



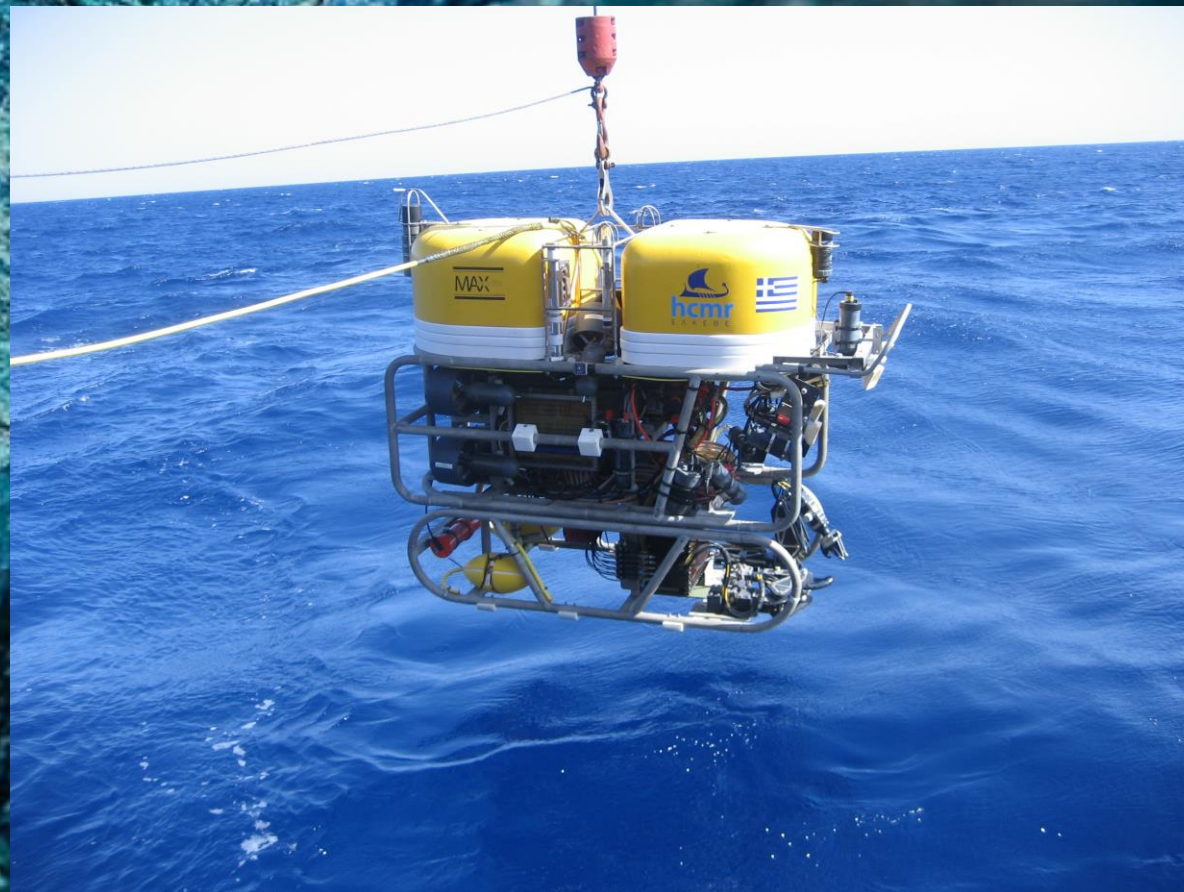
# ROV Types

Hellenic Centre for Marine Research - ROV team



# ROV's can be classified according

- Horsepower
- Size
- Capabilities!





# Classification of ROVs

International Maritime Contractors Association list



**Class I** - Observation ROVs  
Small vehicles fitted with camera, lights and a sonar only.



Photos ©HCMR



# Classification of ROVs

International Maritime Contractors Association list

**Class II**— observation ROVs with Payload Option  
Vehicles fitted with two simultaneously viewable cameras, sonar as standard, and capable of handling additional sensors.



