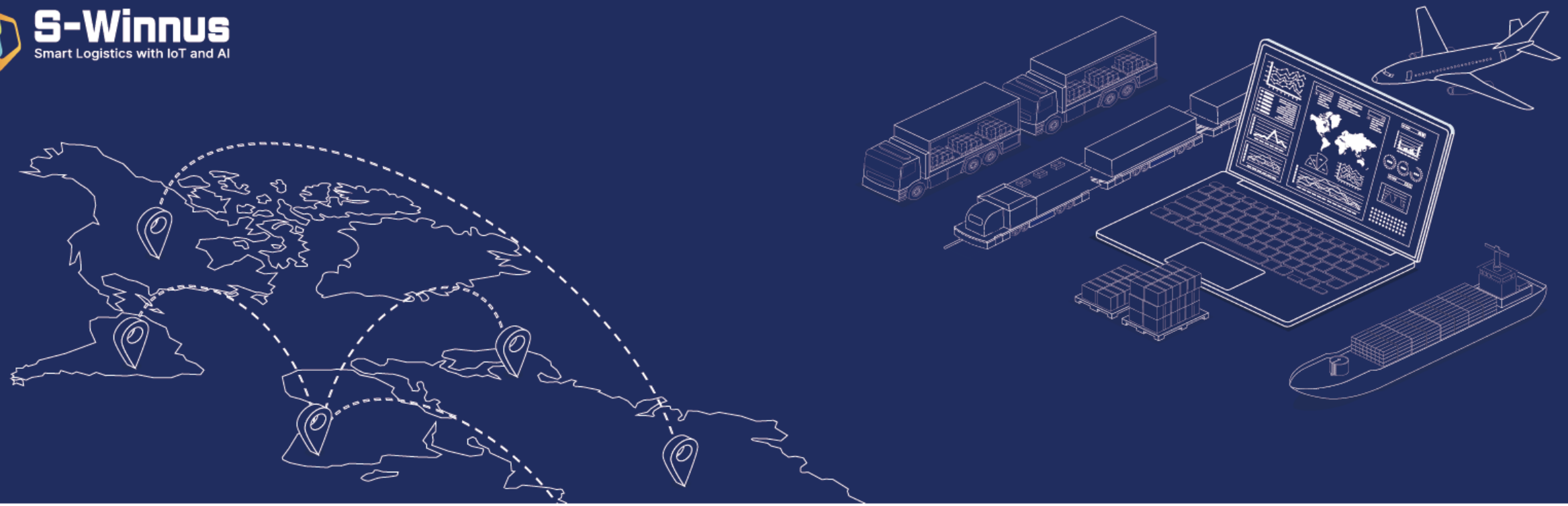
S-Winnus
Smart Logistics with IoT and AI



Insight Into Your Container Assets

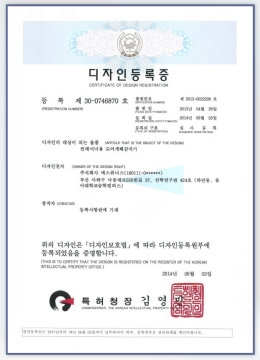
PTI

S-Winnus is taking a step forward in logistics innovation
by providing real-time logistics monitor and control system services
to various logistics industry members such as shipping line, shippers, and forwarders.

Introducing Our Partners

HMM
NAMSUNG
SAMSUNG SDS
CORNING
pantos LOGISTICS
LG Display
HYUNDAI GLOVIS
SINOKOR 長錦商船 株式會社 Sinokor Merchant Marine Co., Ltd.
PAN OCEAN
SEJUNG GROUP
DHL
Korea Customs Service

Since its beginning, **S-Winnus has been investing in R&D**,
S-Winnus has secured leading technology in the logistics control market.



