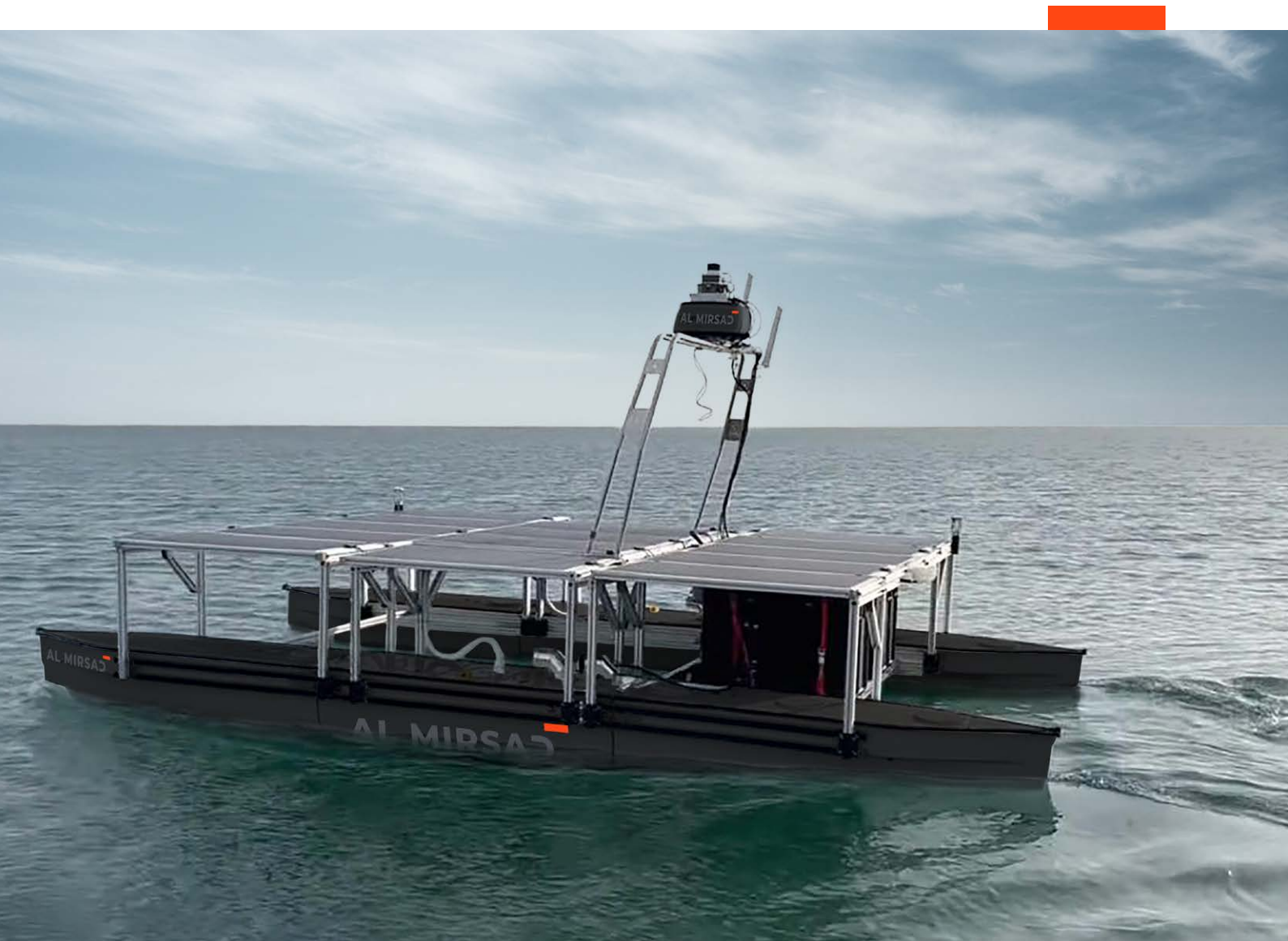


EDGE



TACTICAL PERFORMANCE

AL MIRSAD: UNMANNED SURFACE VEHICLE FOR ISR AND
UNDERWATER MINE DETECTION




ANY MISSION, ANY TIME .



The AL MIRSAD is a next-generation, unmanned surface vehicle (USV) designed to carry payloads of approximately 600 kg with a 1-tonne overload.

Designed for intelligence, surveillance, and reconnaissance (ISR) missions, and underwater mine detection, the AL MIRSAD comprises state-of-the-art sensing payload and can perform a diverse range of missions with a 1-week endurance at sea at 5 knots.





