

MOL and Hitachi Launch Initiative to Convert Used Ships into Floating Data Centers ~ Providing Digital Infrastructure to Meet Growing AI Demand ~



HITACHI

Mitsui O.S.K. Lines, Ltd. (MOL; President & CEO: Takeshi Hashimoto; Headquarters: Minato-ku, Tokyo), Hitachi, Ltd. (Hitachi; President & CEO: Toshiaki Tokunaga; Headquarters: Chiyoda-ku, Tokyo), and Hitachi Systems, Ltd. (Hitachi Systems; President & CEO : Takehiko Watanabe; Head Office: Shinagawa-ku, Tokyo) today announced the signing of a Memorandum Of Understanding (MOU) for the development, operation, and commercialization of a “Floating Data Center (FDC) converted from a second-hand vessel.” ^(Note) Based on this MOU, the companies will conduct demand verification, review basic specifications and operational procedures, and carry out feasibility studies for commercialization of an FDC, with a view to commencing operations in 2027 or later. The project will focus primarily on Japan, where the Hitachi Group already has operational experience in land-based data centers, as well as Malaysia and the United States, where there are proven track records in providing services related to land-based data centers.



CG rendering of an FDC converted from a used ship

In recent years, demand for data centers has continued to grow alongside the rapid proliferation of generative AI, creating a need for diverse range of data center solutions that take into account factors such as location, the availability of water resources for power generation and cooling, surrounding infrastructure, and disaster risks.

Leveraging their respective experience, insights, and expertise, the three companies will assess the feasibility of commercializing FDC converted from a used vessel—a solution that eliminates the need to secure large tracts of land, enables short construction periods and mobility, and reduces environmental impact and costs through the reuse of existing hulls.

Roles of Each Company

- Mitsui O.S.K. Lines, Ltd.

Building on its expertise in studying and evaluating maritime operations—including vessel conversion plans, coordination with port authorities, and mooring and maintenance—MOL will be responsible for planning and promoting vessel conversions; leading discussions with port authorities and other stakeholders; defining maritime operational requirements such as mooring and maintenance; and examining financing structures.

- Hitachi, Ltd./Hitachi Systems, Ltd.:

Led by the Strategic SIB Business Unit, which drives new growth opportunities, Hitachi and Hitachi Systems will leverage their experience in owning and operating land-based data centers in Japan, installing containerized data centers, and providing land-based data center services in Malaysia and the United States. They will be responsible for technical studies on data center design, installation, and operation; defining IT infrastructure requirements such as networking and security; utilizing local expertise; and collaborating on customer requirement clarification and customer acquisition.

Furthermore, by combining advanced AI with deep domain knowledge, the Hitachi Group is providing “[HMAX by Hitachi](#)” (HMAX), a suite of next-generation solutions designed to address the most complex challenges facing in social infrastructure. Hitachi will aim to expand HMAX to further advance and streamline data center operations in the future.

(Note) **[Advantages of FDCs Compared to Land-based Data Centers]**

• **No need to secure large tracts of land or incur land acquisition costs**

Securing large plots of land for data centers in the suburbs of major cities is becoming increasingly difficult. In some cities, infrastructure concerns—such as electricity, cooling water, environmental regulations, and resident consent—has not kept pace, leading to proposals to halt the construction of new data centers. FDCs, which utilize ports and rivers, offer a new solution that can be deployed even in such challenging areas.

• **Shorter construction periods**

Renovation work for FDCs takes approximately one year, potentially shortening the development period by up to three years compared with conventional land-based data center development.

• **Introduction of water-cooling systems utilizing seawater and river water**

Data centers consume large amounts of electricity and generate significant heat, requiring robust cooling systems. As conventional air-cooling systems cannot adequately cool high-performance AI servers, the market is shifting toward water-cooled systems. However, because water-cooling requires large volumes of water, some regions in the United States have experienced conflicts with residents concerned about potential shortages of potable water. As floating structures, FDCs can efficiently utilize seawater or river water for cooling, reducing both the power consumption required for server cooling and overall operational costs.

• **Relocatable**

Because FDCs are floating structures, they are easy to move in response to shifts in demand.

[Benefits of Converting Existing Ships into FDCs]

• **Reduced environmental impact arising from the extraction and processing of raw materials through the reuse of existing ship hulls**

• **Reduced initial investment**

In addition to lowering construction costs, the use of existing onboard systems—such as air-conditioning, water intake, and power generation—is expected to reduce initial investment requirements.

• **Extensive space availability**

For example, a car carrier with a floor area of approximately 54,000 m² would rival one of Japan’s largest onshore data centers in terms of total floor area.

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About Mitsui O.S.K. Lines, Ltd.

MOL operates a fleet of more than 900 vessels, including LNG carriers, car carriers, oil tankers, and bulk carriers. Centered on its core shipping business, the company is engaged in a wide range of social infrastructure businesses—such as offshore business, wind power generation, logistics, and real property—as well as B2C businesses such as cruises and ferry services. MOL aims to be a strong and resilient corporate group that grows on a global scale by addressing the evolving needs of society, including environmental conservation, through the advancement of its technologies and services, and by delivering new value to all stakeholders. Visit us at <https://www.mol.co.jp/en/>.

About Hitachi, Ltd.

Through its Social Innovation Business (SIB) that brings together IT, OT (Operational Technology) and products, Hitachi contributes to a harmonized society where the environment, wellbeing, and economic growth are in balance. Hitachi operates globally in four sectors – Digital Systems & Services, Energy, Mobility, and Connective Industries – and the Strategic SIB Business Unit for new growth businesses. With Lumada at its core, Hitachi generates value from integrating data, technology and domain knowledge to solve customer and social challenges. Revenues for FY2024 (ended March 31, 2025) totaled 9,783.3 billion yen, with 618 consolidated subsidiaries and approximately 280,000 employees worldwide. Visit us at www.hitachi.com.

About Hitachi Systems, Ltd.

Hitachi Systems will collaborate with Hitachi Group companies and business partners to develop the Lumada business as One Hitachi, with a focus on managed services, to achieve DX for our customers on a global scale. Our human capital featuring business knowledge and know-how acquired through solving customers' problems across a variety of industries will utilize generative AI more than ever before to further accumulate and utilize knowledge. This will enable us to propose on-site digitalization solutions and create a cycle of collaborative value creation. Visit us at <https://www.hitachi-systems.com/eng/index.html>.

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