EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00004NS
Revision No:
1

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 Heading control system (HCS)

with type designation(s)
Bridge Mate HCS

Issued to

Marine Technologies LLC
Egersund, **Norway**

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2021/1158,**
  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)
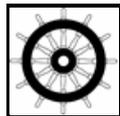
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-01-20**.

Issued at **Høvik** on **2022-01-21**

DNV local station:
Norway CMC, West

Approval Engineer:
Steinar Kristensen

Notified Body
No.: **0575**

for **DNV AS**

Sverre Olav Bergli
Head of Notified Body

Product description

Bridge Mate HCS compromises the below modules :

Hardware modules:

Unit	Description	Component	Note
Computer with separate Display unit	Computer with embedded graphical processor	MT-COMPUTER-100 *or*	Computer with on-board DVI interface
		MT-COMPUTER-200 *or*	
		MT-COMPUTER-300 *or*	
		MT-COMPUTER-400	
	Display Unit	Hatteland HD 17T22 MMD *or*	DVI interface
		Hatteland HD 19T22 MMD *or*	
		Hatteland HD 24T22 MMD *or*	
		Hatteland HD 26T22 MMD *or*	
		Hatteland HD 27T22 MMD *or*	
		Hatteland HD 32T22 MVD *or*	
		Hatteland HD 55T22 MVD	
or			
Panel PC	Computer with integrated display unit and embedded graphical processor	Compact OS JX/AP	
Network equipment	Network switches	Netgear GS728TP *or*	24 ports, 10/100/1000Mbs, PoE, RJ 45
		MT-PoE—SWITCH-1080-8-PORT *or*	8 ports, 10/100/1000Mbs, PoE, RJ 45
		ORing IGPS-1080-24V	8 ports, 10/100/1000Mbs, PoE, RJ 45
Interfaces	I/O Interface units	MT IOB mK2 (I/O card) *or*	Listener according to IEC61162-1 and IEC61162-2 Thruster/Rudder Interface: ±10V and 4-20mA
		MT-PoE-IOB (I/O card)	Listener and talker according to IEC 61162-1 and IEC 61162-2
Options			
Converter	NMEA-Converter	MT-NMEA-CONVERTER	Listener and talker according to IEC 61162-1 and IEC 61162-2
Input Device	Keyboard with trackball	Keyboard Cherry / MT Type	

All units listed above are to be installed in a protected environment, i.e. indoor.

Software modules	**Version**
• Operating System:	Windows XP embedded and Windows 8.1
• HCS version (embedded in DP)	DP version 1.5.x, where x= 18 or higher

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 Pt.6, Ch.3, Sec.3, Clause 6.2.3.7 (July 2021, as amended)

