

## e5 Lab Establishes Marindows Inc.

~ Offering Global Maritime Solutions through an IT Revolution—‘Marindows’ is the World’s 1<sup>st</sup> Maritime OS~



TOKYO—e5 Lab.Inc. (President: Tomoaki Ichita; Headquarters: Tokyo) today announced the establishment of Marindows Inc. (President: Yasumasa Suetsugu; Headquarters: Tokyo) on March 3 to bring the world’s most advanced information technology (IT) to Japan’s maritime industry. e5Lab is a joint venture of four companies: Asahi Tanker Co., Ltd., Exeno Yamamizu Corporation, Mitsui O.S.K. Lines Ltd., and Mitsubishi Corporation that aims to develop electrically powered, zero-emission vessels.

URL: <https://www.marindows.com>

### 【Issues Facing the Japanese Maritime Industry】

Looking at logistics in Japan—a maritime nation surrounded by the sea—marine transport accounts for 45% of Japan’s domestic cargo transport and 99% of overseas cargo transport. In recent years, the maritime industry, which serves as Japan’s lifeline, has faced extremely complex and difficult-to-solve social, environmental, and economic issues. These include a shortage of manpower due to a sharp decline in the working-age population, long working hours and dangerous work for crewmembers, global-scale environmental issues, and intense competition from overseas such as China and South Korea. The depressed Japanese maritime industry leads not only to problems in logistics, but also a decline in overall national strength, bringing various negative impacts on all types of land-based businesses. Considering this situation, Japan’s Ministry of Land, Infrastructure, Transport and Tourism has promoted legislation aimed at improving productivity and creating a more attractive work environment in the maritime industry and enhance the business foundation of the Maritime sector \*1.

\*1. On February 5, 2021, the Cabinet approved “a bill to partially revise the Marine Transportation Act to strengthen the foundation of the entire maritime industry, for example, by enhancement of competitiveness in the shipbuilding and ocean shipping fields, workstyle reforms for seafarers, and improvement of productivity in coastal shipping.

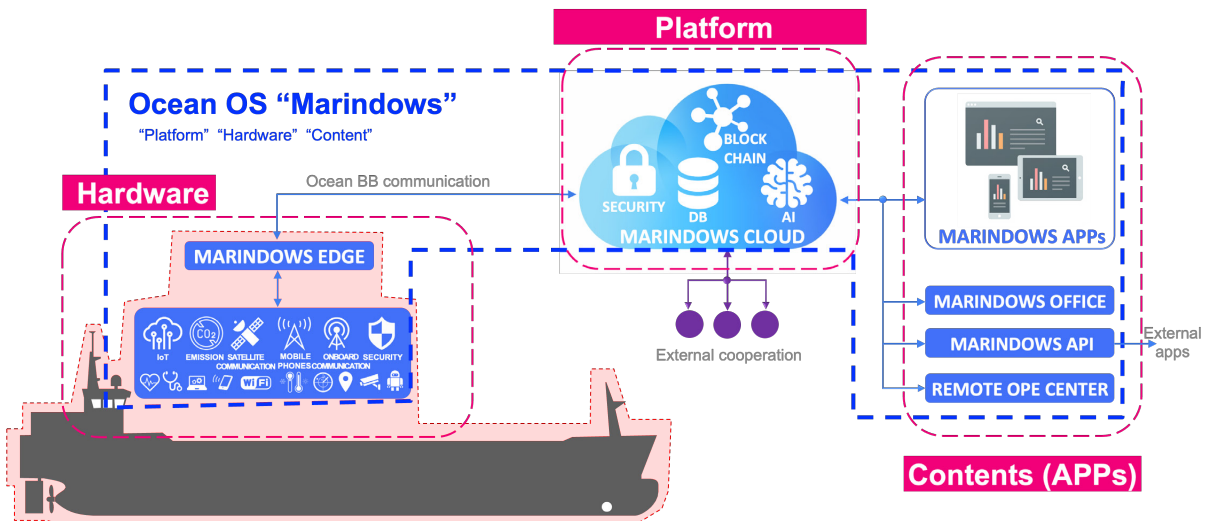
**【Roles of Marindows】**

As typified by Smart City, the digital transformation (DX) has been promoted beyond individual corporate frameworks by national and local governments. The next-generation services and systems inspired by DX create completely new values and businesses. On the other hand, the maritime industry, with a market scale exceeding ¥8.5 trillion, got behind of DX due to various hurdles such as difficulty in development of communication environment and longstanding business practices. Under such circumstances, an ocean broadband (ocean BB) service, using a next-generation satellite, will start in 2022.

