

STATEMENT OF COMPLIANCE

Statement No:
n1821360-skp
DNV Id No:
10564901

Particulars of Product

Function Area: **MACHINERY OPERATION SIMULATOR**

Class Notation: **Tanker for liquefied gas BIS BMON BWM(E(s), T) COATPSPC(B) E0 LCS NAUT(OC) Recyclable TMON(oil lubricated) ER(EGR, SCR, TIER III)**

Name and type designation: **K-Sim® Engine LNG Carrier MAN ME-GI L22**

Particulars of Manufacturer

Manufacturer: **Kongsberg Digital AS**

Manufacturer address: **Maritime Simulation, Horten, Norway**

This is to confirm:

That the above product is found to comply with Class A, B, C, D - Standard for Certification of Maritime Simulators No. DNV-ST-0033 June 2021.

Application

The above Standard is based on requirements in the STCW Convention, Regulation I/12 and corresponding industry standard and guidelines.

This Statement is valid until **2028-02-08**, provided the requirements for the retention of the Statement will be complied with.

Issued at **Horten, Norway** on **2023-02-08**



for **DNV**

This document is signed electronically in accordance with IMO FAL.5/Circ.39/Rev.2. Validation and authentication can be obtained from trust.dnv.com by using the Unique Tracking Number (UTN):
n1821360-skp and ID: 10564901

Aksel David Nordholm
Approval Expert

This Statement is subject to terms and conditions overleaf. Any significant change in simulation performance may render this Statement invalid.
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Application/Limitation

The simulator can simulate a realistic environment for selected STCW competence requirement referred to in Table 4-2.

Table 4-2 Competencies addressed by machinery operation simulator class

| STCW reference | Competence | Class A (ENG) | Class B (ENG) | Class C (ENG) | Class D (ENG) |
|------------------|---|------------------|------------------|------------------|------------------|
| Table A-III/1.1 | Maintain a safe engineering watch. | A | B | | |
| Table A-III/1.3 | Use internal communication systems. | A | B | | |
| Table A-III/1.4 | Operate main and auxiliary machinery and associated control systems. | A | B | C | D |
| Table A-III/1.5 | Operate fuel, lubrication, ballast and other pumping systems and associated control systems. | A | B | C | D |
| Table A-III/1.6 | Operate electrical, electronic and control systems. | A | B | C | D |
| Table A-III/1.11 | Maintain seaworthiness of the ship. | A | B | | |
| Table A-III/2.1 | Manage the operation of propulsion plant machinery. | A | B | | |
| Table A-III/2.2 | Plan and schedule operations. | A | B | | |
| Table A-III/2.3 | Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machinery. | A | B | | |
| Table A-III/2.4 | Manage fuel, lubrication and ballast operations. | A | B | C | D |
| Table A-III/2.5 | Manage operation of electrical and electronic control equipment. | A | B | | |
| Table A-III/2.6 | Manage troubleshooting restoration of electrical and electronic control equipment to operating condition. | A | | | |
| Table A-III/2.8 | Detect and identify the cause of machinery malfunctions and correct faults. | A | | | |
| Table A-III/2.10 | Control trim, stability, and stress. | A | B | | |
| Table A-III/2.11 | Monitor and control compliance with legislative requirements and measures to ensure safety of life at sea and protection of the marine environment. | A | B | | |
| Table A-III/2.14 | Use leadership and managerial skills. | A | | | |
| Table A-III/4.2 | For keeping a boiler watch: Maintain the correct water levels and steam pressures. | A | B | C | D |
| Table A-III/6.1 | Monitor the operation of electrical, electronic and control systems. | A | B | | |
| Table A-III/6.2 | Monitor the operation of automatic control systems of propulsion and auxiliary machinery. | A | B | | |
| Table A-III/6.3 | Operate generators and distribution systems. | A | B | | |
| Table A-III/6.5 | Operate computers and computer networks on ships. | A | B | | |
| Table A-III/6.7 | Use internal communication systems. | A | B | | |
| Table A-III/6.9 | Maintenance and repair of automation and control systems of main propulsion and auxiliary machinery. | | | | (S)D |
| Table A-III/6.10 | Maintenance and repair of bridge navigation equipment and ship communication systems. | | | | (S)D |
| Table A-III/6.11 | Maintenance and repair of electrical, electronic and control systems of deck machinery and cargo-handling equipment. | | | | (S)D |
| Table A-III/6.12 | Maintenance and repair of control and safety systems of hotel equipment. | | | | (S)D |
| Table A-III/7.5 | Contribute to the maintenance and repair of electrical systems and machinery on board. | | | | (S)D |

Sec. 4, Table 4-3 Physical realism, the following additional requirements for simulators used for training ship's electrical officers (STCW Table A-III/6 -7) Class S apply

- 2.2.1 It shall be possible to demonstrate systematically the tests that are made on the UMS (unmanned machinery space) alarm system.
- 2.2.2 It shall be possible to simulate auto slow-down and emergency shutdown.
- 2.2.3 It shall be possible to simulate safe methods to test inert gas generator (IG) alarms and controls.
- 2.2.6 It shall be possible to simulate of reading a power factor meter with reference to four segments.
- 2.2.7 It shall be possible to simulate testing of the devices and relays provided for generator protection.
- 2.2.8 It shall be possible to simulate tests related to AVR (Automatic Voltage Regulator).
- 2.2.12 It shall be possible to simulate routine tests on an emergency generator.
- 2.2.13 It shall be possible to simulate how a generator circuit breaker OCR (Over Current Relay) is set and tested.
- 2.2.14 It shall be possible to simulate the process of connecting a shaft generator on load and specific conditions for taking off load.
- 2.2.16 It shall be possible to simulate paralleling of generators using synchro-scope and demonstrate the method to parallel, if synchro-scope is faulty.
- 2.2.17 It shall be possible to simulate the maintenance and checks carried out on an ACB (air circuit breaker).
- 2.2.18 It shall be possible to simulate recovery from "dead ship" condition.
- 2.2.19 It shall be possible to simulate methods to test the "Preferential Tripping Sequence"
- 2.2.20 It shall be possible to simulate methods to test auto "Cut In" of stand by generator.
- 2.2.21 It shall be possible to simulate methods of diagnosing single phasing fault.
- 2.2.22 It shall be possible to simulate operation and maintenance of variable speed motor starters.
- 2.2.23 It shall be possible to simulate operational test methods of oily water separator monitors.
- 2.2.24 It shall be possible to simulate test methods for level alarms and function tests of bilge pumping arrangement.
- 2.2.26 It shall be possible to simulate the function test of OWS (oily water separator) and PPM (parts per million) unit.

2.3 Additional requirements for simulators used for training ship's officers onboard a vessel using LNG as fuel

- 2.3.6 It shall be possible to simulate a propulsion plant integrated automation system including alarm safety warning system, power management system and propulsion control system.
- 2.3.7 It shall be possible to simulate at least one dual fuel engine and support systems.
- 2.3.9 It shall be possible to simulate the onboard LNG storage system.
- 2.3.10 It shall be possible to simulate dual fuel engine gas trip.
- 2.3.11 It shall be possible to simulate fuel and gas supply system for gas engines.
- 2.3.12 It shall be possible to simulate gas leakage test prior to engine start-up

This Statement of Compliance is for the manufacturer offering the simulator for examination or mandatory simulator training and complies with the requirements of DNV-ST-0033 Maritime Simulator Systems.

Based on this statement of compliance, maritime training providers in possession of simulators that comply with the requirements of the standard can apply for a product certificate for "Maritime simulator". The simulator's function area and the simulator class according to the standard will be stated on the certificate.