

Certificate no.: TAA00003EW

TYPE APPROVAL CERTIFICATE

This is to certify: that the Monitoring System

with type designation(s) Riser Management System

issued to Kongsberg Maritime AS Kongsberg, 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. 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 2025-06-19

This Certificate is valid until **2027-06-18**. DNV local unit: **East & South Norway CMC**

Approval Engineer: Alexander Dahlstrøm Jønsson



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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.



Job ID: 262.1-041209-1 Certificate no.: TAA00003EW

Product description

The Kongsberg Riser Management System (RMS) is a computerized system for online monitoring of risers and riser operational parameters. It gives advice on recommended position setpoints and safe areas in order to keep riser flexjoint angles and connector forces within acceptable limits. The RMS system also monitors safety margins for emergency disconnect scenarios and facilitates safe operation of marine drilling riser systems. The RMS system is integrated with the Kongsberg Dynamic Positioning (K-Pos) system.

Approval conditions

This TA certificate covers type approval of cyber security capabilities and system architecture in accordance with security profile 1 as specified in DNV-RU-SHIP Part 6 Chapter 5 Section 21.

For each delivery of the system to vessels with DNV class notation Cyber secure(Essential,+) and the Kongsberg Dynamic Positioning (K-Pos) system is in System under Consideration (SuC), the following documents shall be submitted for assessment:

- System topology (F030), demonstrating consistency with type approved document 110-0066550 revision C.
- Inventory/equipment list (F071), demonstrating consistency with type approved document 110-0066549 revision D.
- Signed delivery checklist (F262) demonstrating that security capabilities and system architecture have been configured as per document 110-0100755 revision B.

In addition to the documents above, any differences in the delivered system compared with the type approved system shall be documented and submitted for approval.

A Product Certificate (PC) shall be issued for each delivery based on the above document assessment. A combined product certificate for K-Pos and RMS may be issued based on the compliance with security profile 1 requirements. Certification test is not required as long as the system is correctly represented by this type approval.

Modifications to delivered systems shall be managed in accordance with DNV-RU-SHIP Pt.7 Ch.1 Sec.2 [1.5].

Application/Limitation

The Kongsberg Riser Management System shall be integrated with Kongsberg Dynamic Positioning (K-Pos) system as per below.

- K-Pos in the same security zone shall connect directly to the Riser Managements Systems Process network A and B.

The Kongsberg Riser Management System may be integrated with other systems and equipment as per below:

- Kongsberg Maritime system in the same security zone may connect directly to RMSs Process network A and B.
- Kongsberg systems in other security zones may connect to RMSs Process network A and B via the K-Pos firewalls as per type approval TAA000004C.
- Third party systems in the same or other security zones may connect to RMS via the K-Pos firewalls as per type approval TAA000004C.
- A MRU5 may be connected to RMS operator station using a serial splitter (Moxa NPort 5232-T/5430I)
- KSEM (cRIO) may be connected to RMS via the RMS firewall using OPC-UA with Basic256SHA for signing & encryption.

The Kongsberg Riser Management System may also be integrated with the below systems and equipment:

- Kongsberg Remote Services may connect to K-Pos firewall(s) as per type approval TAA00003F4.
- Kongsberg Information Management System (K-IMS) may connect to K-Pos firewall(s) as per type approval
 TAA00003F4 and TAA00003F5.
- Third party remote access or information management solutions may connect to K-Pos firewall(s).

All connected systems and equipment shall be described and illustrated in the System topology (F030) and the integration is subject to testing on board in accordance with applicable requirements in DNV rules.

Type Approval documentation

110-0066549 revision D, RMS Asset Inventory 110-0066553 revision E, RMS – Test Procedure 110-0066552 revision D, RMS - Security Capabilities 110-0066550 revision C, RMS - System Topology KM-PROC-0080 revision B, Change management KM-GUI-0118 revision A, Guideline for Secure Development Lifecycle (SDLC) 110-0100755 revision B, RMS Configuration Guideline



461022 revision B, RMS Riser Management System Operator Manual Release 2.6

At renewal of this TA certificate a complete list of modifications (i.e., an accumulated change log) shall be submitted.

Documentation of major changes to the type approved system shall be informed to DNV. If the changes are considered to affect functionality covered by this TA certificate, 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.

Tests carried out

Tested according to test procedure 110-0066553 revision E carried out 17th of December 2024.

Places of manufacture

Kongsberg Maritime AS, Kirkegårdsveien 45, 3616 Kongsberg, Norway

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

A renewal assessment will be performed at renewal of the certificate. END OF CERTIFICATE