Certificate no.:
TAA00003JA

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Control and Monitoring System

with type designation(s)
Aperio ICMS

issued to
Emerson Automation Solutions, Damcos A/S
Næstved, Sjælland, **Denmark**

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.
This 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 **2025-04-28**
This Certificate is valid until **2027-04-27**.
DNV local unit: **Denmark CMC**

for **DNV**

Approval Engineer: **Knut Omberg**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to USD 300 000.

Product description

Aperio ICMS is an integrated control and monitoring system for maritime vessel machinery and cargo applications.

This type approval covers cyber security capabilities required by DNV security profile 1 (SP1) for the Aperio ICMS, which at the time of issuance of this TA certificate consists of the following hardware and software components.

- Application software Aperio 6.3.0
- Vision workstation 10” panel PC
- Vision CPU
- UC20 Controller
- RXI Web panel
- Moxa switch EDS-405A
- Moxa switch EDS-408A
- Moxa switch EDS-516A
- Moxa firewall EDR-8010
- Moxa MGate MB3170/MB3270 Converter
- Moxa NPort IA5000 Converter

A complete list of Aperio ICMS hardware and software components, including versions is specified in Emerson’s document F071 Asset inventory. The reference architecture of the Aperio ICMS is specified in Emerson’s document F031 Zone and conduit.

Major changes are identified by the first to numbers in the Aperio version number and shall be informed to DNV. If the changes are considered to affect functionality for which rule requirements apply, a new functional type test may be required, and the certificate may have to be renewed to identify the new version. Minor changes are covered by this type approval.

At renewal of this certificate, a list of all changes to hardware and software covered by this certificate shall be submitted.

Approval conditions

Product certificate
When serving vessel functions in the scope of class notation Cyber secure(Essential), the type approved product shall be delivered to the vessel with a product certificate in accordance with DNV-RU-SHIP Pt.6 Ch.5 Sec.21.

The product certificate shall be issued based on assessment of vessel-specific documents as listed below. Certification test is exempted as long as the system is correctly represented by this type approval.

- Project-specific system topology, demonstrating that system architecture and communication interfaces are consistent with type approved document F031 Zone and Conduit and in accordance with Application/Limitation below.

- Project-specific inventory list, demonstrating that hardware devices and software versions are consistent with type approved document F071 Asset inventory. Any differences in the delivered system compared with the type approved F071 shall be clearly identified and explained to be minor changes.

- A signed copy of document F141 Guidelines for configuration of security capabilities, demonstrating that all security capabilities have been configured correctly (i.e., declaring that all referenced setup guides and procedures have been followed).

It should be noted that product certificate may also be required to confirm compliance with other DNV rules, e.g., DNV-RU-SHIP Pt.4 Ch.9.

Application/Limitation

The Aperio ICMS is approved for communication with systems and equipment in the same or other security zones. Any IP-based communication with networks in other security zones shall be routed via the firewall delivered as part of the Aperio ICMS and indicated in the project-specific system topology.

The Aperio ICMS is not approved for IP-based communication with or via untrusted networks or devices (i.e., networks or devices that are not part of the vessel’s security zones).

Communication with untrusted devices using serial protocols and discrete/analogue signals is acceptable provided that cyber security risks associated with signals or commands transferred to the Aperio ICMS are assessed and documented for each project. This should be documented as part of the systems integrator's cyber security design description (F011).

Tests carried out

Tested as per document Z252 Procedure for type testing, February 17-18. 2025.

Place of manufacture

Emerson Automation Solutions, Damcos A/S (id. 133897)
4700 Næstved, Denmark

Emerson Automation Solutions (10602066)
8680 Ry, Denmark

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:

- Ensuring 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

A renewal assessment will be performed at renewal of the certificate.