Type Examination documentation

DNV No	Document ID	Rev.	Description
101	MT-DEV-5743	1.0	Report: MT, Heading Control System Type Approval
100	MT-DEV-5744	1.0	Report: MT, BAM part of Type Approval
99	MT-DEV-5464	10	Manual: MT, DP Operator Manual
89	147125F	2014-09-15	Report: TesLab, NMEA CONV IEC 60945 report
88	MT-DEV-5457		Report: MT, IEC 61162-1 and -450 MT NMEA Converter Test Program
87	MRA0000016	2	Certificate: DNV, Hatteland HD XXT22 MMD Monitor series
86			Statement: MT, IEC 60945 8.12 salt mist waiver for MT-Computer-300/400
85	DOC205984-1	Rev 01	Report: Hatteland, Conformance test report HD 55T22 MVD-AA1-TOGP HTC02-DP
84	DOC205971-1	Rev 01	Report: Hatteland, IEC 62288 flicker test report HD55T22
83	DOC205992-1	Rev 01	Report: Hatteland, Conformance test report HD 32T22 MVD-MA1-AOGP HTC02-DP
82	DOC205970-1	Rev 01	Report: Hatteland, IEC 62288 flicker test report HD32T22
81	DOC206417-1	Rev 01	Report: Hatteland, Conformance test report HD 27T22 MMD-MA1-FAGA HTB30-DVI-D
80	DOC206156-1	Rev 02	Report: Hatteland, IEC 62288 flicker test report HD 27T22 MMD
79	DOC205967-1	Rev 01	Report: Hatteland, IEC 62288 flicker test report HD24T22
78	DOC102352-1	Rev 01	Report: Hatteland, Conformance test report HD 24T22 MMD-MA1-FAGA-ES HTC02-DP
77	DOC206405-1	Rev 01	Report: Hatteland, Conformance test report HD 19T22 MMD-MA1-FAGA HTB30-DVI-D
76	DOC206081-1	Rev 03	Report: Hatteland, IEC 62288 flicker test report HD 19T22 MMD
75	DOC206452-1	Rev 01	Report: Hatteland, Conformance test report HD 17T22 MMD-MA1-FAGA HTB30-DVI-D
74	DOC206444-1	Rev 01	Report: Hatteland, IEC 62288 flicker test report HD 17T22 MMD R01
73	DOC102352-4	Rev 02	Report: Hatteland, Conformance test report HD 26T22 MMD-MA1-FAGA-ES
72	DOC205969-1	Rev 01	Report: Hatteland, IEC 62288 flicker test report HD26T22
71	DOC205958-1	Rev 02	Report: Hatteland, Minimum brightness test of GDCX
70	T140319D03-RL	00	Report: CCS, Environmental Test Report ORing-IGPS-1080-24V/MT-PoE—SWITCH-1080-8-PORT
69	T140319D03-E	00	Report: CCS, EMC Test Report ORing-IGPS-1080-24V/MT-PoE—SWITCH-1080-8-PORT
65	20094390200	2010-04-22	Report: Telefication, EMC and environmental test report for NSI KSML92F1RLED-1077 keyboard
63	MT-DEV-5491	4.0	Manual: MT, Alerts in Bridge Mate
62	MT-DEV-5338	4	Report: MT, Type approval report HCS and TCS, additional tests for BAM
61	MT-DEV-5421	2.0	Report: MT, Audible test of external buzzer
57	MT-DEV-5416	1.0	Manual: MT, MTOC SW Installation Manual
56	MT-DEV-5415	1.0	Manual: MT, MTCC SW Installation Manual
55	MT-DEV-5411		Manual: MT, DP Sea Trial Manual
54	E08495.00		Report: NEMKO, Test Report IEI MT Black Box PC (ICP IOS-945B-R10-ICPA)
51	MT-DEV-5227	1.0	Manual: MT, Operator Manual Joystick System
48			Doc: MT Bridge Mate Heading Control System AUTOPILOT
44	2005-3362	02	Report: DNV, EMC and environmental testing of JH23T02 MMD
43	2009-3442	01	Report: DNV, EMC and environmental testing of JH19T14
42	E08495.00		Report: Nemko, Test of IEI MT Black Box PC
41	2010-3290	01	Report: DNV, EMC and environmental testing of Touch Compact OS
40	2006-3576	02	Report: DNV, Testing of computer HTB07CDSTD-A1
39	DOC100377	1	Report: Hatteland, ECDIS Color Verification HD19T03
38	2006-3249	01	Report: DNV, Testing of panel computer HD19T03 + HTMMC01
37	2007-3089	01	Report: DNV, EMC and environmental testing of HD 12T04
33	2007-3160	02	Report: DNV, Testing of maritime PC HTB08CDSTD-A1

DNV No	Document ID	Rev.	Description
32	MT-DEV-5338	2	Report: Additional HCS performance tests
31	2012-3362	0	Report: DNV, EMC and Environmental tests HD 26T21 MMD-MA1-FAGA
30	2012-3398	0	Report: DNV, EMC and environmental testing of MT-COMPUTER-100, MT-COMPUTER-200, MT-POE-SWITCH-100 (GS724TP) and MT-PA-UNIT-100
29	MT-DEV-5344	1.0	Report: MT, MFD Testing-HCS, BN ECDIS900, BM ARPA 2008, BM Conning, BM HCS
28	133040F-I	2013-05-30	Report: TesLab, EMC and Environmental tests computer MT 200DC
27	133040F-H	2013-05-30	Report: TesLab, EMC and Environmental tests computer MT 200AC
26	PB0037		Report, MT, IEC60936-1/60936-3 tests for ARPA Performance Requirements
25	PB0094	A	Report: MT, IEC 62288 tests for HCS system
18			Manual: Sea Trial Procedures MT Bridge Mate Heading Control System IO Scaling
13	2005-3386	1	Report: DNV, EMC and Environmental testing of CompactOS, Central Thruster Control Unit, Remote Joystick and Panel Controller
9	2007-3160	2	Report: DNV, Jakob Hatteland Display AS, Testing of Maritime PC HT B08CD STD-A1
8	2006-3576	2	Report: DNV, Jacob Hatteland Display AS, Testing of Computer HTB07CDSTD-A1
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
6	2005-3362	2	Report: DNV, Jacob Hatteland Display AS, Type Testing of 23 inch Panel Display, Type JH23T02 MMD-E1
5	PB0054	C	Report: MT, Test Report for Heading Control System Type Approval
4	2007-3310	1	Report: DNV, EMC and environmental testing of Panel Display 23 and Compact OS
3	2003-3481	1	Report: DNV, EMC and environmental testing of MT DP-system

Tests carried out

- Environmental Tests: IEC 60945 (2002) incl. Corr. 1. (2008)
- Performance Tests: ISO 11674 (2019)
- Serial Interface Tests: IEC 61162-1 (2016)
- Presentation of information: IEC 62288 (2014)
- Bridge Alert Management: IEC 62923-1 (2018) and IEC 62923-2 (2018)

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