Door opening and closing sensor for container

Container stack tier measurement system and method

Communication device and method using communication protocol of logistics tracking devices

Container door sealing device and its operating method

GPS error correction device and method for logistics tracking devices

Container door sealing device and method using Near Field Communication(NFC)

Freight train monitoring system and method for sensing and transmitting information on the status of cargo containers transported by rail

Container tracking device

Computer application software used to implement the IoT

IoT devices for monitoring and remote control of reefer containers

Analysis and validation program for predicting reefer container failures

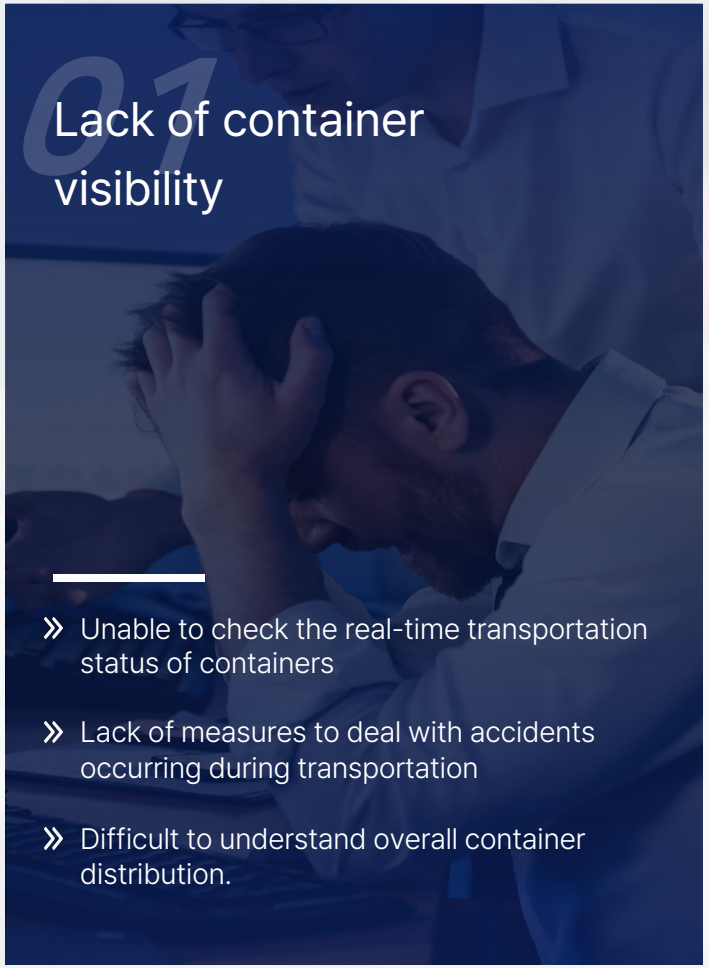
Computer application software used to implement the IoT

Remote control device for the IoT

Program for predicting container movements

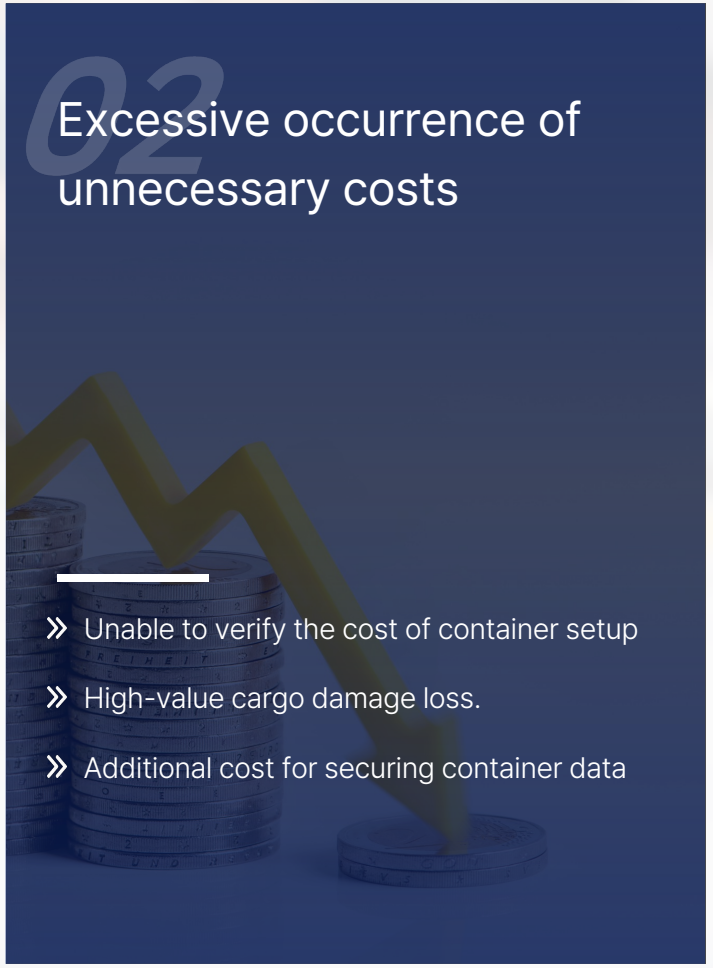
IoT devices for monitoring refrigerated containers

