MOL Group
Digital Transformation Initiatives

2024

Mitsui O.S.K. Lines Group

Contents

1. Positioning of Digital Transformation in Management Plan

Positioning of Digital Transformation in the Management Plan (BLUE ACTION 2035)

As part of the "Initiatives to Sustainability Issues" in the management plan BLUE ACTION 2035, MOL will promote “Digital Transformation (DX)“.

Overall BLUE ACTION 2035

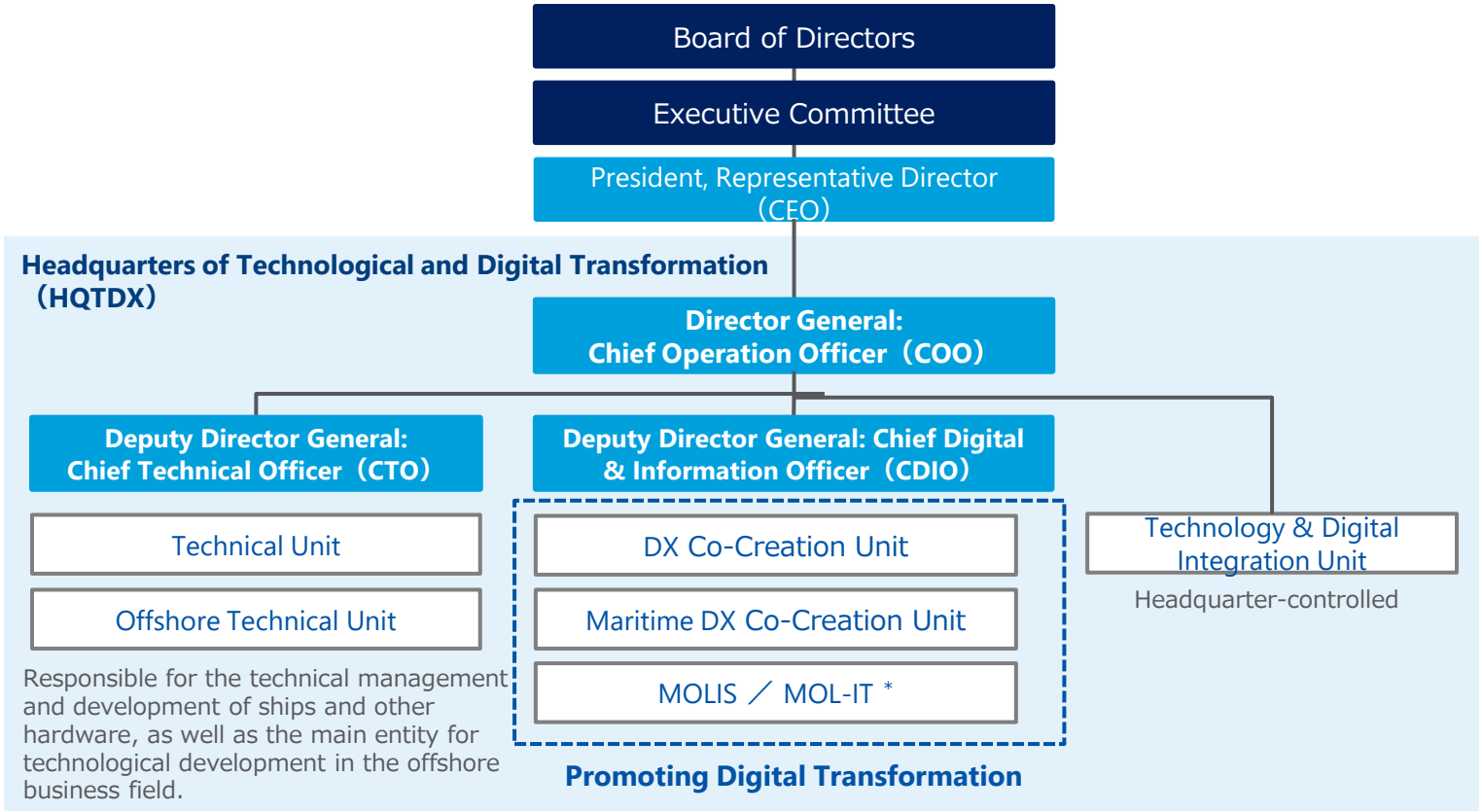
https://www.mol.co.jp/ir/management/plan/pdf/blueaction2035.pdf

2. Organization

Organization

The three divisions of Headquarters of Technology and Digital Transformation will take the lead in promoting “Digital Transformation” within the MOL Group.

Organization Chart



* MOLIS：Mitsui O.S.K. Lines Systems、MOL-IT：MOL INFORMATION TECHNOLOGY

Objective of HQTDX

Our commitment to "Innovation," one of our group's sustainability challenges (materiality), involves actively adopting advanced technologies. This initiative aims to bring innovation to our business, contributing to the resolution of various societal challenges related to "providing added value through safe transportation and social infrastructure business" and "conserving the marine and global environment."
We have consolidated the organizations responsible for this initiative under the newly formed organization. We will accelerate the pace of transformation by sharing the insights nurtured by each division and working towards the realization of the "DX Vision."

https://www.mol.co.jp/pr/2023/img/23139.pdf

https://www.mol.co.jp/corporate/organization/img/organization.pdf

3. Strategy Roadmap and Performance Indicators

Strategy Roadmap and Performance Indicators

MOL promotes digitalization by 2025, and promote transformation aimed at enhancing corporate value from 2026

Road map

Present-2025
Fully Digitized/Digitalized

Promote digitalization
and optimize business processes

2026～
Transformed

Transform corporate value
and social significance of the company

https://www.mol.co.jp/sustainability/innovation/dx/

Performance Indicator

Environment

- 2030 Total GHG emission reduction rate 23% (compared with 2019)*1
- 2035 GHG emission intensity reduction rate 45% (compared with 2019) *1

*1 See Link for detail

Safety

- Number of fatal accidents
- Number of serious marine incidents
- Downtime frequency rate etc.

DX

- Conversion rate to value-creating and safety operations (Cumulative total)
  10%（FY2025）、20%（FY2030）、30%（FY2035）
- Cumulative Total Number of Change Leaders
  30（FY2023）、75（FY2024）、120（FY2025）

https://www.mol.co.jp/sustainability/management/pdf/mol_sustainability_plan_detail.pdf

※「環境」「安全」のKPIは、DXの取組み以外も含めて達成するKPI

4. Overall Digital Transformation Initiatives

MOL Group DX Vision

MOL promote transformation by utilizing digital technology and data, considering perspectives such as "people," "safety," "society," and "new frontier" to address sustainability issues.

