Short Reports

Successful Joint Test of Next-generation Onboard IoT Platform

1. Introduction

The NYK Group (Nippon Yusen Kabushiki Kaisha and MTI Co., Ltd.) and the NTT Group (NTT and NTT DATA) have successfully conducted a proof-of-concept experiment for a next-generation onboard Internet of Things (IoT) platform. The test was conducted aboard Hidaka, a domestic coastal vessel owned and operated by Kinkai Yusen Kaisha Ltd. of the NYK Group.

2. Background and details of experiment

The NYK Group previously developed a ship information management system (SIMS) that enables the gathering, monitoring, and sharing of detailed data between ship and shore, with the aim of promoting safe and efficient operations. The data include information on the operational condition and performance of oceangoing vessels.

In September 2017, the four companies began collaborating to make use of NTT's edge computing technology in order to develop a next-generation onboard IoT platform by adding to SIMS a new system that would enable the remote distribution and management of onboard applications from land offices [1]. This experiment was conducted using NTT DATA's ANYSENSE IoT platform and the communication company's expertise in developing infrastructure that makes use of IoT solutions (**Fig. 1**).

This platform is also compliant with onboard IoT international standardization being devised by the
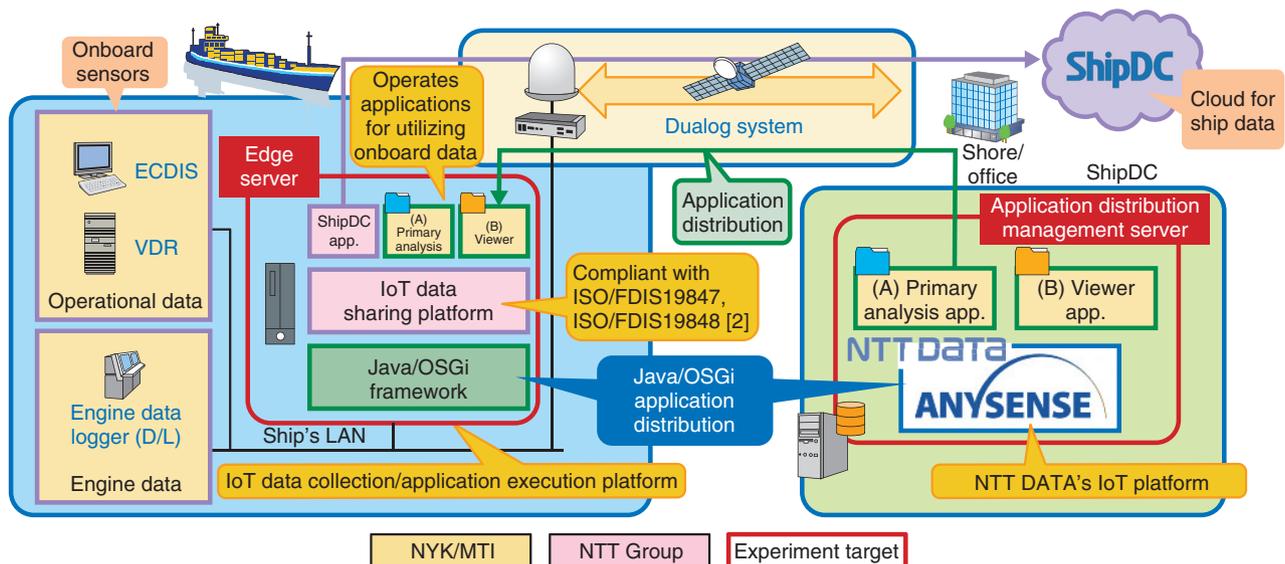
ECDIS: electronic chart display and information system
ISO/FDIS: final draft International Standard of the International Standards Organization.
LAN: local area network
OSGi: Open Services Gateway Initiative
VDR: voyage data recorder

Fig. 1.   Next-generation onboard IoT platform.

Japan Ship Machinery and Equipment Association and under development by the International Standards Organization (ISO) [2]. In addition, the gathered data can be utilized not only on board but also from an IoT open platform ShipDC, a ship datacenter established by Nippon Kaiji Kyokai (Class NK).

3. Future prospects

The four companies performing this test will next conduct a proof-of-concept experiment on an ocean-going vessel operated by the NYK Group. They will also continue to strive for innovation in the maritime industry in order to improve the safety and efficiency of vessel operations, and will promote environmental initiatives and global competitiveness.

References

[1] Joint press release issued by the NYK Group, the NTT Group, and Dualog AS on September 19, 2017, "NYK Group and Norwegian Partner Dualog Begin Collaboration with NTT Group for On-board IoT Innovation."
http://www.ntt.co.jp/news2017/1709e/170919a.html

[2] ISO/FDIS19847: Ships and marine technology -- Shipboard data servers to share field data at sea, and ISO/FDIS19848: Ships and marine technology -- Standard data for shipboard machinery and equipment.

For Inquiries

Research and Development Planning Department, NTT

http://www.ntt.co.jp/news2018/1802e/180215a.html