

# UNDERWATER DRONE SURFACE DRONE

ROVOSTECH



# ROVOSTECH COMPANY STATUS

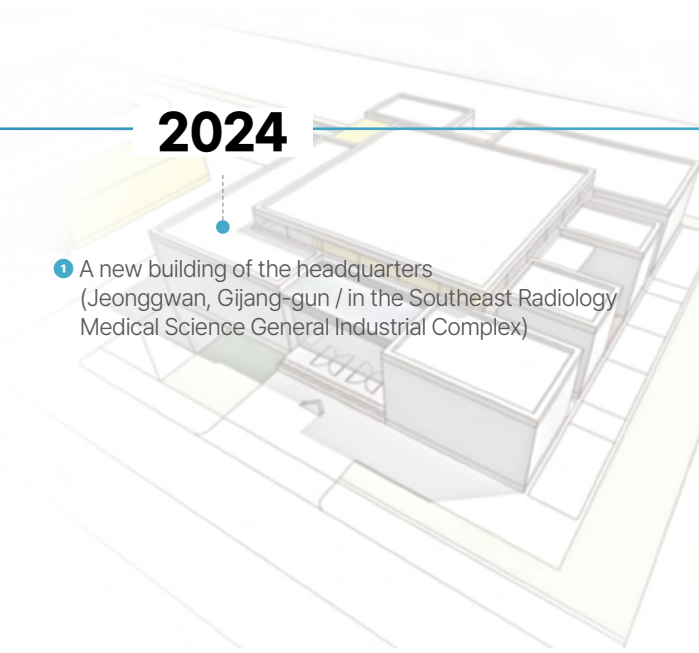
ROVOSTECH Co., Ltd. is leading company for underwater drone research & development, manufacturing, field operation and Training/education etc.  
 We are continuing to develop various type of underwater drone according to customer requirements.  
 We are also looking for good partners to expand the market.

## COMPANY STATUS

<b>Company</b>	ROVOSTECH Co., Ltd.
<b>President</b>	Jongwoong Choi
<b>Founded</b>	Dec.12, 2018 (Incorporated)
<b>Factory establishment</b>	Jan. 2019
<b>Corporate Research Institute</b>	2019111423
<b>Personnel</b>	15
<b>Company Registration</b>	Registered as a venture company, professional research business, direct producer
<b>Business</b>	Underwater Drone, Underwater Robot, Surface Drone
<b>Head office</b>	397-9, Imnang-ri, Jangan-eup, Gijang-gun, Busan, Republic of Korea
<b>Branch</b>	Corporate Research Center No. 708,189, Sandannambuk-ro, Gunsan-si, Jeollabuk-do, Republic of Korea
<b>Indonesia Representative Office</b>	Jalan Dewi Sartika No. 306, Cawang, Jakarta 13630, Indonesia (hereinafter shall be referred to as "PAGEO")
<b>Website</b>	www.rovostech.com



# COMPANY HISTORY



**2022**

- 1 Development of Surface Drone. (UVO-1)
- 2 Development of ROV for underwater glider recovery. (Pukyong National University/KIRO)
- 3 R&D - Sediment sampling ROV development.
- 4 Patent registration - Underwater drone for underwater structure diagnosis.
- 5 Patent registration - Underwater cleaning robot.
- 6 Selected as a Pilot project for excellent commercial products. - Underwater drone (Ministry of National Defense).

**2023**

- 1 ISO 9001, 14001, 45001 (Design, development and production of underwater drones) (IGC, ~2026.04.02.)
- 2 Construction of a test building. (water tank and equipment room for underwater drone testing)
- 3 Development of an underwater ROV platform for water tunnel inspection. (K-water)
- 4 Manufacturing 10 underwater drones (Korea Coast Guard)
- 5 Establishment of representative office in Jakarta, Indonesia
- 6 MOU signed with Indonesian 'PAGEO'
- 7 MOU signed with 'TOP Engineering Coporation' in Thailand
- 8 MOU signed with 'N.P. Global Trading Co., Ltd.' Thailand
- 9 Establishment of Gunsan Branch

**2024**

- 1 A new building of the headquarters (Jeonggwan, Gijang-gun / in the Southeast Radiology Medical Science General Industrial Complex)

**2021**

- 1 Registered as a venture business.
- 2 Change of corporate research institute. (Jeonbuk)
- 3 R&D - Sediment sampling ROV development.
- 4 R&D - Fish farm maintenance Robot development.
- 5 R&D - Decommissioning of Offshore platform in Indonesia.

