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BRINGING TOGETHER RESEARCH AND INDUSTRY FOR THE DEVELOPMENT OF GLIDER ENVIRONMENTAL SERVICES

Marine Data Interoperability Using a Smart Sea Cable

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Cyprus Subsea

This project has received funding from the *European Union's Horizon 2020 research and innovation programme* under grant agreement No 635359

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Underwater Gliders

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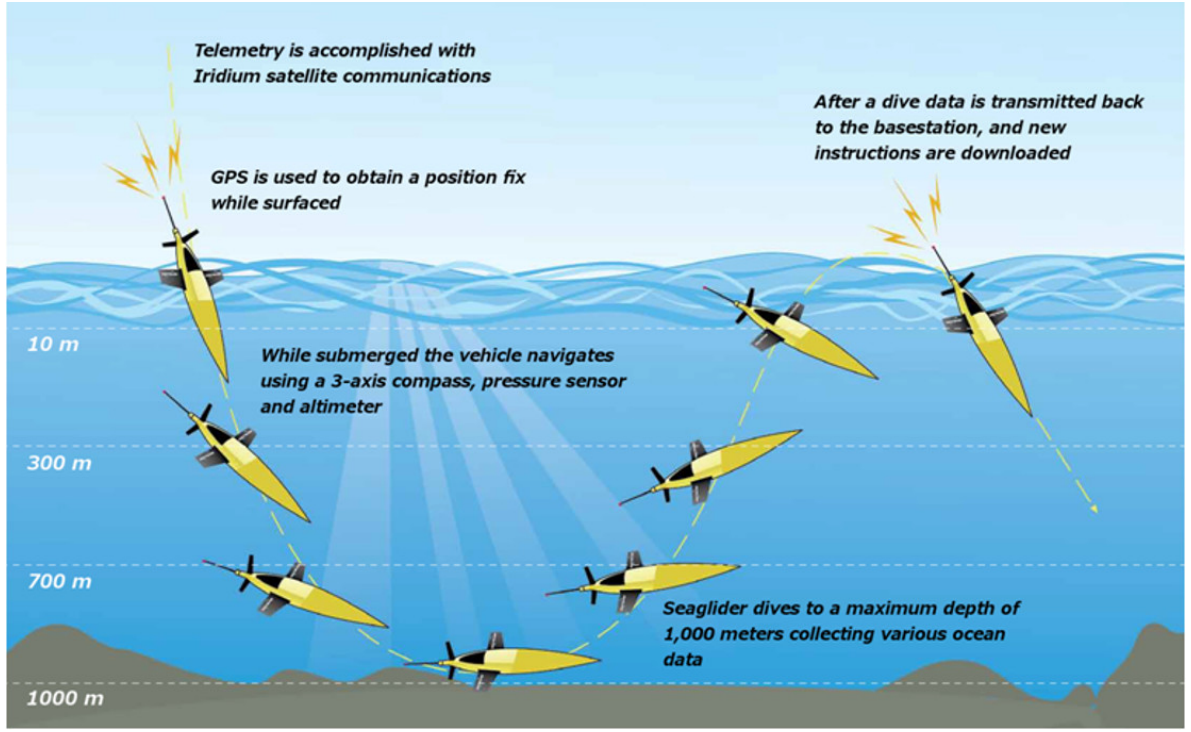
- Autonomous underwater buoyancy-driven vehicles play an important role in global observing networks.
- Very efficient and have long endurance (months)
- Data available after every dive (~ every 7 hours for 1000m dive) via iridium satellite



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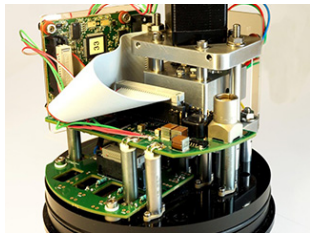
Dissolved Oxygen