MOL Group DX Vision

Towards the Blue Ocean, We Transform

Intelligence and technologies unlock the potential of the sea.
Inspiring the diverse talents, we co-create new values.
Expertise and borderless creativity lead us towards the future.

The blue ocean is new frontier.
Towards the blue ocean, we will move ahead together with digital technology.

Thoughts behind the DX Vision

Perspective#1「People」

MOL Group purs people first to make the company better

- Enhance MOL Group's expertise with the power of technology to respond to changes in society.

Perspectives#2「Safety」

Contributes to trusts by improving the safety level

- Aspire the higher safety level as the safety is an universal and our primary value.
- Establish a Group-wide safety culture.

Perspectives#3「Social」

Eliminate all gaps

- Contribute to the creation of new values by eliminating the gaps and the borders between companies, organizations, and people.

Perspective#4「New frontier」

Forge a new frontier without being bound by current assumptions

- Pursue the best quality service for existing customers and businesses.
- Pioneer the value chain in new industries and growth areas.

https://www.mol.co.jp/sustainability/innovation/dx/

Direction of MOL Group's DX Initiatives

To realize BLUE ACTION 2035, MOL will promote two types of DX: "Business Transformation with Digital" and "Culture Transformation with Digital."

Positioning of DX in Management Plan (BLUE ACTION 2035)

MOL Group Corporate Mission	From the blue oceans, we sustain people's lives and ensure a prosperous future.
MOL Group Vision	We will develop a variety of social infrastructure businesses in addition to traditional shipping businesses, and will meet the evolving social needs including environmental conservation, with innovative technology and services. MOL group aims to be a strong and resilient corporate group that provides new value to all stakeholders and grows globally.
Management Plan BLUE ACTION 2035	In addition to inheriting the "three main strategies" from Rolling Plan 2022, we will place the five key items of the "Initiatives to Sustainability Issues," which also serve as the foundation, at the center of BLUE ACTION 2035.

https://www.mol.co.jp/corporate/principle/ https://www.mol.co.jp/ir/management/plan/pdf/blueaction2035.pdf

DX Vision and DX Action 1.1

DX Vision	**Towards the Blue Ocean, We Transform**

DX Action 1.1

Business Transformation with Digital

Change business, safety and service

- ①Data
- ②Business process
- ③Business Management
- ④Onboard routine tasks
- ⑤Shore-Vessel Communication

Culture Transformation with Digital

Change people, organization and culture

- ⑥Global Human Capital Management
- ⑦Crew's QOL
- ⑧Nurturing new values in employees

https://www.mol.co.jp/sustainability/innovation/dx/

Overall DX Action 1.1

Business Transformation with Digital
- ❶ Data
- ❷ Business process
- ❸ Business Management
- ❹ Onboard routine tasks
- ❺ Shore-Vessel Communication

Culture Transformation with Digital
- ❻ Global Human Capital Management
- ❼ Crew's QOL
- ❽ Nurturing new values in employees

To realize the management plan "BLUE ACTION 2035" and various strategy, MOL promote digital transformation

BLUE ACTION 2035

Sales Support – Business Process Reengineering ❷
- Improvement of budget and actual analysis reporting tasks
- Optimization of automobile shipping evening-up tasks
- Optimization of core sales operations and organizations

Reforms in Business Management ❸
- Global standardization of accounting systems
- Dashboarding of business management and regional management
- Digitization of financial tasks

Optimization of routine tasks ❷
- Utilization of generative AI
- Strengthening of group cybersecurity

HC Action 1.1

❺ Modernization of ship-to-shore communications
- Low-orbit satellite expansion
- Improvement of onboard Wi-Fi signal

❼ Improving the quality of life of seafarers
- Introduction of Cashless Payments on Board

❻ Improving Employee Value Creation
- Nurture of Change Leaders
- Departmental assignment of Change Leaders

Reforms in Human Resource Management ❽
- Introduction of Talent Management System and expansion of its use

Safety Action 1.0

❹ Onboard Business Process Reengineering
- Reformed business process design
- Outsourcing to shore SSC and organizational optimization

Digitalization of on-board operations ❹
- E-Logbook implementation
- Expansion of digitalization of onboard work

Utilization of AI for shore operations ❹
- Introduction of optimal route and main engine output adjustment business tools
- Remote management support with digital twins

FOCUS

❶ MOL Group's integrated data platform

MOL EARL (Platform to Explore & Analyze Reliable Large source)

❶ Vessel Data Platform

- Development of ICT infrastructure
- Governance (ICT/Security/Data)

Improvement of the business environment

Environment Vision 2.2

❶ Improved visualization of environment-related data
- Improving the data in the GHG Emissions Dashboard
- EU-ETS Information Visualization

❶ Integration with the DarWin Project
- Aggregation of environmental impact data
- Introduction of optimal route and main engine output adjustment business tools

DX Action 1.1

Initiatives：①Data【Safety】

SOSC（Safe Operation Support Center）

MOL established SOSC with the following objectives: to provide weather and various information for each sea area not only to the vessel but also to all parties involved with the vessel in an appropriate and timely manner, to support the vessel and related parties until they can take appropriate actions, and to provide maximum shore-based support when the vessel is in a critical situation.



SOSC（March 2023）

Value

- ✓ Monitoring the movements of our operated vessels to prevent maritime accidents caused by weather and sea conditions.
- ✓ Providing 24/7 support and help desk functions to ensure safe navigation.
- ✓ Enhancing safe navigation and crisis management by utilizing various monitoring systems.

***Typical example of a monitoring system**

■ Sustainable Platform with Intellectual Resource and Innovative Technology（SPIRIT）
- ✓ Monitoring the location and weather conditions of our operated vessels around the world. It is possible to monitor movements while comprehensively assessing risks, including not only weather and sea conditions but also pirates, exercises, high risk areas (HRA), and other information while comprehensively assessing risks

■ Fleet Intelligence Navigational Risk Monitoring
- ✓ Fleet Intelligence Navigational Risk Monitoring is a grounding risk monitoring system that combines a number of data sources, such as ship position, water depth, and chart information, to alert SOSC operators when a vessel is judged to be entering an area with a high risk of grounding.

https://www.mol.co.jp/pr/2023/23029.html https://www.mol.co.jp/pr/2022/img/22008.pdf https://www.mol.co.jp/sustainability/safety/facility/

Initiatives：①Data【Environment】

DarWIN Project

DarWIN project aims to improve fuel efficiency by 5% in fiscal year 2025 compared to 2019. This will be achieved through the pursuit of optimal navigation, active investment in energy-saving technologies and equipment, and ensuring steady progress through collaboration with other companies.

