

# *An Underwater Crawler Applied to Underwater Observatory Obseas*

Present by Ahmad Falahzadeh



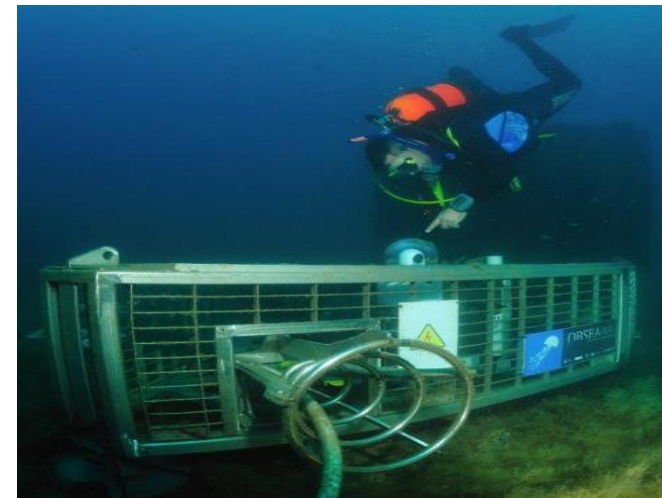
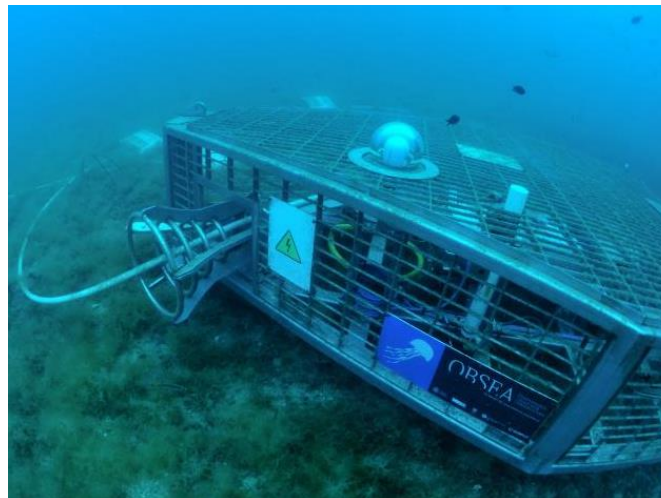
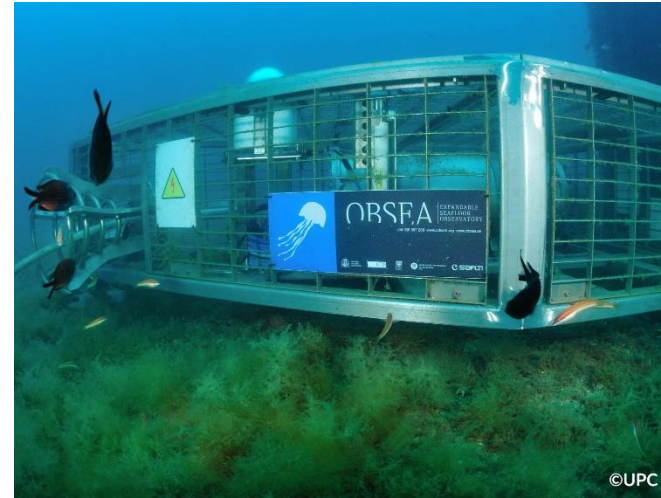
# Whats underwater observatory?



