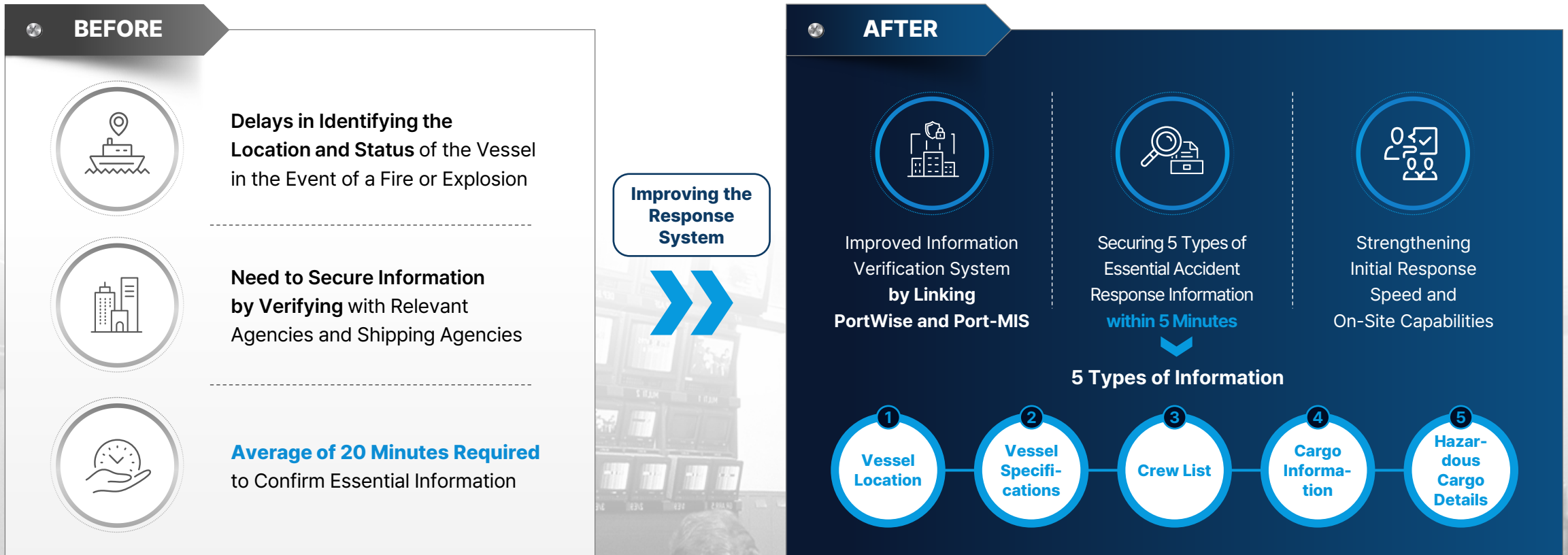
Secured Volume of Fire Extinguishing Agents



Key Content and Implementation Strategies

1-4 Strengthening the Prevention System | Establishing an Institutional Safety Net Against Ship and Hazardous Material Fires and Explosions at Ulsan Port

Collaboration for Immediate Response in the Event of a Ship Fire or Explosion



Key Content and Implementation Strategies

1-4 Strengthening the Prevention System | Establishing an Institutional Safety Net Against Ship and Hazardous Material Fires and Explosions at Ulsan Port

Opening the Vessel and Hazardous Material Monitoring System to Rescue Agencies (Fire Department/Coast Guard) using [the Port Information Sharing Platform \(PortWise\)](#)

