DNV·GL

Certificate No:
MEDB00004NS

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 Norway.

This is to certify:

That the Heading control system (HCS)

with type designation(s)
BridgeMate HCS

Issued to
Marine Technologies LLC
Egersund, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397,**
item No. MED/4.16. SOLAS 74 as amended, Regulations V/18 & V/19, IMO Res. A.342(IX), IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.64(67) Annex 3, IMO Res. MSC.302(87)

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

This Certificate is valid until **2021-08-29**.
Issued at **Høvik** on **2020-05-14**

DNV GL local station:
Stavanger

Approval Engineer:
Roger Lauritsen

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
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.

NORWEGIAN ACCREDITATION PROD 019

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Certificate No: **MEDB00004NS**
Item No: **Error! Reference source not found.**
Job Id: **344.1-001384-4**

Product description

BridgeMate HCS compromises minimum following:

Hardware modules:

- Touch screen Monitor
- Operation computer
- Control computer
- Network switch
- I/O Interface

Hardware modules are described in detail as hardware profile HW1 in separate certificate. See Type examination documentation

Software modules:

- DP version 1.5.x, where x= 18 or higher?
- Operating system: Windows XP embedded

Applications/Limitations

- The BridgeMate HCS is certified and found to be in compliance with the requirements for MultiFunctionDisplay (MFD), when connected in a MT network with following system applications: BridgeMate ECDIS, BridgeMate Nautoscan NX, BridgeMate Conning.
- The BridgeMate HCS is in configuration with three control computers found to be compliant with NAUT requirements for a safety system. Ref. DNV rules (Jan 2014) Pt. 6. Ch. 8. Sec. 6. B 307
- All modules to be installed in protected location.
- If monitors marked with * are installed, optional buzzer must be installed unless the optional Panel DP 23 or Compact OS JX/AP are installed.
- If monitors marked with ** are installed, the type designation suffix must be xxxx-xx**B**x. If not the optional buzzer must be installed unless the optional Panel DP 23 or Compact OS is installed.

Type Examination documentation

DNV GL No	Doc. Ref.	Rev.	Description
64	TAA000000B	3	Certificate: DNVGL, BridgeMate Hardware Platform
48			Doc: MT Bridge Mate Heading Control System AUTOPILOT
63	MT-DEV-5491	3	Manual: Alerts in Bridge Mate
56	MT-DEV-5415		Manual: MT CC SW Installation Manual
58	MT-DEV-5228		Manual: MT DP Operator Manual
55	MT-DEV-5411		Manual: MT DP Sea Trial Manual
57	MT-DEV-5416		Manual: MT OC SW Installation Manual
51	MT-DEV-5227		Manual: MT Operator Manual Joystick System
18			Manual: Sea Trial Procedures MT Bridge Mate Heading Control System IO Scaling
32	MT-DEV-5338	2	Report: Additional HCS performance tests
61	MT-DEV-5421		Report: Audible test of external buzzer
7	BSH/46162/0070335 /07/S3330		Report: BSH, Flat Panel Display for use as Radar - and ECDIS - Monitor - 23" TFT Flat Panel Display JH23T02 MMD E1
13	2005-3386	1	Report: DNV, EMC & Environmental testing of Compact OS, Central Thruster Control Unit, Remote Joystick & Panel Controller
46	2012-3398	0	Report: DNV, EMC and environmental testing of Computers and PA system
37	2007-3089	01	Report: DNV, EMC and environmental testing of HD 12T04

DNV GL No	Doc. Ref.	Rev.	Description
43	2009-3442	01	Report: DNV, EMC and environmental testing of JH19T14
44	2005-3362	02	Report: DNV, EMC and environmental testing of JH23T02 MMD
45	2007-3310	01	Report: DNV, EMC and environmental testing of Panel 23 Compact OS
41	2010-3290	01	Report: DNV, EMC and environmental testing of Touch Compact OS
31	2012-3362	0	Report: DNV, EMC and Environmental tests HD 26T21 MMD-MA1-FAGA
30	2012-3398	0	Report: DNV, EMC and Environmental tests IOSP HM55 & Netgear GS724TP
8	2006-3576	2	Report: DNV, Jacob Hatteland Display AS, Testing of Computer HTB07CDSTD-A1
6	2005-3362	2	Report: DNV, Jacob Hatteland Display AS, Type Testing of 23 inch Panel Display, Type JH23T02 MMD-E1
9	2007-3160	2	Report: DNV, Jakob Hatteland Display AS, Testing of Maritime PC HT B08CD STD-A1
40	2006-3576	02	Report: DNV, Testing of coputer HTB07CDSTD-A1
33	2007-3160	02	Report: DNV, Testing of maritime PC HTB08CDSTD-A1
38	2006-3249	01	Report: DNV, Testing of panel computer HD19T03 + HTMMC01
27	Testlab 133040F-H		Report: EMC and Environmental tests computer MT 200AC
39	DOC100377	1	Report: Hatteland, ECDIS Color Verification HD19T03
62	MT-DEV-5338	4	Report: MT Type approval report HCS and TCS, additional tests for BAM
25	PB0094		Report: MT, IEC62288 tests for HCS system
29	MT-DEV-5344		Report: MT, MFD Testing - HCS, Radarm ECDIS, Conning
5	PB0054	C	Report: MT, Test Report for Heading Control System Type Approval
42	E08495.00		Report: Nemko, Test of IEI MT Black Box PC
28	Testlab 133040F-I		Report: Teslab, EMC and Environmental tests computer MT 200DC

Tests carried out

- Environmental Tests: IEC 60945 (2002) incl Corr 1. (2008)
- Performance Tests: ISO 11674 (2006)
- Serial Interface Tests: IEC 61162-1 (2016)
- Presentation of information: IEC 62288 (2014)

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