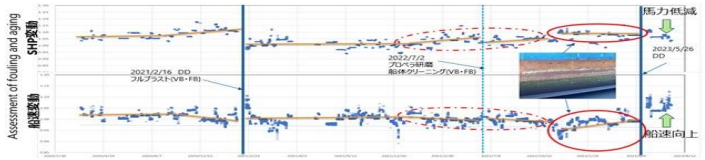
DarWIN **Degital Approach to Reduce GHG With Integrated Network**

Inspired by Darwin's theory of evolution, our initiative is named to signify our commitment to continuous evolution and adaptation to rapidly changing environments.

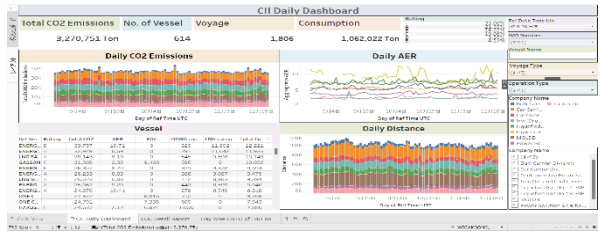
FOCUS
(Vessel Data Platform)

Establish a platform for collecting and managing maritime transportation data from IoT and other sources, and develop applications that utilize this data.

Verification of fuel-saving effects.



CO2 Dashboard



Organization

DarWIN Project Management

MOL 商船三井 / EcoMOL
三井E&Sホールディングス 株式会社三井造船昭島研究所 / MOL 商船三井テクノトレード株式会社

Advanced analytical capabilities through ship technology research and engineering methods.

Technical resources backed by a wide variety of services.

Providing optimal improvement measures.

うごかす、とめる。Nabtesco / iFTC / TOKYO KEIKI / C-LEANSHIP / 総合潜水企業 國富株式会社 / CMP MAP / NAKASHIMA NAKASHIMA PROPELLER CO., LTD.

Value

✓ Improving fuel efficiency and reducing GHG emissions through efficient operations that lead to optimal navigation.

https://www.mol.co.jp/sustainability/environment/vision/pdf/vision22/mol_group_environmental_vision_2.2.pdf (pp.24-26)

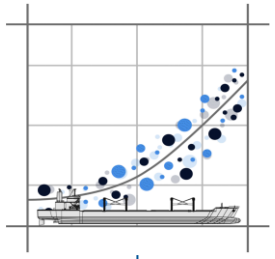
Initiatives：①Data【Environment】

Introduction of Sofar's Wayfinder, Dynamic Voyage Optimization Platform

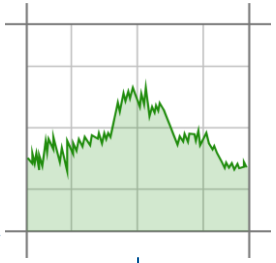
To aim for GHG reduction through efficient operations, MOL will gradually introduce the Dynamic Voyage Optimization Platform "Wayfinder" provided by the U.S. company Sofar Ocean to our group's operating vessels. Wayfinder provides high-precision weather and sea condition forecasts based on information from ocean observation buoys, reflects ship fuel performance and market information in real-time, and offers the optimal engine RPM and route for safe and efficient operations to each vessel and onshore operation managers daily.

Weather and sea condition forecasts using the ocean observation buoy "Spotter Buoy".

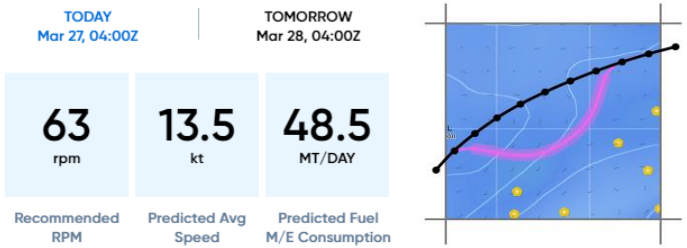
Fuel performance models for each vessel utilizing AI.



Market information on fuel costs, vessel costs and so on.



Propose the optimal engine RPM and route daily



＜Result of Trial with 40 of MOL Group's operating vessel＞

6%

Average fuel/GHG emission reduction per voyage

80%

The captains participating in the trial have highly evaluated the convenience of the platform and accuracy of the weather and ocean forecasts

