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NMRI National Maritime Research Institute

Japan Weather Association

PRESS RELEASE

May 24, 2023
National Maritime Research Institute,
National Institute of Maritime, Port and Aviation Technology
Japan Weather Association

Analysis program of onboard monitoring data has been released

（SALVIA-OCT.-web V2）

National Maritime Research Institute, National Institute of Maritime, Port and Aviation Technology (NMRI, Director General, Takemasa Minemoto) has released the analysis program of onboard monitoring data (SALVIA-OCT. -web V2) on May 24, 2023. The program enables data acquisition of the onboard monitoring data stored at Ship Data Center and from the ocean data service for the maritime industry (POLARIS) provided by Japan Weather Association (JWA, Director General, Futoshi Osada) in the program. By providing this program widely in Japan and overseas as a standard method for analyzing onboard monitoring data, we will support efforts to realize shipbuilding with high performance in actual seas and highly efficient ship operations.

In order to strengthen the international competitiveness of Japan's maritime industry, taking up the ship performance in actual seas as a research theme which cannot be implemented or be maximized the results by a company alone, Japan Maritime Cluster Collaborative Research on Evaluation of Ship Performance in Actual Seas "OCTARVIA Project -Phase2-" has been carried out since March 2022 by forming the open innovation platform.

In the project, a research body ‘OCTARVIA2’, in which 21 companies such as ship owners and shipyards participate, is in charge of promoting social implementation. OCTARVIA2 developed a program for analyzing onboard monitoring data with high accuracy: SALVIA-OCT.-web V2. The effectiveness of the program is validated by the participants. By releasing the program on NMRI cloud (https://cloud.nmri.go.jp/), we will support efforts to realize shipbuilding with high performance in actual seas and highly efficient ship operations.

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(Attached)

SALVIA-OCT.-web V2 can be used in the limited version (free version) and the full version (paid version). Both versions are able to acquire the following data necessary for analyzing onboard monitoring data by API.

- ✧ Onboard monitoring data stored in ShipDC
- ✧ POLARIS Hindcast, the ocean hindcast database provided by JWA

1. The features of the program and each data

(1) SALVIA-OCT.-web V2

- ➢ Users can obtain calm sea performance (relation between ship speed, engine speed and engine output) since the program implements a data filtering function and a wind/wave correction function for ship monitoring data.
- ➢ Users can conduct a wind/wave correction based on the world most accurate[*1] performance prediction model.
- ➢ Users can analyze ship monitoring data with high objectivity and no arbitrariness by the quality assessment for the obtained calm sea performance.
- ➢ Users not having detailed hull data can analyze monitoring data in conjunction with EAGLE-OCT.-web and OCTARVIA-web.

(2) Onboard monitoring data stored in ShipDC

- ➢ Onboard monitoring data held by platform users (PU) such as ship owners are stored in highly secure onshore data centers and provided to users as a service of IoS-OP[*2].
- ➢ The data necessary for the use of SALVIA-OCT.-web V2 such as ship speed, engine revolution and power are available.

(3) POLARIS Hindcast, the ocean hindcast database provided by JWA

- ➢ The ocean data provided as POLARIS Hindcast data are highly accurate hindcast database[*3] based on JWA original wave estimation model, using objective analysis values[*4] of wind speed and direction as input data.
- ➢ It consists of global data and data for the seas around Japan and provides the ocean data linked to ship position by spatiotemporal interpolation.
- ➢ The user's available dataset includes significant wave height, mean wave period, primary wave direction, mean wind speed, and mean wind direction etc.

*1 For estimating added resistance in waves and that in winds with accuracy, the program applies the methods developed by NMRI which are recognized as the most accurate methods in ITTC (International Towing Tank Conference).

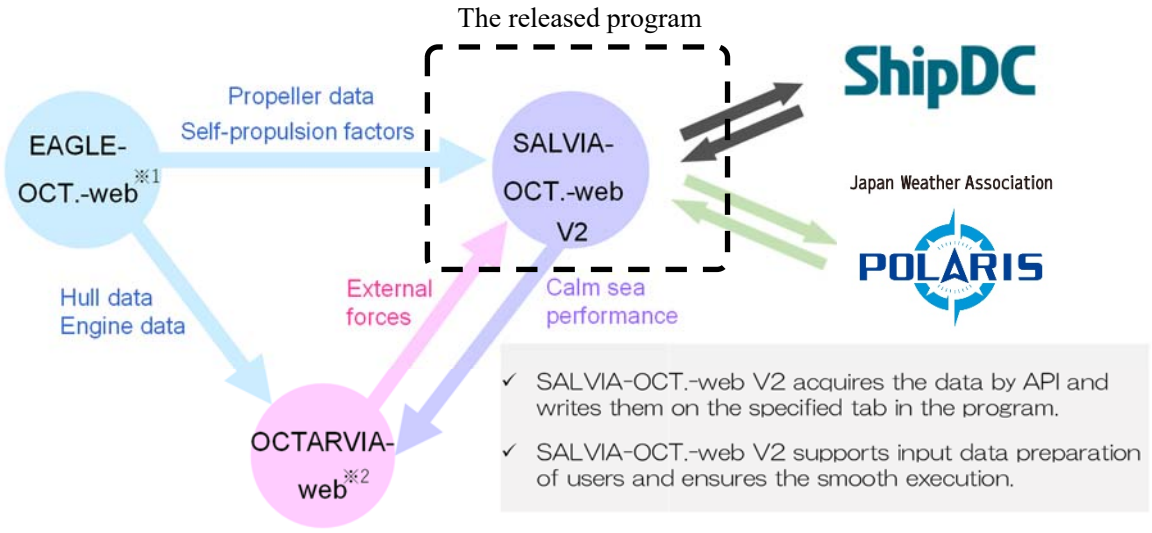
*2 IoS-OP is a universal platform consisting of rules established in the maritime industry and a data center. It was developed in order to enable the sharing of vessel operational data between stakeholders, the sale of usage rights to shipyards and manufacturers, and many other services without data providers losing profit. As of April 1, 2023, 68 companies have joined the IoS-OP Consortium, a membership organization. Ship Data Center Corporation, a wholly owned subsidiary of Nippon Kaiji Kyokai, operates the IoS-OP Consortium.

