DNV·GL

Certificate No:
TAA00002D3

TYPE APPROVAL CERTIFICATE

This is to certify:

That the hardware components for ECDIS, RADAR, INS, HCS and TCS

with type designation(s)
NACOS Platinum system platforms

Issued to
Wärtsilä SAM Electronics GmbH
Hamburg, Germany

is found to comply with
IMO Res. A.694(17) General requirements for shipborne radio equipment forming part of the global maritime distress and safety system (GMDSS) and for electronic navigational aids
MSC.191(79) Performance standards for presentation of navigation-related information on shipborne navigational displays

Application :

This type approval certificate is only valid as part of the EU type examination certificates MEDB00005M8, MEDB00005MB and MEDB00005MC.

Issued at **Hamburg** on **2019-10-07**
This Certificate is valid until **2024-10-06** .
DNV GL local unit: **Hamburg**

Approval Engineer: **Jörg Rebel**

for **DNV GL**

Arne Schaarmann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

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Product description
See appendix for details of the NACOS Platinum system platforms.

Application/Limitation
- Installation is to be performed according to the manufacturer's documentation.
- This certificate only identifies hardware and software used in NACOS Platinum systems and is intended to be read in conjunction with the individual certificates covering the various NACOS Platinum systems.
- For details on compliance to system requirements, please see individual certificates for NACOS Platinum where reference is made to this certificate.

Tests carried out
- Environmental and EMC testing: IEC 60945 (2002) incl. Corrigendum 1 (2008)
- Presentation testing: IEC 62288 (2014)

Type Approval Documentation

DNV GL No	Document ID	Rev.	Description
1	ANC-D-0000-0145	01B	List of reports for ENV, EMC and presentation testing for NACOS Platinum

Marking of product
Marking is to be in accordance with requirements in Marine Equipment Directive (MED) 2014/90/EU. See individual MED-B certificates for details.

Certificate Retention Survey
Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

The scope of the periodical/renewal assessment is to verify that the production quality conditions stipulated for the type approval are complied with and that no alterations are made to the product design or its components and/or materials without appraisal by the Society.

APPENDIX

Product description

No.	Designation	Type Designation
1•	**Transceiver Units**	• **if RADAR is included**
	Radar Scanner	a) X-Band Scanner 5ft, type GR3020 G150 b) X-Band Scanner 8ft, type GR3020 G160 c) S-Band Scanner 14ft, type GR3021 G090
	Radar Transceiver	a) 12.5 kW X-Band Transceiver NG3050 with Antenna Turning Unit GR3050 b) 25.0 kW X-Band Transceiver NG3050 with Antenna Turning Unit GR3050 c) 25.0 kW X-Band Bulkhead Transceiver NG3050 A004 d) 30.0 kW S-Band Transceiver NG3051 with Antenna Turning Unit GR3051 e) 30.0 kW S-Band Bulkhead Transceiver NG3051 A002
	Turning Units	a) X-Band Turning Unit GR3050 b) S-Band Turning Unit GR3051
2	**Main Processing Unit** Display Electronics Platinum (alternatively)	GE 3068 / GE 3068 A 001 / GE 3068 A 002 / GE 3068 A 003 / GE 3068 A 004 / GE 3068 A 005 / GE 3068 A 006
		Operating system: Microsoft Windows 7 SP1 and Microsoft Windows 10 Pro (Version 1803)
		including Mariner Kit for a) horizontal b) vertical installation a) MS 2230 or MS 2270 or MS 2330 or MS 2370 or MS 2430 or MS 2470 b) MS 2240 or MS 2280 or MS 2340 or MS 2380 or MS 2440 or MS 2480
3	**Display Units 250mm** [1] (for Radar CAT 2 & ECDIS, alternatively)	a) Monitor Platinum, 22" TFT-CCFL, type AZ 3074 G 040 or G 042 [2] b) Monitor Platinum, 22" TFT-LED, type AZ 3074 G 240 or G 241 (IP 56) c) Monitor Platinum, 22" TFT-LED, type AZ 3074 G 242 or G 243 (IP 56) [2] d) Monitor Platinum, 22" TFT-LED, type AZ 3074 G 244 (HB, IP56) [2] e) Monitor Platinum, 24" TFT-LED, type 390 008 902 [2] f) Monitor Platinum, 24" TFT-LED, type 390 008 903 [2] g) Monitor Platinum, 24" TFT-LED, type 390 008 905 [2] h) Monitor Platinum, 24" TFT-LED, type 390 008 906 [2]
4	**Display Units 320mm** [1] (for Radar CAT 1 & ECDIS alternatively)	a) Monitor Platinum, 26" TFT-CCFL, type AZ 3073 G 040 or G 042 [2] b) Monitor Platinum, 26" TFT-LED, type AZ 3073 G 240 or G 242 [2] c) Monitor Platinum, 27" TFT-LED, type 390 008 908 [2] d) Monitor Platinum, 27" TFT-LED, type 390 008 910 [2] e) Monitor Platinum, 32" TFT-LED, type 390 008 911 [2] r) Monitor Platinum, 55" TFT-LED, type 390 008 913 [2]
5	**Operator Units** (alternatively)	a) Platinum BD 3030 (Trackball & optional RADAR, TRACK, or ASCII control panel) b) ECDIS keyboard NSI KSML92x c) Trackball BD 3014 and optional ASCII keyboard BD 3029 * d) HP standard optical scroll mouse and optional HP standard keyboard * * At main workstations a separate dimmable light is required. e) Trackball NSI-E38-76A31D (desktop) and NSI-TBE38F(N)0-OBT1-MC3 (panel mount) f) Platinum BD 3030 G13 (RADAR) & BD 3030 G15 (TRACK) 144 mm panels
6	**Sensor Interfaces** (alternatively)	a) Platinum DCU 2010 (DPU 2010, SIO 2010 and PFM 2200 in one housing) b) Platinum DPU 2010 & SIO 2010 & opt. PFM 2010 for dual power supply c) Platinum DPU 2020
7	**Network Switches** (alternatively)	a) EDS-408A-(T) (SAM) (RJ45 ports) or suffix T added b) EDS-408A-MM-SC-(T) (SAM) (+2x fibre ports) or suffix T added c) EDS-510 (1 GHz)
8	**Optional Components**	a) Power supply STEP PS/1AC/24DC/1.75 or QUINT PS/1AC/24DC/10 b) DVI Extender VL-66201 [3] c) DVI/USB Extender VL-66203 [3] or VL-66213 [4] d) DVI Distributor VL-66005