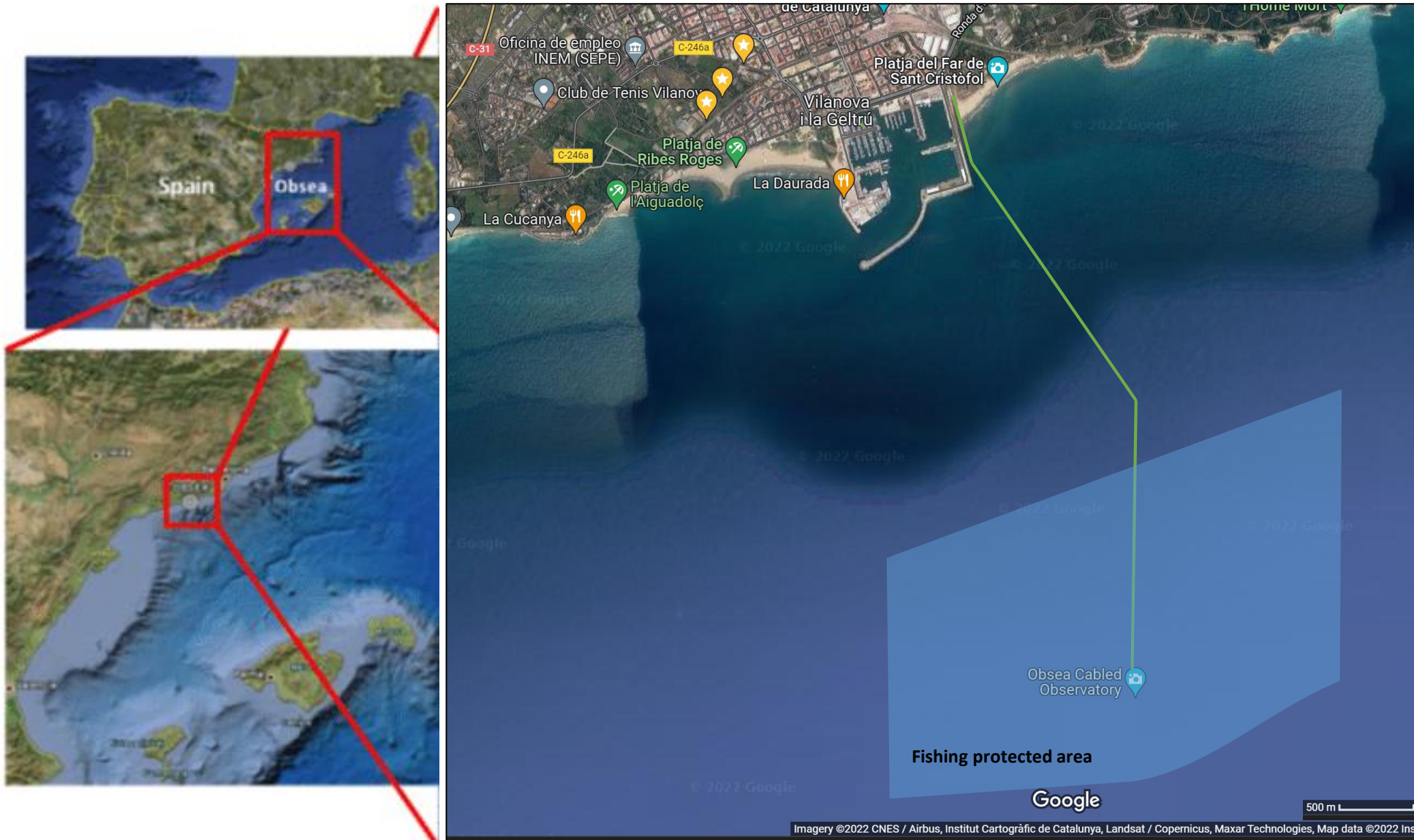
The Coral World - Underwater Observatory Marine Park, Eilat | Red Sea Israel

Ashizuri Underwater Observatory in Kochi, Japan

# Obsea Underwater Observatory



# Where is Obsea Observatory?





# ORSEA

EXPANDABLE SEAFLOOR OBSERVATORY

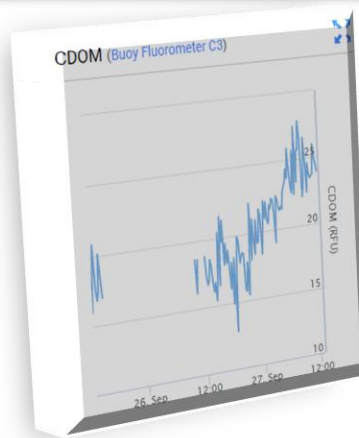
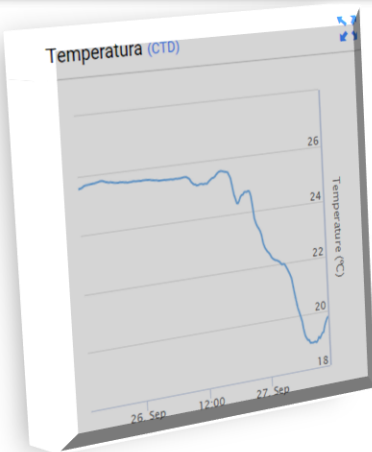
**OBSEA (càmera submarina)**

Camera protected from fouling by window surface electrochromation. System provided by IFREMER-INDT. Deployed since July 2020.

