

# Kawasaki obtains ClassNK Innovation Endorsement Certificate for SOPass 115

Kawasaki Heavy Industries, Ltd. has obtained the Product & Solutions certificate for the SOPass from Nippon Kaiji

Kyokai (ClassNK) based on evaluation of the innovative applicability of the system, which is included in the Innovation

Endorsement newly provided for innovative development by ClassNK. The SOPass is the Kawasaki Ship Operation and Performance analysis support system.

ClassNK Innovation Endorsement is intended to stimulate promotion and evolution of innovative technologies as well as support for environmental conservation, safety improvement, and sustainable development in the field of marine transport. ClassNK has now verified every function of SOPass which is an advanced solution using digital technologies.

Kawasaki SOPass can provide useful information for ship operational management. Information can be produced by integrating real data received from ships via satellite communication and Kawasaki's engineering expertise in shipbuilding, and integration is achieved by technologies such as ICT (Information and Communication Technology) and IoT (Internet of Things). This system can offer visualization of ship navigation, various performance analyses, and optimal route simulations that will contribute to energy saving. This system also provides the optimizing function of LNG cargo management for LNG carriers, which is the first in the industry of LNG transport. SOPass can be applied to various ship types and support economical and safe ship operation.

By January 2021, Kawasaki has received orders for SOPass for 17 ships mainly LNG carriers. The company expects that SOPass will be increasingly applied to various types of ship to alleviate the load on the environment and improve business efficiency in marine transport.

# Kawasaki Receives First Order for Coastal Ship Large-capacity-battery Propulsion Systems 116

Each Kawasaki battery propulsion system includes large-capacity lithium ion (Li-ion) marine batteries, a propulsion control system and an electric power management system. Kawasaki made full use of its expertise in the field of systems integration to realize a system that efficiently supplies power and electricity to the main propulsion system and auxiliary equipment, and irregularity monitoring and protective functions have also been provided to safeguard the

entire system including the Li-ion batteries. In addition, Kawasaki utilized electric power system knowledge cultivated through experience in the generator field to make this system usable as an emergency power supply source\*2 in the event of a large-scale natural

disaster, thus providing support for the business continuity plans and the life continuity plans in the region.

As the maritime shipping industry faces increasingly strict emission regulations from the International Maritime Organization (IMO) on carbon dioxide (CO<sub>2</sub>), nitrogen compounds and other gases, many are looking to cleaner, alternative power sources to replace traditional heavy fuel oil. Fully battery-powered vessels achieve major reductions in emissions of CO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>) and particulate matter (PM) during operation.

As a marine equipment manufacturer and systems integrator, Kawasaki plans to continue focusing its efforts on the provision of systems in a package optimized for user operations.

Basic Specifications for Kawasaki's Large-capacity-battery Propulsion System

Batteries: 1,740 kWh per set (total 3,480 kWh per ship)

Propulsion control system: Propulsive power control, energy and power flow control, maneuvering operation, system monitoring

Main propulsion system: Two 300 kW Kawasaki Rexpeller KST-115LF/AN-1.7 units (variable-speed, motor-driven control)

\*1 Zero-emission electrically propelled tankers planned and designed by e5 Lab Inc. for purposes of developing similar ships and promoting their widespread use. These two vessels in particular are slated for use in ship refueling operations within Tokyo Bay. The ships will be built by KOA SANGYO CO.,LTD. and IMURA SHIPYARD CO.,LTD.

\*2 This idea was originally proposed by e5 Lab and Asahi Tanker.

