



Bundesrepublik Deutschland

Federal Republic of Germany

Bundesamt für Seeschifffahrt und Hydrographie

Federal Maritime and Hydrographic Agency



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

EC TYPE EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

Bundesamt für Seeschifffahrt und Hydrographie, specified as a "notified body" under the terms of „Schiffssicherheitsgesetz“ of 9. September 1998 (BGBl. I, p. 2860) modified last 08. April 2008 (BGBl. I, p. 706), did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the Navigation requirements of Marine Equipment Directive (MED) 96/98/EC modified by Directive 2002/84/EC.

Manufacturer **TRANSAS Ltd.**
 Address **10 Eastgate Avenue, Eastgate Business Park, Little Island, CORK, IRELAND**

Applicant **TRANSAS Ltd.**
 Address **10 Eastgate Avenue, Eastgate Business Park, Little Island, CORK, IRELAND**

Annex A.1 Item (No & item designation) **4.34 Radar equipment with automatic radar plotting aid (ARPA)**

Product Name **Navi Radar 4000 MFD**

Trade Name(s) **Navi Radar 4000 MFD**

Specified Standard(s)

IMO Resolution A.694 (17)	IMO Resolution MSC.64 (67) Annex 4	IEC 60936-1 Ed.1.1, 2002	IEC 60945 ed.4.0, 2002
IMO Resolution A.813 (19)	SN/Circ. 217	IEC 60936-3 Ed.1.0, 2002	IEC/PAS 60936-5, 2003
IMO Resolution A.823 (19)	ITU-R.M 1177	IEC 60872-1 Ed.1.0, 1998	IEC 61162-1 Ed.2.0, 2000
		IEC 61993-2 Ed.1.0, 2002*	IEC 61162-2 Ed.1.0, 1998

* Limited to required Data content to display and process other ships UAIS information as defined in IEC 61162-1 Ed.2.0

This certificate remains valid unless cancelled, expired or revoked.

Date of Re-issue: **2008-09-04**

Issued by: **Bundesamt für Seeschifffahrt und Hydrographie
Bernhard-Nocht-Str. 78, 20359 Hamburg, Germany
Notified body 0735**

Expiry date: **2009-06-30**

Certificate No.: **BSH/4612/4340807/08**

USCG-Module-B No.: **165.120/EC0735** Unique Identifier: **4340807**

This certificate consists of 6 pages.



by order

Schulz-Reifer
Schulz-Reifer



Components necessary for operation:

See Annex 1 to EC type examination (Module B) certificate BSH/4612/4340807/08

Approval Documentation:

See Annex 2 to EC type examination (Module B) certificate BSH/4612/4340807/08

Tested Software:

Type	Version	Build
Radar Software NR4000 MFD	1.11.005	0916
Chart Assistant Software	1.11.005	0916

Places of production:

Transas Skandinavia AB
 Datavägen 37, 436 32 Askim
 SWEDEN

Limitations on the acceptance or use of the product:

The radar equipment also fulfils the functions of item A.2/4.21 "Chart facilities for shipborne radar". The chart radar capability was tested with S-57 ENC.

An inter-switch functionality is integrated part of the system, having some limitations. These limitations are sufficiently described in the appropriate equipment manuals.

Items of the equipment, identified by * in list 1 of Annex 1, have been previously subjected to a MED type approval process and are identified in certification under the GEM brand. They were not fully and/or individually tested during this session of type approval. Certificate no. 24 830 - 05 Lux, issued January 18, 2005, references these units.

The referenced certificate no. 24 830 - 05 Lux additionally confirms that the equipment units comply with Recommendation ITU-R M.1177.

Notes:

NAVI RADAR 4000 MFD is provided with the additional facilities NAVI CONNING 4000 and NAVI SAILOR 4000 ECDIS.

Compliance of NAVISAILOR 4000 MFD ECDIS with the requirements of ECDIS are certified in CERTIFICATE NO. MED-B-4671 issued by DET NORSKE VERITAS (Notified Body No. 0575).

Notes:

The manufacturer shall inform Bundesamt für Seeschifffahrt und Hydrographie, as the notified body, of any modifications to the type-tested product(s) that may affect compliance with the requirements or conditions laid down for use of the product(s).

In case the specified regulations or standards are amended during the validity of this certificate, the product(s) must be re-certified before being placed on board vessels to which such amended regulations or standards apply.

The Mark of Conformity (wheelmark) may only be affixed to the type approved equipment, and a Manufacturer’s Declaration of Conformity may only be issued, if the product quality system fully complies with the Marine Equipment Directive and is certified by a notified body against ANNEX B module D, E, or F of the Directive.

U.S. Coast Guard Approval

This product has been assigned a U.S. Coast Guard Module B number (165.xxx/EC0735/Unique Identifier[if other than EC 0735: /Number of the notified body which certifies the quality assurance system]) to note type approval to Module B only as it pertains to obtaining U.S. Coast Guard approval as allowed by the "Agreement between the European Community and the United States of America on Mutual Recognition of Certificates of Conformity for Maritime Equipment" signed February 27th, 2004.