Ineffective transport process
that is not suitable **for high-value products**



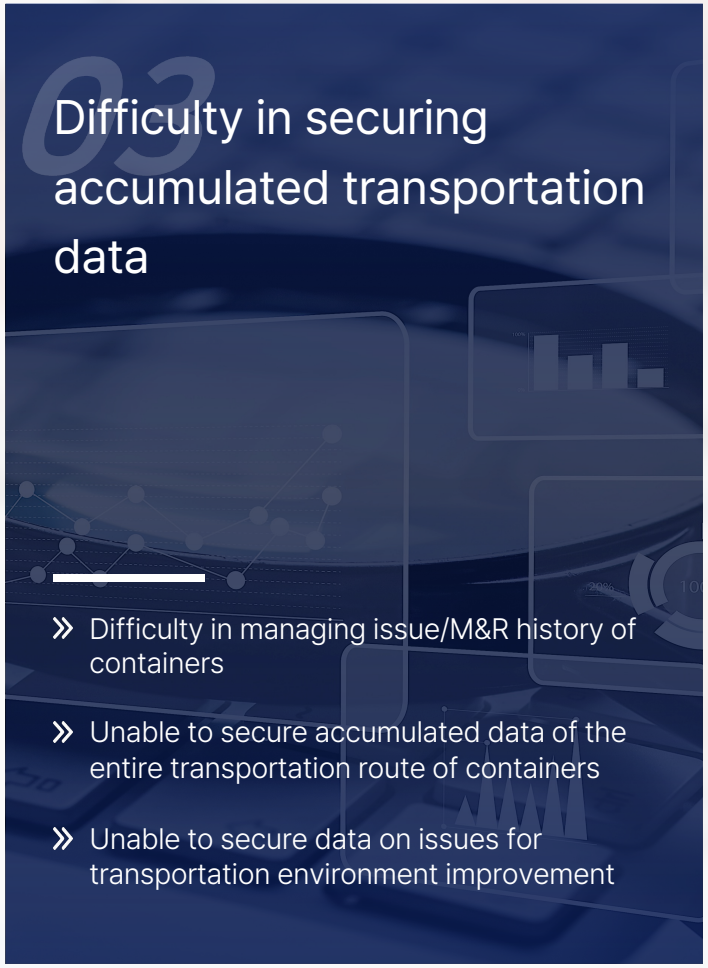
01 Lack of container visibility

- Unable to check the real-time transportation status of containers
- Lack of measures to deal with accidents occurring during transportation
- Difficult to understand overall container distribution.



