EC TYPE EXAMINATION (MODULE B) CERTIFICATE

No. **03-001740/031444**

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 **Simrad E50xx ECDIS System**

NUMBER AND ITEM DESIGNATION (in accordance with Annex of Regulation (EU) 2019/1397)

MED/4.30 – Electronic chart display and information system (ECDIS)

MANUFACTURER:

NAVICO NORWAY AS, Nyåskaiveien 2,
4374 Egersund – Norway

REGULATIONS AND STANDARDS (in accordance with Annex of Regulation (EU) 2019/1397)

SOLAS 1974 as amended, Reg. V/19

IMO Res. A.694(17), IMO Res. MSC.191(79), IMO Res. MSC.232(82), IMO Res. MSC.302(87) and IMO MSC.1/Circ.1503. Rev.1.

NOTICE:

1. Further details of the product and conditions for certification are given overleaf.
2. 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.
3. 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 are being placed on board vessels to which the amended regulations or standards apply.
4. 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.
5. In case limitations of use apply, these should be indicated of in the Schedule of Approval.

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

This certificate is valid until: **2021-08-29**

Place and date: **2020-04-28** Seal

Signature
Marinko Popović, dipl.ing.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION

Simrad E50xx ECDIS System consists of the following components:

	Component	*Item name*	*Part No.*
1.	*ECDIS processor*	*Simrad E5000*	*000-11780-00x and 151-10379-00x*
2.	*24" Monitor for ECDIS application*	*Simrad M5024*	*000-11781-00x and 151-10380-00x*
3.	*27" Monitor for ECDIS application*	*Simrad M5027*	*000-12726-00x*
4.	*Wireless Trackball mouse*	*Logitech M570*	*000-12262-00x;*
5.	*Trackball (Option),*	*LTSX 50N8*	*000-12375-00x;*
6.	*Alarm panel (with 24" Monitor only)*	*Simrad E0102*	*000-12264-00x and 151-10381-00x;*
7.	*NMEA 0183- NMEA 2000 gateway (Option),*	*Simrad SI80*	*000-10425-00x.*

2. APPLICATION/LIMITATION OF USE

The Simrad E50xx ECDIS is not tested for compliance with IEC 61174 Ed. 4.0 (2015-08) – Annex G (ECDIS in the RCDS mode of tion) 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 latitude. New interface requirements have been added and tested for communication with BNWAS, VDR, BAM, MSI, INS as well as transfer.

System is to be installed in a protected environment.

3. DESIGN DRAWINGS AND SPECIFICATIONS

Simrad E50xx ECDIS system overview Rev. 2.0 – NPD Documents Library;
Simrad E50xx ECDIS Installation Manual, part number 988-10782-00x;
Simrad E50xx ECDIS Operation Manual, part number 988-10788-00x;
Simrad E0102 Alarm panel manual, part number 988-10826-00x;
Simrad M50xx monitor manual, part number 988-10795-00x;
Simrad SI80 manual, part number 988-10475-00x.

4. TYPE TEST RECORDS/LABORATORY RECOGNITION STATUS

Performance testing – IEC 61174 Ed. 4.0 (2015-08), CRS witnessed – Egersund 06-16- June 2016 & Ensenada 02-04 May 2016;
Environmental testing – IEC 60945(2002) including Corrigendum 1(2008), CRS witnessed-Egersund 05-06 July 2016;
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 06-16- June 2016;
Ethernet interconnection for VDR & Route Transfer – IEC61162-450 Ed.1.0 (2011-06), CRS witnessed-Egersund 06-16- June 2016;
CRS letters of approval – 221/TE/VB/031120 and 1880/TSE/VB/031239.

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

Simrad E5000 dual core processor (Part of Simrad E50xx ECDIS) might be used as a part of additional, independent information system if type approved.

