Certificate no.:
TAA00003MN

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Data Collection Infrastructure and Ship Performance System

with type designation(s)
Danelec Onboard Insights

issued to
Danelec Norway AS
Bergen, **Norway**

is found to comply with
DNV rules for classification – Ships Pt.6 Ch.5 Sec.21 Cyber security

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.
The Type Approval covers security capabilities in accordance with DNV security profile 1 and IACS UR E27 Rev.1, subject to conditions stated in this certificate.

Issued at **Høvik** on **2025-06-03**

This Certificate is valid until **2027-06-02**.
DNV local unit: **Mid-North Norway CMC**

Approval Engineer: **Pål Børre Kristoffersen**

for **DNV**
Digitally signed by: Jarle Coll Blomhoff
Location: DNV Høvik, Norway

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description
This Type Approval applies for:

Product name: Danelec Onboard Insights

Product function: The Danelec Onboard Insights system is an integrated solution designed to monitor and manage vessel performance data. It provides real-time data visualization and tools to optimize vessel performance. The system consists of both hardware and software components that collect, process, and display performance metrics to operators. Key parameters, such as shaft power, torque, thrust, speed, fuel, emissions and overall efficiency, are monitored to help operators make informed decisions.

Application/Limitation
This type approval covers cyber security capabilities at security profile 1 for the systems listed in Product description.

The type approved products shall be installed in restricted areas. Access to the components shall be restricted and controlled.

The type approved products shall be in a security zone separated from other control systems. If the type approved products collect data from other control systems using Modbus TCP/IP communication, the external system shall include a firewall to monitor and control the data traffic between the zones. Only read of data shall be allowed.

The Type Approved system does not include systems for remote maintenance.

Approval conditions
If the type approved system is part of scope (SuC) for class notation Cyber secure(Essential,+), it shall be delivered with a vessel-specific product certificate (PC). The product certificate shall be issued based on the following verification as per DNV-RU-SHIP Pt.6 Ch.5 Sec.21:

a) It shall be demonstrated that the architecture of each delivery is documented in a project-specific system topology F030 and that this is consistent with type approved System topology.

b) It shall be demonstrated that each delivery is correctly represented by a vessel-specific asset inventory (F071) and that this inventory is consistent with type approved Asset inventory.

c) It shall be demonstrated by a declaration or test report (Z261) that each delivery has been configured and hardened as per the type approved Guidelines for hardening and configuration of security capabilities.

If a delivered system differs from the type approved system, this shall be described and submitted for assessment.

Major changes affecting the type approved security capabilities shall be informed to DNV. Such modifications may require witnessing of type testing and update of this type approval certificate to reflect new products or versions listed in Product description.

Type Approval documentation
F021 - Description of security capabilities
Description of security capabilities Rev 2

F252 - Procedure for test of security capabilities
Procedure for test of security capabilities Rev 4

F141 - Guidelines for hardening and configuration of security capabilities
Guidelines for hardening and configuration of security capabilities Rev 1

F071 - Inventory list
Asset Inventory Rev 1

F030 - System topology
System Topology Rev 1

F259 - Description of secure development lifecycle processes
Secure Development Lifecycle Rev 2

F142 - Information supporting incident response and recovery

Cyber Incident Response Rev 2

F253 - Procedure for verification of security functions on board
Procedure for test of security capabilities Rev 3

Z100 - Specification Modification strategy, FI
Secure Development Lifecycle Rev 2

I320 - Software change handling procedure AP
Software Change management procedure Rev 1

Tests carried out

Tested in accordance with requirements for DNV rules Pt.6 Ch.5 Sec.21 security profile 1, edition July 2024. Relevant manuals and instructions of Danelec's management system have been verified for compliance with IACS UR E27 chapter 5.

Marking of product

The product shall be marked with:

- manufacturer name
- model name
- serial number
- power supply ratings

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials. The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate
- Review documented evidence of adherence to Secure Development Lifecycle processes

Periodical assessment is to be performed at renewal of this certificate.

END OF CERTIFICATE