**2020**

- 1 Direct producer registration, research and development service business registration.
- 2 Underwater drone demonstration project. (Dong-A University)
- 3 Certified as a company with excellent technical capabilities (Korea Enterprise Data, 2022.10.11.)
- 4 Underwater drone (ROVOCEAN) electromagnetic compatibility KC certification (National Radio Research Institute)

**2019**

- 1 Foundation of the Factory, R&D center.
- 2 ROV developed for Dam inspection. (K-water)
- 3 Underwater Drone development for Inlet & Outlet of cooling water in Power generation station. (Power Generation Company)

**2018**

- 1 Establishment of corporation (December 12)
- 2 ROV development for Submarine cable maintenance for KEPCO Company Foundation as Corporation.

**2017**

- 1 Small Manipulator development.
- 2 Underwater Drone operation for some projects in Gas filed, wreck, ship building yard.

**2016**

- 1 100m depth rated ROV (ROVO-1) developed.
- 2 Support maintenance and operation of Scientific ROV 'HEMIRE' in Deep sea exploration project in Guam.

**2015**

- 1 Supervision of Submarine power cable Installation project in KEPCO.
- 2 Consulting for SSU in Korea Navy.

**2014**

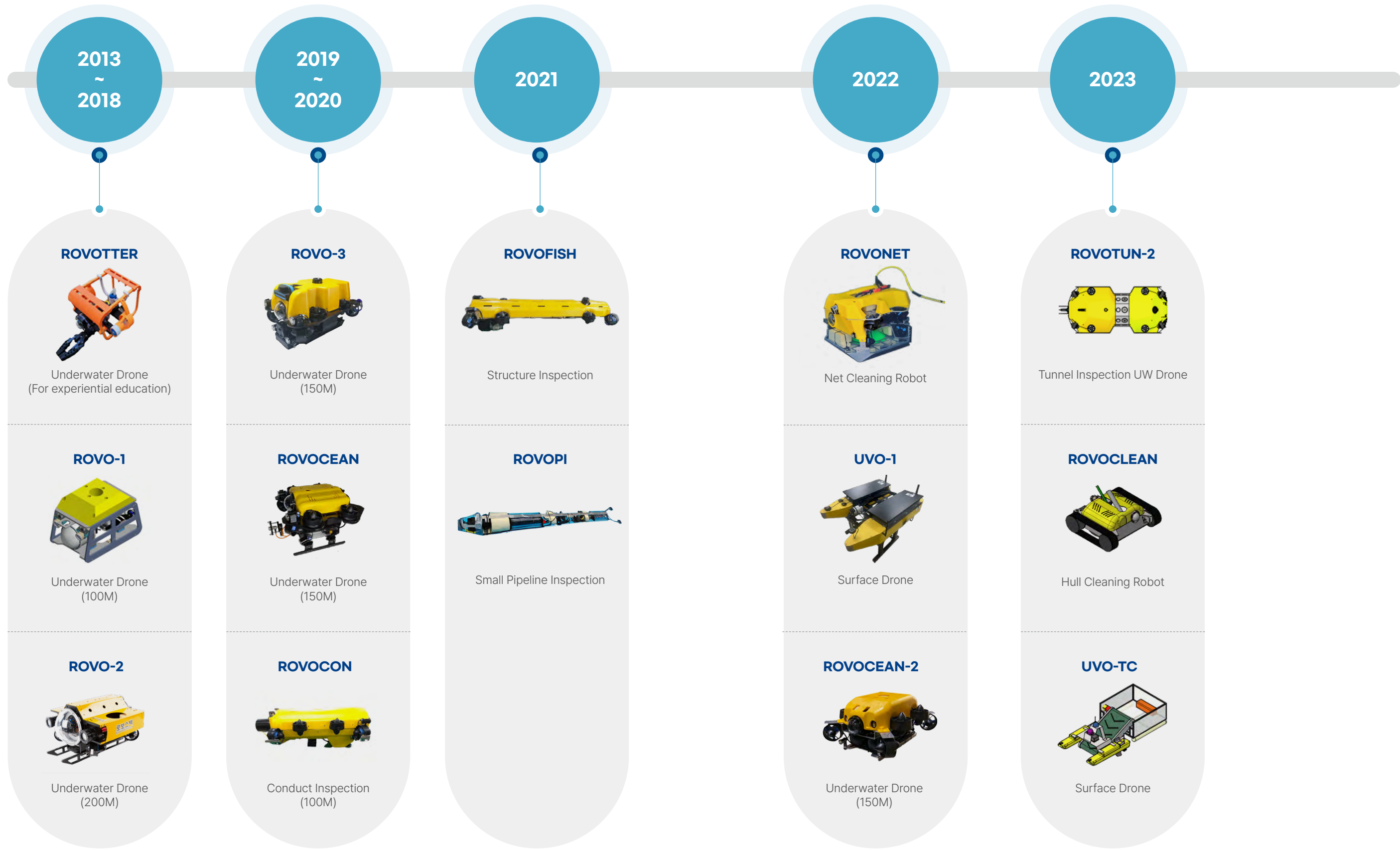
- 1 Support maintenance and operation of Scientific ROV 'HEMIRE' (6000m depth rate) in KRISO.