https://www.mol.co.jp/pr/2024/24090.html

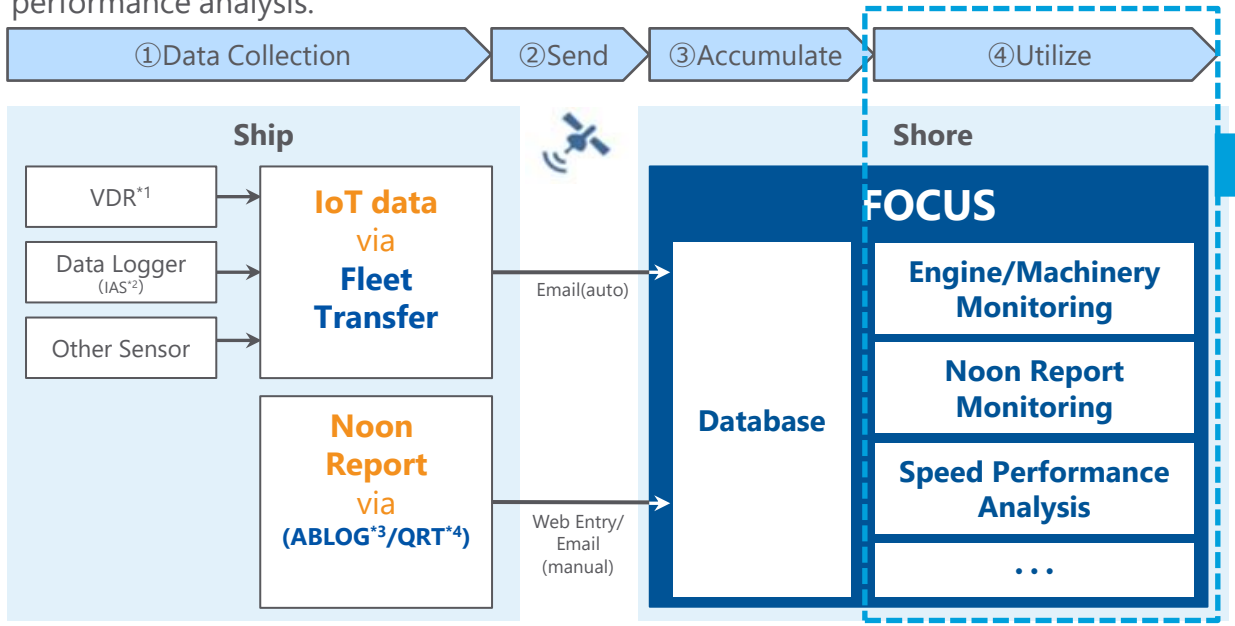
（Reference）Overview of FOCUS

Business Transformation with Digital
- ❶ Data
- ❷ Business process
- ❸ Business Management
- ❹ Onboard routine tasks
- ❺ Shore-Vessel Communication

Developing various applications to analyze and utilize the navigation and engine data accumulated in the FOCUS system, aiming to ensure safe navigation and reduce environmental impact.

Vessel Data platform “FOCUS”

To ensure safe navigation and reduce environmental impact, we will establish a data platform to collect and manage detailed navigation and engine data from operating vessels in real-world sea areas for advanced operational monitoring and propulsion performance analysis.



*1) Voyage Data Recorder
*2) Intelligence Awareness System
*3) Ship movement data such as port of call, voyage time, position, speed, and engine operation data of operating vessels
*4) Quick Report Template

Application related to FOCUS

Establishing a platform for collecting and managing maritime transportation data from IoT and other sources, and developing applications that utilize this data.

Fleet Viewer 第1弾 137隻
Enhanced Ship Management Application

Fleet Guardian 取組中
Next-Generation Engine Failure Prediction Application

Fleet Performance 第2弾 18隻
Application Aimed at Monitoring Fleet Performance in Actual Operation

Fleet Tour 第3弾 24隻
Virtual Ship Visit Application

Autonomous Navigation Support

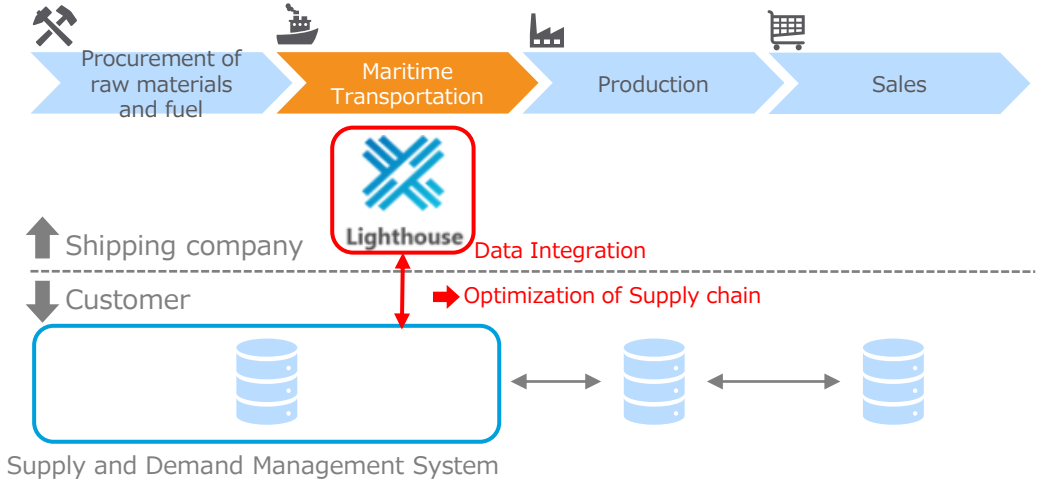
※Currently, Fleet Guardian and autonomous operation support (FOCUS EYE/BRAIN/GEAR) applications are being promoted as separate projects.

https://www.mol.co.jp/sustainability/innovation/case/safety/index.html?id=ancFOCUS
https://www.mol.co.jp/pr/2019/19101.html
https://www.mol.co.jp/pr/2020/20045.html
https://www.mol.co.jp/pr/2020/20074.html

Initiatives： ②Business process 1/2

Lighthouse (Contribution to customer supply chain)

We provide a service that allows stakeholders such as shippers and operators to safely and centrally share and confirm various information related to maritime transportation, including cargo and contract information, vessel schedules, and weather and sea conditions, in real-time and in a customized format for each party.



Integration with customer's supply chain management system (image)

Voyage information (vessel schedules, cargo information, weather, etc.) can now be viewed on a single platform

Value

✓ Through the establishment of this system, we contribute to the optimization of our clients' supply chain management, including optimization of vessel allocation and optimization of inventory, including offshore inventory.

https://www.mol.co.jp/pr/2023/23066.html

Initiatives： ②Business process 2/2

DX promotion of car carrier operations (using mathematical optimization)

With the cooperation of Professor Shunji Umetani from the Graduate School of Information Science and Technology at Osaka University, we have developed an algorithm that utilizes mathematical optimization techniques to derive the optimal plan in a short time, and we are considering its application to our operations.

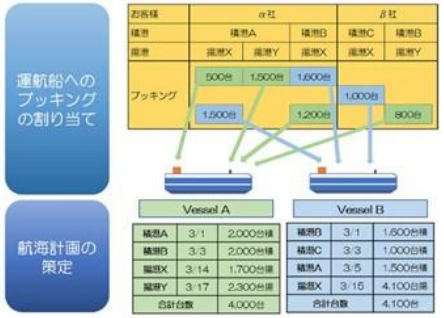
Step1 Shipping Plan

By deriving the optimal shipping plan from a vast number of combinations in a short time, we streamline shipping operations

Shipping Plan Simulation (Image)

Step2 Space Management

To meet the diversifying transportation and logistics requirements, we automate the booking of operating vessels and the formulation of voyage plans.