CTD

Water Sampler

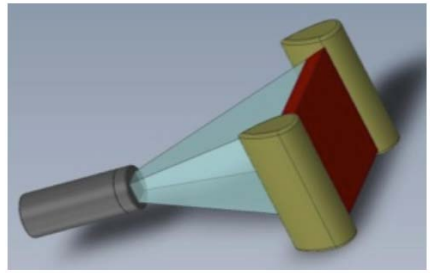


Lab on a Chip
- Nitrate
- Phosphate
- Silicate
- Ammonia

Echo-Sounder

Fluorescence
- Turbidity
- Chlorophyll
- CDOM
- Crude Oil
- Crude Oil

Passive Acoustics
- Noise monitoring
- Event Detection



Smart Camera
count and measure
particles (organic and inorganic, > 100µm)
in real-time

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Piloting tools and data formats

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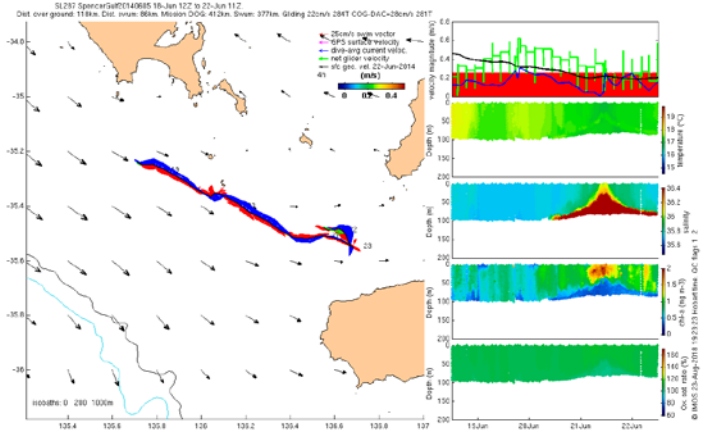
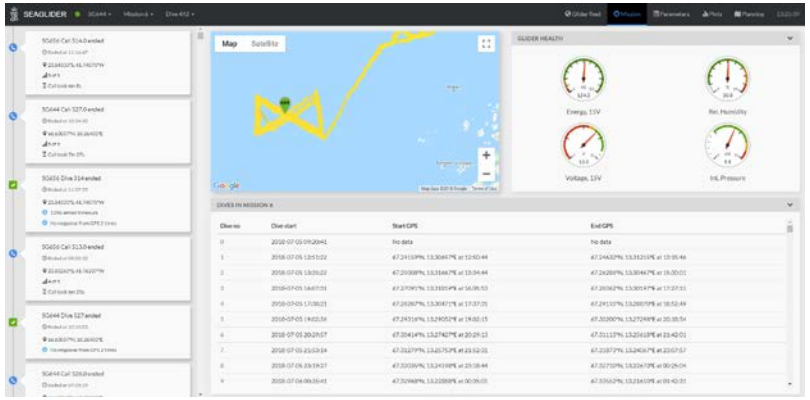
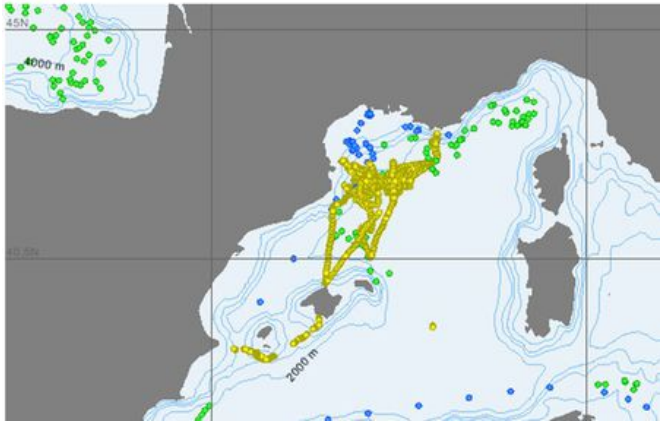
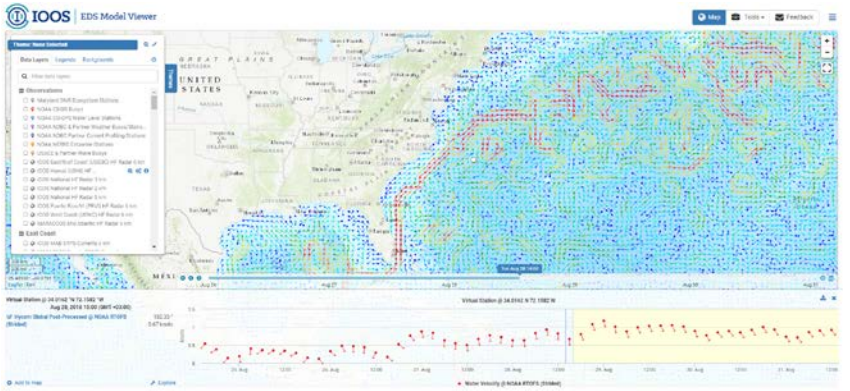
- Limited toolboxes and mostly work only locally
- Lots of efforts to standardize scientific data but not platform data
- EGO, IOOS, IMOS