02 Excessive occurrence of unnecessary costs

- Unable to verify the cost of container setup
- High-value cargo damage loss.
- Additional cost for securing container data



03 Difficulty in securing accumulated transportation data

- Difficulty in managing issue/M&R history of containers
- Unable to secure accumulated data of the entire transportation route of containers
- Unable to secure data on issues for transportation environment improvement

The integrated control service **Smart Reefer Solution,** which combines **IoT devices and platforms**

Enhance container visibility

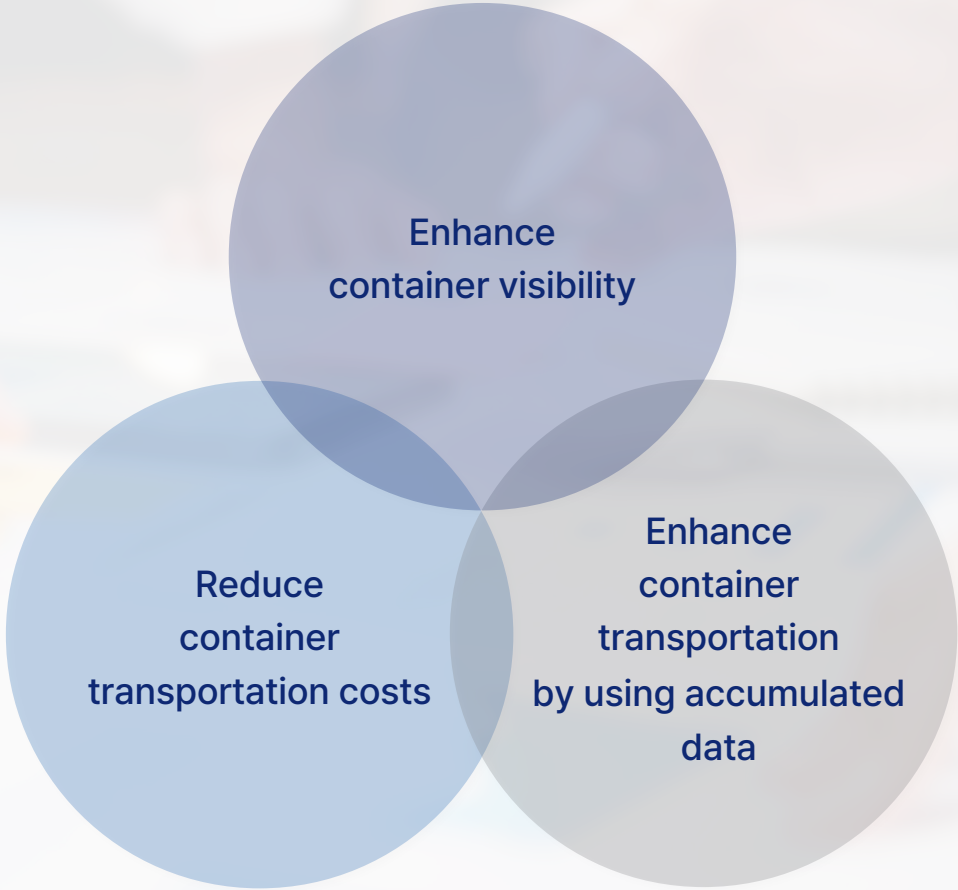
» Utilizing IoT devices for container monitoring enables swift issue response, real-time status checks, and comprehensive operational insights across all owned containers.

Reduce container transportation expenses

» By validating previously unverifiable container setup expenses, we can cut down unnecessary costs and establish clear liability in case of cargo damage, thereby reducing compensation expenses.