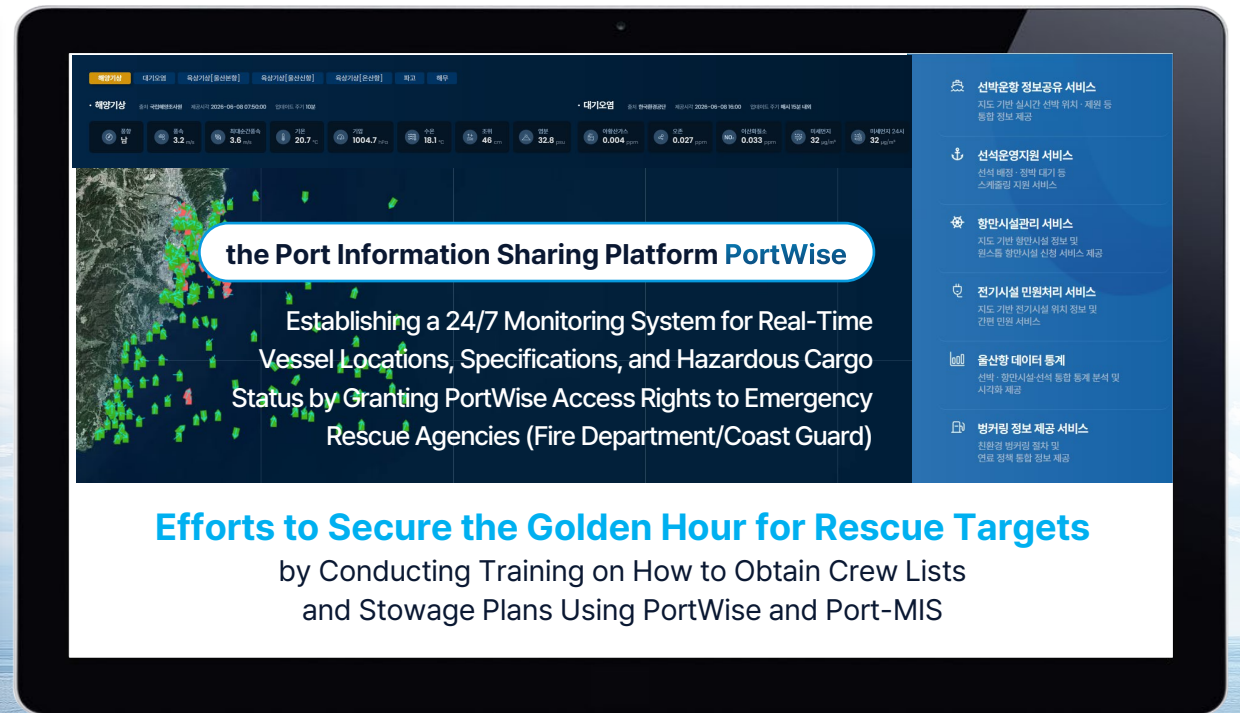
Problem 1

Inadequate System for Securing Essential Information for Ship Fire/Explosion Response

(Vessel Specifications, Crew List, Hazardous Material Import Declaration, Stowage Plan, Fire Control Plan)

Problem 2

Difficulty in Quickly and Accurately Locating Port Entrances and Accident Berths, as well as Identifying Vessel Specifications, due to **Low Understanding of the Port as a Security Area**



the Port Information Sharing Platform PortWise

Establishing a 24/7 Monitoring System for Real-Time Vessel Locations, Specifications, and Hazardous Cargo Status by Granting PortWise Access Rights to Emergency Rescue Agencies (Fire Department/Coast Guard)

Efforts to Secure the Golden Hour for Rescue Targets
by Conducting Training on How to Obtain Crew Lists and Stowage Plans Using PortWise and Port-MIS

- 선박운항 정보공유 서비스
지도 기반 실시간 선박 위치·재원 등 통합 정보 제공
- 선석운영지원 서비스
선석 배정·정박 대기 등 스케줄링 지원 서비스
- 항만시설관리 서비스
지도 기반 항만시설 정보 및 원스톱 항만시설 신청 서비스 제공
- 전기시설 민원처리 서비스
지도 기반 전기시설 위치 정보 및 간편 민원 서비스
- 울산항 데이터 통계
선박·항만시설·선석 통합 통계 분석 및 시각화 제공
- 방커링 정보 제공 서비스
선원권 방커링 절차 및 연료 정책 통합 정보 제공

Key Content and Implementation Strategies

1-4 Strengthening the Prevention System | Establishing an Institutional Safety Net Against Ship and Hazardous Material Fires and Explosions at Ulsan Port

Conducting Ship Firefighting Equipment Training and Boarding Drills for Emergency Rescue Agencies

Problem 1

During the 2019 Yeompo Quay Explosion, there were difficulties in initial fire suppression and concerns about rescue worker casualties due to their lack of understanding of ship structures.