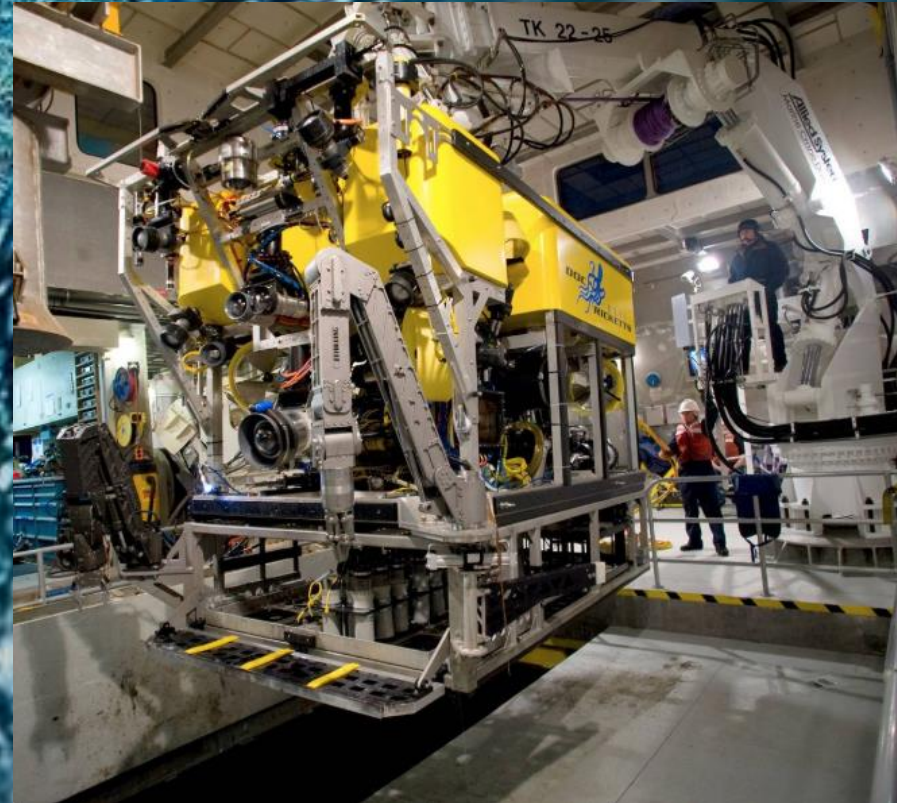
Photos @HCMR



# Classification of ROVs

International Maritime Contractors Association list

**Class III**—Work-class vehicles  
Vehicles large enough to carry additional  
sensors and manipulators



Photos @MBARI's Doc Ricketts ROV



# Classification of ROVs

International Maritime Contractors Association list



**Class IV**—towed and bottom-crawling vehicles (vehicles pulled through the water by a surface craft or winch, and bottom-crawling vehicles using a wheel or track system to move across the seafloor)

**Class V**—prototype or development vehicles



# Classification of ROVs

Based upon the ROV weight

**OCROV**—from the smallest vehicles to submersible weights up to 91 kg

**MSROV**—submersible weights from 91 kg to 907 kg

**WCROV**—submersible weights in excess 907 kg



# Classification of ROVs

## OCROV categories



**Mini OCROVs**—vehicles with submersible weight between 4.5 kg and 32 kg

Photo @HCMR

**Micro (or small) OCROVs**—those vehicles with a basic weight of less than 4.5 kg



Photo @VFtech spol. s r.o



**Large OCROV**—vehicles with weights between 32 kg and 90 kg

Photo @HCMR



# Classification of ROVs

## MSROV categories



**Shallow MSROV:** Low-power vehicles with copper (or fiber) telemetry and ,1000 m depth capability



**Deepwater MSROV:** Typically deepwater versions of the shallow vehicles and may run single or dual light manipulator systems along with high-voltage power, light-duty electric and hydraulic manipulator systems and fiber-optic telemetry



**Heavy MSROV:** These are often named "light work class" and typically have electric thrusters, dual medium-duty hydraulic manipulator systems and a hydraulic power unit for operation of medium-duty hydraulic tooling