RELIABLE EFFICIENCY, DAY AND NIGHT. —

The AL MIRSAD operates efficiently during the day and night. Featuring a payload that makes it ideal for ISR missions and for detecting suspicious underwater objects, its standout specifications include:

- LiDAR with a range of 200 m
- Radar with a range of 6 km
- Thermal and 360 degree vision cameras
- Automatic Identification System
- Sonar that allows detection of underwater objects up to 300 m @ 2 kW

The AL MIRSAD is an ideal platform for:

- Maritime ISR
- Maritime surveillance, large-scale monitoring, and search-and-rescue missions
- Underwater mine detection
- Ocean pollutants monitoring
- Launch and recovery of underwater acoustic recorders
- Deployment, recovery, and collaboration with Unmanned Underwater Vehicles (UUVs), Autonomous Unmanned Vehicles (AUVs), and Remotely Operated Underwater Vehicles (ROVs)

LONG-TERM, UNINTERRUPTED DAY-AND-NIGHT AUTONOMOUS OPERATIONS AT SEA



SPECIFICATIONS

TECHNICAL DATA

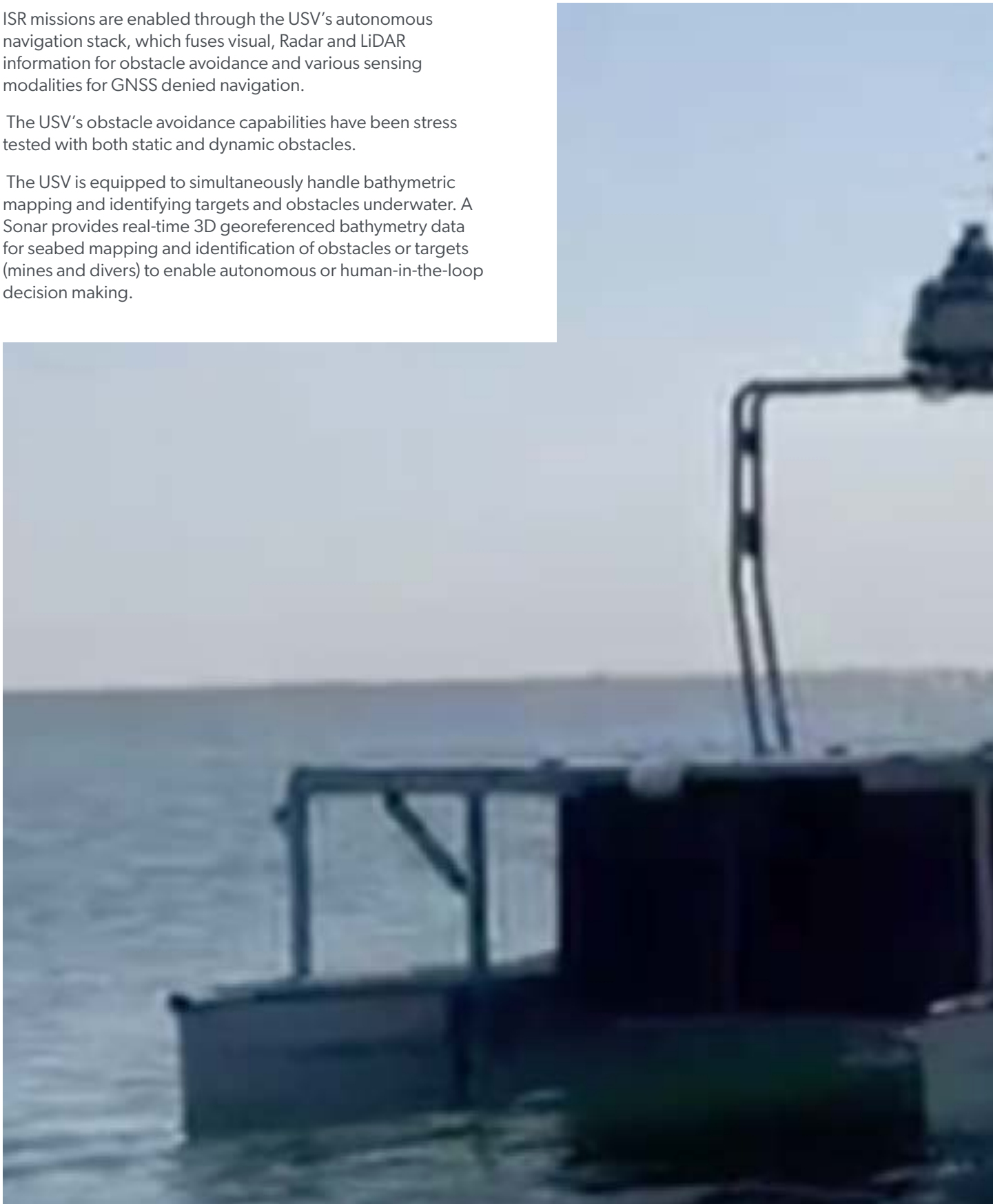
| | |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------|
| PAYLOAD CAPACITY | 600 KG |
| OVERLOAD | 1,000 KG |
| ENDURANCE | 1 WEEK AT SEA (@ 5 KNOTS) |
| SEA STATE | 0-2 |
| POWER SOURCE | MULTIPLE BATTERY PACKS (4 X 4 KW) + DIESEL GENERATORS (2 X 3.5 KW) + MULTIPLE 8 SQM SOLAR PANELS (3 X 1.2 KW) |
| LENGTH | 7 M |
| WIDTH | 3 M |
| HEIGHT | 1.6 M |
| GEOLOCALISATION | DUAL RTK GNSS INS |
| NAVIGATION AID (GNSS DENIED) | DOPPLER VELOCITY LOG (DVL) |
| AIR SENSING | LIDAR, RADAR, 360-DEGREE CAMERA, AIS |
| UNDERWATER | 3D VOLUMETRIC SONAR, ACOUSTIC DOPPLER CURRENT PROFILER (ADCP) |

AL MIRSAD

ISR missions are enabled through the USV's autonomous navigation stack, which fuses visual, Radar and LiDAR information for obstacle avoidance and various sensing modalities for GNSS denied navigation.