Voyage Plan Results (Image)

Step3 Cargo stowage plan

By creating cargo stowage plans that take into account various conditions, we improve and optimize operational efficiency

Plan for Loading Vehicles on Decks and Holds (Image)

Value

- ✓ Agile Response to Changes in Transport Demand
- ✓ Fuel Savings and Environmental Impact Reduction

https://www.mol.co.jp/pr/2021/21046.html

- ✓ Efficient Use of Space on Each Ship
- ✓ GHG Emission Reduction through Improved Operational Efficiency

https://www.mol.co.jp/pr/2022/22041.html

- ✓ 40% Reduction in Planning Time
- ✓ GHG Emission Reduction through Improved Cargo Handling Efficiency

https://www.mol.co.jp/pr/2019/19072.html

Initiatives： ③Business Management

By visualizing and utilizing global financial and non-financial information, we achieve real-time management.

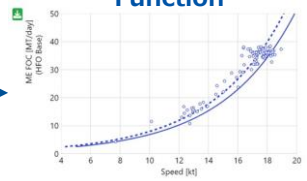
GHG Emission Visualization

Visualizing GHG emissions to address the following:
- Realization of environmental vision
- Market and societal demands (such as CII rating system)
- Customer demands (understanding the GHG emissions of their cargo)

GHG emissions visualization dashboard

Visualize and analyze GHG emissions from various perspectives, such as by vessel, voyage, and department.

CII Simulator Function



Calculate GHG emissions based on data such as sailing distance and fuel consumption, and compute the CII rating (Carbon Intensity Indicator).

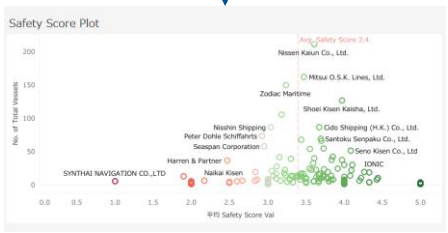
Value
- ✓ Reduction of GHG emissions as a company
- ✓ Efficiency improvement in response to systems such as the CII rating system
- ✓ Improvement in customer satisfaction

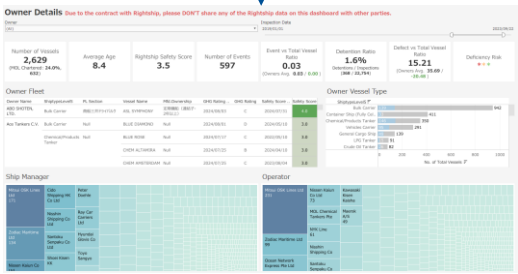
Shipowner dashboard supporting charter chain management

Creating a dashboard to verify safety and quality standards during chartering, for improving governance in charter procurement that affects our sustainable business activities, and for enhancing safety, quality, and sustainability.

https://www.mol.co.jp/ir/data/annual/pdf/ar-j2023.pdf (p.36)

Image of 'Overview Information of Our Group's Long-term Charter Shipowners' (Dashboard)





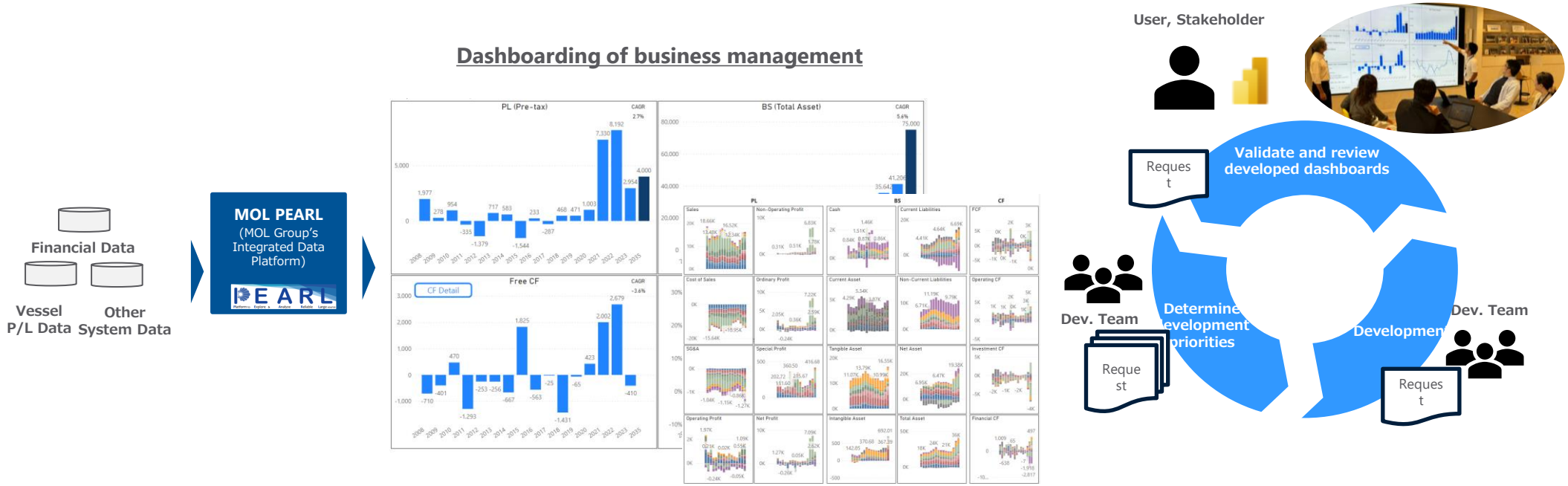
Quantifying the safety and quality of shipowners and their owned ships by combining both external and internal data.

Value
- ✓ Contribution to 'Charter Chain Management' in pursuit of the overall optimization of our group's chartered fleet.
- ✓ Ensuring proper governance in charter procurement
- ✓ Improvement of ship safety, quality, and sustainability

Initiatives： ③Business Management

Dashboarding of business management

Build a dashboard that aligns with the portfolio strategy and regional strategy of BLUE ACTION 2035 to support management decisions. Full-scale operation is scheduled to begin in fiscal year 2025. An agile approach is adopted, with reviews conducted every 1-2 weeks and iterative development.