**2013**

- 1 ROVOSTECH established.
- 2 Development of an Underwater Drone Kit for Education.



# R&D HISTORY



# GENERAL USE



## UNDERWATER DRONE

is a type of unmanned underwater vehicle that is remotely controlled by connecting the on-board controller and the underwater drone body with a wire. The pilot on board controls the drone while monitoring camera images and data from the underwater drone body in real time.

It is used for underwater inspection of oceans, rivers, water tanks, etc., and is especially used in the field of inspection of underwater structures such as dams, reservoirs, ports, offshore wind power, offshore bridges, submarine cables/pipelines, and drilling facilities, as well as ship bottom inspection and sunken ship investigation. Also included. It is used in a variety of fields including marine exploration, inspection, underwater archaeological investigation, and scientific exploration.



## ROVOCEAN

The observation class ROV that can be operated up to 150m depth rated with battery power supply method.

### SPECIFICATIONS

Size	50 x 49 x 33 cm
Weight	18kg in air
Payload	2 kg
Battery	18~36Ah (3~4hours)
Dept	150m (option 300m)
Thruster	Horizontal 4 (Vectored), Vertical 4
Camera	1080p HD Video
Camera Tilt	±45°
Light	LED 4 x 1500 lumens
Tether	Length 150m (max 250m)
Auto	Depth / Heading / Hovering
Options	Manipulator, DVL, FO Cable, Image / Scanning / Profiling Sonar

## ROVO-3

The observation class ROV that can be operated up to 150m depth rated with power supply method from tether.

### SPECIFICATIONS

Size	56 x 39 x 34 cm
Weight	19.5kg in air
Payload	2 kg
Power	300VDC (Input 220VAC)
Dept	150m (option 300m)
Thruster	Horizontal 4 (Vectored), Vertical 4
Camera	1080p HD Video
Camera Tilt	±45°
Light	LED 4 x 1500 lumens
Tether	Length 150m (max 250m)
Auto	Depth / Heading / Hovering
Options	Manipulator, DVL, FO Cable, Image / Scanning / Profiling Sonar



# SPECIAL USE



## ROVOCON

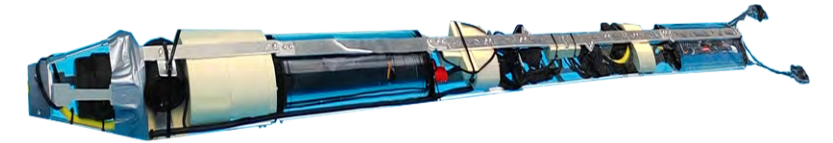
A special-purpose underwater drone for internal inspection of pipelines powered by battery power that can survey up to a distance of 500m.