<b>Ocean BB communication</b> High speed, large capacity and low latency	<b>DX cloud</b>	<b>AI</b>
Online operations on all ships	Digitalization of all ships	Use of data creates new value through AI

**3 IT revolutions bring explosive growth to the maritime industry**

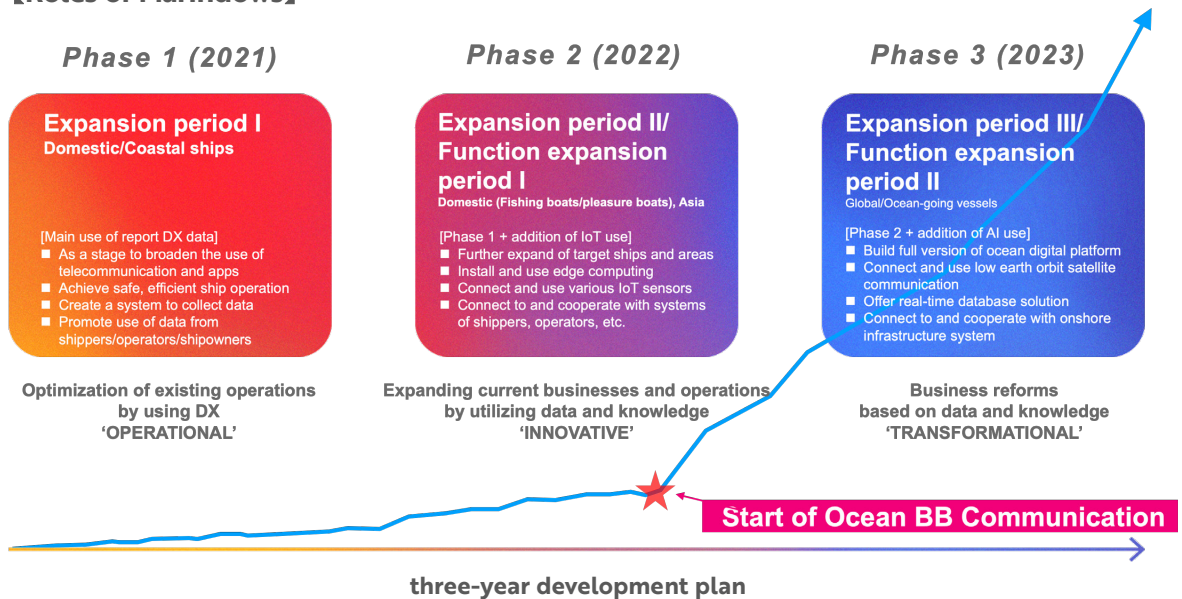
Looking toward the coming of ocean BB communication, Marindows will develop a streamlined digital platform (ocean OS “Marindows”), which allows for evolution and expansion by drawing upon the power of the information and communication revolution (incorporating ocean BB communication/DX/AI). With the OS “Marindows” as the driving force, the company will address social, environmental, and economic issues facing the maritime industry. Marindows will create new value and markets in the Maritime industry along with partners of various leading companies having good business relationship with e5 Lab which is mother company of Marindows.



**Basic configuration of Ocean OS “Marindows”**

Packaging “Platform”, “Hardware” and “Contents (APPS)”

**【Roles of Marindows】**



“Ocean BB communication” is the KEY point of expanding scale and market

- From 4Q 2021: Start promotion activities for ocean BB communication, which will go into full-scale service in 2022
- 1-2Q 2022: Plan to release operational DX service for seafarers, shipowners, and shipping companies (Phase 1)
- In 2022: Expand the service in various domains from merchant ships to fishing boats and pleasure craft
- In 2022: Expand Marindows service to global market based on experiences and knowledges of the use of DX and data in Japanese maritime industry
- By end of 2023: Aim at 70% (abt. 5000 ships) in installation ratio of ocean OS “Marindows” on Japanese coastal ships