Value

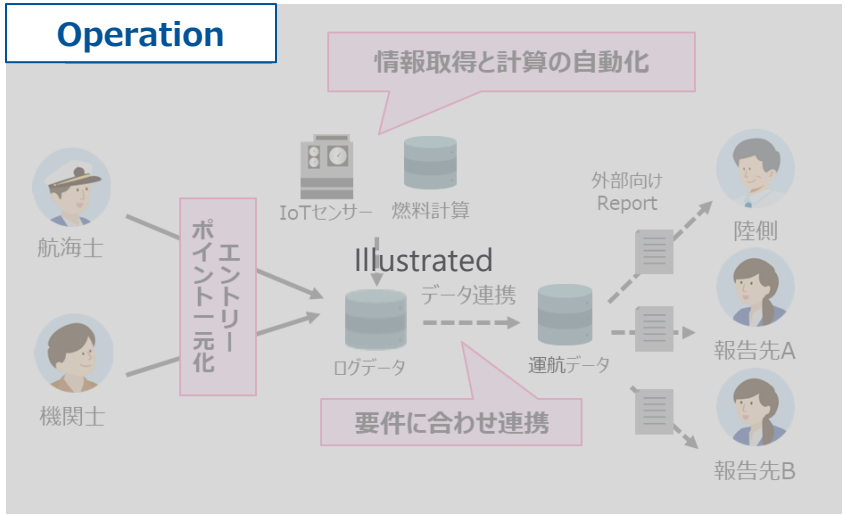
- ✓ Visualize business profitability and company-wide capital costs by setting ROA targets for each business.
- ✓ Visualize regional performance realities that serve as indicators when regional organizations collaborate with headquarters in business development and operations.

Initiatives： ④Onboard routine tasks

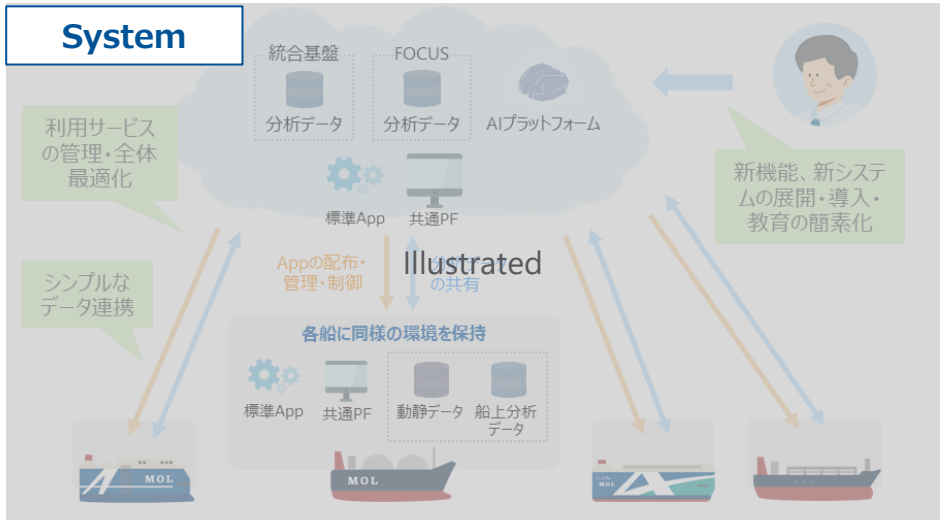
Improvement of crew work efficiency and optimization of onboard system environment.

Identification of issues related to routine shipboard operations and clarification of effective measures and direction for resolving these issues from both operational and systems perspectives

Operation



System



Value

- ✓ Centralizing entry points and reducing duplicate input tasks for 'Reducing crew workload and improving work efficiency'
- ✓ Preventing omissions and variations in work through 'Automation of information acquisition and calculation'
- ✓ Simplifying data linkage, optimizing system management, and reducing costs through 'Standardization of onboard IT environment'
- ✓ Shortening the development-to-introduction lead time for new functions and systems through 'Building a common platform'

Initiatives： ⑤Shore-Vessel Communication

Low-orbit satellite expansion

By using Starlink* onboard, systems and data can be shared in real-time between the ship and the shore, enhancing safe navigation and improving the well-being of the crew in their onboard life. Compared to existing communication equipment, an improvement in communication speed of up to 50 times has been confirmed.

Full-scale introduction to our managed ocean-going vessels

A trial was conducted to improve the onboard communication environment, and a significant improvement in crew well-being was confirmed. Therefore, full-scale introduction will begin in October 2023. All vessels managed by our group, except those where introduction is difficult due to ship registration and other reasons, are scheduled to be equipped.

Installation of Starlink（youtube）

Trial vessels: From left, ferry "Sunflower Sapporo" and coastal RORO ship "Musashi Maru".

Future Illustration Project

To improve the well-being of crew members during their time on board, the onboard communication environment has been identified as a challenge. Through collaboration with Marlink AS (a communication service provider) and SpaceX (a satellite communication service), we are addressing issues related to the utilization of LEO (low Earth orbit) network technology and sharing the insights gained with the entire industry.
※White paper（Summarizing the challenges of the existing onboard communication environment, an overview of LEO, and use cases is available (LinkedIn account required).

* Starlink is a satellite communication service operated by SpaceX that uses low Earth orbit satellites to provide high-speed, low-latency connectivity.

https://www.mol.co.jp/pr/2023/23133.html

Initiatives： ⑥Global Human Capital Management, ⑦Crew's QOL

Culture Transformation with Digital
- ❻ Global Human Capital Management
- ❼ Crew's QOL
- ❽ Nurturing new values in employees

⑥Global Human Capital Management

To enhance global talent management, we will aggregate all global talent information, visualize skill information, and place the right talent with expertise beyond organizational and regional boundaries.

MOL Group Key Positions (MGKP)

Important positions across the Group are designated as MGKP. The job descriptions and requirements for human capital are clarified.

Headquaters	General Managers
Group Companies in Japan	President and some high-level officers
Major Posts outside Japan	-Head of Corporate Functions & Head of Marketing in each region -Presidents -New posts associated with business expansion

Optimum Groupwide allocation of human resources is achieved

Human Capital Database

- Information ofhuman capital is collected from Group companies globally and centrally managed
- Candidates for Group managers are selected and systematically cultivated at an early stage
- Skill and position information is defined

https://www.mol.co.jp/pr/2024/24077.html

⑦Crew's QOL

By speeding up onboard communication, we will provide a living environment where crew members can always connect with someone, thereby improving crew engagement.

Onboard Cashless Project

✓ **Introduction of cashless payments onboard**
By promoting electronic payments onboard, we aim to reduce the risks and labor associated with handling cash manually, as well as reduce fees related to cash arrangements for ships.

✓ **Introduction of international remittance services for the maritime industry**
We will introduce MarTrust, an international remittance service for seafarers' salaries, for all crew members. This will allow salaries to be sent via a mobile app and enable online shopping, eliminating the need for cash payments onboard. This will improve the convenience for crew members and enhance the efficiency of financial management tasks for captains. The introduction will be promoted so that all eligible crew members can use it by the fiscal year 2024.

