



EC TYPE EXAMINATION (MODULE B) CERTIFICATE (EC-US MRA)

No.	03-001838/031540
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THIS IS TO CERTIFY:

That Croatian Register of Shipping did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with requirements of Marine Equipment Directive (MED) 2014/90/EU, subject to any conditions in the schedule attached hereto.

TYPE AND DESCRIPTION OF PRODUCT

Electronic chart display and information system - ECDIS

with type designation **Maris ECDIS900 MK15**

NUMBER AND ITEM DESIGNATION (in accordance with Annex of Regulation (EU) 2020/1170)

MED/4.30 – Electronic chart display and information system (ECDIS) with backup, and raster chart display system (RCDS)

MANUFACTURER:

NAVICO RBU ITALIA S.r.l.

Via Romita 26, 50025 Montagnana VP, Firenze – ITALY

REGULATIONS AND STANDARDS (in accordance with Annex of Regulation (EU) 2020/1170)

SOLAS 1974 as amended, Reg. V/18, Reg. V/19, Reg. V/27, Reg. X/3

IMO Res.A.694(17), IMO Res.MSC.36(63)-(1994 HSC Code) 13, IMO Res.MSC.97(73)-(2000 HSC Code) 13, IMO Res.MSC.191(79), IMO Res.MSC.232(82), IMO Res.MSC.302(87) and IMO MSC.1/Circ.1503. Rev.1.

USCG Module B number: **165.123/EC2489/03-001838**
165.124/EC2489/03-001838

NOTICE:

- Further details of the product and conditions for certification are given overleaf.
- This certificate will not be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with the notified body named on this certificate.
- Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply.
- 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-control phase module (D, E, or F) of Annex II of the Directive is fully complied with and controlled by a written inspection agreement with a notified body.
- In case limitations of use apply, these should be indicated of in the Schedule of Approval.
- This product has been assigned **U.S. Coast Guard Module B number** in accordance with the European Council Decision 2004/425/EC dated 21 April 2004 on the conclusion of an Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Marine Equipment, as amended by Decision No.1/2018 of the Joint Committee established by the Agreement of the European Community and the United States of America of 18 February 2019.

Issued by Croatian Register of Shipping, notified body number 2489.

This certificate is valid until: **2025-07-15**

Place and date: Split, 2021-07-15

Seal

Signature
Marinko Popović, dipl.ing.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Maris ECDIS900 MK15 is a Flat panel computer system consisting of the following components:

	<i>Item name</i>	<i>item number</i>
1.	<i>Computer + Display: MARIS MK15 FPC 24"4S (Internal serial adapter 4 x RS485/RS422 ports)</i>	<i>000-12526-001</i>
2.	<i>Computer + Display: SIMRAD MK15 FPC 24"4S (Internal serial adapter 4 x RS485/RS422 ports)</i>	<i>000-12548-001</i>
3.	<i>Computer + Display: MARIS MK15 FPC 19"4S (Internal serial adapter 4 x RS485/RS422 ports)</i>	<i>000-12547-001</i>
4.	<i>Computer + Display: MARIS MK15 FPC 24" (No internal serial adapter)</i>	<i>11515</i>
5.	<i>External serial adapter Hatteland FPC NMEA0183 4 port Expander: 4 x RS485/RS422 ports</i>	<i>000-12564-001</i>
6.	<i>Internal Ethernet adapter 2 x RJ45</i>	-
7.	<i>External ECDIS Network Switch (8 x RJ45)</i>	<i>11298</i>
8.	<i>USB ports: Internal 3 x USB 2.0 Type-A and 1 x USB 1.1 Type-A</i>	-
9.	<i>Maris ECDIS900 CT&A Cable</i>	<i>000-12549-xxx</i>
10.	<i>Keyboard CHERRY – US/English, USB</i>	<i>11197</i>
11.	<i>Logitech Marble USB mouse</i>	<i>11008</i>
12.	<i>Logitech M570</i>	<i>000-12262-00x /151-10382-00x</i>
13.	<i>SIS4000 MK2-8CH Serial to LAN</i>	<i>11346</i>

2. APPLICATION/LIMITATION OF USE

Maris ECDIS900 MK15 is tested for compliance with IEC 61174 Ed. 4.0 (2015-08) – Annex G (ECDIS in the RCDS mode of operation) and Annex H (Alarms and indicators in the RCDS mode of operation).