### SPECIFICATIONS

<b>Size</b>	89 x 42 x 33 cm
<b>Weight</b>	28kg in air
<b>Power</b>	Battery 72Ah
<b>Depth</b>	100m
<b>Thruster</b>	Horizontal 4 (Vectored), Vertical 4
<b>Camera</b>	1080p HD Video
<b>Camera Tilt</b>	±45°
<b>Light</b>	LED 4 x 1500 lumens
<b>Tether</b>	Length 600m
<b>Auto</b>	Depth / Heading / Hovering
<b>Options</b>	Multibeam Image Sonar, Single Beam Profiling Sonar

## ROVOPI

A special-purpose underwater drone for inspecting the inside of a tunnel with a battery power supply that can inspect the inside of a tunnel by entering a small-diameter pipe.

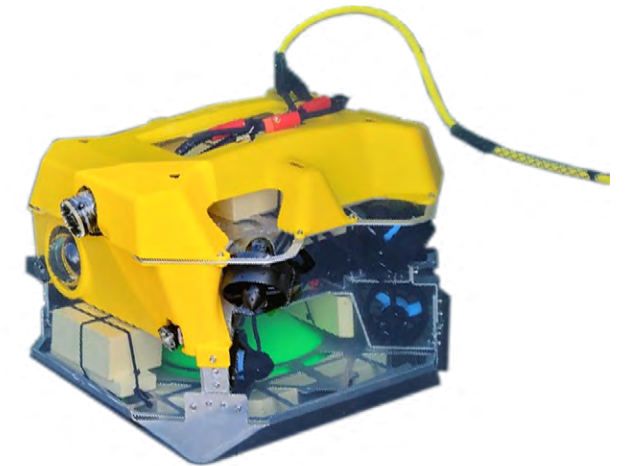


### SPECIFICATIONS

<b>Size</b>	Diameter: 112mm Length: 1800mm	<b>Camera</b>	1080p HD Video
<b>Weight</b>	8kg in air	<b>Camera Tilt</b>	±45°
<b>Battery</b>	18Ah (>2~3hours)	<b>Light</b>	LED 2 x 1500 lumens
<b>Depth</b>	Max 50m	<b>Tether</b>	Length 150m (max 250m)
<b>Thruster</b>	Horizontal 2, Vertical 2, Lateral 1	<b>Options</b>	Single Beam Image Sonar

## ROVONET

Underwater robot for fish farm management, such as cleaning farm nets, checking fish conditions, etc.



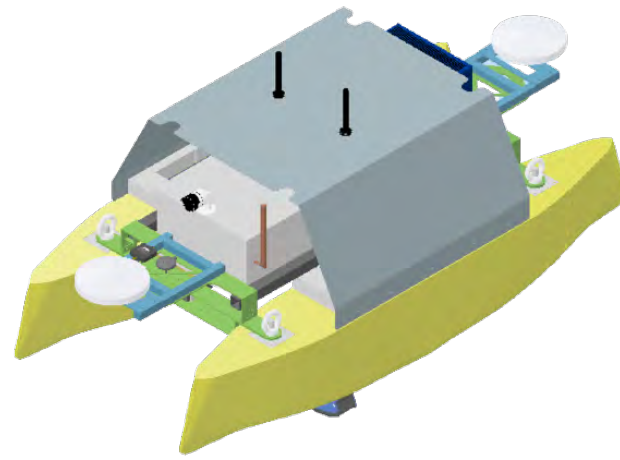
### SPECIFICATIONS

<b>Size</b>	60 x 60 x 65 cm	<b>Camera Tilt</b>	±45°
<b>Weight</b>	20kg in air	<b>Light</b>	LED 4 x 1500 lumens
<b>Power</b>	Constant power supply (Tether line)	<b>Tether</b>	Length 200m
<b>Depth</b>	100m	<b>Auto</b>	Depth / Heading / Hovering
<b>Thruster</b>	Horizontal 4 (Vectored), Vertical 4	<b>Module</b>	- Hig pressure jetting module (for Net cleaning)
<b>Camera</b>	1080p HD Video x 3ea		- Dead fish lift module
			- Net repair module