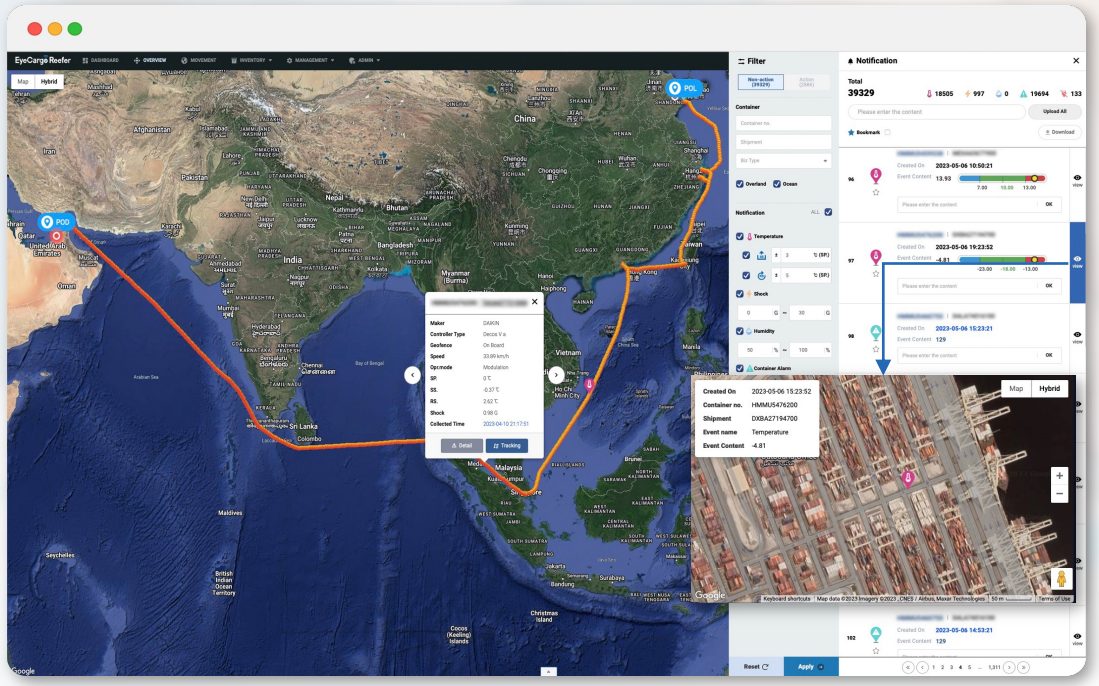
Enhance container transportation by using accumulated data

» Using accumulated container transport data enhances cargo movement conditions, manages abnormal events, tracks container repair history, and thus ensures containers remain in optimal condition.



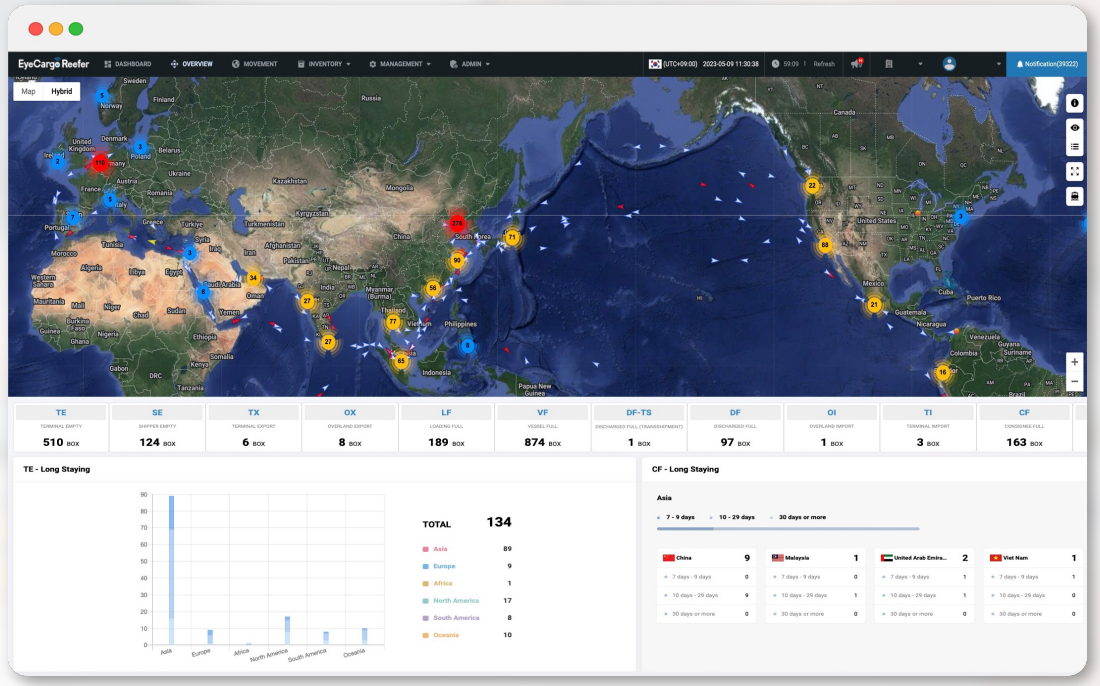
Establish a real-time container transportation management system

by enhancing the visibility of reefer containers



Real-time control function

» Reefer containers linked with IoT devices offer real-time oversight of location, humidity, and other key data. Instant alerts avert potential harm to valuable cargo during any abnormalities.



