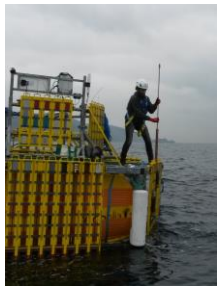
Harsh Lab1.0

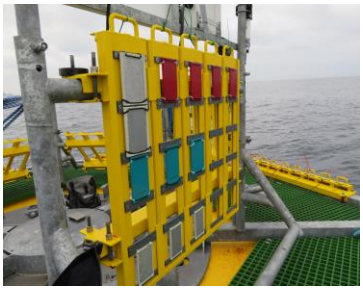
Laboratory for experimentation and validation of materials and components in offshore environment

HarshLab1.0 is a first prototype of a bigger and more complex offshore laboratory (HarshLab2.0).

HarshLab1.0 was moored in Summer 2018, while v2.0 is expected to be installed in summer 2020.

Advanced floating platform for the evaluation of standardized probes and components in real offshore environment



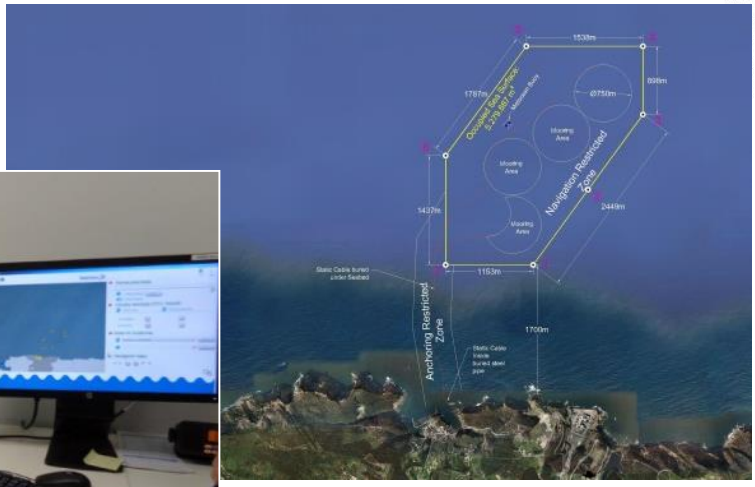


HarshLab1.0 is suitable to test new materials and solutions against corrosion, ageing and fouling in real and monitored offshore conditions

Extension of the life cycle of the components and equipment in harsh environments.

- HarshLab1.0 allows the evaluation of standardized probes and other components in real offshore environment, in immersion, splash and atmospheric zones.
- This offshore laboratory can handle up to 125 samples in atmospheric zone, 320 in splash and 320 in immersion (765 probes in total).

INFRASTRUCTURE LOCATION



HarshLab1.0 was moored in Summer 2018 in the Biscay Marine Energy Platform – BiMEP (http://bimep.com/en/)

BiMEP is an experimental sea zone with a total surface area of 5.3 km^2 situated in the Biscay Gulf, 1,700 meters in front of the village of Armintza (Bizkaia, Spain).

BiMEP area is well communicated with Armintza's port and under 24 hour surveillance, which allows a quick access to samples under trial while ensuring 100% offshore conditions.

BiMEP is an open sea test site for WEC trials:

- 13,2 kV – 5 MW subsea export cables.
- 24/7 surveillance and monitoring.
- Research and Data Centre (Monitoring and control system)

ENVIRONMENTAL PARAMETERS

Meteorological data

- Annual precipitation: 1500 mm/year
- Mean interannual temperature: 13ºC
- Average interannual max temperature: 16ºC
- Average interannual min temperature: 10ºC
- Average insolation: 1825 hours/year

Oceanographic data

- Water temp. min/max: 11ºC (Jan) - 22ºC (Aug)
- Significant wave height min/med/max: 1,15m/1,67m/9,62m
- Average salinity: 35 USP
- Average dissolved O_2: 6 mL/l
- Average transmittance: 88%

Identified biofouling species

- Bryozoan
- *Perforatus perforatus*
- *Anomia ephippium*
- *Hiatella arctica*
- *Mytilus galloprovincialis*

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