6. OTHER MATERIALS AND/OR COMPONENT

Simrad E50xx ECDIS 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 ECDIS E50xx shall be supplied by 12V or 24V DC 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

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

10. OTHER

SOFTWARE:

Item name	*SW version*
E50xx ECDIS system software version	*2.0.x.yyyy*
Chart Library Presentation	*4.0.x*
SDK Version	*2.0*

APPENDIX – TYPE EXAMINATION DOCUMENTATION

	Document title	*Identification number*	*Revision index*
1.	*E50xx System Context*	*NPD Documents Library*	*Rev. 2.0*
2.	*SIMRAD MO24-T Monitor, Touch, High Bright*	*EMC Technologies Test Report No. 140122.1*	*10th June 2014.*
3.	*NAVICO – EMC Addendum* *Comparison MO24-P monitor with MO24-T*	*Control No.: AAC20140622-00*	*10th February 2014*
4.	*MO50xx Difference to MOxx*	*-*	*Rev. 3*
5.	*SIMRAD NSO-II Marine Processor*	*EMC Technologies Test Report No. 130409.1*	*25th June 2013*
6.	*E5000 ECDIS processor* *Comparison with NSO evo 2 computer*	*-*	*8th January 2015*
7.	*NSO EVO II – overview over reports*	*Project Number 42271*	*8th August 2014*
8.	*System1:* *IS40 Pro, OP40, MO16-T, MO19-T, NSO EVO II, Logitech Wireless Trackball M570;* *System 2:* *MO24-T, NSO EVO II, Kensington Orbit Trackball with Scroll Ring*	*MET Report: ESLU42271-IEC*	*25th August 2014*
9.	*System1:* *IS40 Pro, OP40, MO16-T, MO19-T, NSO EVO II, Logitech Wireless Trackball M570;* *System 2:* *MO24-T, NSO EVO II, Kensington Orbit Trackball with Scroll Ring*	*MET Report: EMCS42271-EN 60945*	*25th August 2014*
10.	*Simrad Monitor M50xx* *IEC 60945 – item 8.12 corrosion (waiver)*	*-*	*18.12.2014.*
11.	*NSO evo2 Processor* *IEC 60945 – item 8.12 corrosion (waiver)*	*-*	*15.01.2015*
12.	*Logitech M570 Wireless USB Trackball*	*EMC Technologies Test Report No 140721.1*	*2nd September 2014*
13.	*Power Failure Alarm Panel*	*DNV MED-B Certificates*	*Certificates 8315 & 8316*
14.	*Addendum for EO102 – Alarm Panel*	*-*	*12th January 2015*
15.	*Heading control system AP70, AP80*	*DNV MED-B Certificates*	*Certificates 7837 & 7912*
16.	*MET Laboratories –* *ISO 17025 accreditation*	*A2LA Certificate No. 591.02*	*Revised 06/02/2014*
17.	*EMC Technologies –* *ISO 17025 accreditation*	*IANZ – No. 424*	*Issue 41 08/09/14*
18.	*NSI scroll & roll trackball – Test report*	*Delta Test Report DANAK-19/14502*	*19 September 2014*
19.	*NAVICO Monitors – Compass safe distance*	*BSH Certificate No.881*	*2014-10-30*
20.	*M5024 ECDIS Colour Monitor –* *Colour Calibration & Visual Verification, Test Report*	*Part # 000-11781-001*	*Rev. 15 & 21*
21.	*CNR – Istituto Nazionale di Ottica –* *Simrad 24" monitor, Optical test (IEC62288)*	*3F-RT14009*	*Sept. 26, 2014*
22.	*Koncar Institute – Zagreb,* *Simrad 27" monitor, EMC Test Report*	*21583EMC16051*	*17.6.2016.*
23.	*Koncar Institute – Zagreb,* *Simrad 27" monitor, IEC60945 Test Report*	*21580ALL008*	*28.06.2016.*
24.	*EMC Addendum - NAVICO*	*AEP20160630-00*	*30 June 2016*
25.	*M5027 ECDIS Colour Monitor –* *Colour Calibration & Visual Verification, Test Report*	*Part # 000-12726-001*	*Rev. 25, 2016-05-04*
26.	*CNR – Istituto Nazionale di Ottica –* *Simrad 27" monitor, Optical test (IEC62288)*	*3F-RT16008*	*July 22, 2016*
27.	*Navico declaration – M5027 Optical tests*	*DAP20160720-01*	*20. July 2016*
28.	*Navico – M5027 Sound Test*	*EG-CE-20160705-01*	*2016-07-05*

- END OF CERTIFICATE -