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Standardization in BRIDGES

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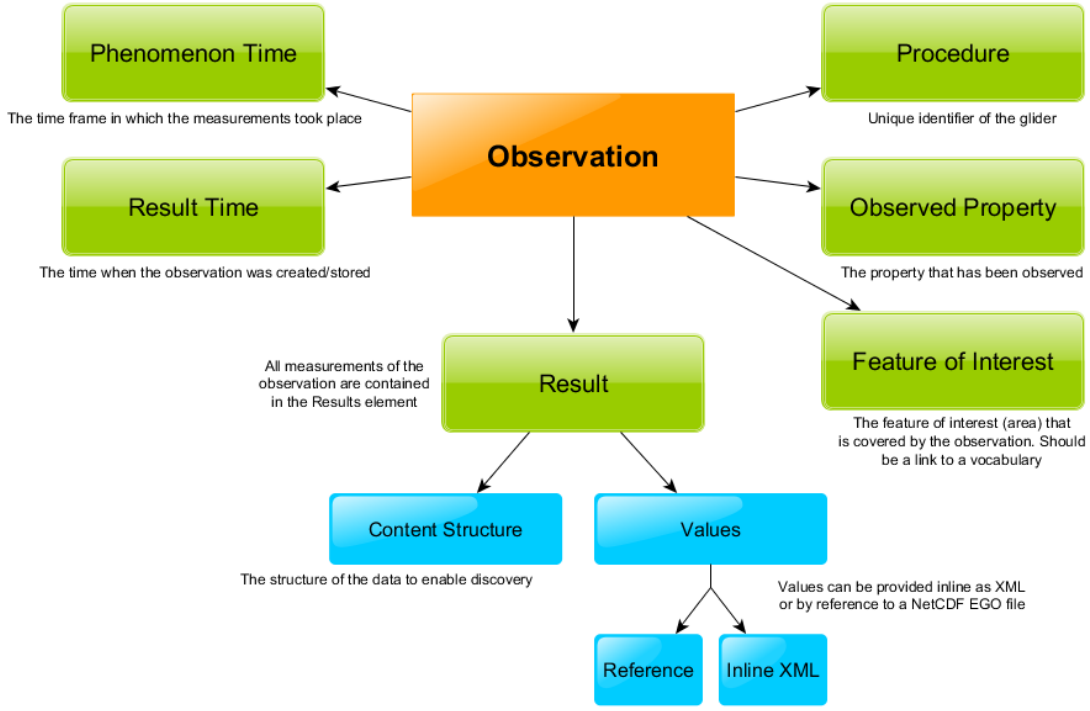

