

PENGUINMR

UNMANNED AERIAL SYSTEM [UAS]

COST EFFICIENT AND RISK-REDUCING MARITIME DATA ACQUISITION



MARITIME
ROBOTICS



THE FUTURE IS UNMANNED

PenguinMR



The PenguinMR RPAS is a multipurpose remotely piloted aircraft system with the ability to carry a diverse suite of sensors and payloads serving user needs.

Usually, operators in need of an RPAS for testing multiple types of sensors or payloads are required to design, construct and set up the complete aircraft system themselves. With the PenguinMR, we deliver a turn key solution with a flight ready aircraft. The payload can be mounted to a standardized payload frame on an interchangeable plate, enabling the user to have several payloads instead of tying an aircraft to a single payload.

Each PenguinMR is test flown and adjusted to minimize variations between aircraft. Manufacturer airframe or engine deviations are compensated for, and the engine is adjusted and broken in for maximum performance and reliability.

The PenguinMR is fitted with a performance enhancing low noise exhaust system. This system has proven reliability, with hundreds of flight hours. The quiet running system has a detectability range of less than 1000 meters.

The PenguinMR platform is equipped with high speed UHF communications for VLOS C&C. For EVLOS and many BLOS missions, the long range VHF radio and GPRS system provides redundant communication platforms, while Iridium Satellite communications are used for areas where no other system provides coverage.

Performance

Flight time:	4-16h
Payload capacity:	3kg
Climb rate:	750 fpm
Operational ceiling:	12000ft AMSL
Dimensions:	Wing span 3.3m, length 2.3m
MTOW:	21.5kg

PenguinMR components

01



LONG RANGE VHF

03



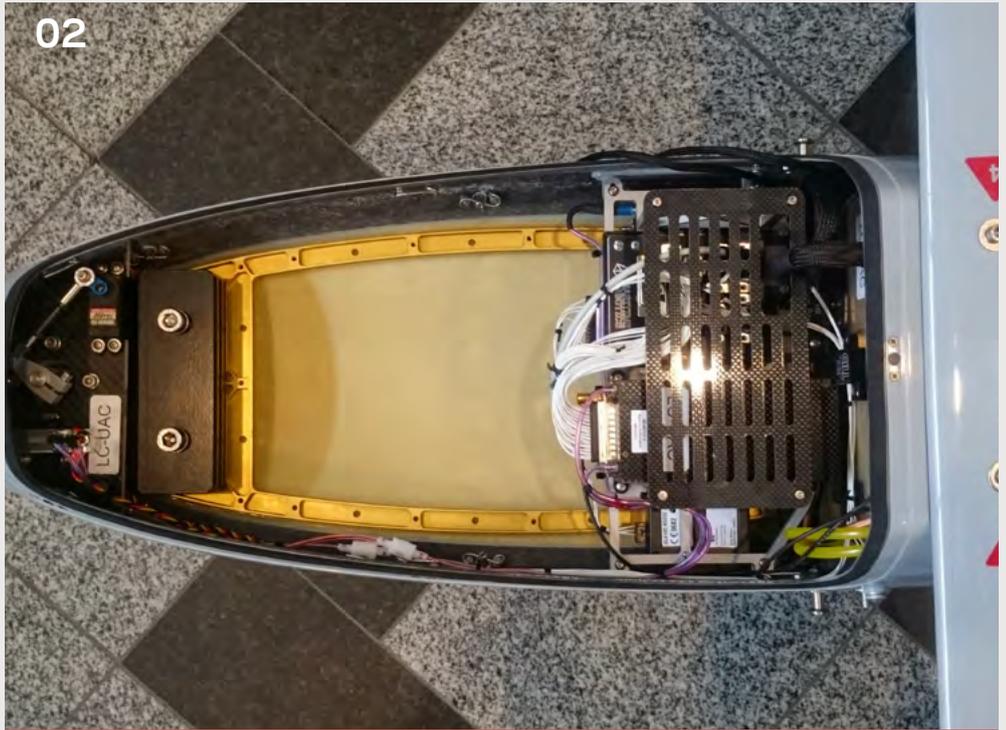
AIR SAFETY

04



VEHICLE CONTROL STATION

02



STANDARDIZED CONNECTIONS AND SETUP

05



PROVEN UNDER DUAL RPAS OPERATION

01 LONG RANGE VHF

The long range VHF radio enables long range communications with PenguinMR for C&C. For all VLOS, EVLOS and a large part of BLOS missions this link provides sufficient communications for reliable operation. A robust FEC protocol and TDMA channel access allows efficient channel utilization and a long range telemetry and command link.

02 STANDARDIZED CONNECTIONS AND SETUP

Our own developed interface/service module distributes power and communication to all communication links, as well as to connected payloads. On/off control of payloads can also be provided even for payloads with internal own power supply. Air safety is ensured in case of component failure by fused outputs.

03 AIR SAFETY

Transponder integration: ADS-B transponder, enabling all ADS-B equipped aircraft, as well as all ATC units with radar or ADS-B to know the position, speed and heading of the RPAS using their existing systems. Use of airplane approved components whenever available increases reliability and fault tolerance of the PenguinMR. All components have faced intensive testing, both individually and together as a complete platform.

04 VEHICLE CONTROL STATION

The VCS is a newly developed control station integrating all components required for RPAS operations. Integrated air band VHF connecting the operators to other air traffic as well as each other through a wireless intercom system simplifies operations. The control station establishes a dedicated work area for the pilot. Communication links are added in the form of external modules that all connects through standardized connectors. All links are merged into one in order to simplify flight operations for the internal pilot.

05 PROVEN UNDER DUAL RPAS OPERATION

The PenguinMR platform has been proven as a solid platform for dual RPAS operation. Flying multiple RPAS simultaneously enables efficient operations collecting more data in a shorter time, or utilizing the benefits of payloads positioned in different locations at the same time.



A LEADER IN UNMANNED SOLUTIONS

Maritime Robotics, developer and supplier of the PenguinMR, is a leading provider of innovative unmanned solutions for maritime operations and data acquisition. The company develops and delivers Unmanned Surface Vehicle solutions (USV), the OceanEye® moored balloon surveillance system as well as Unmanned Aircraft Systems (UAS). Main markets are the oil & gas and military/governmental applications. With technology developed in close collaboration with civilian, governmental and military partners, Maritime Robotics focuses on delivering high-quality system solutions and products that are cost-efficient, reduce HSE risk exposure and are highly deployable, in any conditions.

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