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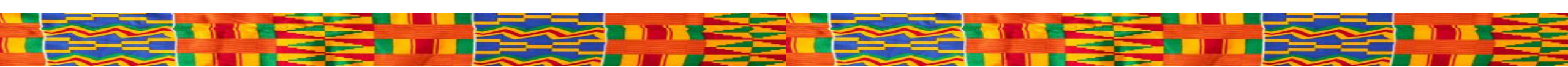


GMES & AFRICA (Marine) in North and West Africa

Marine EO services for West & North Africa

[Geo Blue Planet, Ocean and Coastal Observations for Policy and Decision Making, 5 March, 2024]

Dr. Kwame Adu Agyekum
Project Coordinator, Marine and Coastal Areas
Management in North and West Africa (MarCNoWA)
University of Ghana



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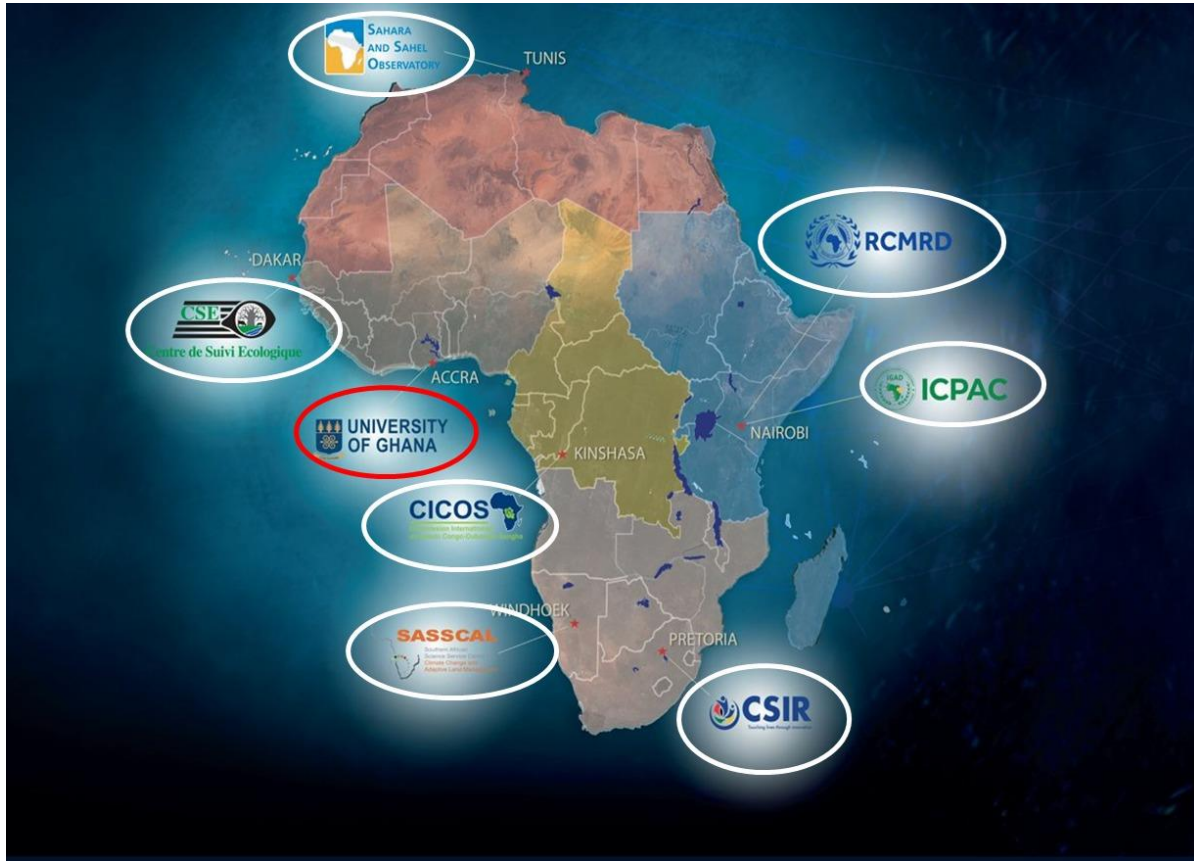


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Global Monitoring for Environment and Security & Africa (GMES & Africa)

The Global Monitoring for Environment and Security and Africa (GMES & Africa) Support Programme is a joint programme co-financed by the European Commission and the African Union Commission. The Programme intends to adapt and use the Copernicus Programme data and services in the African context.