# SURFACE DRONE

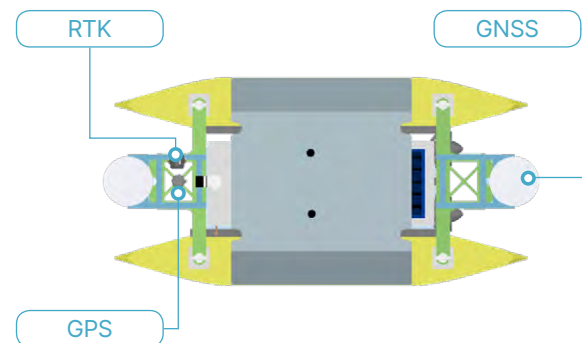
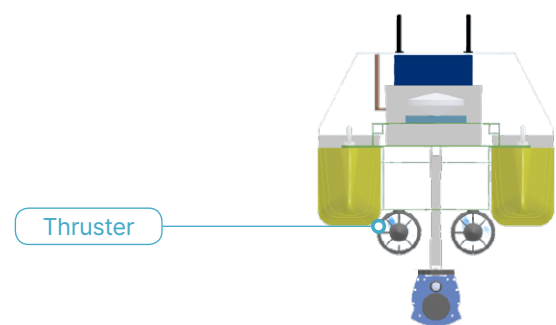
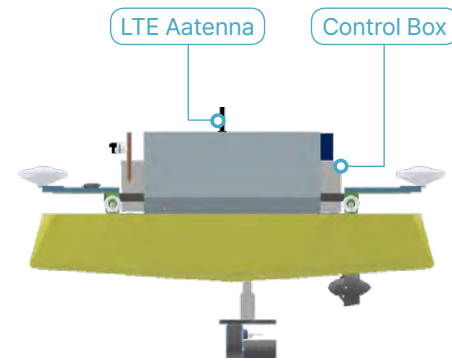
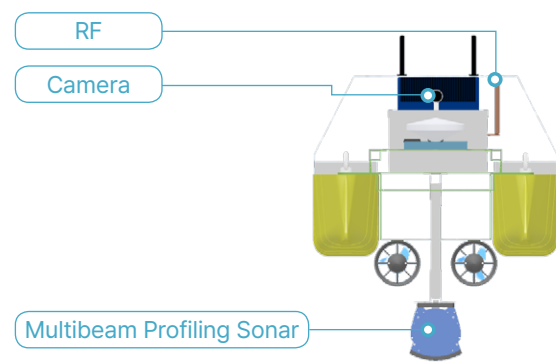
## UVO-1

The surface drone (UVO-1) is an unmanned surface-operated vessel, and is an unmanned surface boat with real-time remote control and autonomous navigation functions.