Contributed to increasing crew's engagement

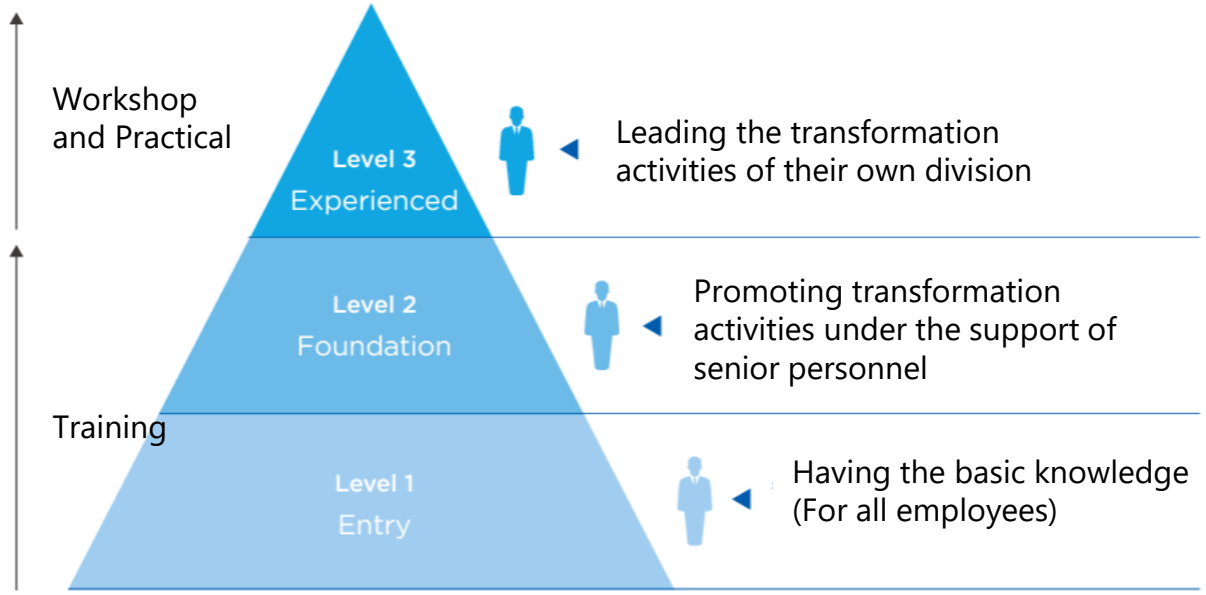
https://www.mol.co.jp/pr/2023/23138.html

Initiatives： ⑧Nurturing new values in employees

Providing a transformation training program for all employees to develop change leaders (value-creating personnel).

⑧Nurturing new values in employees

We have defined the skills necessary for driving transformation and prepared a three-level curriculum, starting the training in the fiscal year 2022. Each department, led by change leaders, promotes transformation from the bottom up, driving transformation across the entire group."



KPI

Cumulative Total Number of Change Leaders

- 30 （FY2023）
- 75（FY2024）
- 120 （FY2025）

https://www.mol.co.jp/sustainability/innovation/dx/img/MOL_Group_DX_Vision.pdf (pp.8-9)

5. ICT Infrastructure Development

ICT Infrastructure Development (1/2)

MOL promotes the development of ICT environment to realize DX

Business applications (achieving standardization and efficiency)

Launch of the new core system 'SURF' aims to improve operational efficiency and enhance sales support functions.

PCC/ferry operation system (mathematical optimization)

Optimal route recommendation tool

…

SURF

- ✓ Substantial sales support functions
- ✓ Industry de facto standard ⇒ Promotes business standardization
- ✓ Enjoy continuous value enhancement through SaaS
- ✓ Reduction and leveling of system investment
- ✓ Flexible expansion and contraction in response to changes in business scale

Sales Performance support

Tool for consolidated management accounting operations

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https://www.mol.co.jp/pr/2022/22128.html

Data Platform（Flexible data utilization）

To implement the 'MOL DX Vision,' we aim to resolve data issues that hinder progress and strive for an ideal data environment.

To achieve this ideal data environment, we will implement the following data management measures.

PEARL (Platform to Explore & Analyze Reliable Large source)

Supply → Storage → Processing → Combination

Establish a data platform that centralizes the dispersed information necessary for management and business operations and realizes real-time performance.

https://www.molis.co.jp/services/04/

- Data Governance
- Data Architecture
- Data Modeling
- Master Data Management
- Meta Data Management
- Data quality control
- Data Security

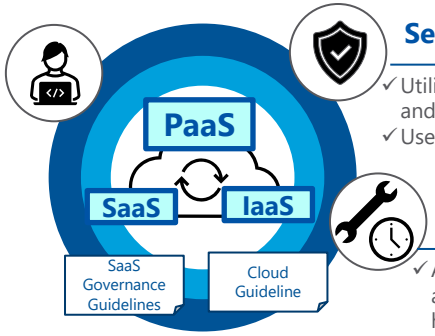
https://metafind.jp/casestudy/case04/

Infrastructure（Cloud First）

Active utilization of cloud services to achieve 'agility,' 'security,' and 'management efficiency.

Agility

- ✓ Public Cloud Utilization to Speed Up System Development
- ✓ Active use of PaaS services(especially PEARL data infrastructure, etc.)
- ✓ Development of cloud guidelines
- ✓ Issuance of governance rules



Security

- ✓ Utilization and usage monitoring of CSPM and security-related services
- ✓ Use of industry-leading cloud services

Management Efficiency

- ✓ Aim to minimize management costs and accumulate and deepen know-how by using specific cloud services

https://www.molis.co.jp/services/05/pdf/microsoft.pdf

Utilization of advanced technology

Further promotion of ICT utilization in light of advanced digital technology trends, such as AI utilization

Shipping Market Forecast

- ✓ In collaboration with Yokohama National University, we are analyzing economic and maritime data using AI to forecast the dry bulk market.
- ✓ Additionally, we are working with external information companies to advance market forecasting efforts for other operating vessels.

https://www.mol.co.jp/pr/2016/16060.html

Optimal route selection Smart Routing

- ✓ In collaboration with a U.S. startup company, we are conducting demonstration experiments for the research and practical application of AI-equipped optimal route planning.
- ✓ We will present recommendations for optimal routes and propulsion power while ensuring safety and punctuality.

https://www.mol.co.jp/pr/2021/21009.html

Generative A

- ✓ From the second half of fiscal year 2023, we will roll out the MOL version of ChatGPT ('ChatMOL') company-wide.
- ✓ Additionally, we will introduce technology solutions for the business application of generative AI."