Providing Rescue Workers from Emergency Rescue Agencies (Fire Department/Coast Guard) with Training on Ship Structures and Firefighting Equipment, alongside Opportunities for Boarding Drills by Vessel Type.



Key Content and Implementation Strategies

2-1 Enhancing Response Capabilities | Advancing Actual Disaster Preparedness Through Type-Specific Disaster Training and Feedback Systems at Ulsan Port

Securing Practical Disaster and Accident Response Capabilities Through **Joint Private-Government-Public Enterprise Drills**

**Complex Disaster Drill Simulating
a Collision Between a Bunker
Vessel and a Fishing Boat**
(Nov. 6, 2023)



**Joint Land-Sea Response Drill
Simulating an Onboard Ship Fire**
(Sep. 2, 2025)



**Ship Accident Response Drill
Simulating an EV Fire Aboard
a Car Carrier**
(May 13, 2024)



Fire
-
Explosion
-
Collision

Securing Response
Capabilities Through
Practical Training

Key Content and Implementation Strategies

2-2 Enhancing Response Capabilities | Drastically Improving Safety Management Capabilities by Introducing the Nation's Largest Fireboat and Operating It 24/7

Collaboration for Immediate Response in the Event of a Ship Fire or Explosion



Fireboat Squad Overview

- National 119 Rescue Headquarters Ulsan Port Fireboat Squad
- Location: 139-17 Maeam-dong, Nam-gu, Ulsan
- Personnel: 25 total / Work Schedule: 3 shifts of 8 personnel (24/7 operation)



Fireboat Specifications

- Water Discharge Capacity: 16,000L/min / Range: 200m
- Fire Pumps: 4 units / Water Cannons: 8 units
- Equipped with Foam Concentrate Tank / Automatic Foam Proportioner and Related Equipment



Effects of Introducing the Fireboat Squad

- Significant enhancement of accident prevention and response capabilities through the 24/7 deployment of personnel and operation of equipment capable of handling special fires involving hazardous materials (chemicals).
- Improving personnel's familiarity with vessels and specialized accident response expertise by hiring and maintaining dedicated maritime professionals.



Project Achievements

Achievements in Advancing Ulsan Port Safety Management

Establishment of a Prevention-Oriented Safety Management System

Achieved the Highest Rating (Excellent) in the Ministry of the Interior and Safety's 「2025 Disaster Management Evaluation」

Advancement of the Private-Government-Public Enterprise Cooperative System

Achieved the Highest Ratings in the 「Emergency Rescue Support Agency Evaluation」 hosted by the Fire Headquarters and Coast Guard, respectively

Strengthening the Real-Time Response System and Infrastructure

Received the Minister of the Interior and Safety Commendation for Meritorious Contributions to Capacity Building in Social Disasters (Marine Disasters Sector)

Pioneering the Establishment of a Specialized Safety Management System for Ulsan Port

Secured Ulsan Port's Business Continuity, Including 6 Consecutive Years of Certification as an 「Excellent Enterprise in Disaster Mitigation」 by the Ministry of the Interior and Safety



The Center of Safety Management!

Expected Effects

Dissemination of the Specialized Ulsan Port Safety Management Model

02

Improved Disaster Response Speed and On-Site Capabilities

03

Establishment of a Specialized Safety Management System for Ulsan Port

01

Minimization of Damage from Hazardous Material Accidents

04

Enhanced Safety Management Capabilities for Hazardous Material Handling Ports



2026 WPSP

Thank You.

South Korea's Safest Port, **Ulsan Port**