Understand the global status

» Quickly grasp worldwide reefer container status and optimize usage by tracking idle periods per region for an efficient container plan.

Reduce management costs for reefer containers
by utilizing IoT validation data

Swinnus

Determine liability for cargo damage

» Preventive actions for in-transit cargo damage and identification of responsibility for existing damages are achievable through comprehensive analysis of container status data throughout transportation, resulting in reduced compensation expenses.

Validate container setup billing costs

» Verify previously unverifiable billing items like PTI execution, monitoring, electricity bills, and storage fees using real container status data.

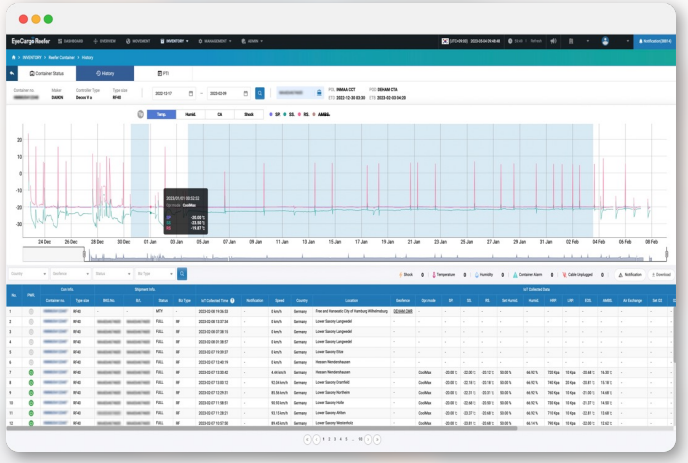
Secure container status data

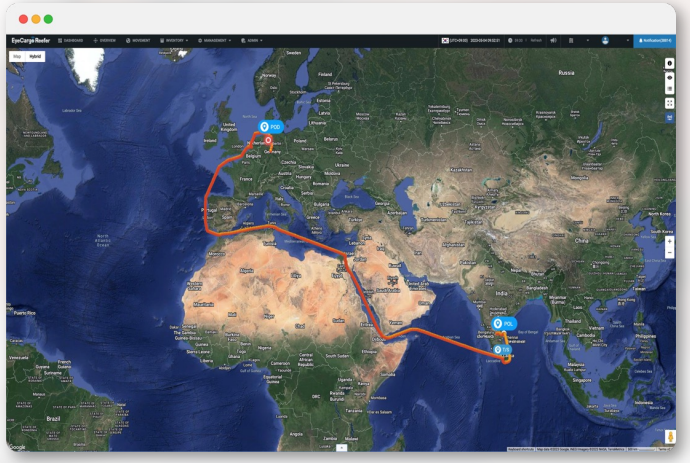
» Access container operation logs in Excel format anywhere, simplifying analysis. No need for separate requests or post-operation fees as before.

Improve reefer container condition and transportation environment
using accumulated big data

Provide transportation analysis reports by shipment

» **Enhance global transport with analysis summarizing** impact zones, extended transit delays, power-offs, and more on container routes per shipment.

