

Marine technologies of the future

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#### What We Do?

When we combined our passion for the sea with our technology experience, We have been working in the field of unmanned sea vehicles and marine technologies since the 2000s.

With the successful completion of the R&D projects supported by TUBITAK and EU, we continued advanced R&D and manufacturing activities with our equity implemented the pioneering project in the field of maritime and defense in Turkey.

#### Unmanned Underwater Vehicles

SAGA Unmanned Underwater Observation Vehicle SAGAPRO Unmanned Underwater Search&Rescue Vehicle DORIS Sporting (Hobby) Class Unmanned Underwater Observation Vehicle

#### **Unmanned Surface Vehicles**

FASTY Remote Controlled Lifeguard Robot (Remote controlled lifebuoy) FASTY.v2 Unmanned Surface Survailance And Exploration Vehicle MAKTES Mine Counter-Measure System

Underwater Vehicles and Systems

TUNA Underwater Scooter Underwater Camera and Lighting Diver Tracking System



proven themselves in many military operations at home and abroad, also make significant contributions to the operations of private enterprises and other institutions in the marine field.

Our team, which has carried out many pioneering and innovative projects in the field of maritime since its establishment, closely follows the developments in the sector and new demands in the market. While we continue our R&D activities in METU Teknokent campus with our highly motivated and innovative technical team, we conduct sea tests, device training, and user demos on our Antalya campus.

While inspired by the infinity of the sea, we believe that our robots will blend into the blues of the world's seas in the future.

#### **CUSTOMER OPERATIONS**



GENDARMERIE GENERAL COMMAND



COAST GUARD COMMAND









A R N E D A SOFT WARE ELECTRONICS



**COAST GUARD COMMAND** 

R 0





**TURKISH NAVAL FORCES** 









#### LIFEGUARD ROBOT

FASTY is a very easy-to-use remote-controlled lifeguard robot, whose design and production are developed with domestic facilities.

Thanks to its high maneuverability and powerful engines, FASTY, which can reach a speed of 15 km/h, provides the fastest response to the casualty in the water. FASTY, which can communicate with the person in the water with remote voice transmission, has a carrying capacity of up to 200 kg and carries any casualty to the safe area as soon as possible.

The device, which has a durable and light body, can be launched into the sea even from high places. FASTY can continue its mission without slowing down even if it capsizes in tough sea conditions. It provides remote detection and observation with a real-time video streaming camera in dangerous areas where it is not possible to approach. FASTY can also perform night operations thanks to the location direction indicator flashers and the lighting system. FASTY, which has a range of 800 meters and a working time of 60 minutes, prevents possible drowning cases by being comfortably positioned on the boat deck and in every area with the seashore.







Powerful engines and enclosure structure

<u>f1.</u>

Durable and light body

#### Location / Orientation marker flashers

Action camera mount place

Shock absorber ←



Handles

#### **LIFEGUARD ROBOT**

Feature	Value
Weight	15 kg
Size	115 cm x 80 cm x 25 cm
Speed	Max - 15 km/h
	Loaded - 7,5 km/h
Motors	Brushless DC
Load Capacity	200 kg
Operating Time	60 dk (normal usage)
Operating Temp.	-20 +50 °C
Storege Temp.	-20 +50 °C
RC Frequency	2,4 GHz
Payload	Action Camera Mount Place
Flasher	2 Pieces (red and green)
Handling	4 Handles and Rope
Power	Battery Powered
Safety	Shock Absorber

#### **REMOTE CONTROLLER**

Feature	Value	Сс
Weight	342g	Са
Size	213 mm x 117 mm x 115,5 mm	Pr
Range	800 m	St
Operating Frequency	2.4 GHz	No
Operating Temp.	-20 +50 °C	Re
Battery	6xAA Battery	Lig
Telemtry	Vehicle Battery Voltage Signal Quality	Au



**BATTERY** 

#### **ADDITIONAL HARDWARE**

Feature	Value
Manual Drive	Forward, Left-Right (Optional)
Voice Transmission	300 m (Optional)
Color Options	Orange (Optional)
Carrying Case	Impact Resistance Wheeled (Optional)
Protective Cover	(Optional)
Stand	(Optional)
Nonslipping Pad	(Optional)
Reflector	(Optional)
Lighting	(Optional)
Autopilot	(Optional)









#### **UNDERWATER SCOOTER**

UNA

TUNA is an underwater scooter for divers, which is designed and produced, utilising latest technology.

