EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00002X2

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 GL AS under the authority of the Government of Norway.

This is to certify:

That the Electronic chart display and information system (ECDIS) with backup, and raster chart display system (RCDS)

with type designation(s)
CONAM NAV/C2I

Issued to

SAINSEL SISTEMAS NAVALES, S.A.U., S.M.E.
San Fernando de Henares, Madrid, Spain

is found to comply with the requirements in the following Regulations/Standards:
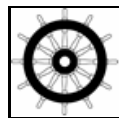Regulation **(EU) 2019/1397,**
item No. MED/4.30. SOLAS 74 as amended, Regulations V/18, V/19, V27 & X/3, IMO Res. A.694(17), IMO Res. MSC.36(63), IMO Res. MSC.97(73), IMO Res. MSC.191(79), IMO Res. MSC.232(82), IMO Res. MSC.302(87), IMO MSC.1/Circ.1503 Rev.1

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

This Certificate is valid until **2025-08-30**.

Issued at **Høvik** on **2020-08-31**

DNV GL local station:
Madrid

Approval Engineer:
Roger Lauritsen

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

Product description

The **CONAM NAV/C2I** ECDIS/WECDIS console consisting of display unit, control panel and electronic rack are comprising the following components:

Component	Model/version	*Notes*

Main processing unit incl:
    Mother board
 	
    Graphic board
    SSD disk
    Mother board power supply
    UPS
	MFP-16M Processor Module
	    X10SRH-CLN4Fl
	
	    nVIDIA Quadro K2000D
	 TS512GSSD370S
	 BEH-630C
	 SLM-TM489
		Xeon processor E5-2620 v4, Intel C612J chipset
		
		 512 GB SATA
		
		 Redundant input 115/230V. Power out to mother board power supply, monitor and operator panel.

Interfaces
    LAN
 	
    USB
    DVI
    VGA
    Serial J4
    Serial Com1
	
	 REALTEK/RTL8211 CL
	
	 -
	 -
	 -
	 -
	 -
		
		 2 for Navigation,1 for CCTV, 1 for Radar
		 4 ports for internal use
		 2 ports for display units
		 Not used
		 For internal use
		 For internal use

Operating and control unit incl:
    Keyboard
    Trackball
    DVD
    USB
    Buzzer
	CP-16 Operator panel	
		
		 For chart update
		 For chart update

Display unit: 26" LCD with touch	SAINSEL/FS26T	DVI signal to be used for video

Software:
    Presentation Library version
    WECDIS application sw
    ECDIS kernel
    Operating system
	4.0.x
	 CONAM NAV Rev. 10.0.x
	 SevenCs ver. 5.22.x
	 Red Hat Enterprise Linux ver. 7.4	

Application/Limitation

- The CONAM NAV/C2I shall be installed according to Installation Manual and Technical Manual.
- A dual installation of CONAM NAV/C2I is found to comply with the requirements for ECDIS with Back-up arrangements.
- CONAM NAV/C2I supports reception of target information from AIS and Radar.
- For retrofit installations with RADARs providing target information via TTM sentence, CONAM NAV/C2I may provide AIS target alerts.
- CONAM NAV/C2I may optionally be connected to NAVTEX for Maritime Safety Information (MSI).
- CONAM NAV/C2I may optionally be used as a MKD for Saab AIS transponders.
- CONAM NAV/C2I supports presentation of radar overlay when received via an ASTERIX[*] CAT-240 interface from a radar compliant with the relevant standards of IMO.

[*] All Purpose STructured Eurocontrol suRveillance Information Exchange, ref EUROCONTROL-SPEC-0149-240

Tests carried out

- Performance testing: IEC 61174 Ed. 4.0 (2015)
- Environmental testing: IEC 60945 (2002) incl. Corr.1 (2008)
- Interface testing: IEC 61162-450 (2018) [**]
- Presentation of navigation information: IEC 62288 (2014)
- Bridge alert management: IEC 62923-1 (2018) and IEC 62923-2 (2018)

[**] Sentences used is verified according to IEC 61162-1 (2016)

Type Examination documentation

DNV GL No	Document ID	Rev.	Description
75	SL_CT004I_MNO_01	Ed.3	Manual: CONAM NAV/C2I Operator's Manual
76	SL_CT004I_MTE_01_EN	Ed.4	Manual: CONAM NAV/C2I Technical Manual
74	SL_CT004I_MNI_01	Ed.3	Manual: CONAM NAV_C2I Installation Manual
63	20/36400424		Report: Applus, C2I, Corrosion test
58	19/31708236M2		Report: Applus, C2I, Determination of sound pressure level
59	19/31703423		Report: Applus, C2I, Environmental Testing
61	19/31703509M1		Report: Applus, C2I, Protection against accidental access to dangerous voltages
62	19/31703426		Report: Applus, C2I, Vibration Test
79	SL/2-1701/PRP/01		Report: ECDIS Test Procedure
80	SL_PA041_PRP_02_ed4		Report: FS26T Flicker Test Procedure
32	FO-TRE-4933-017-INTA-16-EN		Report: INTA, Photometiric and colormetirc features of ECDIS FS24C Display
51	FO-TRE-4933-004-INTA-18 SAINSELFS26 ENG	Ed. 02	Report: Ministerio de Defensa, Photmetetric and colormetric test NAV-C2I

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.