### SPECIFICATIONS

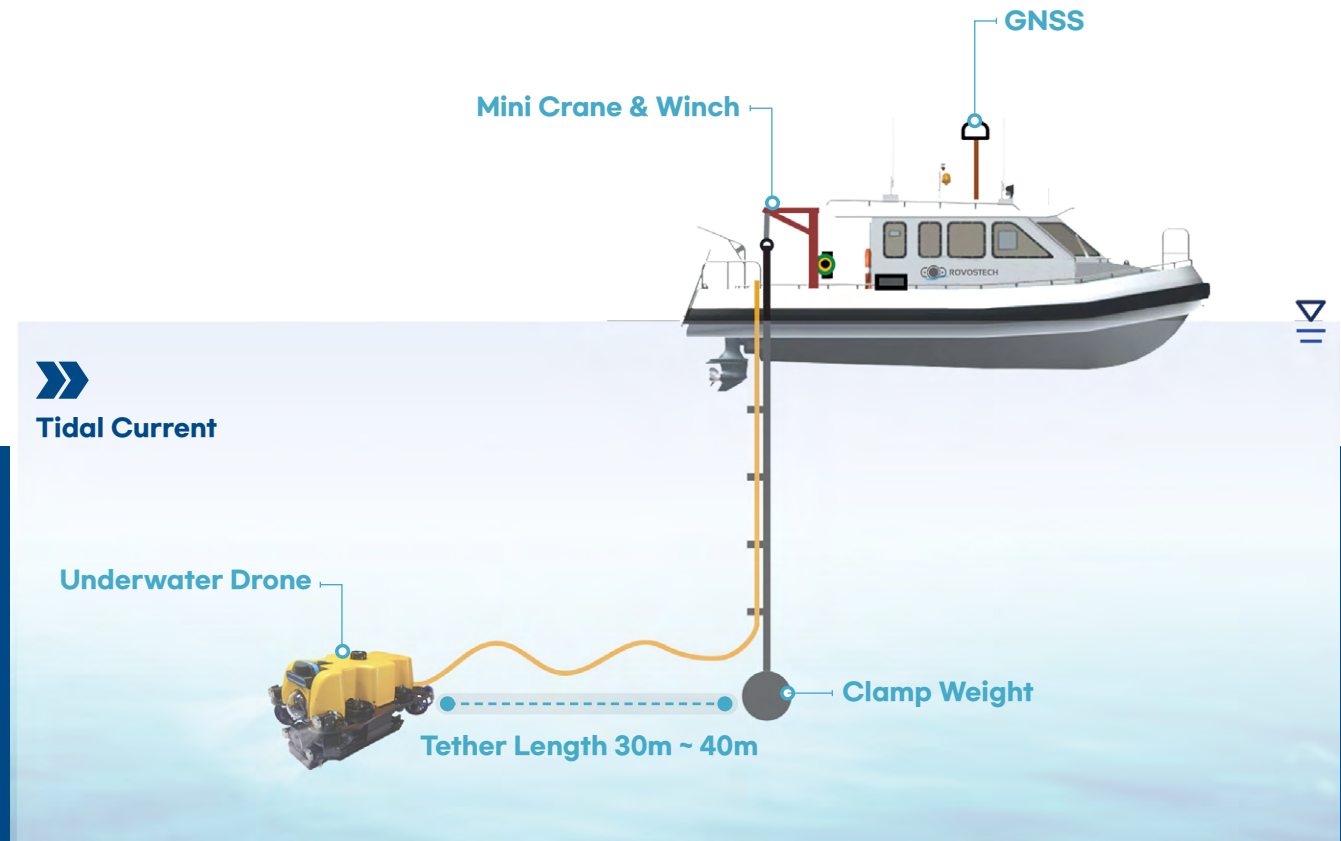
<b>Size</b>	157 x 75 x 87 cm	<b>Communication</b>	LTE / RF
<b>Weight</b>	60kg in air	<b>Sensor</b>	Multi Beam Profiling Sonar, Single Beam Sonar, Side Scan Sonar
<b>Shape</b>	Catamaran	<b>PC</b>	CPU I7, RAM 16GB, SSD 512GB, Graphics Card Geoforce 3050
<b>Texture</b>	FRP(Hull), Aluminum(Frame)	<b>Ground Controller</b>	1 SET
<b>Thruster</b>	16kgf x 2ea	<b>Spare Part</b>	1 SET
<b>Camera</b>	1080p FHD Video	<b>Operation Manua</b>	1 volume
<b>Battery</b>	24VDC x 2ea	<b>Navigation</b>	Waypoint, Auto Grid, Auto Return
<b>Speed</b>	Max 4knot		





# OPERATION

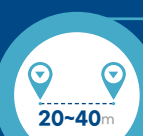


## Tidal Current




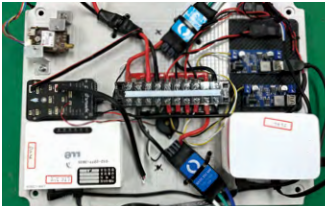



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Real-time monitoring of the location of ships and underwater drones. 01
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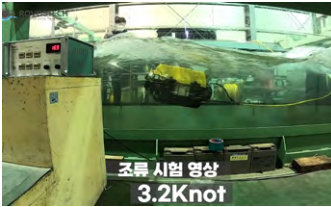

The weight is moved vertically using a mini crane and winch installed on the ship, and the tether(underwater cable) is fixed to the wire so that it is not affected by the current. 02
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The underwater drone freely moves and irradiates a distance of about 20-40m radius from the Tether connected from the weight. 03