*3 Detail information can be found at the following website.

https://www.jwa.or.jp/service/transport-support/transport-support-waves-02/

*4 Objective analysis values mean dataset of spatiotemporal grid point value obtained from numerical analysis and observations.

2. Cooperation between each program and data



※1 EAGLE-OCT.-web : Calculation program to estimate the hull form and the calm sea performance from the principal dimensions which is used for the input data of the above programs

※2 OCTARVIA-web : Calculation program to predict the ship performance in actual seas and evaluate the life cycle fuel consumption

3. Usage fee for the program

Licensing of SALVIA-OCT.-web is handled by UNICUS Co., Ltd. Please visit the website (https://unicus.jp/licensing/salvia/) and complete the application process. The usage fee for the full version is as follows.

Usage fee for the program (full version) and API

Name of program	6 months usage	12 months usage
SALVIA-OCT.-web V2 (full version)	330,000 yen	440,000 yen
	SALVIA-OCT.-web V2 (limited version) is available for free.	
ShipDC API**1	7,260 yen per ship per year ShipDC API is available for free if SALVIA-OCT.-web V2 is used.	
POLARIS Hindcast API**2	33,000 yen for up to 730 points per month, pay-as-you-go after 731 points. Detailed explanation can be found at the website.	

**1 To acquire the onboard monitoring data stored in ShipDC, users need to issue a key file from ShipDC. Even if no key file is available, the sample data can be used.

**2 To acquire the ocean data provided by JWA, users need to apply for a POLARIS account

on the NMRI Cloud and obtain a POLARIS account for SALVIA-OCT.-web. Even if users do not have an account, the sample data can be used. Users of the limited version can use the API if they are given the POLARIS account.

The API usage fees can be checked at users' side.

Onboard monitoring data stored in ShipDC

SALVIA-OCT.-web + ShipDC

https://www.shipdatacenter.com/

- SALVIA-OCT.-web can request and acquire the onboard monitoring data stored in ShipDC using API.
- In combination with ocean data, the analysis of onboard monitoring data can be conducted.
- Preparation and data analysis of onboard monitoring data can be smooth.
- The API usage fees can be checked at users' side.

Request view in SALVIA-OCT.-web V2 for the acquisition of onboard monitoring data stored in ShipDC

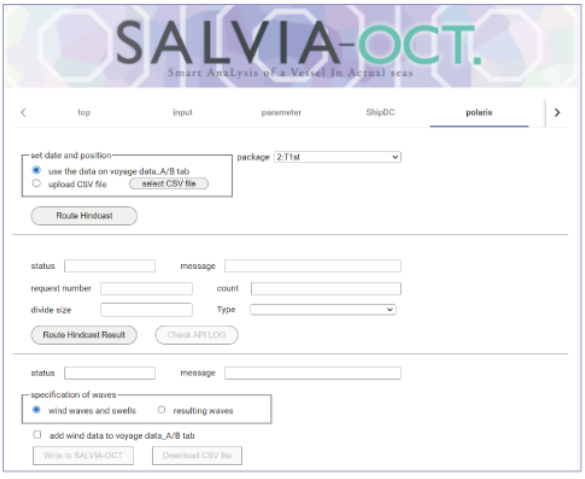
To acquire the onboard monitoring data stored in ShipDC, users need to issue a key file from ShipDC. Even if no key file is available, the sample data can be used.

POLARIS Hindcast, the ocean hindcast database

SALVIA-OCT.-web + POLARIS

https://www.jwa.or.jp/

- Using API, ocean data is acquired based on ship position prepared by users.
- Ship position included onboard monitoring data acquired from ShipDC is also available.
- The user' s available dataset includes significant wave height, mean wave period, primary wave direction, mean wind speed, and mean wind direction.
- The API usage fees can be checked at users' side.



Request view in SALVIA-OCT.-web V2 for the acquisition of POLARIS hindcast data provided by JWA

To acquire the ocean data provided by JWA, users need to apply for a POLARIS account on the NMRI Cloud and obtain a POLARIS account for SALVIA-OCT.-web. Even if users do not have an account, the sample data can be used. Users of the limited version can use the API if they are given the POLARIS account.