GMES and Africa is designed to specifically respond to African needs with respect to the development of services for **water, natural resources, marine and coastal areas**, address the global needs to manage the environment, and ensure civil security.



Regional Initiatives



Stakeholders

Geographical Coverage

Lead, Partners



Consortium Name: **MarCNoWA**

Title: **Marine and Coastal Areas Management in North and West Africa**

Geographical Coverage: **West & North Africa (18 countries)**

Focus: **Fisheries, Marine meteorology, Coastal ecosystems monitoring and vulnerability assessment, Oil spill monitoring**

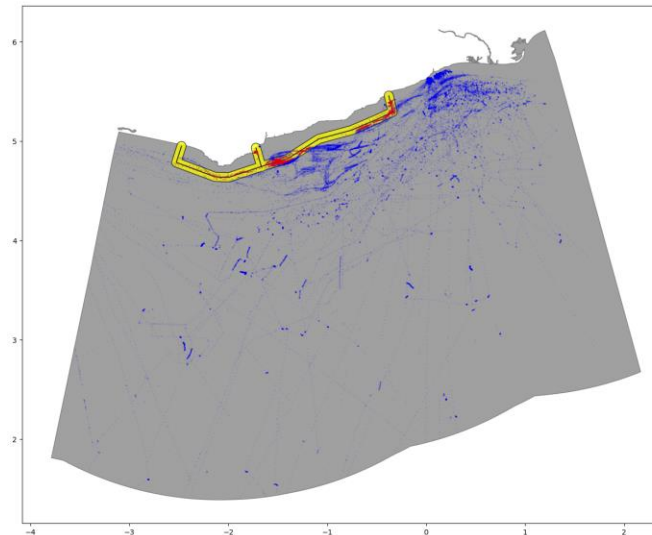
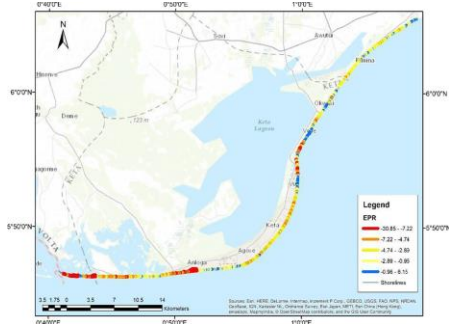
Website: <https://gmes.rmc.africa/>

Contacts: rmc@ug.edu.gh

Partners : **UG, GMet, CEDARE, NTG, CURAT, UCD, CERT, IRHOB, CRODT, NIOMR, Edenway Foundation**



EO Services



**Earth
Observation
Applications
& Services**

- 1 Monitoring & forecasting oceanography variables
- 2 Fisheries resources management and protection
- 3 Regional marine weather forecast
- 4 Monitoring coastal vulnerability
- 5 Coastal ecosystem/habitat mapping
- 6 Oil spill monitoring and warning services (New)

Mobile USSD code

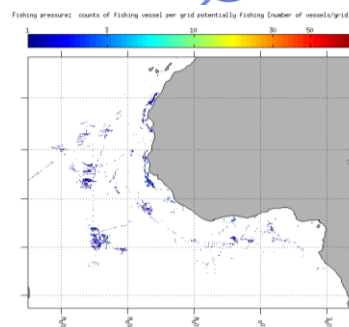
SMS Service
Forecasting ocean weather

Advance information on ocean weather on your mobile phone

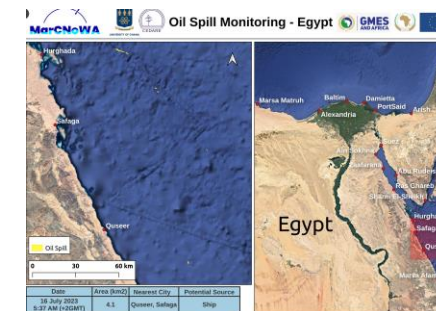
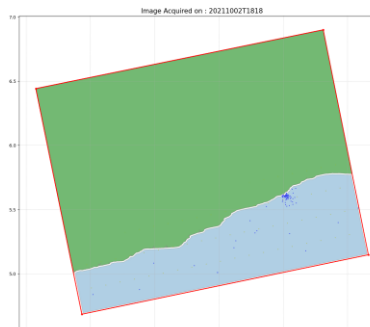
1		→	Green	Calm
2		→	Yellow	Rough
3		→	Red	Dangerous