It is essentially a propulsion vehicle operated by the diver for fast and effortless swimming, which is crucial for operational success. TUNA can be operated down to 200 meters of depth and more than 250 minutes. Diver can adjust the speed during operation up to 70 meters per minute. The vehicle is powered by a smart Li-Ion battery and a powerful electric motor. Handle can be adjusted for both right and left handed people. Additional payloads like action camera and compass helps divers to navigate and record underwater footage. Information lamp provides battery level and warning informations during operation. Safety clucth, short circuit, over current, over temperature, water leakage and low voltage protection features ensures safety of the diver.









Compass

TUNA

Action camera holder

Handle right/left adjustable

Powerful engine and enclosure structure

Hand grips

Durable and Light Body

#### **UNDERWATER SCOOTER**

Feature	Value
Mass	18 kg
Size	67 x 34 x 43 cm
Depth Limit	200 m
Usage Time	250 min (low speed)
	150 min (high speed)
Propeller	3 Blades, Detachable
Speed Adjustment	3 Steps
Speed Limit	70 meters per minute
Handle	Right/Left Hand Adjustable
Power	Li-Ion Smart Battery
Charging Time	5 hours
Operating Temperature	-20 +50 °C
Storege Temperature	-20 +50 °C
Payload	Action Camera Holder, Compass
Safety Features	Short Circuit, Over Current,
	Over Temp. Water Leakage,
	Low Voltage.
Information Lamp	Battery Level & Warnings

#### CHARGER

Feature	Value
Mass	780 gr
Size	18 x 8 x 5 cm
Operating Voltage	220 Vac

### **CARRY BAG**

Feature	Value
Mass	20 kg
Size	105 x 61 x 59 cm
Building Material	Polyethylene
Transport	Hand Grips, 2 Wheels
Stacking	Suitable
Maintenance Kit	Yes
Protection Class	IP64
Safety	Pressure Valve,
	Silicone Gasket







# SAGA PRO



#### **UNMANNED UNDERWATER VEHICLE (ROV)**

SAGAPRO unmanned underwater vehicle (miniROV), whose design and production is developed with domestic facilities, can dive to a depth of 300 meters.

SAGAPRO, which provides instant image transfer from underwater with its high-resolution front and rear cameras and lighting systems that can move together with the camera, has an advanced operation capability without a time limit. By means of the robot arm and different mouth tips, it can bring the detected objects from underwater to the surface. SAGAPRO can perform search and detection activities even in zero-visibility waters, thanks to the advanced sonar that can be mounted on it. SAGAPRO provides easy usage with its high maneuverability and advanced autopilot features and can accelerate up to 3 knots.

The system, which has light and easy-to-carry equipment, makes it possible to perform operations even on the zodiac boat with a total of 3 waterproof carrying bags.

SAGA PRO, which has a higher payload capacity compared to SAGA; has the possibility of integrating additional hardware such as a metal detector, underwater positioning system, dome camera (360 degrees), in addition to standard temperature, depth, compass sensors.

SAGAPRO has proven itself in the sector with its robust structure and after-sales service support in military and professional use and provides optimum benefit. SAGAPRO, which has been in the inventory of the Turkish Navy, Coast Guard and Gendarmerie for many years, has successfully carried out many domestic and international operations.







