



DET NORSKE VERITAS

EC TYPE EXAMINATION CERTIFICATE

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive 2012/32/EU, issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Directorate. This Certificate is issued by Det Norske Veritas under the authority of the Government of the Kingdom of Norway.

CERTIFICATE NO. **MED-B-9014**

This is to certify that the
Track control system

with type designation(s)
TECDIS TCS

Issued to
Telko AS
TJØME, Norway

is found to comply with the requirements in the following Regulations/Standards:
IMO Resolution MSC 191(79)

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)

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

Høvik, 2014-04-22
for **Det Norske Veritas AS**




This Certificate is valid until
2019-04-22


Marianne Strand Valderhaug
Head of Department

Notified Body No.: **0575**

DNV local office:
Sandefjord


Olaf Gundersrud
for
Surveyor



The Certificate is subject to terms and conditions overleaf. Any significant changes in design or construction of the product, or amendments to the Directive or Standards referenced above may render this Certificate invalid. The product liability rests with the manufacturer or his representative in accordance with Council Directive 96/98/EC, as amended. The Mark of Conformity may only be affixed to the product and a Declaration of Conformity may only be issued when the production/product assessment module referred to in the council directive, is fully complied with.



Certificate No.: MED-B-9014
Item No.: A.1/4.33
Job Id.: 344.1-000651-7

Product description

See Appendix.

For latest revision of the Appendix, see <http://exchange.dnv.com/tari>

Application/Limitation

- See Appendix.
- The installation shall be verified and tested onboard according to TECDIS Installation manual - Checklist regarding Installation.

Type Examination documentation

- See Appendix.

Tests carried out

- Performance testing, IEC 62065 (2002)
- Performance testing, presentation, IEC 62288 (2008)
- Environmental testing, IEC 60945 (2002)
- Serial interface testing, IEC 61162-1 (2010)

Marking of product

The Manufacturer and Type Designation to be applied to the equipment in a clearly visible location and in addition the equipment shall be marked with serial number, safe distance to magnetic compass, power consumption and/ or supply voltage.

Mark of Conformity

The manufacturer is allowed to affix the Mark of Conformity according to Article 11 in the Council Directive 96/98/EC on Marine Equipment and shall issue a Declaration of Conformity, only when the module D or E or F of Annex B in the same directive is fully complied with.

Module D: The quality system for production and testing shall be approved by the Notified Body.

Module E: The quality system for inspection and testing shall be approved by the Notified Body.

Module F: Compliance of the products to type as described in this EC Type-Examination Certificate must be verified by the Notified Body who also shall issue a Certificate of Conformity.

USCG Approval

An 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), 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.

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Certificate No.: MED-B-9014
Item No.: A.1/4.33
Job Id.: 344.1-000651-7

APPENDIX REV. NO. 1 (PAGE 1 OF 2)

Product description

TECDIS TCS consisting of the following components:

- Telko TECDIS
- Raytheon NP2025 Plus, Heading control system or Furuno FAP 2000, Heading control system or EMRI SEM 200, Heading control system

Software Modules:

- Telko TECDIS, version 4.7.X
- Raytheon NP2025 Plus, version 102-885p01e00.xx
- EMRI SW AEU 2 vers. 3.1

Application/Limitation

- The system shall be connected to an alarm transfer system for transfer of back-up navigator alarms.
- The TECDIS TCS complies with the requirements for Category C Track Control Systems (Track control along pre-planned straight and curved tracks).
- The ECDIS and HCS identified in the product description as well as the heading, speed and positioning sensors being interfaced shall hold a valid type approval certificate.

Type Examination documentation

DNV No.	Doc. Ref.	Rev.	Description
1		05	Conformance test of ECDIS and TCS
12		02	TECDIS conformance test report
20	E501359-2		Type Approval testing of MOUSE-TRAK trackball
21	FLI 12-02-047		Test Report for Furuno Inmarsat-C SES, FELCOM 15
22	200112106		Test Report IEC 60065
23	FLI 12-02-036		Test Report for Furuno Terminal unit IB-583
24	2005-3248	01	Compass safe distance testing of loudspeakers HP-6 and HPS-6
25	3010-05-0284		Environmental test report loudspeaker HPS-6 and HP-6
28	2006-3273	01	EMC and Environmental Testing of HT405P4 STD-A1
29	A503794-1		EMC type approval testing of Maritime Rack Computers
30	2006-3363	01	Excessive conditions test of HT 205P4 STD MC and JH 23T02 MIL MMD
36	EMV0018E-02		EMI Test Report
38	TA01-03-02-GL		Test report for Raytheon HCS NP 2035 (2015/2025)
44	FLI 12-04-030		Test report for Furuno FEA2X07 (1 of 2)
45	FLI 12-04-030		Test report for Furuno FEA2X07 (2 of 2)
48	2005-3362	02	Type testing of 23 inch panel display, type JH 23T02 MMD-E1
54		2.0	TECDIS Operator's Manual
56	100495-1		Conformance test report for LCD in use in Radar and ECDIS - JH23T12MMD
57	100496-1		Conformance test report for LCD in use in Radar and ECDIS - JH19T14MMD
58	100541-1		Conformance test report for LCD in use in Radar and ECDIS - JH20T17MMD
59	2008-3528		EMC and Environmental testing of JH19T14MMD
60	2008-3511	02	EMC and Environmental testing of JH20T17MMD





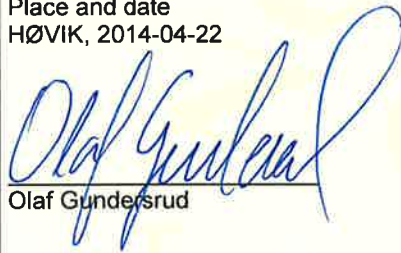
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Type Examination documentation continues

DNV No.	Doc. Ref.	Rev.	Description
61	2008-3142		EMC and Environmental testing of JH23T12MMD
62	2008-3146		EMC and Environmental testing of JH19T12MMD-DA1-AAAA
63	2008-3143		EMC and Environmental testing of JH19T12MMD-AA1-AAAC
64	2007-3008		EMC and Environmental testing of JH20T07 MIL-E1
65	2008-3418		Dry heat test on Maritime Computer typwe HT405P4 TEL
66	2008-3190	02	Dips and interruption testing of monitor type JH19T12 MMD-AA1-AAAA
67		3	TECDIS conformance test report
68		5	Conformance Test of ECDIS and TCS (EMRI)
69		2.5	TECDIS Installation Manual

Place and date
HØVIK, 2014-04-22


Olaf Gundersrud





END OF CERTIFICATE