Notice on legal remedies available:

Objection to this document may be filed within one month after notification. The objection must be filed in writing to, or put on record at, Federal Maritime and Hydrographic Agency, Bernhard-Nocht-Str. 78, 20359 Hamburg, Germany

ANNEX 1 TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No.: BSH/4612/4340807/08

I. List of components:

No.	Designation	Type designation
1.	X-Band scanner (up mast)	a) 6 ft. array, type AU11-06N/S* (GEM)
2.	X-Band transceiver (up mast)	a) 12 kW, type SU70-10N/S* (GEM) b) 25 kW, type SU70-25N/S* (GEM)
3.	Performance Monitor PM30-02*	a) Sensor, type SPM-010* (GEM) b) Power supply, type APM-030* (GEM)
4.1	Display with 340mm PPI	a) Type JH23T02 MMD-E1 (Hatteland)
4.2	Display with 250mm PPI	a) Type JH19T01 MMD-E1 (Hatteland) b) Type JH19T02 MMD-E1 (Hatteland)
5.1	ARPA processor	a) Computer RS4 v. 2 (Capax)
5.2	Processor interfacing	a) Radar integrator board (RIB) - high frequency box V.2 - low frequency box V.2 b) Connection board X1 c) Connection board X2
6.	Control keyboard with integrated track-ball	a) ES3 b) ES4**
7.	GEM - TRANSAS interface / power supply	a) Type ASU-40000* (GEM)
8.	Power supply	a) Pulsar Extreme C 1500 UPS (MGE) Art.-No. 5103171400
9.	Power supply line filter	a) Line filter 10A (MGE)
10.	LAN-Switch	a) Type EDS 308** (MOXA)

Note: Items of the equipment, identified by *, have been previously subjected to a MED type approval process and are identified in certification under the GEM brand. They were not fully and/or individually tested during this session of type approval. Certificate no. 24 830 - 05 Lux, issued January 18, 2005, references these units.

Items of the equipment, identified by **, have been previously subjected to a MED type approval process. They were not fully and/or individually tested during this session of type approval. Certificate no. MED-B-4671, issued March 14th, 2008, references these units.

II. Table of combinations:

		Type of	
		1.1	1.2
Designation Designation		X-Band NaviRadar 4000MFD (PPI 250) Up Mast	
		X-Band NaviRadar 4000MFD (PPI 340) Up Mast	
1.	X-Band Scanner (Up Mast)	X	X
2.	X-Band Transceiver (Up Mast)	D	D
3.	Performance Monitor	C	C
4. 1	Display Unit PPI 340 mm	A	X
4. 2	Display Unit PPI 250 mm	D	A
5. 1	ARPA Processor	X	X
5. 2	Processor Interfacing	C	C
6.	Control Unit	D	D
7.	GEM/TRANSAS-Interface, Pow.Sup.	X	X
8.	Power Supply	O	O
9.	Power Supply Line Filter	O	O
10.	LAN-Switch	O	O

- Note: X = Mandatory equipment
 A = Optional for additional display systems, e.g. radar display in the wings
 O = Optional equipment
 D = One out of noted possibilities in relevant section is mandatory
 a)..z) = Reference to relevant section within List of components
 C = All items of relevant section in list of components are mandatory

ANNEX 2 TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE

No.: BSH/4612/4340807/08

Approval Documentation

I. System Documentation

TRANSAS documentation

No.	Title	Version / Edition	Date of Issue
1.	Navi Radar MFD Functional description,	ed.1	, June 2008
2.	Navi Radar MFD User Manual	ed.1	June 2008
3.	Navi Radar MFD Additional functions	ed.1	June 2008
4.	Navi Radar MFD Installation guide	ed.1	June 2008
5.	Navi Radar MFD Quick reference	ed.1	June 2008
6.	Navi Radar MFD Utilities	ed.1	June 2008

Additional manuals

Supplier: GEM Elettronica

No.	Title	Version / Edition	Date of Issue
1.	Scanner unit SU70-10N/S, user and installation manual	MUIAA123407E, Rev. 1	April 2007
2.	Scanner unit SU70-25N/S, user and installation manual	MUIAA123502E, Rev. 0	February 2005
3.	Performance monitor PM 30-02, user and installation man.	MUIAA920355E, Rev. 0	October 2003
4.	Power supply unit ASU-40000, user and installation man.	MUIAA602245E, Rev. 0	February 2005

II. Test reports

No.	Test-Laboratory	Report No.	Standard(s)	Title
1.	BSH	BSH/4612/4340336/08	IEC 60936-1 IEC/PAS 60936-5 IEC 60872-1 IEC 60945 IEC 61162-1/-2	S-Band / X-band radar NR4000
2.	SP	MTkP 603990	IEC 60945 rev. 4	RS4v2: Environmental tests
3.	SP	MTkP 603990-01	IEC 60945 rev. 4	RS4v2:EMC-tests
4.	SP	MTkP 603990-03	EN ISO 694 : 2001	RS4v2:Compass safe distance
5.	BSH	# 329	IEC 60945	RIB: Compass safe distance
6.	SP	P 103004:D	IEC 60945	RIB: EMC-tests
7.	SP	P 103004-1D rev. 2	IEC 60945	RIB, LF-box, HF-box: EMC-tests
8.	DELTA	DANAK-197446	IEC 60945	ES3: EMC-tests
9.	DELTA	DANAK-196393	IEC 60945	Hatteland monitor 19"
10.	DNV	2005-3111	IEC 60945	Hatteland monitor 23"
11.	DNV	2005-3112	IEC 60945	Hatteland monitor 19"
12.	BSH	# 533	IEC 60945	RS4v2:Compass safe distance
13.	BSH	# 545	IEC 60945	SU70-10H: Compass safe distance
14.	BSH	BSH/4612/4340807/08	IEC 60945	General Requirements

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