To receive SMS on ocean conditions please contact: 018221262151 Ext 4982

MESA



Fishing density maps



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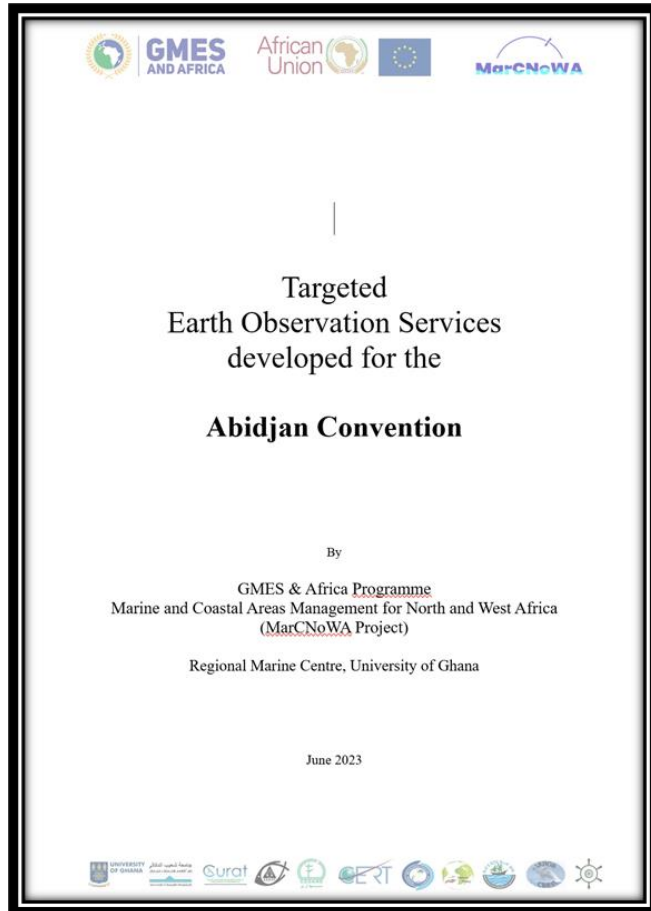


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Co-design and EO service uptake



- Engagements clearly define the cooperation and support for FCWC, MMCZoneF, Abidjan Convention and CaFGOAG.
- Develop tailored EO services and applications (co-design, service utilization/adoption).
- Provide comprehensive capacity-building programmes and technical support.
- Knowledge sharing and partnership building.

- Overfishing and Unsustainable Fishing Practices
- Marine Pollution
- Ocean Acidification
- Climate Change and Rising Sea Temperatures
- Habitat Destruction
- Loss of Biodiversity
- Illegal, Unreported, and Unregulated (IUU) Fishing
- Marine Protected Areas (MPAs) Underfunding and Poor Management
- Impact on Indigenous and Local Communities
- Ocean Governance and International Waters Management
- Nutrient Pollution and Eutrophication
- Sea Level Rise and Coastal Erosion
- Invasive Species
- Socio-Economic Challenges