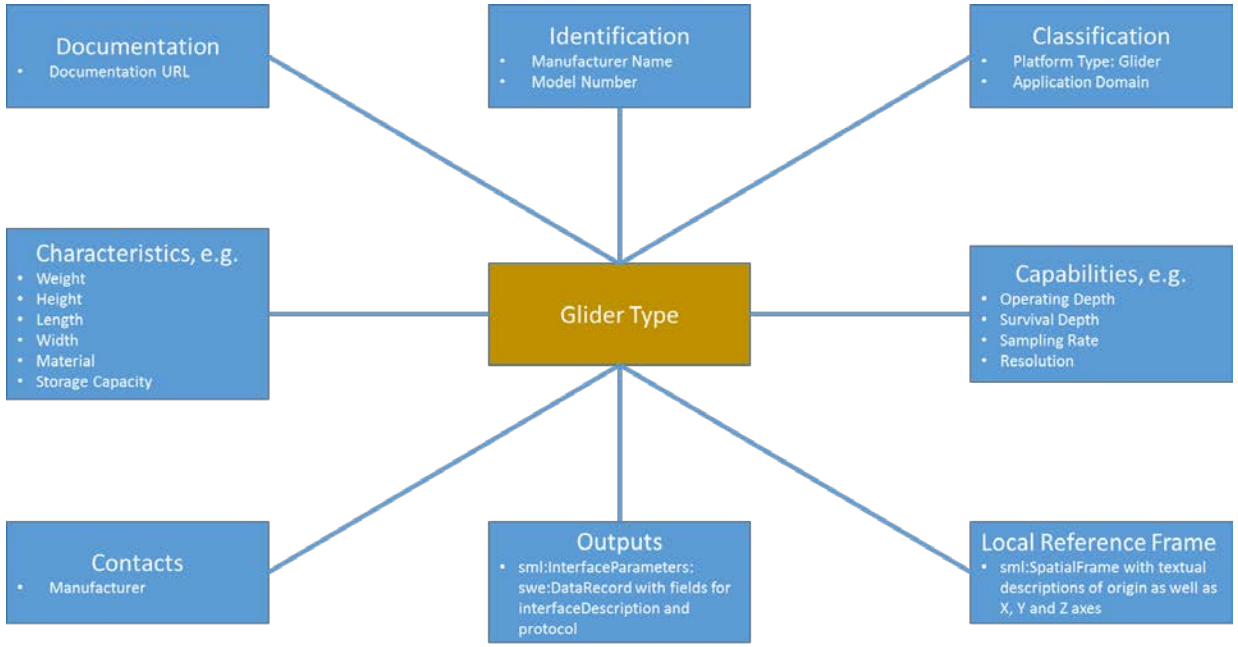

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Smart Cable

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- Initially built for purpose of analog to digital data conversion
- Extremely low power (20mW while active)
- Pressure tolerant (down to 6000m)
- Consists of voltage regulators, a Microcontroller, memory unit, ADC, etc.

