DNV·GL

Certificate No:
TAA000005D

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Alarm Management System

with type designation(s)
SeaQ Bridge Central Alert Management (CAM)

Issued to
Vard Electro AS
Tennfjord, Norway

is found to comply with
Det Norske Veritas' Rules for Classification of Ships

Application :

See page 2.

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

This Certificate is valid until **2017-06-30**.

Issued at **Høvik** on **2016-08-19**

for **DNV GL**

DNV GL local station: **Ålesund**

Approval Engineer: **Roger Lauritsen**

Jan Tore Grimsrud
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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Job Id: **262.1-013949-3**
Certificate No: **TAA000005D**

Product description

The SeaQ Bridge Central Alert Management (CAM) comprise of the following module types:

- Display and control units
- Interface plate
- Operator units
- Sounders and detectors

Modules are described in detail in SeaQ HW certificate system platform 1 (SP1). See Type examination documentation.

Software version. 2.x
Operating system: Linux

Application/Limitation

- Installation to be performed according to the manufactures Product Manuals.
- Integrated functionality for a Bridge Navigation Watch Alarm System (BNWAS), Telephone Directory, Lighting and Window heating is tested and found to not to be inferior to the Alarm Management system.

Type Approval documentation

DNV No	Document Ref.	Rev.	Description
64	TAA000006E	Rev 1	Certificate: SeaQ HW
62	74008-TT-01-V2	Rev -	Report: Performance test System Platform 1, Type Testing
55	74008-SRVM-01-V2	Rev -	Manual: SEAQ Bridge System Platform 1, Service Manual
49	74008-USG-11-V2	Rev -	Manual: SEAQ Bridge CAM, Product User Manual
43	74008-BENC-00002	1.1.0 - A	Report: BAM - Type testing telephone directory
42	74008-USG-00001	1.1.0 - C	Manual: BAM - Product user manual
39	74008-PROC-00003	1.1.0 - B	Manual: BAM - Product validation
36	74008-FMEA-00001	1.1.0 - B	Doc: BAM - FMEA
22	74008-BENC-00001		Report: Type Testing, SeaConcept BAM, Linux compatability
21	74008-PROC-00001		Report: Type testing, SeaConcept Brige Alert Managment - updated

Tests carried out

- Performance testing BAM, MSC.302(87)
- Performance testing BNWAS, IEC 62616 (2010), including IEC 62616 Corrigendum 1 (2012)
- Environmental testing, IEC 60945 (2002), including IEC 60945 Corrigendum 1 (2008)
- Serial interface testing, IEC 61162-1 (2010)
- Serial interface testing, IEC 61162-2 (1998)
- Presentation of Navigation information, IEC 62288 (2014)
- DNV GL Rules Pt.6 Ch. 3 Sec. 3, 4 and 5

Marking of product

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

Periodical assessment

A retention survey is to be performed at least every second year, and upon renewal of this certificate. The scope of the retention/renewal survey 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.