EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate no.:
MEDB0000BWN
Revision no.:
0

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 **Track control system (working at ship’s speed from minimum manoeuvring speed up to 30 knots)**

with type designation(s)
HiNAS Control Standard

issued to
Avikus Co., Ltd.
Seoul, **Korea, Republic of**

is found to comply with the Implementing Regulation **(EU) 2025/1533** for
Item no. **MED/4.33** (Row **1 of 2**)
according to the following requirements:
SOLAS 74 Reg. V/19, IMO Res. A.694(17), IMO Res. MSC.74(69), IMO Res. MSC.191(79), IMO Res. MSC.302(87), SOLAS 74 Reg. V/18

(Manufacturers authorised representative)
Movena GmbH
Bremen, Reeder-Bischoff-Str. 65, D-28757, Germany

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

Date of issue: **2025-12-10**

Expiry date: **2030-12-09**

DNV local unit:
Seoul, CMC Korea

Approval Engineer:
Roger Lauritsen

Notified Body
no.: **0575**

for **DNV AS**

Christine Mydlak-Röder
Head of Notified Body

A 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, E or F), 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, and amended by Decision No 1/2023 dated August 21st, 2023.

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

Product description

HiNAS Control Standard consists of components listed in Annex 1.

Software version: 2.0.x. Where x is the number 0 or higher.
Operating system: Ubuntu 22.x. Where x is 04 or higher.

Please see Appendix: Product Description

Application/Limitation

- The system shall be installed in accordance with the HiNAS Control Standard Installation Manual
- HiNAS Control Standard may optionally be delivered with speed control. See product description.
- HiNAS Control Standard may optionally be delivered with HiDOM repeater display. See product description.
- HiNAS Control Standard may optionally include additional functionality to increase situation awareness using cameras for detection of objects within the visible range
- HiNAS Control Standard may optionally include additional functionality for decision support for collision avoidance. See separate certificate for collision avoidance function.

Type Examination documentation

Tests carried out

TCS performance testing, IEC 62065 (2014)
Environmental testing, IEC 60945 (2002) incl. Corr.1 (2008)
Serial interface testing, IEC 61162-1 (2016), IEC 61162-2 (1998)
Ethernet interface testing, IEC 61162-450 (2024)
Presentation of navigation related information , IEC 62288 (2021)
Bridge Alert Management, IEC 62923-1 (2018), IEC 62923-2 (2018)
Route exchange (RTZ v 1.0 and 1.2) , IEC 61174 (2015) Annex S and IEC 61174-1 (2021)
Target association and tracking, IEC 62388 (2013), 11.3.14.7 & 11.8

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.

APPENDIX
Product Description

Certificate no.:
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Revision no.:
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HiNAS Control Standard consists of following components

Type	Type Designation	Maker	Note/description/limitation	Installation Location
Server	Optiplex XE4 Tower with damping kit TVK-XE4-TV or TVK-XE4-TH	Tetradyne	*At least two per installation.*	Protected
Client	Optiplex XE4 Tower with damping kit TVK-XE4-TV or TVK-XE4-TH		*Optional. In server/client config, two per installation.*	Protected
And				
Monitor	TIMX-W270 or, TIMX-W320 or, TIMX-UW584	Tetradyne	*System may be installed with two monitors in same installation.*	Protected
And;				
Keyboard with trackball	RKTE85B2448-W-MC1	NSI	*To be installed with each delivery*	Protected
Serial to Ethernet	Nport-5450i	Moxa	*Minimum one per installation*	Protected
Network switch	EDS-G508E	Moxa	*Minimum one per installation*	Protected
Firewall	FGR-60F	Fortinet	*One per installation*	Protected
Selector switch	MPH 731	Yokogawa	*One per installation*	Protected
Dimmer for	MKD002	Yokogawa	*One per installation*	Protected
UPS	9SX1000IM or 9SX3000IM or 9PX1500iRTM or 9PX3000iRTM	Eaton	*Minimum one UPS per installation.*	Protected
And optionally				
Camera unit , incl. EO cameras and IR cameras **Junction box,** incl. Single Board Computer	HiNAS Navigation	Avikus	*Optional*	Exposed
System to be interfaced with				
Heading Control System	PT900 or	Yokogawa	*Minimum one HCS per installation SW version V8225Hv-B08 or higher*	Protected
	PR-9000	Tokyo Keiki	*Minimum one HCS per installation HCCPU: SW version 2.00 or higher HCIFU: SW version 2.00 or higher ADNCT: SW version 1.12 or higher*	
Remote control system	AutoChief 600 or	Kongsberg Maritime	*Optional, for speed control SW version 12.16.116 or higher*	Protected
	M-800-V or	Nabtesco	*Optional, for speed control SW version 0.0.13 or higher*	
	M-800-VII	Nabtesco	*Optional, for speed control SW version 2.0.1 or higher*	
ECDIS	Any	Any	*For any ECDIS that support exchange of route on RTZ v.1.0 or*	Protected

Type	Type Designation	Maker	Note/description/limitation	Installation Location
			v.1.2 format by use of RRT sentences	
Position sensors	Any	Any	*To be approved according to IMO requirements*	As applicable
Heading sensor	Any	Any	*To be approved according to IMO requirements*	As applicable
Speed sensor	Any	Any	*To be approved according to IMO requirements*	As applicable

The HiDOM option includes repeater functionality that can present following sensor information.

- Time
- Rudder angle
- Rate Of Turn
- Engine or propeller RPM
- Heading
- Course over ground
- Under keel clearance
- Speed over ground
- Speed trough water
- Wind direction and speed.