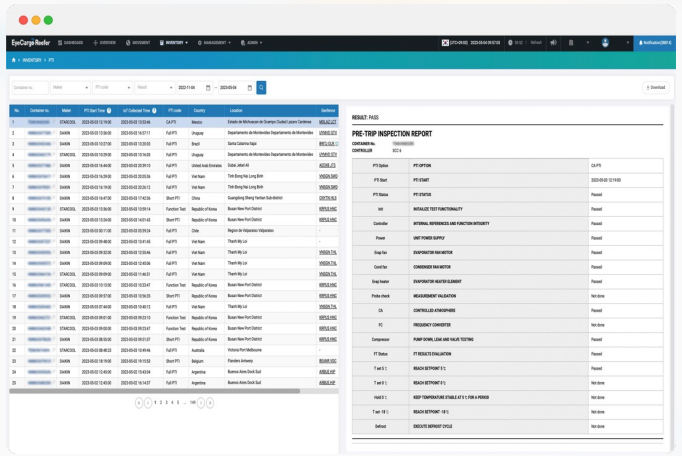


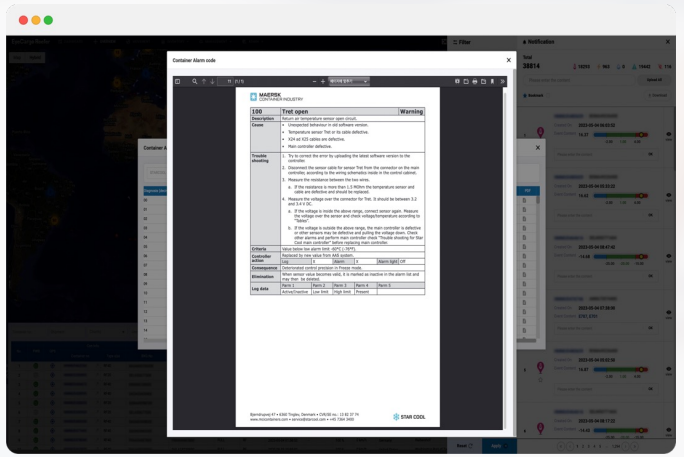


Utilize container M&R data

» PTI data, container error info, and response methods **can form a DB for managing conditions**.

» **Smart prediction** to preclude reefer container issues, safeguarding cargo. **(R&D in progress)**





Improve pain points in the reefer container logistics chain
by adopting an IoT device-integrated solution.

	AS-IS	TO-BE
Shipping Line	» Unverifiable operation charges » Complex condition management » Unclear liability for damage » Growing need for distinct services	» Confirm setup fees with IoT devices. » Optimize container state via PTI and M&R analysis » Determine accident liabilty via transport data » Create revenue from global transport data services
Shipper	» Unable to manage freight transportation lead time » Unable to respond to losses caused by cargo deterioration or damage » Unable to improve freight transportation method due to lack of transportation data	» Secure real-time transportation visibility via container monitoring » Prevent cargo damage with the real-time abnormality sensors. » Adjust packing and placement structure based on transportation data

CTR-S200

Smart Reefer Solution - IoT Device

Size	15.1cm x 9.6 cm x 2.7cm
Weight	300g
Battery	6,800mAH
Bluetooth	BLE 5.1
Shock	IK10
Water and dust resistantip	IP66, IP67

Status data collection

General status data

- Collect location, temp, humidity, and CA data.

GPS

Tracking location

- Apply Satellite-Based Augmentation System (SBAS)
- Provide accurate GPS information

External Sensors

Additional sensors

- Integrate external sensors via Bluetooth.

Remote Control

Telecommunication

- Change temperature and humidity and execute PTI remotely
- Provide container control functions