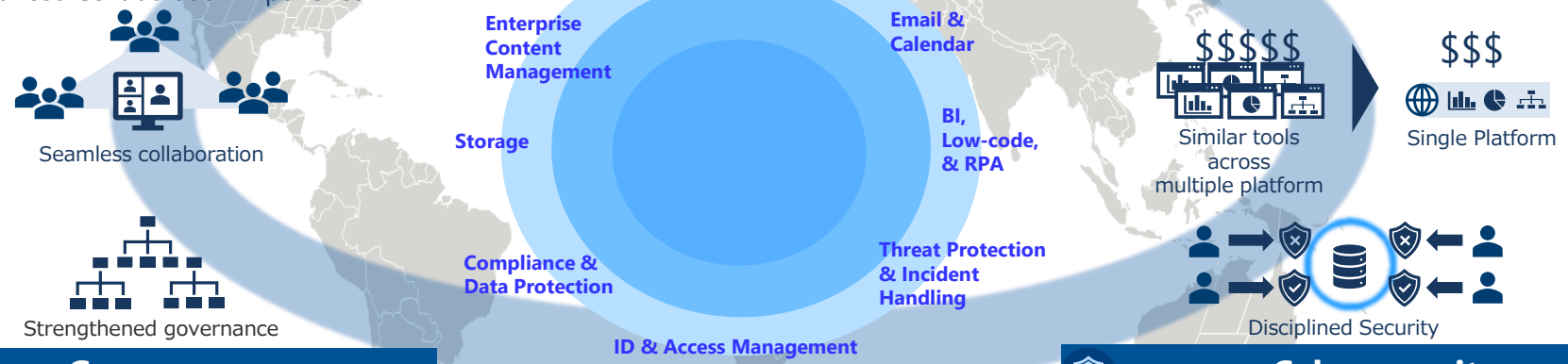
ICT Infrastructure Development (2/2)

Global Digital Platform

By integrating the ICT environment across the entire MOL Group, we aim to enhance collaboration, productivity, governance, and security, thereby advancing the business environment

As One MOL Group

Join Forces with Microsoft for : Elevated Collaboration, Productivity, Governance, and Security



Collaboration

- Enhanced Accessibility to Files/Resources
- Improved Knowledge Sharing
- Enhanced Collaboration Experience

Seamless collaboration

Strengthened governance

Productivity

- Cost Optimization by optimizing license
- Enhanced Productivity with BI, RPA, low code
- Operational Efficiency by standardization

$$$$$ Similar tools across multiple platform

$$$ Single Platform

Disciplined Security

Governance

- Optimized Operational Framework
- Expansion of Operations to a 24/7 Basis
- Streamlined Operational Costs

Cybersecurity

- Standardized Security Level
- Compliance with Cybersecurity Regulations
- Strengthened Security Monitoring

6. Security Measures

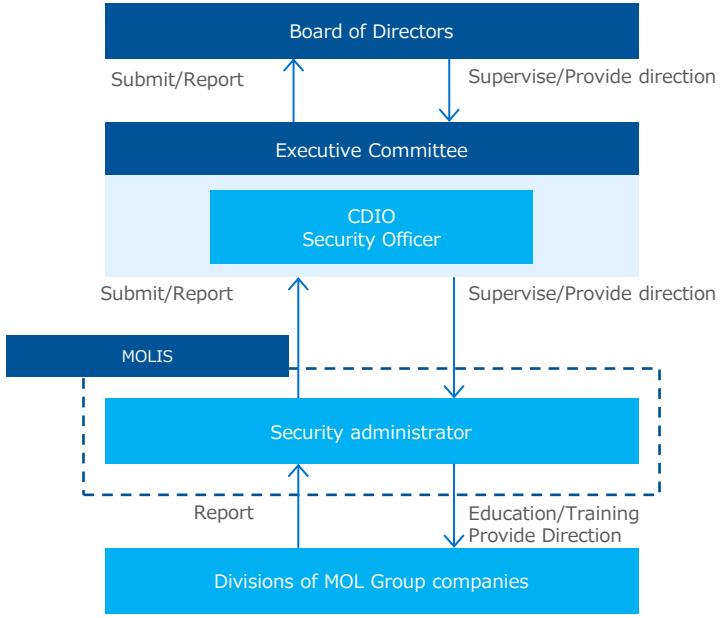
Security Measures

Continue to strengthen our security system, including enhancing security measures for vessels.

Organizational and human measures

Information security system

To address the increasingly serious threats to information security, we are establishing a system to ensure information security.



System

https://www.mol.co.jp/sustainability/governance/security/

Cyber Security Incident Response Team (CSIRT)

In the event of an emergency, a “Major Incident Response Headquarters” is established and the CSIRT responds as a cybersecurity response team.

- ✓ Investigations into malicious email, malware, and cyber threats
- ✓ Awareness-raising activities based on lessons learned from security incidents
- ✓ Collecting up-to-date information on daily cyber risks and the latest security trends in cooperation with external organizations such as the Ministry of Land, Infrastructure, Transport and Tourism

⇒**Reduce the risk of cyber-attacks at headquarters and at users and domestic and international group companies**

Information Security Training

All employees

Annual e-Learning and targeted email training to raise awareness of security threats

Management (President, CDIO, General Manager in charge of response teams, etc.)

Conduct annual incident response training under the scenario of a major ICT incident caused by a cyber attack and the establishment of a task force.

Technical measures

Ransomware Countermeasures

System Protection

Protection against malware infiltration into the company network and enhanced management and monitoring of network and telecommunications equipment with a view to telecommuting

Emergency response

In preparation for system failures, emergency communication methods and systems are in place, and system recovery drills are regularly conducted by the department in charge.

Investigation and Analysis

We obtain the latest information on ransomware damage, conduct periodic surveys and analysis, and review various countermeasures as necessary.

World's first IACS Basic Design Certification

MOL has obtained the world's first basic design approval for compliance with the unified regulations E26 'Cyber resilience of ships' issued by the International Association of Classification Societies (IACS) for the basic design of a ship network with cybersecurity measures developed and demonstrated by our company

https://www.mol.co.jp/pr/2023/23012.html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