

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 GL AS under the authority of the Government of the Kingdom 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

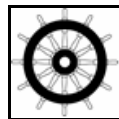
is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2015/559**,
Annex A.1, item No. A.1/4.33 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation V/18 & V/19, IMO Res A.694(17) and IMO Res MSC. 74(69) & 191(79) IMO Resolution MSC.302(87) Performance standards for Bridge Alert Management

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

This Certificate is valid until **2022-01-30**.

Issued at **Høvik** on **2017-01-31**

DNV GL local station:
Sandefjord



for **DNV GL AS**

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

Vidar Dolonen
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.

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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Product description

Kongsberg Maritime K-Bridge Track Control system (TCS)

comprising the following subsystems:

- K-Bridge ECDIS ^{*)}
- K-Bridge Radar, CAT 1 with Chart option ^{*)}
- K-Bridge Heading control system ^{*)}
- K-Bridge Conning

^{*)} ref. individual type approval certificate for a detailed product description.

Hardware:

K-Bridge system platform : Model/Type: As defined in separate certificate ^{†)}

Software modules:

K-Bridge System Platform SW : As defined in separate certificate ^{†)}

^{†)} Type Examination Certificate for K-Bridge and K-Nav System Platforms, see Type Examination documentation.

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 approval of the track control system is based on the condition that all the individual sub-systems are holding valid type approval certificates 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 is certified and found to be in compliance with the requirements for Multi Function Display (MFD), when connected in a KM network. The MFD may serve as Radar, ECDIS, back-up ECDIS, HCS, TCS and BNWAS.

Tests carried out

- Performance testing: IEC 62065 (2014)
- Environmental testing: IEC 60945 (2002)
- Serial interface testing: IEC 61162-1 (2010) and IEC 61162-1 (2016)
- Presentation of navigation information: IEC 62288 (2014)

Job Id: **344.1-000694-4**
Certificate No: **MEDB00001MZ**

Type Examination documentation

DNV GL No	Document Id.	Rev.	Description
73	MEDB0000013V	-	Certificate: DNVGL, MED-B certificate for K-Bridge and K-Nav ECDIS
72	MEDB00001MX	-	Certificate: DNVGL, MED-B certificate for K-Bridge HCS
71	MEDB00001MY	-	Certificate: DNVGL, MED-B certificate for K-Bridge BNWAS
70	MEDB000013U	-	Certificate: DNV GL, MED-B certificate for K-Bridge and K-Nav Radar
69	417886	A	Manual: Kongsberg Maritime, K-Bridge Autopilot Operator Manual Release 8.0
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	1	Certificate: DNVGL, 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
30	174026		Report: Kongsberg, IO test report SDP Autopilot
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.