

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Control and Monitoring System

with type designation(s)
K-Chief 600

Issued to

Kongsberg Maritime AS
Horten, Norway

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

Application :

This type approval covers security capabilities in accordance with DNV security profile 1, subject to conditions stated in this certificate.

Issued at **Høvik** on **2022-12-21**

This Certificate is valid until **2024-12-20**.

DNV local unit: **Norway CMC, East-South**

Approval Engineer: **Knut Omberg**

for **DNV**



Digitally Signed By: Tag, Siri
Location: DNV Høvik, Norway
on behalf of

Jarle Coll Blomhoff
Head of Section

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 300,000 USD.



Product description

K-Chief 600 is an integrated automation system and may include control, monitoring and alarm functions as follows:

- Main alarm system
- Engineers' alarm system
- Extension alarm system
- Power Management System
- Control of machinery/ship auxiliaries

This Type approval certificate covers cybersecurity capabilities of:

K-Chief 600 version 12.16.zz

as specified in the following documents:

- K-Chief 600 description of security capabilities, 465658
- C600 Cyber secure system asset inventory, 467320

Basic software functions for control, monitoring, and alarm applications are type approved separately in TAA0000018.

Application/Limitation

The K-Chief 600 system shall be delivered with K-GSN Gateway and Malware protection systems (MPS).

Network communication with the Kongsberg Ship@web Server is covered by this TA certificate on the condition that the Ship@web server is in a DMZ established by the K-GSN gateway.

K-GSN Gateway, Kongsberg Remote Services (KRS) and Ship@web server is type approved separately, see certificate TAA00001FR.

Network communication between K-Chief 600 process network (Net A/Net B) and other systems/networks shall be routed via the K-GSN Gateway. Other Kongsberg control systems consisting of assets covered by this certificate may be integrated on the same process network.

External devices communicating with K-Chief 600 SCUs or DPUs by IP-network (e.g. Modbus TCP) shall be in the same security zone, or alternatively in other security zones with the firewall specified in asset inventory 467320.

Hardware devices in the K-Chief 600 shall be installed in areas with means to prevent unauthorised access.

Approval conditions

For each delivery to DNV class notation Cyber secure or Cyber secure(Essential), the following project-specific documents shall be submitted to demonstrate that the delivered system is covered by this type approval:

1. Topology diagram with indication of any external network interfaces, demonstrating system architecture as per TA-document 465658.
2. Asset inventory with updated security patch versions, demonstrating consistency with TA-document 467320.
3. Internal test report demonstrating that KM has completed configuration of relevant security capabilities before FAT as per TA-document 465660.
4. Description of any modifications in the system to be delivered compared with the type approved system covered by this TA certificate.

Type Approval documentation

The type approved system is represented by the documents listed below. Any modification to the type approved system shall be reflected by updated document(s):

K-Chief 600 version	Document name	Document no./ver.
12.16.zz	K-Chief 600 description of security capabilities	465658/D
	C600 Cyber secure system asset inventory	467320/F
	K-Chief 600 cyber security test program	465659/D
	K-Chief 600 configuration of security capabilities	465660/E
	C600 Modification Strategy	467325/C
	C600 Change management procedure	467424/C

Minor modifications to the type approved system is represented by updating the last number in the version and covered by this type approval.

Major modifications to the type approved system are to be identified by updating either of the first two numbers in the version, and shall be informed to DNV for assessment and update of this certificate.

Tests carried out

Type testing of security capabilities were carried out in accordance with document K-Chief 600 cyber security test program, 465659/D.

Marking of product

Components are marked with product name and product number.
 Basic software version is displayed in the system graphical user interface.

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

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

END OF CERTIFICATE