OBSEA (càmera submarina) interface showing a live video feed of the seabed. The interface includes a sidebar with technical details and logos of the project partners.

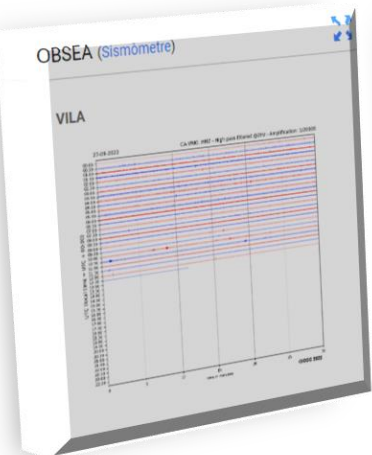
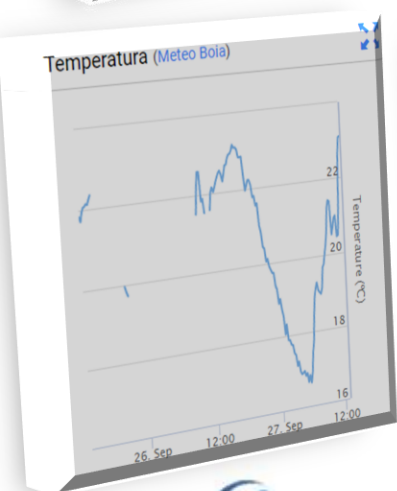
**OBSEA (CTD)**

Temperatura: 19.55 °C  
 Conductivitat: 5.10 S/m  
 Salinitat: 38.06 PSU  
 Velocitat So: 1520.54 m/s  
 Observació realitzada el 2022-09-27 12:18:06 (UTC)



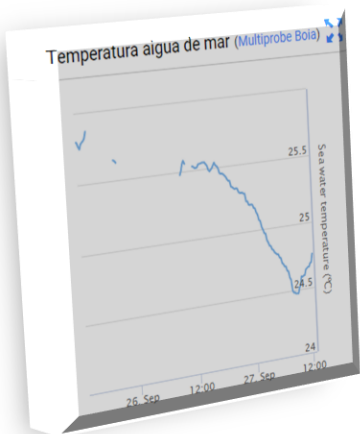
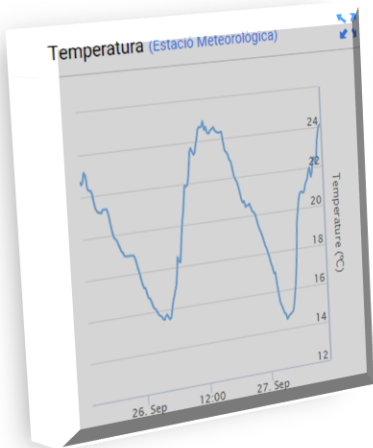
**OBSEA (Boia)**

Velocitat Vent: 3.20 m/s  
 Temperatura aire (°C): 23.10  
 Direcció Vent: 125.5°  
 Pressió aire: 1.0123 bars  
 Observació realitzada el 2022-09-27 13:44:58 (UTC +1)



**SARTI (Estació Meteorològica)**

Temperatura aire prop de la superfície\*: 24.3 °C  
 Velocitat del vent en superfície\*\*: 1.5 km/h  
 Direcció Vent\*\*: 300° Respecte al Nord  
 Ratxa\*\*: 3.0 km/h Humitat relativa\*: 43 %  
 Intensitat de precipitació 0.0 mm/h  
 Pressió atmosfèrica a nivell del mar\*: 1005.0 hPa  
 Observació realitzada el 2022-09-27 13:00:51 (UTC)  
 \*Promig de 1 minut. \*\*Promig de 10 minuts.  
 Location: 41° 13' 24.74" N 1° 54' 11.71" E a 1m sobre el nivell del mar