# SAGA PRO UNMANNED UNDERWATER VEHICLE (ROV)

#### **UNDERWATER VEHICLE**

Feature	Value	Feature	Value
Mass	30 kg	Portable Lights	Adjustable positioning on vehicle
Size	62,0 x 43,2 x 39,5 cm	(optional)	Adjustble orientation
Depth Limit	300 m		2 x 4400 lm Brightness
Endurance	Unlimited		Brightness Control
Thrusters	6 Brushless Motors (4 vectoral, 2 vertical)	Flasher	360° Beam propagation
	Grid Propeller Protection (optional)		Location indicator on power loss
Motion Capability	Up / Down, Forward / Backward	Pinger	37,5 kHz Locator Signal
	Turn Right / Left, Strafe Right / Left	(optionall)	Water Activated
Autopilot Modes	Manual, Stabilize, Depth Hold		90 days working duration
Autopilot Features	Adjustable Speed Gain, Input Hold	Sonar	720 kHz Signal Frequency
Speed Limit	2 knots	(optional)	120° FOV
Front Camera	180 deg. Tilt Control		512 Beams
	94,9° Field of View		0,2 – 120 m Range Scale
	1920x1080p HD Color Video		8 mm Range Resolution
	0.1 Lux Color Light Sensitivity		5-97 Hz Update Rate
	0.01 Lux B&W Light Sensitivity	Location Sensor	USBL Transponder, Omni-directional,
	Automatic Color-B&W Transition		Multi-constellation GPS.
Front Lights	180° deg Tilt Control	Robot Arm	Interchangable Tips
	Brightness Control		Standart,Parallel, Cutter, Trident Jaw
	2 x 4400 lm max. Brightness		
Portable Fisheye	Adjustable positioning on vehicle		
Camera (optional)	220° Fish Eye Field of View		
	1920x1080p HD Color Video		
	0.1 Lux Color Light Sensitivity		







# SAGA PRO







### **OPERATOR CONSOLE**

OPE	RATOR CONSOLE		CABLE SYSTEM
Feature	Value	Feature	Value
Mass	23 kg	Mass	48 kg
Size	61,0 x 43,0 x 26,5 cm	Size	68,7 x 52,8 x 36,6 cm
Protection	IP64	Protection	IP64
Voltage	100 – 230 Vac @ 50-60 Hz	Spool System	Cable Routing with Vargel Shaft,
Power	3 kW (max)		Lock System, Slipring, Spool Arm,
Security Features Computer Monitor	Fuse, Circuit Breaker, Emergency Button, Leak Sensor, Leak Detector, Residual Current Monitor, Active Cooling Control I7 Processor, 8Gb RAM, 250Gb SSD 2 items (21,5 - 12,1 inch) Color LCD	Floating Cable	225 m Cable Length (300 m opt.) 11 +/- 0,5 mm Diameter 80 kgf Working Load 450 kgf Breaking Load Kevlar Rope Buoyant with 0,98 gr/cm3 Density
	Sunlight Readable		GENERATOR
	High Brightness	Feature	Value
	High Resolution	Mass	50 kg
Peripherals	Keyboard (IP68), Mouse	Size	60,5 x 49,0 x 49,0 cm
	Speaker, Joystick	Fuel	Gasoline
Interfaces	3 x USB 3.0, Ethernet,	Capacity	15,0 L
	HDMI, VGA, WiFi, Bluetooth	Туре	Inverter
Video Recorder	1 Tb HDD	Voltage	230 Vac
Locator System	GNSS Receiver	Frequency	50 Hz
	USBL Transducer (180° FOV) USBL Control Box	Output Power	3,5 kVA







## NOTES











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**R&D:** ODTÜ Teknokent Silikon Blok No: BK-8 ODTÜ Çankaya / ANKARA

**Factory:** Sarısu Mah. 160. Sok. İbrahim Tunç Plaza J5 No: 11 Konyaaltı / ANTALYA

Center: Kuşkavağı Mah. 544. Sok. Konyaaltı Apt. No: 2 / Z1 Konyaaltı / ANTALYA

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