# Classification of ROVs

WCROV categories



**Standard work class:** These vehicles are in the 100 -200 hp range typically used in drill support or light construction

Photo @Oceaneering

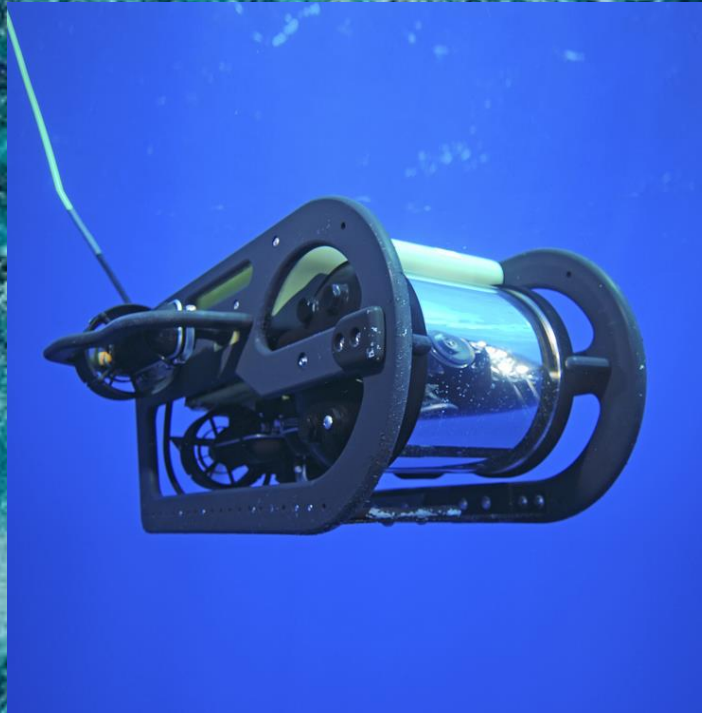


**Heavy work class:** These vehicles are very large and heavy work vehicles of 200 hp or greater for heavy construction work