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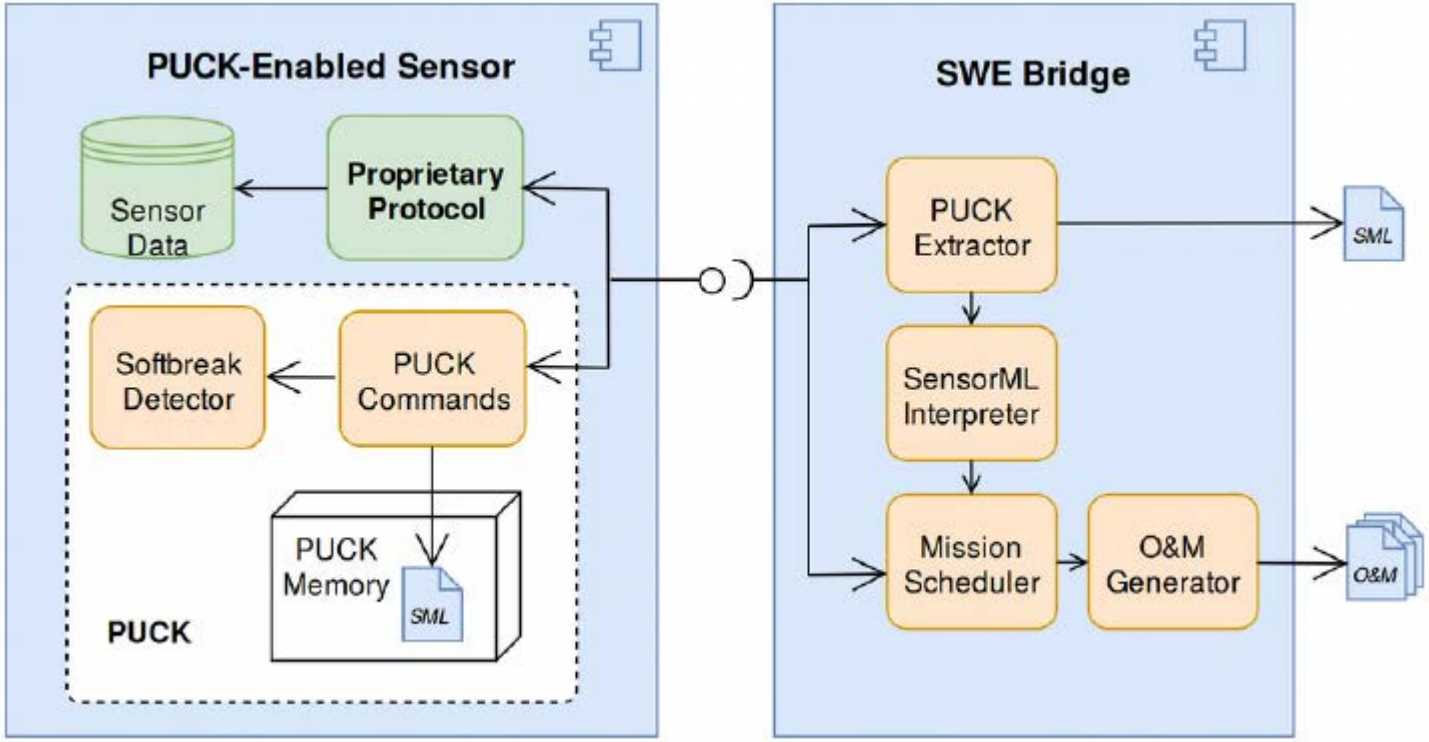
OGC PUCK Protocol



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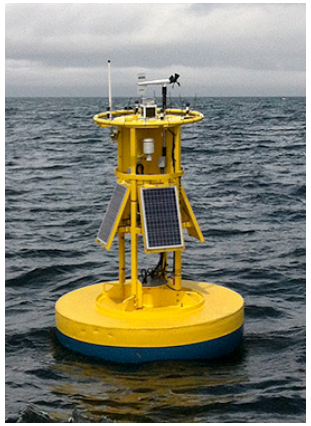

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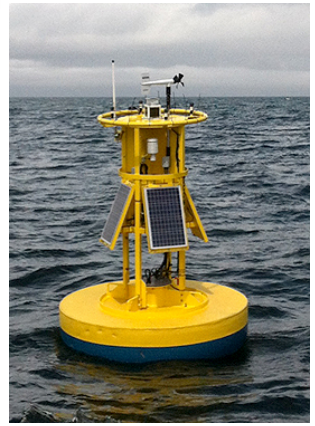

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Future Work

- Demonstrations of the Smart Cable capabilities in field (AtlantOS Interoperability experiment, BRIDGES sensor demonstrations)
- Offering the Smart Cable assembly service
- Working on improving a platform for easy to use SensorML generation
- Providing a platform for running any user-defined process on the sensor data
- Making the hardware/software available Open Source