Reliability

Durability tests

- Achieved IP66, IP67 and IK10 ratings
- Secured strong durability

Data stability

Equip with built-in memory

- Store log data in the built-in memory
- Prevent data loss

Global roaming communication

Auto roaming

- 2G/3G/4G networks supported
- A stable communication environment secured

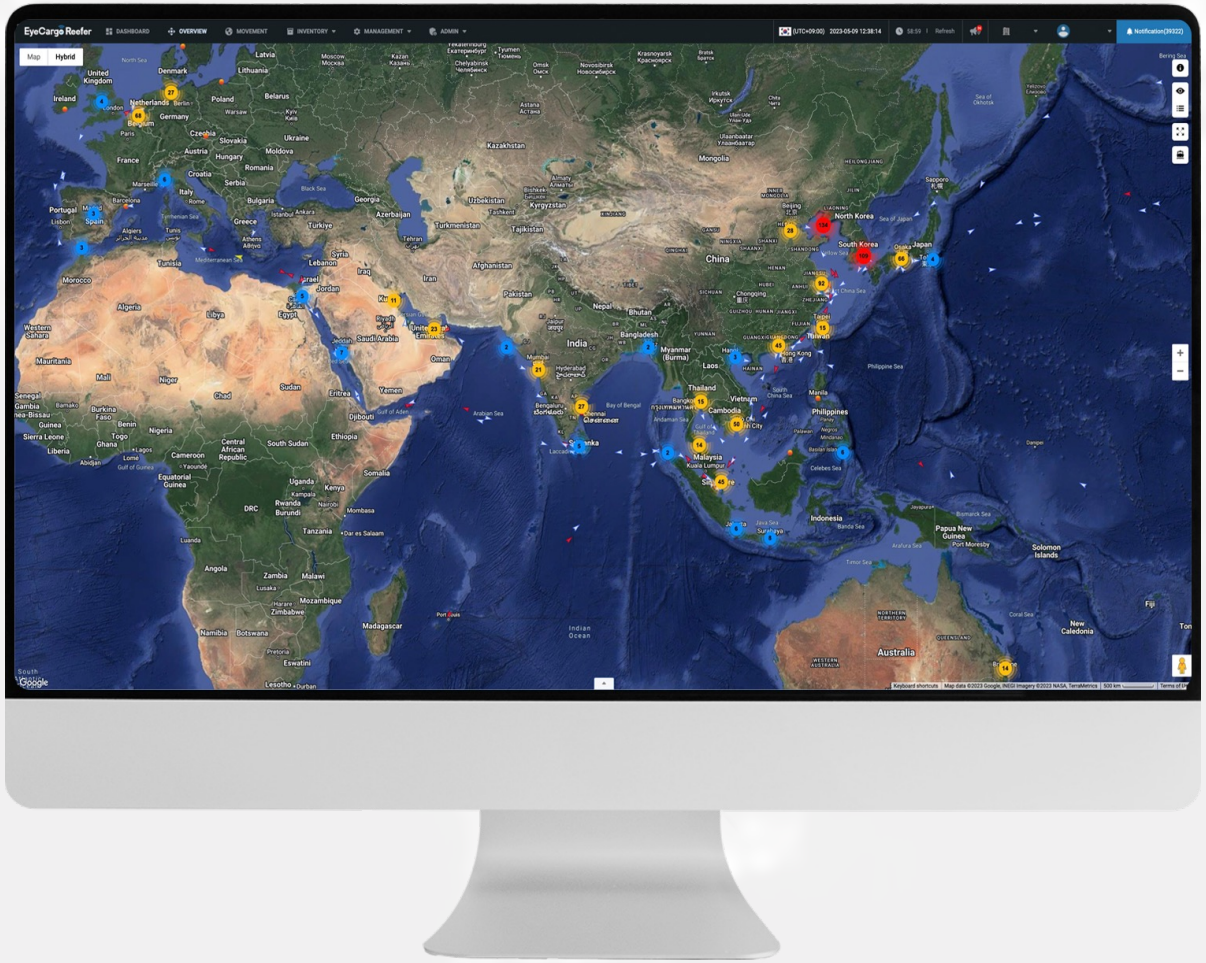
Battery

High-capacity, efficient power design.

- Equip with a large capacity battery
- Efficient power for long-term use

Eye Cargo Reefer

Smart Reefer Solution - Platform



Eye Cargo Reefer Main functions

Real-time container monitoring and control system

Container Tracking

Dashboard

container operation statistics.

Container M&R

PTI/Error code history

Movement

Transportation Segments

Service for shipper

Door to Door Service

S-Winnus

Smart Logistics with IoT and AI

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