Certificate No:
TACC0000019

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Commercial Craft

with type designation(s)
Mariner USV

Issued to
Maritime Robotics AS
Trondheim, **Norway**

is found to comply with
DNV Standard DNV-ST-0342 - Craft, 2022

Application :

See next page.

The following outstanding approval topics shall be addressed within the given validity date of this certificate:

Approvals:
- Safety assessment required as per ST-0342 Sec.4 [4.6.3]
- Inclining experiment report and stability booklet according to ST-0342 Sec.3 [3.7]

Issues/non-compliances to be addressed in the abovementioned safety assessment:
- 2x5 kWh Li-ion batteries located in the engine room
- No fire dampers on the engine room ventilation, ref. ST-0342 Sec.5 [5.2.3.1.4]
- No structural fire insulation of fuel tanks, ref. ST-0342 Sec.5 [5.2.3.1.3]

Issued at **Høvik** on **2022-07-15**
This Certificate is valid until **2022-10-14** .
DNV local unit: **Mid-North Norway FiS**

Approval Engineer: **Per Annar Sandaune**

for **DNV**

Thomas Revheim
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Conditions

Type certification means that the boat builder has engaged himself to build boats in series identical to the prototype which the Society has inspected and found to be in accordance with the abovementioned standard. The production of the type certified boat is subject to surveillance by the Society, by inspection. Boats of the certified type are to be equipped with an individual certificate to be issued upon product survey. The certification is based on the assumption that the boats will be handled in a seamanlike manner as stipulated in the standard.

Boat type

Boat type identification number:	**666.01**
Application of standard:	**Requirements for decked craft**

Particulars

Length, Loa:	**5.93 m**
Beam incl. fenders, B max:	**2.06 m**
Draught incl. keel, max:	**0.504 m**
Height above waterline, incl. mast, max:	**2.4 m**
Weight of boat, incl. engine, equipment, net:	**2090 kg**
Hull material:	**High density polyethylene (HDPE)**
Propulsion:	**Yanmar 4LV195 / Hamilton HJ242**

Restrictions

Engine power, max:	**143 kW**
Maximum load (fuel, payload):	**710 kg**
Number of persons, max:	**0 (Unmanned)**
Special restrictions:	**Maximum allowed speed 18 knots**

Periodical assessment

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