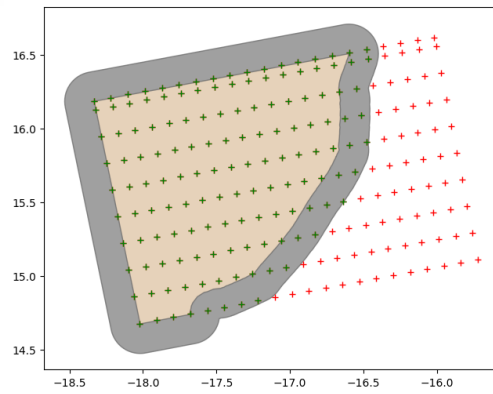
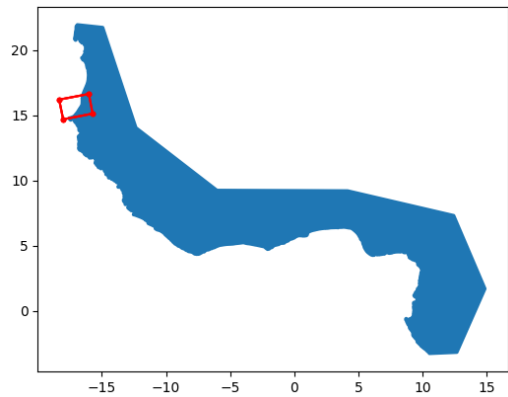
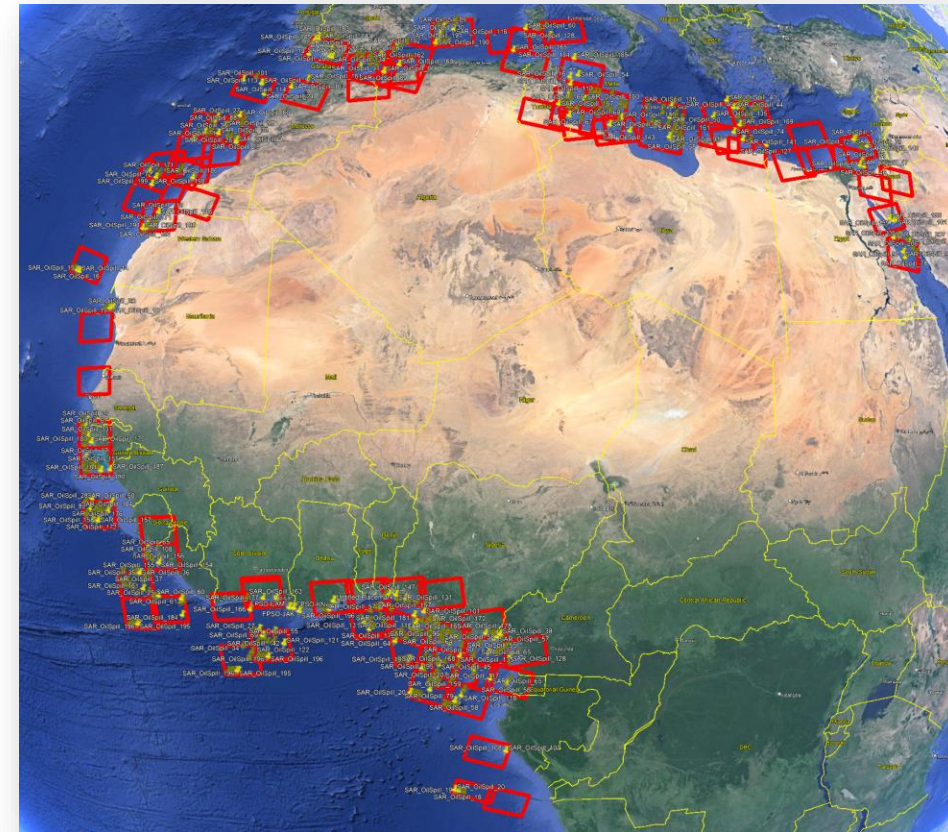
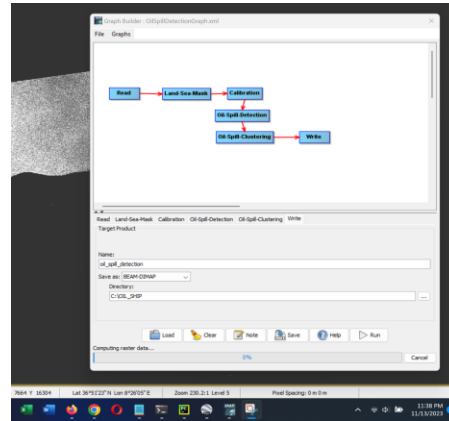
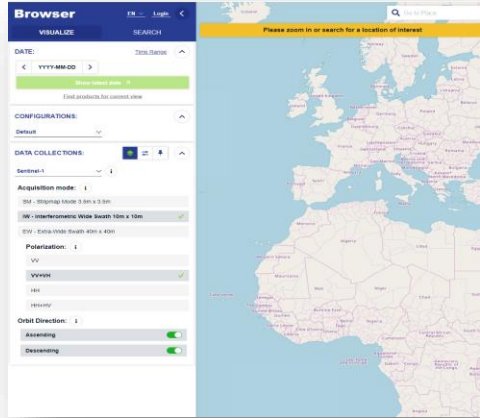


