



**MODULAR UNMANNED
SURFACE VEHICLE DEDICATED
TO SURVEILLANCE AND LAW
ENFORCEMENT MARITIME OPERATIONS**

edredon



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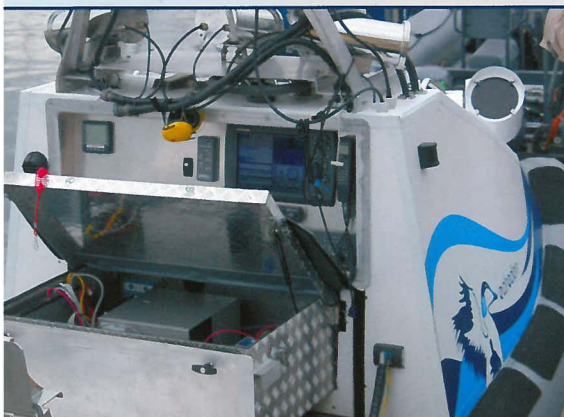
USV GENERAL SPECIFICATIONS:

- RIB (Rigid Inflatable Boat) construction type;
- Unit's hull length: 5,7 meters;
- Capacity: 1 ton;
- Ability to transport (in the manned version): up to 4 people;
- Maximum speed: 30 knots;
- Weight without equipment (with the engine): about 1 ton;
- Autonomy: 8 – 130 hours (depending on speed, sea conditions and load);
- Ability to operate: up to sea state 4;
- Range of operation: up to 20 km;
- Module choice: depending on potential user's task at hand;
- Manual control: in the manned version.
- Communication:
 - 2.3 MHz band communication to support video transmission and remote operation;
 - the VHF marine band (SATEL transmitter) to support emergency control.

COMMAND and CONTROL POST:

The post is located in a container and supports the following:

- Planning and monitoring the tasks:
 - Determine, plot and track changes of the USV position, path and speed;
 - Analyse traffic and detect and avoid collision;
 - Register navigational data (navigation situation around the unit and actions taken);
 - Control path and speed, distance covered, rotational speed, rudder angle and depth below the vessel, etc.
- Control of the navigation and other technical appliances installed on the USV:
 - Change path and speed of USV;
 - Change path and speed of UUV scout;
 - Emit sound signals;
 - Operate cameras, etc.



USV's EQUIPMENT:

- Navigation system: GPS, electronic compass, radar (with ARPA), autopilot, sounder, plotter, electronic map, log;
- Tracking and display system, depicting vessel's position in water environment;
- System of engine and rudder remote control;
- System controlling navigation appliances, technical observation and sensors installed in the vehicle
- System illustrating parameters of the appliances in the command post;
- Energy feed system (with the possibility of feeding appliances on another unit);
- Observation system: camera (day/night) coupled with a laser distance meter, panoramic camera for surveillance, sounder;
- Sensor system: chemical and meteorological;
- Communication system: image transmission (from day cameras, optoelectronic camera, radar, camera on unmanned underwater vehicle), voice communication, control signal transmission, sensor data transmission to command post.

APPLICATION AREAS:

- Reconnaissance;
- Search, detection and destruction of mines;
- Enhancing state's maritime security;
- Assisting in special forces' operations;
- During radio-electronic war;
- Assisting in secret maritime operations;
- Towing targets used in low-caliber artillery shooting practice, etc.

Apart from military tasks mentioned above, the vehicle might be used in pursuits and interventions in coastal regions and during port approaches as well as supervision of ports, road-steads, anchorages, port approach courses and other areas with high vessel traffic; other uses involve controlling exploration and exploitation activity at sea (e.g., oil rig), monitoring transport of dangerous substances, continual surveillance of water areas mentioned above and vessels there. It might also be used in sea pollution detection and determining its culprits as well as in rescue missions at sea etc.



EDREDON was developed within a R&D project "Unmanned surface vehicle to support maritime operations of state agencies" lead by The Polish Naval Academy in Gdynia together with The Gdańsk University of Technology and SPORTIS S.A.

The development of EDREDON continues. Another R&D project lead by Polish-Japanese Institute of Information Technology together with The Polish Naval Academy in Gdynia and SPRINT S.A. aims to provide the USV with ability to autonomously perform tasks such as patrolling, collision avoidance, return to its base, etc.



The USV's equipment can be adjusted to the individual needs of the customer.

Potential customers of the vehicle include:

- Navy;
- Coast Guard;
- Police;
- Maritime Offices;
- and other governmental institutions, duties of which involve patrolling rivers, lakes, water areas, etc.

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