# HCMR ROVs

## Seabotix LBV-200

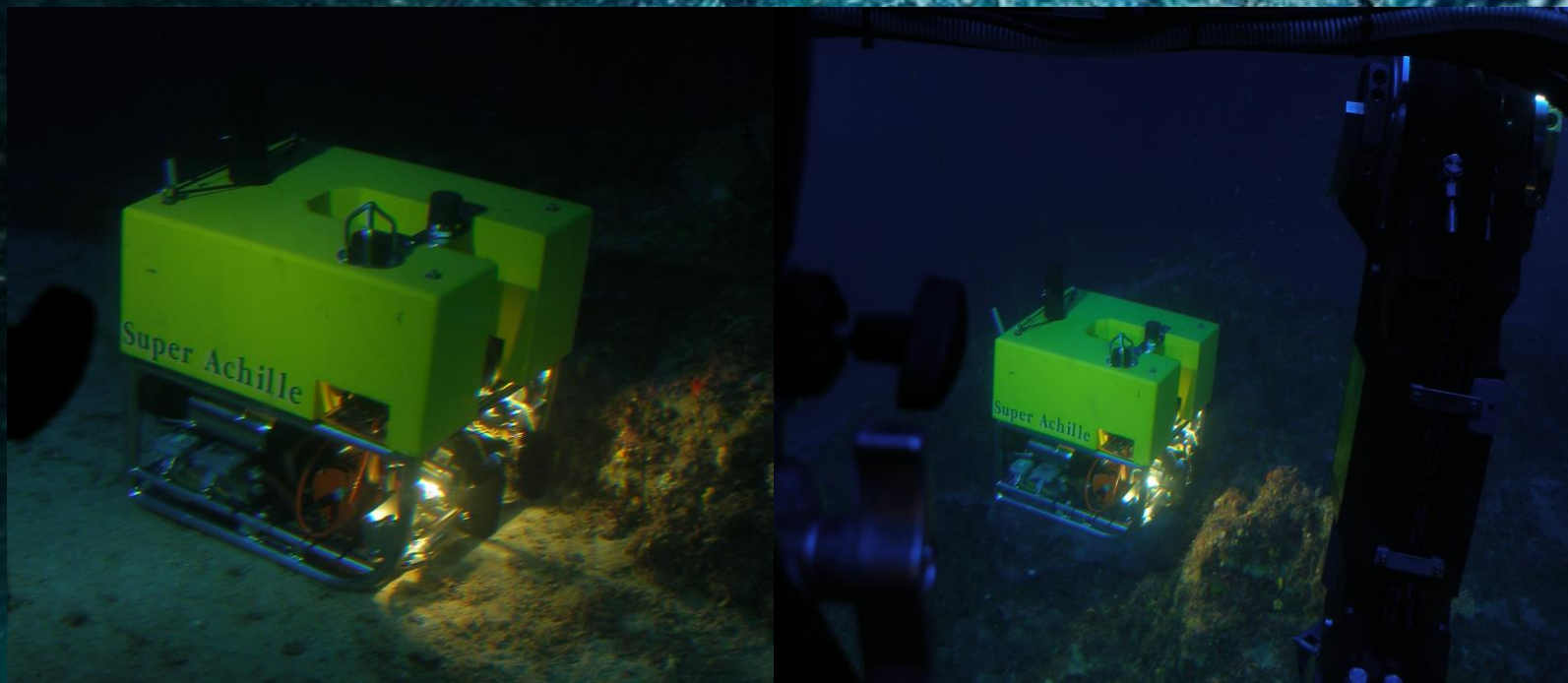


Depth Rating	200 m
Length	530 mm
Width	245 mm
Height	254 mm
Weight in Air	11 kg
With (4) Brushless DC thrusters – Two (2) forward, one (1) vertical and one (1) lateral.	
Speed at surface	3 knots
Camera Tilt	180 degrees
Range of View	270 degrees
Camera – Primary	680 line High resolution color
Video Format	NTSC or PAL



# HCMR ROVs

## Super Achilles ROV



Depth rating 1000 m  
Length: 720mm  
Width: 600mm  
Height: 510 mm  
Total weight 100 Kg approx.  
Underwater speed 2 knots  
Propulsion -4 thrusters: Asynchronous electrically driven.  
Video 1 PAL Digital color camera  
Searchlights 2x250 W – 1x50 W halogen lights  
Instrumentation - Fluxgate compass -  
Echo sounder for altitude monitoring.  
-Pressure sensor for depth monitoring  
-Built-in imaging sonar; 360° scanning head; high resolution; 180° 3D  
Video-Data Recording VHS - SVHS -CD- DVD-MDV  
Arm 3 axis manipulator: in/out, rotation, grip



# HCMR ROVs

## SAAB SEAEYE Falcon



Depth rating	300 m
Length	1000 mm
Height	500 mm
Width	600 mm
Weight in air	60 kg
Payload	14 kg
Forward thrust	40 kgf
Lateral thrust	23 kgf
Vertical thrust	13 kgf
Speed >	3 kn
Thruster type S1-MCT01	
Horizontal thrusters	4
Vertical thrusters	1
Auto-depth	
Auto-heading	
Video channels	1
Video transmission STP/FO	
LED lights (standard quantity)	2



# HCMR ROVs

## DSSI Max Rover



Depth rating	2000 m
Length	2200 mm
Height	2000 mm
Width	900 mm
Weight in air	1100 kg
Payload	68 kg
Underwater speed:	2.5 knots (fwd/rev), 1.5 knots (vert/lat)
Horizontal thrusters	4
Vertical thrusters	2
Sonars:	Tritech Dual Frequency Scanning Sonar (675/1200 KHz) & Tritech Side Scan Sonar (910 KHz)
Autopiloting:	course, depth, altitude
Positioning system:	Trackpoint II USBL positioning system
Cameras	4 (2 HD Cameras, 2 Pal cameras)
Lights	2 x 100 W HID lights and 4 x 150 W Quartz lights
Manipulation:	2 Hydrolek electro-hydraulic 5 function manipulators





# THANK YOU

Hellenic Centre for Marine Research - ROV team