

#EUSpace 

EU SPACE WEEK 2023

7 - 9 November - Sevilla, Spain

Satellite technologies
to monitor ocean environment
and wildlife on Earth

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CLS



For **Earth**
from **Space**



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OUR VISION

A **global** company sharing a common **passion**:

to design and deploy **space-based solutions** so that we can **understand** and **protect**
our planet and **manage its resources sustainably**.



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CLS, a committed & mission-driven company

- CLS is a member of the **United Nations Global Compact** and became a **Mission Driven Company** in 2021.
- The UN has set **17** goals.
- CLS contributes to **ALL** of them.
- We are proud that **95%** of our activities are directly linked to achieving these sustainable development goals.

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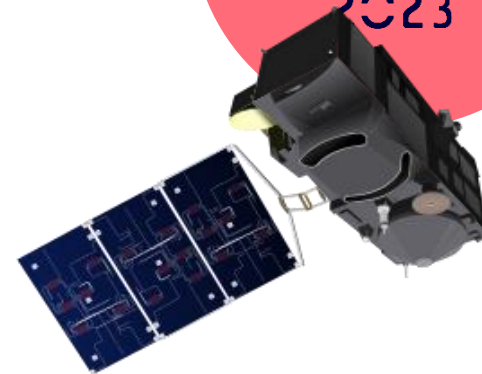
Argos/Iridium



Altimetry



Optic



Radar

Develop and provide operational services using satellite and in-situ data to help citizens and their governments respond to sustainable development challenges

Oceans

Ice

Land

Extreme
events

Clients around the world

- International organizations: Space agencies (CNES, ESA, EUMETSAT, NOAA...) United Nations, European Commission
- Governments: ministries, national agencies (Ifremer, CNRS,...)
- Scientists: climatologists, biologists, oceanographers
- Civilians: NGO's, associations, cities, local authorities etc.

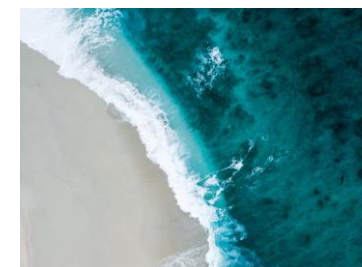


Ocean & Climate



Space Oceanography

+30 Earth observation satellites in use
70 products & services (ocean currents, water color, temperature etc.)



Coastal zone management

Flood risk management services



Forecasting / Visualization

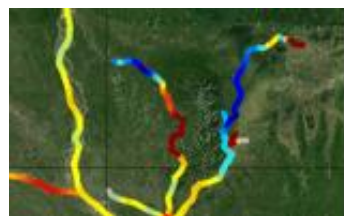
Information at the click of a mouse, visualized on web platforms
Forecasting models (drifts, currents, presence of marine population, etc.) integrated into these platforms



Integration of observation systems

Anticipating climate change
Supporting developing countries

Land & Hydrology



Water resources

Mapping and monitoring of hydrological networks
Development of services: floods, droughts, irrigation assistance



Natural hazards

Rapid mapping system for natural disasters



Urbanisation

Urban development control for large cities and local authorities



Deforestation

Operational satellite monitoring service for green spaces and forests



Agriculture

Control of agricultural plots, crop monitoring, impact of livestock farming on the land
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Telemetry



Monitoring of biodiversity

CLS, with more than **8,000** animals tracked every month, enables scientists to observe the impact of climate change on biodiversity.



In-situ oceanography

5 000 scientific oceanographic platforms processed every day, feeding weather forecasting models in real time.



IoT Environment

With the arrival of Kinéis, development of new satellite-connected environmental applications (hydrology, fire, air quality, etc.).



Smart Farming

The democratization of satellite tracking is opening up new markets such as herd tracking and connected agriculture.

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Copernicus Marine Service



The Copernicus Marine Environmental Monitoring service provides **regular and systematic reference information** on the physical and biogeochemical state, variability and dynamics of the ocean and marine ecosystems for **the global ocean and European regional seas**.

Service operational
since May 1st 2015

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Copernicus Climate Change Service

The Copernicus Climate Change Service provides reliable access to high-quality climate data via the Climate Data Store (CDS). CCS also offers tools and expert advice for transforming data into more visual products, such as maps and graphs.



