

March 28, 2025

National Maritime Research Institute,
National Institute of Maritime, Port and Aviation Technology**OCTARVIA Programs are updated to include calculation functions for
alternative fuels****—OCTARVIA-web V2 and EAGLE-OCT.-web V2—**

National Maritime Research Institute (NMRI), National Institute of Maritime, Port and Aviation Technology (Director General: Mr. Takemasa Minemoto) released the program for estimating the life cycle fuel consumption (OCTARVIA-web V2) on NMRI Cloud on March 28, 2025.

Also, the program estimating ship form and ship performance data from their main particulars (EAGLE-OCT.-web V2) is to be released on April 4, 2025.

OCTARVIA-web V2 and EAGLE-OCT.-web V2 have been developed through the Japan Maritime Cluster Collaborative Research Project on Evaluation of Ship Performance in Actual Seas (OCTARVIA).

The programs have been updated to include calculation functions for fuel consumption and greenhouse gas (GHG) emissions from main and auxiliary engines for alternative fuels such as ammonia and hydrogen. This enables the life cycle assessment of ships considering both economic and environmental aspects. NMRI continues to make its efforts to reduce GHG emissions from the shipping sector through global utilization of the programs.

In order to strengthen the international competitiveness of Japanese maritime industry, Japan Maritime Cluster Collaborative Research on Evaluation of Ship Performance in Actual Seas "OCTARVIA Project -Phase2-" was carried out from March 2022 to March 2024, as an open innovation platform. "OCTARVIA Project -Phase2-" has taken up the ship performance in actual seas as the research theme which each private company cannot conduct or maximize the research results.

In the project, the research body named "OCTARVIA2", in which 21 companies such as ship owners and shipyards participated, was in charge of promoting social implementation. OCTARVIA 2 enhanced function of the current programs to estimate fuel consumption and GHG emissions from main and auxiliary engines for alternative fuels. In this way, the program for estimating the life cycle fuel consumption (OCTARVIA-web V2) and the program estimating ship form and ship performance data from their main particulars (EAGLE-OCT.-web V2) have been developed. Other improvements include improvement of accuracy of the added resistance in waves and the resistance due to drifting, considering future possible trend of slow steaming.

By releasing these programs on NMRI cloud (<https://cloud.nmri.go.jp/>), NMRI continues its efforts to reduce GHG emissions from the shipping sector.

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(Annex)

The programs can be used in the limited version (free version) and the full version (paid version).

1. The features of the program and each data

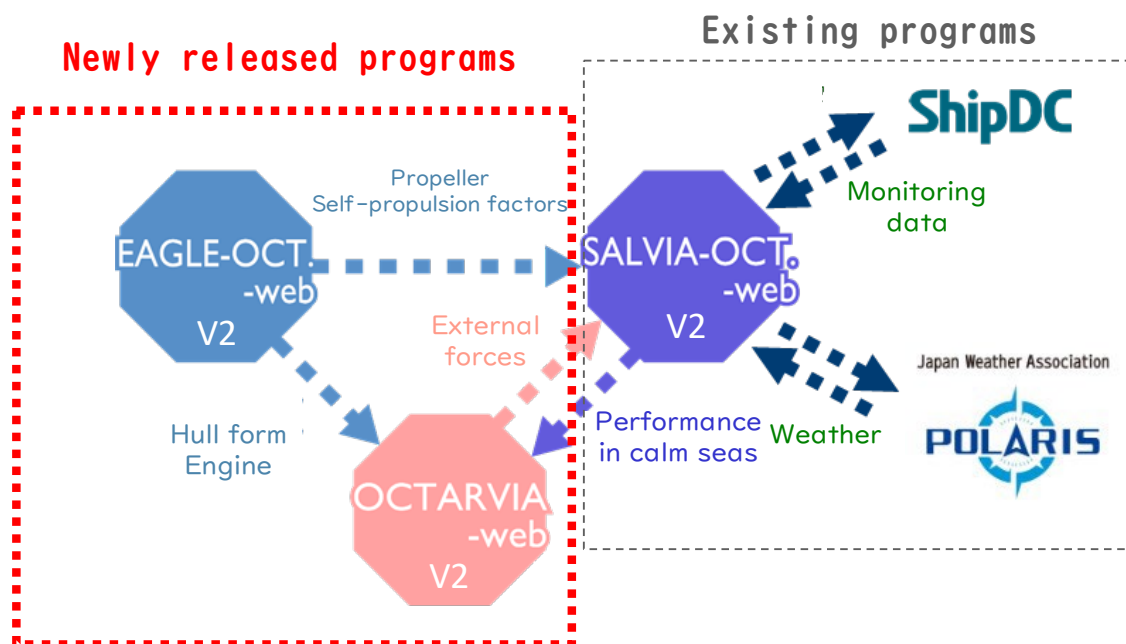
(1) OCTARVIA-web V2(released on March 28, 2025)