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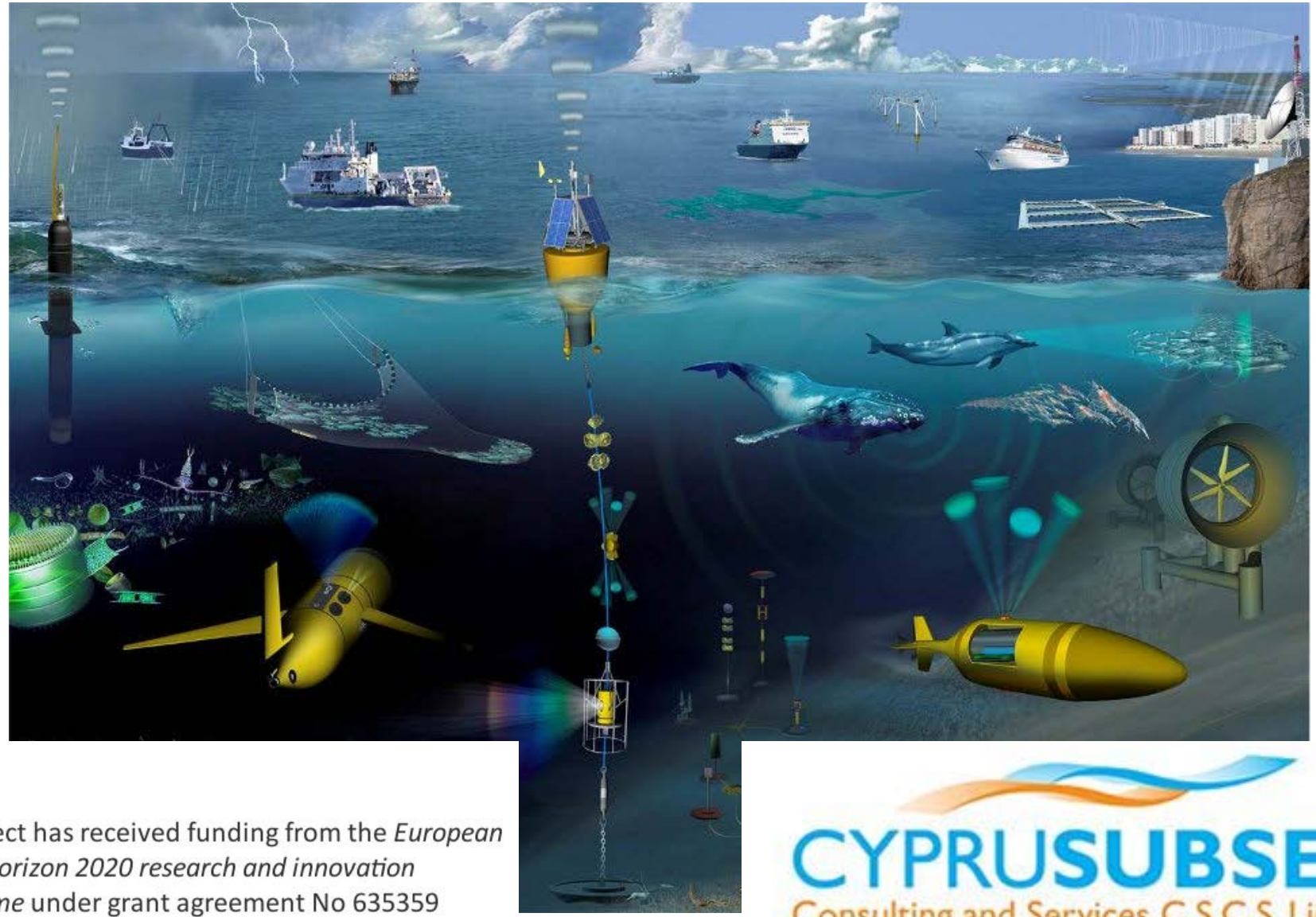
Thank you!



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