Service operational
since 2018

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Environmental Marine Applications

Space and resilience in the face of climate change

Plastics, sargasso, submersion

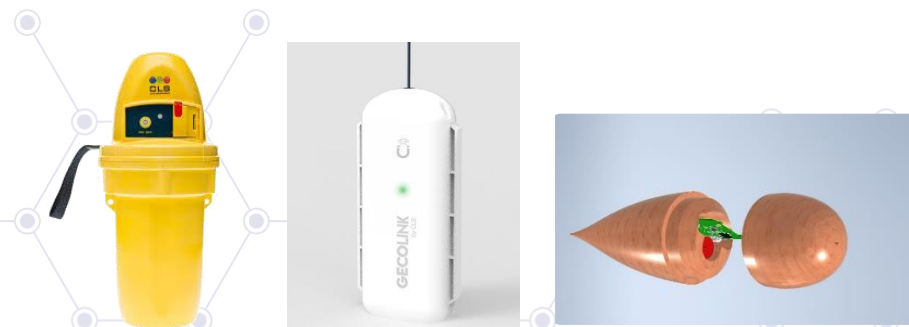
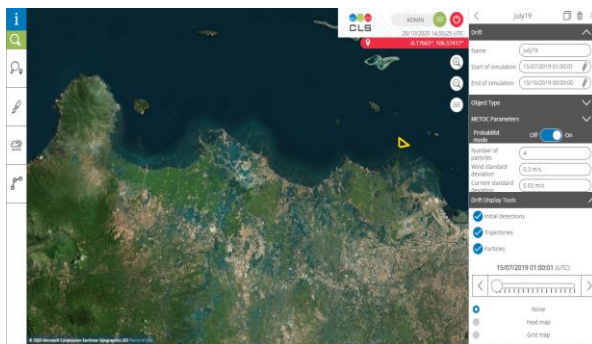
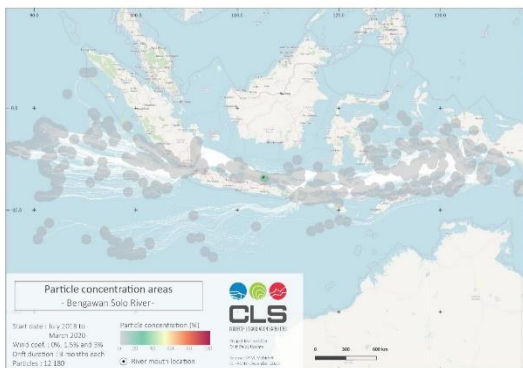


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Drifting plastic: Indonesian use case

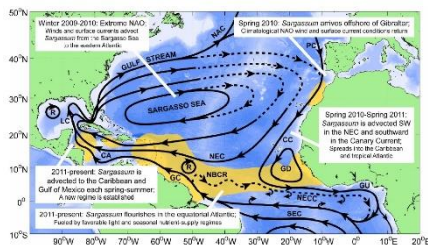


- Argos/Kinéis beacons
 - From river mouths
 - To coastlines or open sea
- Interactif web portal
 - Track beacons
 - METOC Data
 - Drift models
- MOBIDRIFT model
 - Simulation des traces des macro-plastiques



Sargasso detection & drift

Objective: Implement a methodology for collecting sargassum for recycling in French Guiana.

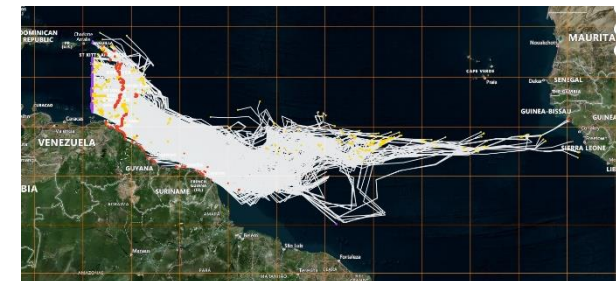
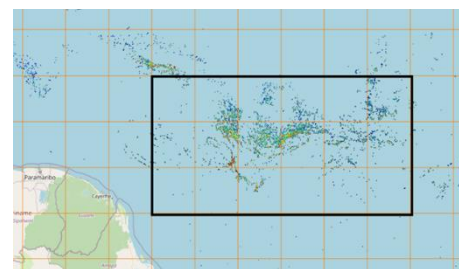


Since 2011, massive strandings of pelagic sargassum algae in the Caribbean, Gulf of Mexico and West Africa.

