

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001MZ
Revision No:
2

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the Track control system (TCS)

with type designation(s)
K-Bridge Track Control System

Issued to
Kongsberg Maritime AS
Kongsberg, Norway

is found to comply with the requirements in the following Regulations/Standards:

Regulation (EU) 2022/1157,
item No. MED/4.33. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res A.694(17), IMO Res MSC.74(69),
IMO Res MSC.191(79), IMO Res MSC.302(87)

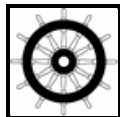
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-07-01**.

Issued at **Høvik** on **2023-01-31**

DNV local unit:
East & South Norway CMC

Approval Engineer:
Steinar Kristensen



Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2019 dated February 22nd, 2019.



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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

Kongsberg Maritime K-Bridge Track Control system (TCS) may be provided in two alternative configurations, comprising the following sub-systems:

Alternative 1:

- K-Bridge ECDIS ^{*)}
- K-Bridge Radar ^{*)}
- K-Bridge Conning
- K-Bridge Autopilot ^{*)}

Hardware Modules:

K-Bridge system platform : As defined in TAA00000FJ ^{*)}

Software modules:

K-Bridge ECDIS & Conning : As defined in TAA00000FJ ^{*)}

Alternative 2:

- K-Bridge ECDIS ^{*)}
- K-Bridge Conning
- Kongsberg Autopilot M100 ^{*)}

Hardware Modules:

- K-Bridge ECDIS & Conning: As defined in MEDB000013V ^{*)}
- Kongsberg Autopilot M100: As defined in MEDB00007UR ^{*)}

Software Modules:

- K-Bridge ECDIS & Conning: 9.0.x or later, as defined in TAA00000FJ ^{*)}
- Kongsberg Autopilot M100: As defined in MEDB00007UR ^{*)}

^{*)} Certificates MEDB000013V for K-Bridge and K-Nav ECDIS, MEDB000013U for K-Bridge and K-Nav Radar, MEDB00001MX for K-Bridge HCS, MEDB00007UR for Kongsberg Autopilot M100 and TAA00000FJ for K-Bridge and K-Nav system platforms (see Type Examination documentation below) in their latest revision at the date of placing the system on the market is part of this certificate.

For the relevant revision see also <https://approvalfinder.dnv.com>

Application/Limitation

- The installation shall be installed and tested on board according manufacturers manuals. See Type Examination documentation below for details. Relevant manuals may also be listed as documentation in certificates for individual sub-systems, including Type Examination Certificate for K-Bridge and K-Nav System Platforms.
- The system complies with the IMO requirement for Category C track control system
- The approval of the track control system is subject to valid type approval certificates for the individual sub-systems, documenting compliance with pertinent IMO performance standards.
- The track control system shall be connected to an alarm transfer system for transfer of “back-up navigator alarms”.
- The K-Bridge Track Control System configured according to Alternative 1 above has been tested as a Multi Function Display (MFD) system with functions for Radar, ECDIS, back-up ECDIS, HCS, TCS and BNWAS.

Tests carried out

- Performance testing: IEC 62065 (2014)
- Environmental testing: IEC 60945 (2002) incl. Corr.1 (2008)
- Serial interface testing: IEC 61162-1 (2016)
- Presentation of navigation information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)

Type Examination documentation

DNV No	Document ID	Rev.	Description
85	MEDB00007UR	Latest rev.	Certificate: DNV, MED-B certificate for Kongsberg Autopilot M100 HCS
84	110-0022183	A	Manual: Kongsberg Maritime, Autopilot M100 Autopilot System, Operator Manual
83	468036	A	Report: Kongsberg Maritime, Type Approval Test Report-K-Bridge Track Control System with Autopilot M100
81	463840	A	Manual: Kongsberg Maritime, K-Bridge ECDIS and Planning Station Operator Manual Release 9.0
80	463844	A	Manual: Kongsberg Maritime, Conning Operator Manual Release 9.0
76	448878	A	Manual: Kongsberg Maritime, K-Bridge Conning, Operator Manual, Release 8.2
75	429363	G	Manual: Kongsberg Maritime, K-Bridge Autopilot Operator Manual, Release 8.2
74	477915	C	Report: Kongsberg Maritime, K-Bridge and K-Nav CAM BAM Type Approval test report
73	MEDB0000013V	Latest rev.	Certificate: DNV, MED-B certificate for K-Bridge and K-Nav ECDIS
72	MEDB00001MX	Latest rev.	Certificate: DNV, MED-B certificate for K-Bridge Autopilot
70	MEDB000013U	Latest rev.	Certificate: DNV, MED-B certificate for K-Bridge and K-Nav Radar
68	421042	A	Report: Kongsberg Maritime, Type Approval Test Report for K-Bridge Track Control System
60	402088	A	Report: Kongsberg Maritime, Additional tests to verify fall-back when loss of position sensor
59	TAA00000FJ	Latest rev.	Certificate: DNV, K-Bridge and K-Nav system platforms
58	1133641/B	(Doc Version 1.0)	Report: K-Bridge Ground Avoidance System (GAS), BGP Prospector
57	1133639/A		Doc: K-Bridge Ground Avoidance System (GAS) BGP Prospector, FMEA Document
47	1042526/A		Report: Track Control System Test Report
33	KLM1.0061	KS171691 Rev. B	Report: Kongsberg Fimas, Environmental test on Aim Safe System
19	310864/A		Manual: K-Bridge TCS, Check List & Guidance for onboard commissioning
1	1042526		Report: K-Bridge Track Control, System Test Report IEC 62065

Marking of product

The type designation and name and contact address of the manufacturer shall be affixed visibly, legibly and indelibly to the product. In addition the product shall be marked with serial number, safe distance to magnetic compass, power consumption and/or supply voltage.