The USV's obstacle avoidance capabilities have been stress tested with both static and dynamic obstacles.

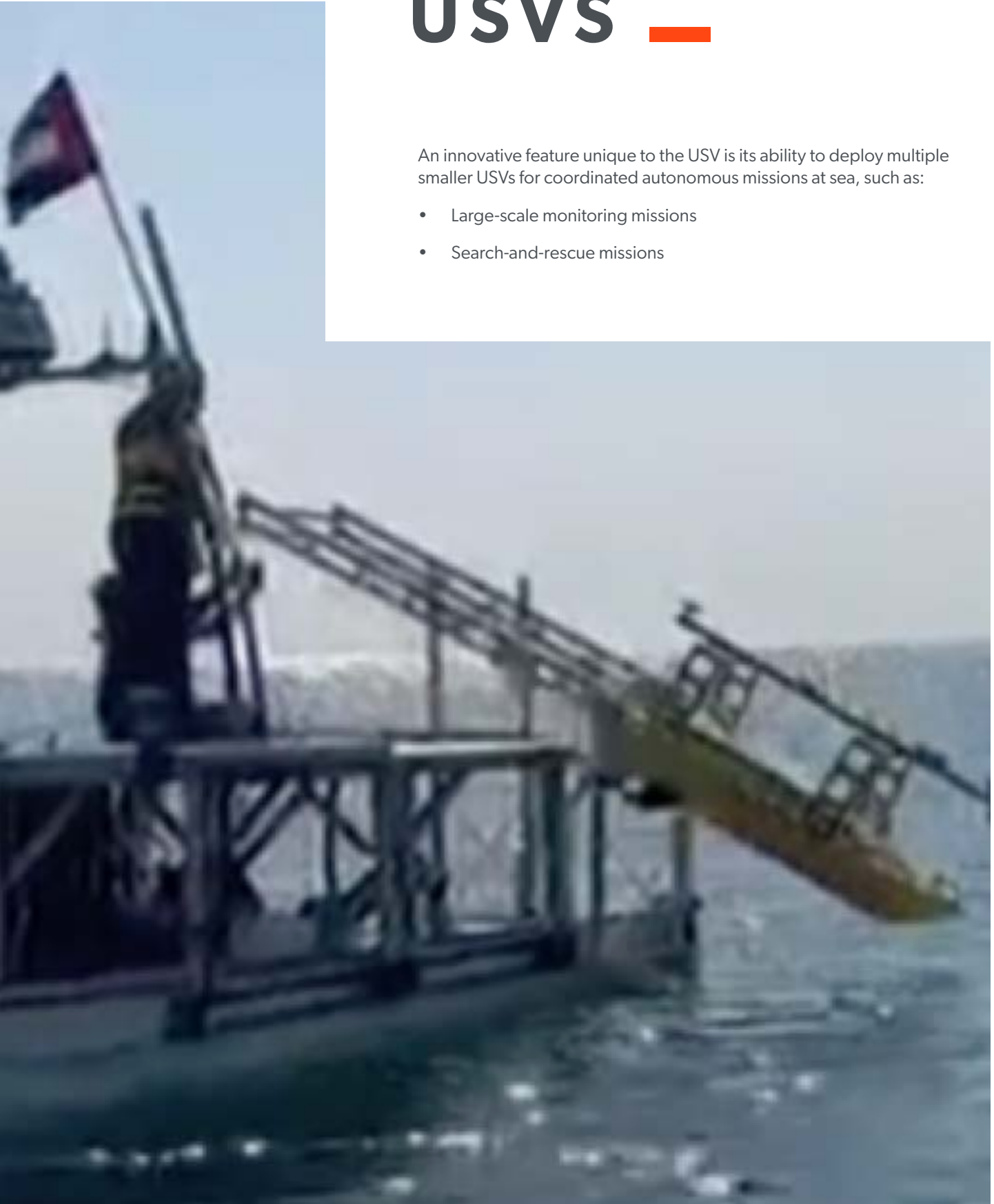
The USV is equipped to simultaneously handle bathymetric mapping and identifying targets and obstacles underwater. A Sonar provides real-time 3D georeferenced bathymetry data for seabed mapping and identification of obstacles or targets (mines and divers) to enable autonomous or human-in-the-loop decision making.



DEPLOYMENT OF SMALLER USVS —

An innovative feature unique to the USV is its ability to deploy multiple smaller USVs for coordinated autonomous missions at sea, such as:

- Large-scale monitoring missions
- Search-and-rescue missions



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