- Users can calculate the speed reduction and the fuel consumption in actual seas by considering the effects of encountered wind and waves and can conduct life cycle assessment of ships considering aging and biofouling effects. Alternative fuels have been added to the fuel type used in main and auxiliary engines, making it possible to evaluate the ship performance not only from an economic aspect but also from an environmental aspect.
- A calculation model for the resistance due to drifting and that for the added resistance in waves have also been improved to cope with increased drift angles by the wave effects and for slow steaming to reduce GHG emissions from ships.
- Even such users as shipping companies who do not have detailed hull form data can evaluate the ship performance in actual seas by connecting this program with EAGLE-OCT.-web V2 and SALVIA-OCT.-web V2.

(2) EAGLE-OCT.-web V2 (to be released on April 4, 2025)

- Users can estimate the hull form data such as the waterline shape, the cross-section, and the fuel consumption rate for alternative fuels by inputting the ship type (container ship, pure car carrier, bulk carrier and tanker) and principal dimensions. These data are required as the input for OCTARVIA-web V2 and SALVIA-OCT.-web V2.
- Even such users as shipping companies and equipment manufacturers who do not have detailed hull form data can evaluate the ship performance in actual seas.

2. Cooperation among each program and data



※SALVIA-OCT.-web V2: program to analyze the ship monitoring data

Detailed information for the release of the program of onboard monitoring data analysis (May 24, 2023) can be found at the following website:

<https://www.nmri.go.jp/en/news/press/2023/press20230524.html>

3. Fee for the program

The licensing of these programs is handled by UNICUS Co., Ltd. Please visit the website (<https://unicus.jp/licensing/octarvia/>, <https://unicus.jp/licensing/eagle/>) and complete the application process. The fee for the full version is as follows:

Fee for the programs (paid version)

Name of the program	6 months	12 months
OCTARVIA-web V2	330,000 yen	440,000 yen
EAGLE-OCT.-web V2	165,000 yen	220,000 yen

4. Participating organizations for OCTARIVA2(As of March 31st, 2024)

No.	Industry type	Name of organization
1	Shipping company	Ocean Network Express Pte. Ltd.
2	Shipping company	Kawasaki Kisen Kaisha, Ltd.
3	Shipping company	Mitsui O.S.K. Lines, Ltd.
4	Shipping company	Nippon Yusen Kabushiki Kaisha
5	Shipbuilding company	Imabari Shipbuilding co., ltd.
6	Shipbuilding company	Oshima Shipbuilding co., Ltd.
7	Shipbuilding company	Kawasaki Heavy Industries, Ltd.
8	Shipbuilding company	Japan Marine United Corporation
9	Shipbuilding company	SHIN KURUSHIMA DOCKYARD CO.,LTD.
10	Shipbuilding company	TSUNEISHI SHIPBUILDING Co., Ltd.
11	Shipbuilding company	Namura Shipbuilding Co., Ltd.
12	Shipbuilding company	Mitsui E&S Shipbuilding Co., Ltd.
13	Shipbuilding company	Mitsubishi Shipbuilding Co., Ltd.
14	Ship equipment company	Kamome Propeller Co., Ltd.
15	Ship equipment company	Kansai Paint Marine Co.,Ltd.
16	Ship equipment company	CHUGOKU MARINE PAINTS, LTD.
17	Ship equipment company	Nakashima Propeller Co., Ltd.
18	Classification society	ClassNK
19	Meteorological company	Japan Weather Association
20	Research institute	National Institute of Maritime, Port and Aviation Technology
21	Others	mitsui E&S Co., Ltd.

(Japanese alphabetical order in the same industry.)