TYPE APPROVAL CERTIFICATE

This is to certify:

that the Central Alert Management System

with type designation(s)
VisionMaster Net

issued to

Northrop Grumman Sperry Marine B.V. - UK Branch
New Malden, Surrey, United Kingdom

is found to comply with
  DNV rules for classification – Ships
  IMO Resolution MSC.302(87) Performance standards for Bridge Alert Management
  MSC.191(79) Performance standards for presentation of navigation-related information on shipborne navigational displays
  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

Application:

See page 2.

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2024-02-12**

This Certificate is valid until **2029-02-11**.
DNV local unit: **Southampton**

Approval Engineer: **Steinar Kristensen**

for **DNV**

Product description

VisionMaster Net Central Alert Management System is available either as a part of a Multi Function Display (MFD) or as a dedicated CAM system, consisting of the below modules:

VisionMaster Net Hardware modules:

Unit	Description	Type Number	Comment
Computer & Display	26" Panel PC	67026AA or 67026AB	
Interface Unit	PCIO Interface Unit	65900AX	X= A or B 9x RS422/RS232 input 6x RS422/RS232 outputs[*]
Control Panel	Control panel with trackball + keyboard (Integrated or Kit)	67003AH or 67003KH	3x USB connectors
Data Control Unit	Digital Interface Unit	65932605	
Network Switch	Network Switch, EDS-G509	RA 00009746	*9 x RJ45 ports*

All units listed above are to be installed in a protected environment, i.e. indoor.

Software modules	Version
• Operating System:	Windows 10 IoT Enterprise LTSC, Version: 1809
• VisionMaster Net:	4.0.x

Application/Limitation

- The system is to be installed as specified in equipment manuals.
- The VisionMaster Net Central Alert Management system has been tested in a Multi-Function-Display (MFD) system with functions for ECDIS, Radar and Conning.
- The VisionMaster Net Central Alert Management system complies with the applicable requirements for BAM compliant equipment (EUT function type P [1]) and CAM system (EUT function type Q [1]).
- When installed in a Multi-Function-Display (MFD) system, the VisionMaster Net Central Alert Management system may, depending on configuration, support:
  - Revaluation of alerts (EUT function type R [1]), as described in equipment manuals.
  - Legacy alert conversion (EUT function type S [1])

Tests carried out

• Environmental testing:	IEC 60945 (2002) incl. Corr.1 (2008)
• Serial interface testing:	IEC 61162-1 (2016) and IEC 61162-2 (1998)
• Presentation of navigation information:	IEC 62288 (2021)
• Bridge Alert Management:	IEC 62923-1 (2018) and IEC 62923-2 (2018)
• Performance testing:	DNV Type Approval program 847.40 for Central Alert Management system

Type Approval documentation

DNV No	Document ID	Rev.	Description
111	67000011V1	5	Manual: NGSM, VM Net Ships Manual- Vol 1
110	67000012	5	Manual: NGSM, VM Net ECDIS User Guide for Software version 4.0
109	67000010	5	Manual: NGSM, VM Net Chart Radar User Guide for Software version 4.0
108	67000011V2	5	Manual: NGSM, VM Net Ships Manual- Vol 2
105	TR-V4.0.0-VMNet-131	Issue 1	Report: NGSM, CID and CAM-HMI comparison to VM Net v3.0.0 for VisionMaster Net 4.0.0
98	67000006	2	Manual: NGSM, Bridge Card Quick Reference- VisionMaster Net Central Alert Management (CAM) Watchmode

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[1] As defined in IEC 62923-1

DNV No	Document ID	Rev.	Description
91	TR-V3.0.0-VMNet-108	2	Report: NGSM, CID and CAM-HMI comparison to VMFT for VisionMaster NET Release 3.0.0
90	TR-V3.0.0-VMNet-101	1	Report: NGSM, System Performance Test Report for VisionMaster NET Display Software Release V3.0.0
87		2022-05-19	Report: NGSM, VisionMaster FT Central Alert Management, CAM-HMI Type Approval Test Report
70	5P03620	1	Report: SP, EMC and environmental test report for DuraPanel 24 Glass and DuraPanel 26 Glass
69	P19-0152-1	2019-09-03	Report: EKTOS, EMC and environmental test report for Slim line 25,5" Panel PC
60	362879	2018-11-06	Report: Nemko, Display performance tests for Visionmaster Net 26" Panel PC
59	8P06394 CSD	2018-08-27	Report: RISE, Compass Safe Distance test of Panel PC
58	P18-0055-1	2018-12-04	Report: EKTOS, EMC and environmental test report for VisonMaster Net 26" Panel PC
55	582/1	2008-11-19	Certificate: BSH, Compass Safe Distance for DCU 5
54	D/16/4419/04	2017-08-11	Report: Teseq GmbH, EMC test report for DCU 5
51		2018-12-20	Report: NGSM, VisonMaster FT Central Alert Management, CAM-HMI Type Approval Test Report
50	9401/12	1	Report: Autoteam, Environmental test report of DCU5
49	D/12/3938/02	2012-07-27	Report: Teseq, EMC test report of DCU5
48	Man_DCU5_2.10_eng		Manual: Veinland, Technical manual for Data Control Unit- DCU5
44	TL1316	2009-06-29	Report: Mariner System, EMC and environmental test report for EDS-G509 series Ethernet switches
43	TL1016	2006-10-30	Report: Mariner System, EMC and environmental test report for EDS-510 and EDS-405A series Ethernet switches
35	103230862LHD-001	4	Report: Intertek, EMC test report of VisionMaster 340 Pedestal Console (65926P)
34	103230862LHD-001 Climatic and Vibration	1	Report: Intertek, Environmental test report of VisionMaster 340 Pedestal Console (65926P)

Marking of product

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

Periodical assessment

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.

This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnv.com