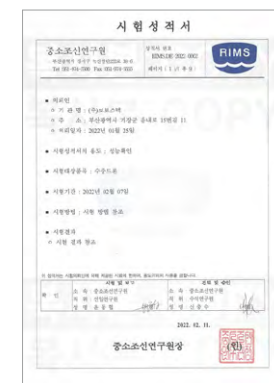
# MANUFACTURING

PROCESS	TECHNOLOGY	DESCRIPTIONS
<b>DESIGN</b>	<ol style="list-style-type: none"> <li>Housing, Frame design.</li> <li>Control board design.</li> </ol>	<ol style="list-style-type: none"> <li>Pressure vessel waterproof design.</li> <li>Frame structure design made of seawater-resistant material.</li> <li>Control circuit and operation SW design.</li> </ol> 
<b>ASSEMBLY</b>	Manufacturing of electric, Power components.	<ol style="list-style-type: none"> <li>Control circuit, power circuit, pressure vessel manufacturing.</li> <li>Camera, light, sonar, sensor assembly.</li> </ol> 
<b>PRESSURE TEST</b>	Pressure test in Pressure Tester.	<ol style="list-style-type: none"> <li>External pressure performance test of pressure vessel using external pressure tester.</li> <li>Check for leaks in the housing and connector parts.</li> </ol> 
<b>POOL TEST</b>	Function Test in pool.	<ol style="list-style-type: none"> <li>Ballast adjustment such as buoyancy and center of gravity.</li> <li>Testing of underwater motion performance such as thrusters, cameras, lights, etc.</li> </ol> 
<b>HARBOR TEST</b>	Function Test in Harbor.	<ol style="list-style-type: none"> <li>Launch/salvage, underwater operation test.</li> <li>Performance testing such as automatic control, underwater position monitoring, etc.</li> </ol> 
<b>SEA TRIAL</b>	Operation in Field.	<ol style="list-style-type: none"> <li>Performance verification through operational demonstration and demonstration for each field environment.</li> <li>Performance improvement and supplementation reflecting customer requirements.</li> </ol> 

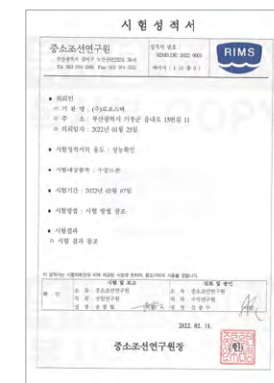
# PERFORMANCE TEST

ITEM	TEST METHODS	AMOUNT / UNIT	TEST INSTITUTE	TEST IMAGE
<b>SPEED TEST</b>	Measuring speed with a drone above the water tank.	max 3 Knots	Research Institute of Medium & Small Shipbuilding (RIMS)	
<b>CURRENT TEST</b>	Check the movement and position of the underwater drone according to the flow rate.	max 2.5 Knots	Research Institute of Medium & Small Shipbuilding (RIMS)	
<b>PRESSURE TEST</b>	Put the underwater drone parts and pressure container into the external pressure tester and pressurize it step by step.	max 30 bar	Korea Shipbuilding & Marine Engineering Research Institute (KOMERI)	

# TEST REPORT



Small and Medium Shipbuilding Research Institute test report



Small and Medium Shipbuilding Research Institute test report



KOMERI test report



KOMERI test report



# PATENT / CERTIFICATION / MOU REGISTRATION / AGREEMENT

## PATENT



Enrollment

Underwater drone system for diagnosing underwater structures

No. 10-2365084



Enrollment

Underwater cleaning robot

No. 10-2395883

## CERTIFICATION



Design, Development and Manufacture of Underwater drone  
ISO 9001 Quality Management System



Design, Development and Manufacture of Underwater drone  
ISO 14001 Environmental Management System



Design, Development and Manufacture of Underwater drone  
ISO 45001 Occupational Health and Safety Management System

## MOU



PAGEO

2023. 04. 17. Indonesia



TOP Engineering Coporation

2023. 10. 12. Thailand



N.P. Global Trading Co., Ltd.