[1] AZ3074/73 G 040 to G 244 Monitors for flash mount and limited to primary voltage systems of 230 VAC
[2] Touch function of monitors not for use
[3] Distance limited by type of CAT-cable: CAT 7 cable up to 40 m, CAT 6 or CAT 5E cable up to 20 m, direct connection only, no couplers or adapters, all cables from same type.
[4] Distance limited up to 100 m for CAT 5E, CAT 6 and CAT 7 cable.

Acceptance or use of the product as ECDIS system (if ECDIS is included)

Chart data formats:

The system supports the display and use of digital chart data in the following formats:

- S-52 Ed. 6.1 and Pres. Lib. 4.0 (IHO)
- S-57 Ed.3.1.1 (IHO)
- S-61 Ed 1.0 (IHO)
- S-63 Ed.1.2 (IHO)
- S-64 Ed. 3.0 (IHO)
- ARCS (UKHO) and CM-93/3 (C-Map Prof.)

System interfaces (undisturbed operation):

Data exchange with sensors, additional devices and external data receiver via:
At least one DCU 2010 or DPU/SIO 2010 or DPU 2020 with 5 (five) serial interfaces for reception and transfer of data from connected sensors according to IEC 61162-1 (Edition 5.0, 2016).

1. for reception of sensor data at least delivered by the following sources:

1.1. for the reception of sensor data from 1 (one) up to 3 (three)
radio navigation receiver assessed as conform with requirements of Marine Equipment Directive and marked as defined there which transmits the following information:

- geographic position, status of geographic position, course and speed over ground

1.2. for the reception of sensor data from a
gyro compass assessed as conform with requirements of Marine Equipment Directive and marked as defined there which transmits the following information,

- gyro compass heading

1.3. for the reception of sensor data from a
speed and distance measurement device assessed as conform with the requirements of Marine Equipment Directive and marked as defined there which transmits the following information:

- speed over ground, and/or speed through the water

1.4 for the data exchange with up to 1 (one) additional Electronic chart display and information system (ECDIS) Type: MULTIPILOT or ECDISPILOT Platinum
via local system area network connection (Ethernet LAN) for route data

1.5 for the data exchange with 1 (one) Night Vision Camera System Type FLIR M-400XR
via local system area network connection (Ethernet LAN) for azimuth and elevation data for platform control and video data for target visualization to up to four different workstations. Video standard H.264/MPEG-4 AVC is applied.

Installation on any of up to four workstations for the presentation of the video on its main monitor, but not on its slave monitor, see Technical Manual Doc. ID 390008516, V21 (2019-04) and higher.

Additional functionality:

A Sea Traffic Management (STM) functionality based on AIS may be used for enhanced route planning and monitoring. The system is approved according to:

- IEC 61174 Ed.4 (2015)
- STM Route Message System Requirements (Ed. F1, 2017-10-13)
- STM FAT Procedure Handbook (Doc no. 2.1, 2017-03-31)

Backup arrangements (ECDIS):

In order to continue ships navigation in the case of a primary system failure the following back up arrangements are allowed:

Installation of a secondary system Type: MULTIPILOT or ECDISPILOT Platinum

with 1 (one) sensor interface DCU 2010 or DPU/SIO 2010 or DPU 2020 with its own independent connection to a position sensor according to 1.1 and connected to the primary system via local system area network connection (Ethernet LAN) for exchange of route data.

END OF CERTIFICATE