ECDIS system is not additionally tested for operation beyond the normal range between 85 degrees South latitude and 85 degrees North latitude.

New interface requirements have been added and tested for communication with BNWAS, VDR, BAM, MSI, INS as well as route transfer.

System is operational in a three different mode: ENC , C-MAP and RCDS mode.

System is to be installed in a protected environment.

3. DESIGN DRAWINGS AND SPECIFICATIONS

Maris ECDIS900 MK – System overview, rev 1.0;

Maris ECDIS900 System Installation Manual, item number 988-10960-xxx;

Maris ECDIS900 System Technical Manual, item number 988-10959-xxx;

Maris ECDIS900 System Operator Manual, item number 988-10958-xxx;

Alarm Panel E0102 User Guide, item number 988-10826-xxx;

Monitor M5000 Installation and Operation Manual, item number 988.10795-xxx;

MK6.0 – Radar Interface Box – Installation Manual.

4. TYPE TEST RECORDS/LABORATORY RECOGNITION STATUS

Performance testing – IEC 61174 Ed. 4.0 (2015-08), CRS witnessed – Egersund May/August 2016 and March 2017;

Environmental testing – IEC 60945(2002) including Corrigendum 1(2008);

Serial interface testing – IEC 61162-1(2016), CRS witnessed – Egersund August 2019.;

Presentation of navigation information – IEC 62288 Ed.2 (2014-07), CRS witnessed – Egersund December 2015 and March 2017;

Ethernet interconnection for VDR & Route Transfer – IEC61162-450 Ed.1.0 (2011-06), CRS witnessed – Egersund May/August 2016;

CRS letters of approval – 056/TSE/VB/031199 and 1933/TSE/VB/031236;

Ethernet interconnection for VDR & Route Transfer – IEC61162-450 Ed.1.2 (2018), CRS witnessed – Genova June/July 2021;

Bridge alert management testing – IEC 62923-1 Ed. 1.0 (2018) & IEC 62923-2 Ed. 1.0 (2018), Genova June/July 2021;

CRS letter of approval – 1490/TSE/NP/031540 dated 2021-07-14.

5. MATERIALS OR COMPONENTS REQUIRED TO BE TYPE APPROVED OR TYPE TESTED

This approval remains valid for subsequent minor software amendments, as allowed by the 5.1.x.x format (x=a numeral), where written details of any such modification have been submitted to and accepted by the approvals authority.

6. OTHER MATERIALS AND/OR COMPONENT

Maris ECDIS900 MK15 System dual installation is found to comply with the requirements for ECDIS with Back-up arrangements.

7. PRODUCTION SURVEY REQUIREMENTS

Production items are to be manufactured in accordance with an approved Production Quality Assurance system (Module D) of the Marine Equipment Directive.

Each item is to have the "Mark of Conformity" affixed and be issued with a "Declaration of Conformity".

8. ONBOARD INSTALLATION AND MAINTENANCE REQUIREMENTS

The Maris ECDIS900 shall be supplied by 110VAC / 230VAC / 24VDC in accordance with Installation Manual.

The installation on board shall be verified and tested according to Installation & Operation Manual.

9. MARKING AND IDENTIFICATION

Subject to compliance with the conditions in this Schedule of Approval which forms part of certificate, and those of Articles 9, 10 and 15 of the Directive, the Manufacturer is allowed to affix the "Mark of Conformity" to the Product described herein.

xxxx/yy
 xxx - the number of the Notified Body undertaking surveillance module(2489 in case of CRS)
 yy - the last two digits of year mark affixed

This product has been assigned US Coast Guard Module B number **165.123/EC2489/03-001838, 162.124/EC2489/03-001838**. In those instances where the Notified Body conducting the conformity assessment in accordance with either Module D, E or F of the Marine Equipment Directive is not CRS, such Notified Body would use the above U.S. Coast Guard Module B number to provide the manufacturer with the U.S. Coast Guard approval number by noting it on the Certificate of Conformity, thereby authorizing the manufacturer to mark the product accordingly.