2023. 10. 13. Thailand

## REGISTRATION



Professional research business operator



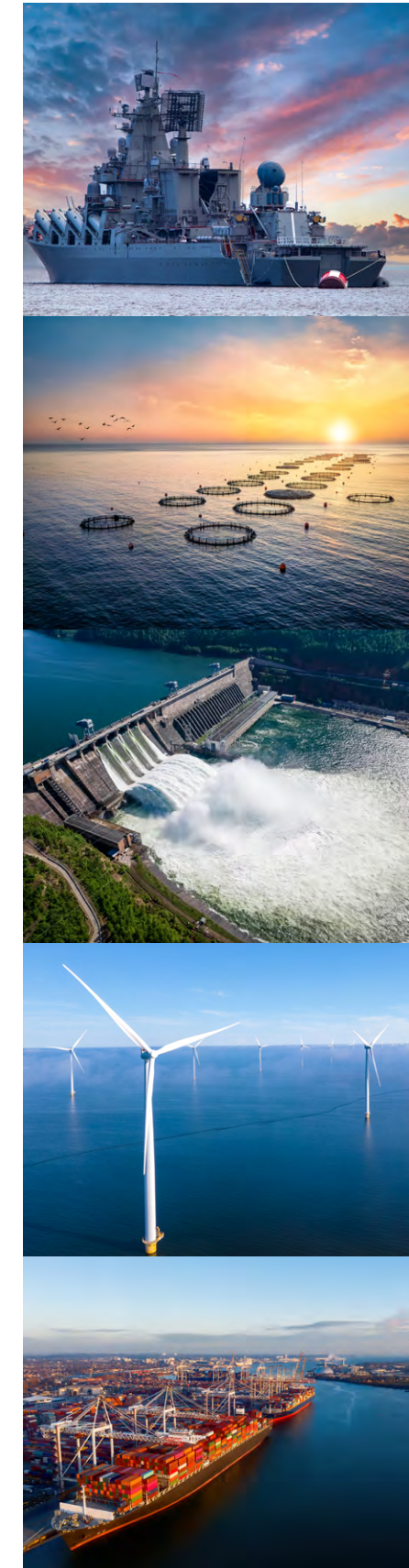
Direct producer registration



Defense Venture Company Agreement

## AGREEMENT

# APPLICATIONS



## Military Field

Navy

Hull Inspection, Mine Detection, Rescue and Research.

Army

Underwater Survey for river and shore area  
Coast Guard and patrol.

## Offshore Aquaculture Field

Fish farm

Net cleaning,  
General Inspection and maintenance.

Artificial reefs, Sea ranch

Underwater inspection.

## Offshore & Civil Field

Offshore

Platforms, Subsea Structure, Pipeline inspection.

Civil

Water tank, Dam, Reservoir inspection.

## Energy Field

Offshore wind farm

Underwater structure and subsea cable inspection.

Various Power Plants

Intake and Drain channel inspection.

## Harbour & Shipping Field

Harbour

Quay, underwater structure inspection.

Ship

Underwater inspection and hull cleaning.





# OPTIONAL DEVICES



			
Single Beam Image Sonar	Multi Beam Image Sonar	Profiling Sonar	USBL
			
Baywei Sonar	Manipulator	DVL	Underwater Cleaner Module
			
CP Probe	UT Probe		

# SALES REFERENCES

PRODUCTS	DEMAND	PURPOSE
<b>ROVOTTER</b> (Educational Kit)	• National Youth Ocean Center (NYOC)	• Youth Experience Education. • Robot contest for Youth.
<b>ROVO-2</b>	• Korea Electric Power Corporation (KEPCO) • BUSAN Techno Park • Safety&AccessKorea: Underwater drone education & training	• Submarine cable inspection. • Field demonstration. • Underwater drone training.
<b>BlueROV2</b>	• Public Institution (Fire Fighting, Environment, etc.) • Company (Port construction, Diving, Shipping, etc.) • Research Institute (University, R&D center, etc.)	• Hull inspection, port management. • Fish farm management. • Underwater structure inspection. • Research, testing, underwater search.
<b>ROVO-3</b>	• Korea water resources corporation (K-WATER) • SAMLIM Engineering consultants., Inc.: Inspection of underwater structures of bridges and bridges • Korea Electric Power Corporation (KEPCO): Undersea cable inspection	• Dam inspection and safety diagnosis. • Submarine cable inspection. • Underwater navigation.
<b>ROVOCEAN</b>	• KOREA Navy (maintenance depot): Inspection of Hull • Daewoo engineering&construction: Dam structure construction management • University research labs, training ships, etc.: research testing, education, ship management	• Dam inspection and safety diagnosis. • Submarine cable inspection. • Underwater navigation.
<b>Prototype</b> (개발품)	• K-water resources corporation. • SK eco plant. • Korea Midland Power Company(KOMIPO) • Korea Fisheries and Ocean Engineering Research Institute(KIFOE)	• Dam inspection. • Tunnel inspection. • Investigation of power plant intake and discharge pipes. • Dam water quality control.







## **ROVOSTECH CO., Ltd.**

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