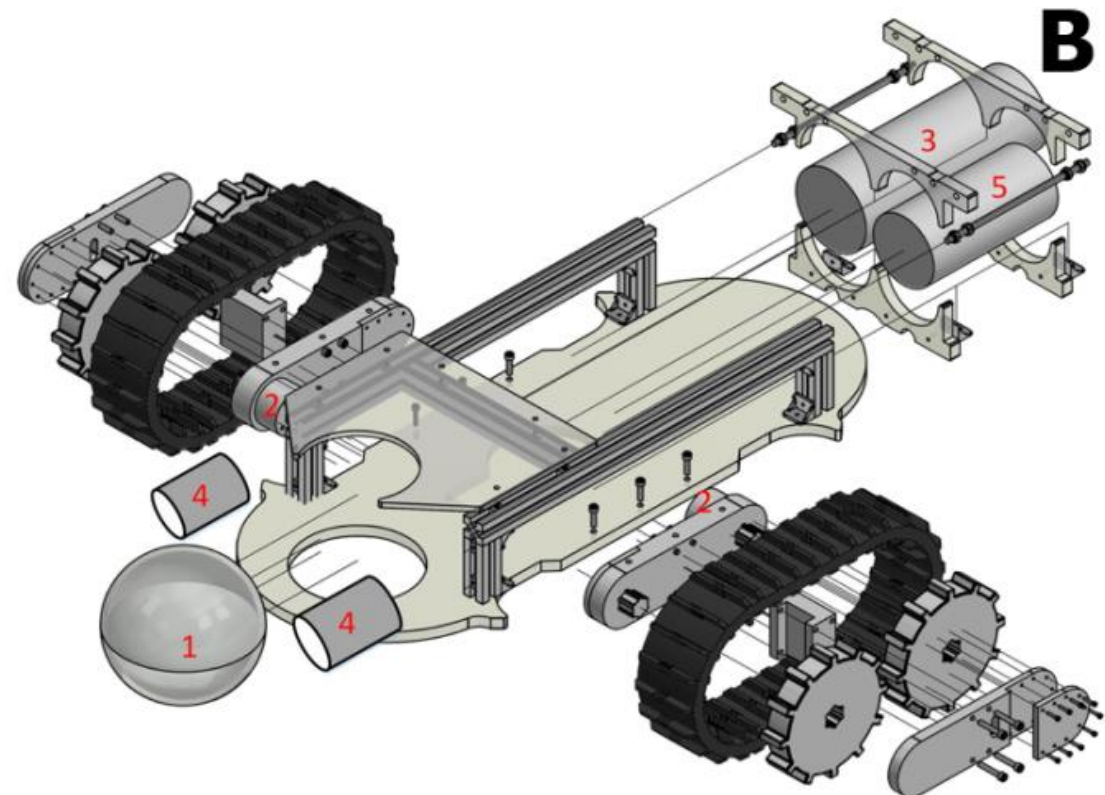
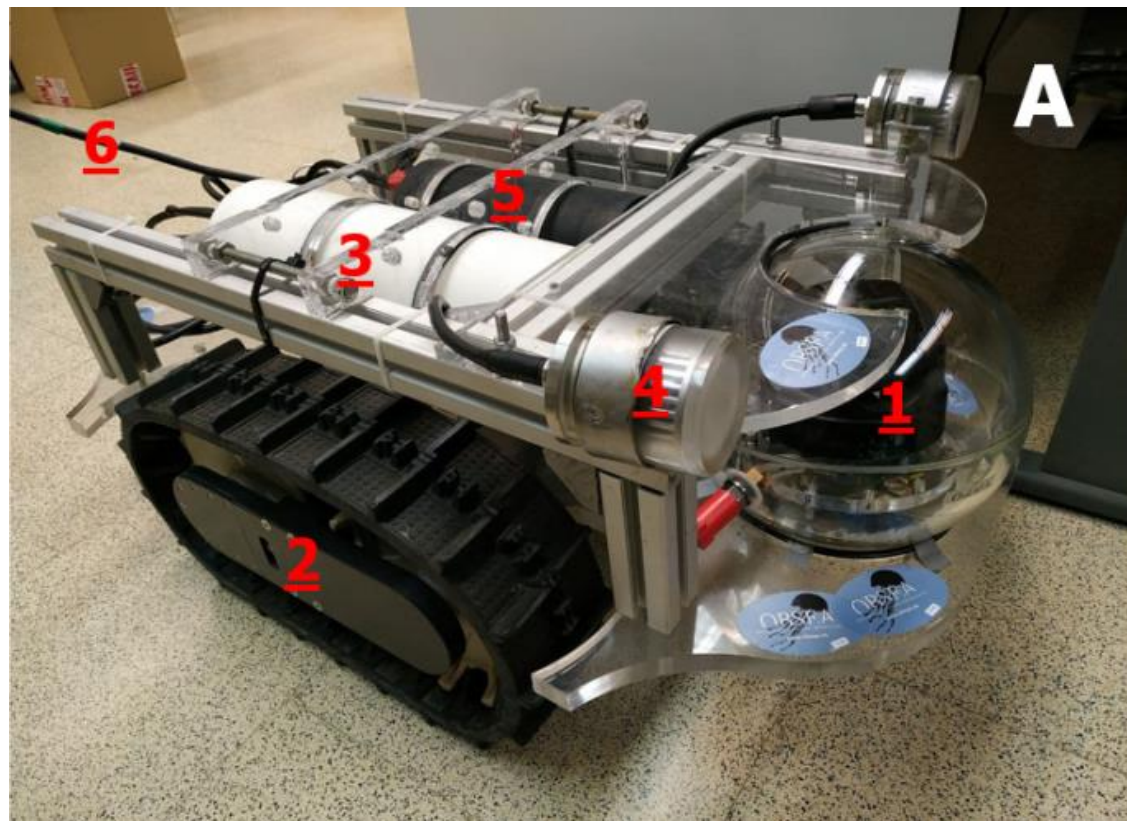
**OBSEA (Hidròfon)**