The Ocean OS “Marindows” is easy-to-use on existing ships as well as newbuilding ships. In Phase 1, We will start developing services to improve operations for seafarers, shipowners, and shipping companies through the use of existing operation DX and data, in parallel with promotion of ocean BB communication. However, we don’t think these initiatives are enough to solve the serious issues facing the Maritime industry. Therefore, the ocean OS “Marindows” is constructed to become smarter and more convenient as time goes by and increase of user since this system will be kept updated and expanded continuously. The ocean OS “Marindows” will lead the Maritime industry toward a sustainable world from the sea and the land by connecting various system of both. It will start from Japan’s sea to the world.



## 【Six materiality to achieve SDGs】

### SUSTAINABLE DEVELOPMENT GOALS

 <p><b>ACTION 01</b> Solve industrial issues, promote innovation through use of DX/AI</p> 	 <p><b>ACTION 02</b> Solve the digital divide over the ocean by spreading and promoting ocean BB communication</p> 	 <p><b>ACTION 03</b> Solve environmental issues, help to protect the global environment</p> 
 <p><b>ACTION 04</b> Establish a resilient logistics infrastructure targeting zero accidents through the use of DX/AI</p> 	 <p><b>ACTION 05</b> Solve education/medical divide by use of DX/AI</p> 	 <p><b>ACTION 06</b> Boost the growth of Maritime industry by using open innovation platform</p> 

## 【Outline of Marindows Inc.】

Name : Marindows Ltd.  
Address : 1-1-3 Otemachi, Chiyoda-ku, Tokyo  
Representative : Yasumasa Suetsugu  
Business activities

- ❑ Development of ocean OS “Marindows”
- ❑ Development of maritime digital content (APPs)
- ❑ Spread and promotion of ocean broadband communication
- ❑ Provide opportunities to connect corporations and create new value
- ❑ Support promotion of DX in the maritime industry



## 【About e5Lab.Inc.】

e5 Lab offers added value to all stakeholders encompassing society, the earth, and the sea, by fostering an attractive, sustainable ocean shipping industry and creating new businesses and social infrastructure in the public interest by creating more electric-powered vehicles, advancing the digitalization of vessels, and passing on a bright future in ocean shipping to the next generation.



▼ For further information:  
E-mail : [project@e5ship.com](mailto:project@e5ship.com)

▼ Website  
<https://e5ship.com>



## **【Comments from co-creation partners】**

### **Nippon Kaiji Kyokai (ClassNK)**

**Mr.Hirofumi Takano** – Executive Vice President, Director of Innovation Development Division

It's a great pleasure for us to participate in the joint research for such an innovative initiative on cyber security. Innovation utilizing digital technology and cyber risks are two sides of the same coin. For the development and the spread of innovation to be conducted under a safe environment, ClassNK supports the initiative through the provision of best practices constructed based on international trends and up-to-date information on cyber security.

### **SoftBank Corp.**

**Mr.Hidebumi Kitahara** – Vice President, Head of Global Business Strategy Division, Technology Unit

SoftBank is committed to solving various social issues through corporate activities and businesses to realize a sustainable society where all things, information and minds are connected. We are happy that we can create a new market by evolving the maritime industry with the power of information communication, and co-create it with Marindows, which is building an industry base through digital transformation (DX). We believe that digital platforms using cutting-edge communication technologies, such as the next-generation satellite communication and High-Altitude Platform Station (HAPS), AI, and IoT, can bring innovation to global industries, and we will contribute to further accelerating digitalization.

### **Furuno Electric Co., Ltd.**

**Mr.Kazuma Waimatsu** – Director/Divisional General Manager, Marine Electronic Products Division

Furuno engages in engineering related to gathering onboard data, beyond its traditional role as a manufacturer of marine equipment. We design onboard IT networks depending on the application, enhance connection with onboard equipment using the Furuno Open Platform (FOP), and aim for efficient use by integrating and centralizing onboard IoT data. We are honored that, along with Marindows and co-creation partner companies, we will be able to direct and co-create the future of the next-generation maritime industry, through use of a new form of ship - shore communication and IoT data based on our experiences as maritime system integrator. Furthermore, we are thinking of ways to contribute to the project and put our activities securely in the forefront of practical innovation in the marine industry.