10. OTHER**SOFTWARE:**

<i>Item name</i>	<i>SW version</i>
<i>Maris ECDIS900 MK15 System</i>	<i>5.1.x.x.</i>
<i>IHO Presentation Library</i>	<i>4.0</i>
<i>Application Manager</i>	<i>2.1.x.x.</i>
<i>C-MAP SDK</i>	<i>6.0.x</i>
<i>Operating System</i>	<i>Windows 7</i>

OPTIONAL EQUIPMENT:

<i>Item name</i>	<i>Item number</i>
<i>Logitech Wireless Trackball M570</i>	<i>000-12262-xxx</i>
<i>Radar Interface Box – MK 6.0</i>	<i>11393</i>
<i>Keyboard OP2010</i>	<i>11153</i>
<i>Keyboard OP3000</i>	<i>000-12524-xxx & 000-12525-xxx</i>
<i>ECDIS Network Switch</i>	<i>11298</i>

APPENDIX – TYPE EXAMINATION DOCUMENTATION

	<i>Document title</i>	<i>Identification number</i>	<i>Revision index</i>
1.	<i>Maritime Computer – HT B22GE STC-C4K-M100, DnV – EMC and Environmental Testing</i>	2013-3135	2013-04-05
2.	<i>Composite Digital Video Converter – Maris VEM3 MK6, Nemko Test Report</i>	E11095.00	2011-08-05
3.	<i>SIS4000 MK2 Serial Interface unit – Maris Test report</i>	-	06.2012
4.	<i>HATTELAND Display – HD 19T21 MMD-MA1-FAGA, DnV – EMC and Environmental Testing</i>	2012-3302	2012-02-14
5.	<i>HATTELAND Display – HD 24T21 MMC-MJD-AAB2, DnV – EMC and Environmental Testing</i>	2011-3475	2011-11-24
6.	<i>HATTELAND Display – HD 19T21 NEC-M3D-ABB2, Conformance Test Report</i>	DOC101809-2, rev1	28.05.2014
7.	<i>HATTELAND Display – HD 24T21 NEC-MJD-ABB2, Conformance Test Report</i>	DOC101809-1, rev1	28.05.2014
8.	<i>Hatteland Maritime Multi Computer – Series X, DnV Type Approval Certificate</i>	A-12838	2012-07-13
9.	<i>Logitech M570 Wireless USB Trackball, EMC Technologies – Test Report</i>	140721.1	2 Sept. 2014
10.	<i>ECDIS Keyboard NSI KSML92F1RLED-1077, Telefication Test Report</i>	20094390200	22.04.2010
11.	<i>NSI Backlighted keyboard with trackball, DELTA Test Report</i>	DANAK-19/14501	19.09.2014
12.	<i>Digital communication interfaces: Qwerty CN8E, N1E, 1N4B, NTG, N2P; Safety isolation Adveto ESIG & Keyboard Cherry XS Trackball - Intertek Semko AB – Test Report</i>	913128	30.10.2009
13.	<i>Mechanical test of Adveto, Qwerty and Cherry INNVENTIA AB – Test Report</i>	279 693	12.01.2010
14.	<i>EMC test on CN8E, N1E and 1N4B, SP Technical Research Institute of Sweden</i>	F917800-A	2009-12-14
15.	<i>EMC Test report on MC50 Computer with accessories, Nemko</i>	200314148001	2004-11-05
16.	<i>Compass Safe Distance Test of Computer System CSxx with accessories, DnV</i>	2005-3102	2005-02-24
17.	<i>Environmental Verification Test on CS accessories</i>	310-04-0279	14.02.05
18.	<i>Moxa Ethernet Switches and Video Servers, DnV TAC</i>	A-13392	2013-08-20
19.	<i>Appendix to IEC62288 Ed.2 for HD 24T21 – Hatteland Display</i>	DOC101896-1R2	2015-08-18
20.	<i>Appendix to IEC62288 Ed.2 for HD 19T21 – Hatteland Display</i>	DOC101900-1R2	2015-08-18
21.	<i>Environmental Test Report on Logitech Trackball M570 – MET Laboratories, Inc</i>	ENV-2-ESLU42271	August 25, 2014
22.	<i>EMC Test Report on Logitech Trackball M570 – MET Laboratories, Inc</i>	EMCS42271	August 25, 2014
23.	<i>NAVICO – Test Report on IEC 61162-450 (2018), IEC 62923-1 (2018) and IEC 62923-2 (2018), CRS witnessed, 2021-07-07</i>	Navico TestLink	07.07.2021.

- END OF CERTIFICATE -