Hydrophone recording visualization showing a dense field of blue and green dots with a play button in the center.

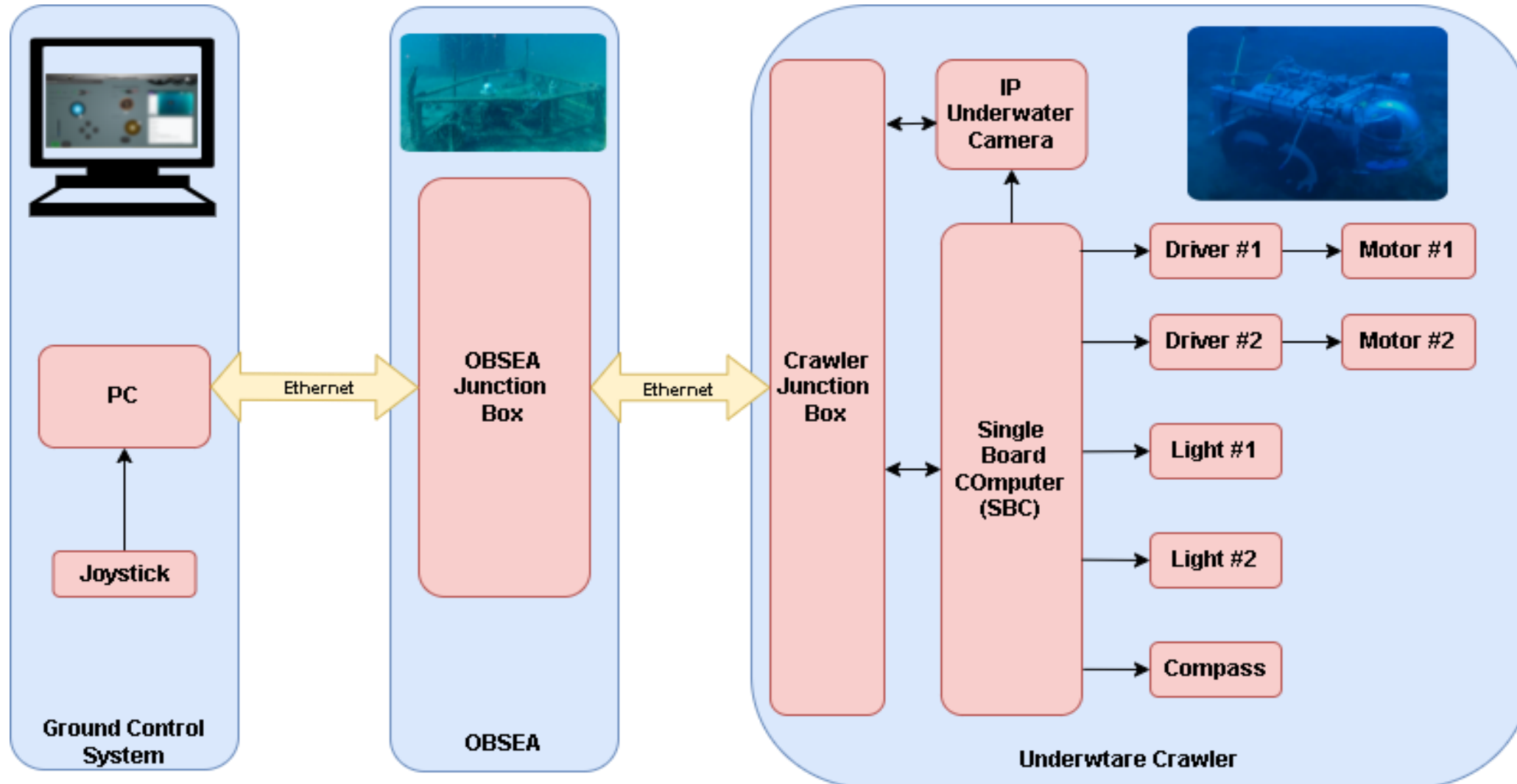
UTC Time  
 Volume



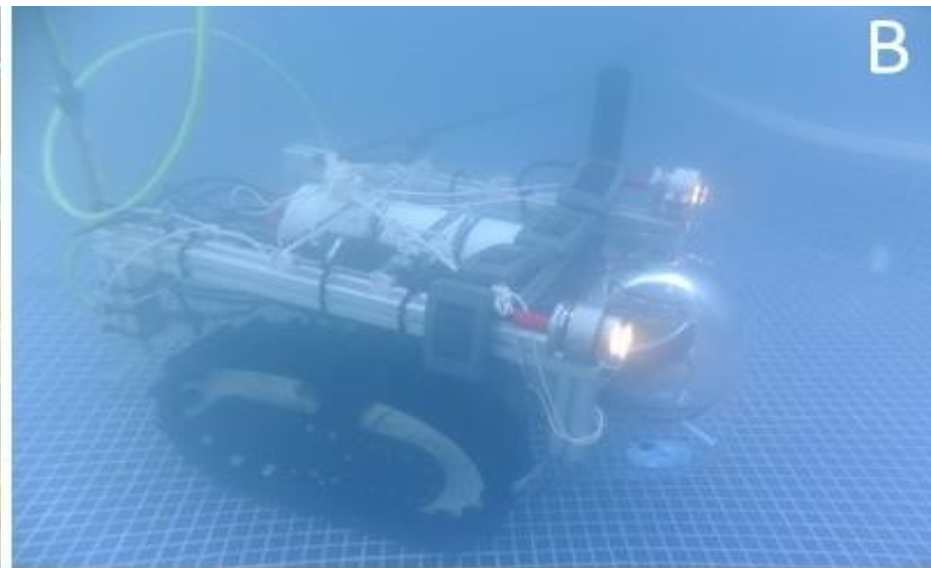
# Obsea Underwater Crawler



# The Web architecture for the crawler through the OBSEA portal

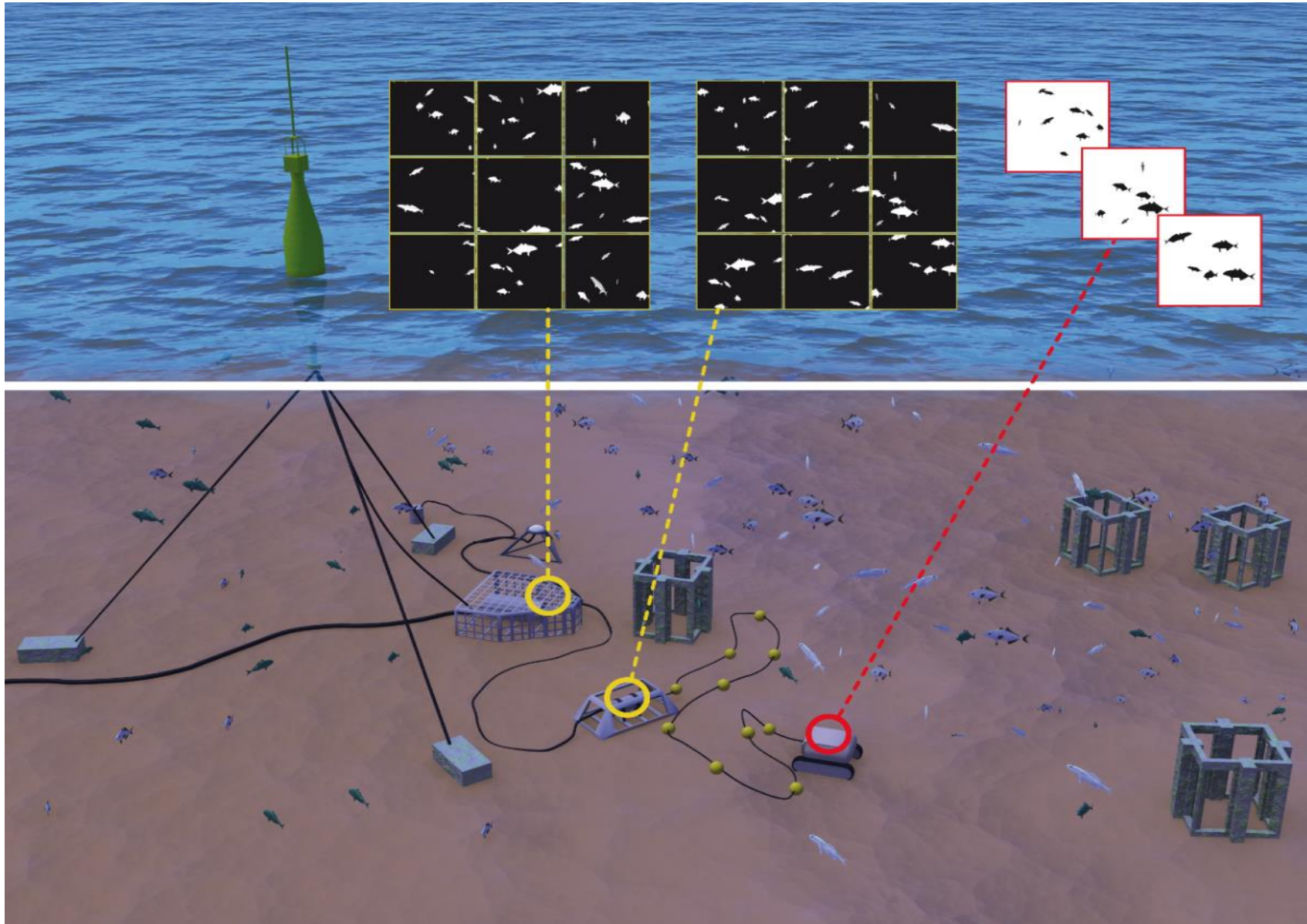


# The testing of the crawler





# Global schematized view of the OBSEA navigation and monitoring tests area



# Number of individuals for each taxon as identified with the OBSEA and Crawler cameras

	OBSEA camera	Crawler camera
<i>Chromis chromis</i>	350 (11.111)	163 (0.671)
<i>Coris julis</i>	0	23 (0.095)
<i>Dentex dentex</i>	17 (0.54)	0
<i>Diplodus cervinus</i>	3 (0.095)	0
<i>Diplodus sp.</i>	7 (0.222)	0
Labridae	0	10 (0.041)
<i>Seriola dumerili</i>	7 (0.222)	0
<i>Serranus cabrilla</i>	0	1 (0.004)
OTU 1	46 (1.460)	3 (0.012)
OTU 2	33 (1.048)	0
OTU 3	3 (0.095)	0
OTU 4	21 (0.667)	0
OTU 5	0	5 (0.021)
OTU 6	0	2 (0.008)
<b>Total</b>	<b>487 (15.460)</b>	<b>207 (0.852)</b>

OTU stands for “Operational Taxonomic Unit” and refers to individuals unidentified to a specific taxonomic level.

Thank you!