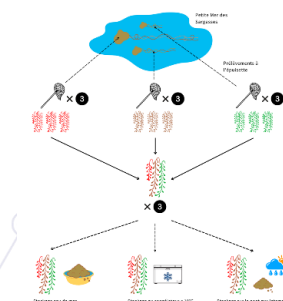
- Impacts on populations (public health, economies, environment)
- Emergence of the "New Sargasso Sea" in the Tropical Atlantic



Study of the presence of Sargassum on historical satellite data off French Guiana and its drift to the West Indies.



Sampling campaign in June 2021: Validation of satellite observations Physico-chemical characterization



Coastal flooding



- Identification of risks associated with coastal flooding



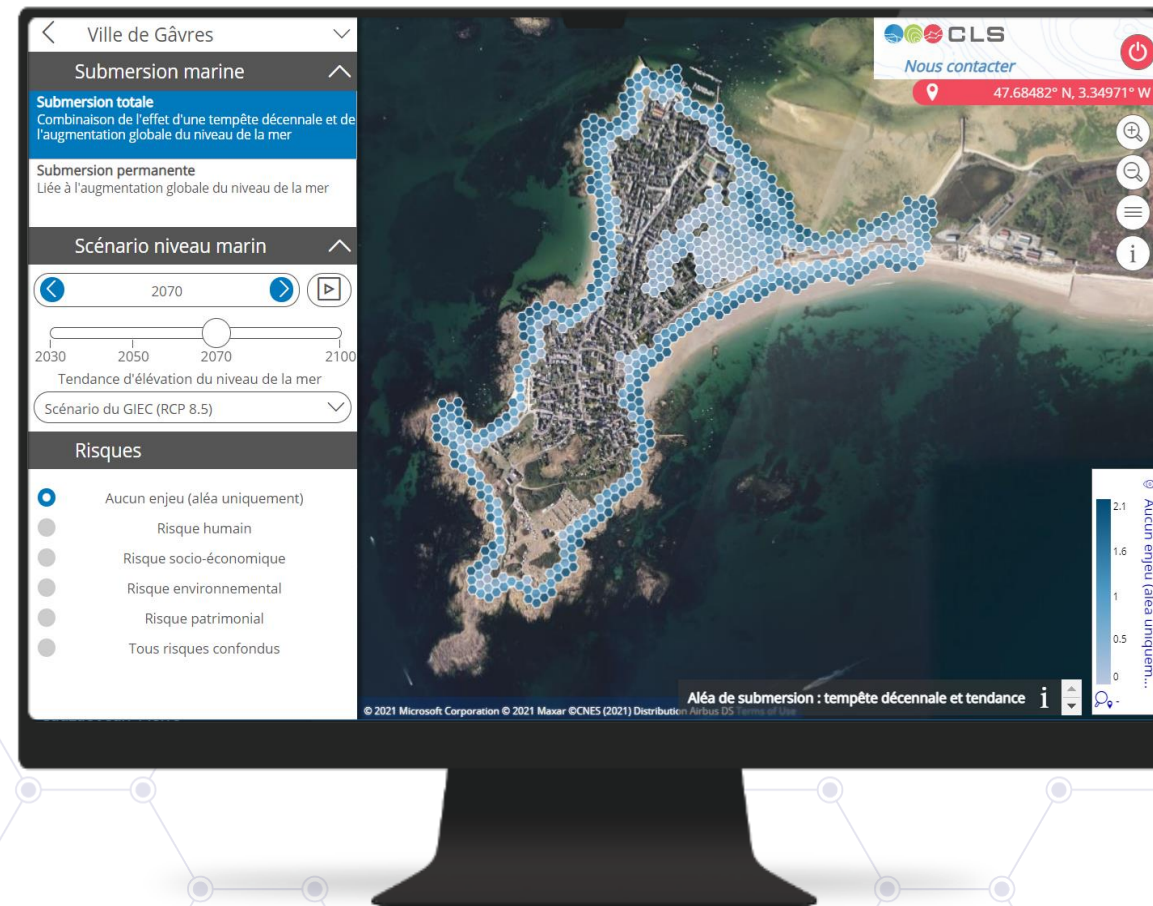
- Tool based on satellite data: optical HR and altimetry



- Takes into account mean sea-level rise, extreme events and socio-economic issues



- Sharing of results via a GIS web platform for use by local authorities





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Any questions?

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Thank you

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