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Ship Detection & Oil Spill Monitoring Service

- Automated data downloads from Dataspace and Alaska Satellite Facility (Sentinel 1)
- SNAP Graphic Builder for prototyping
- Significant speed-up using (CUDA/numba) & processing only ocean regions of the image



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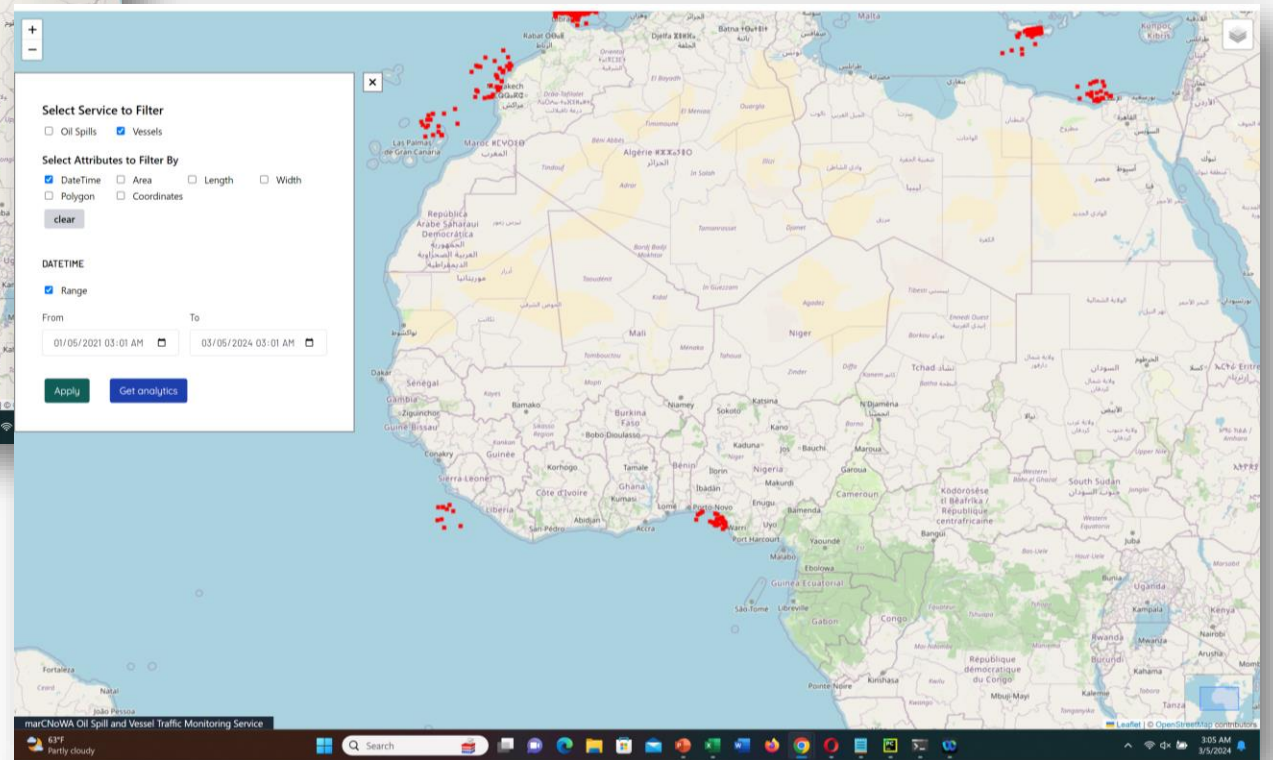
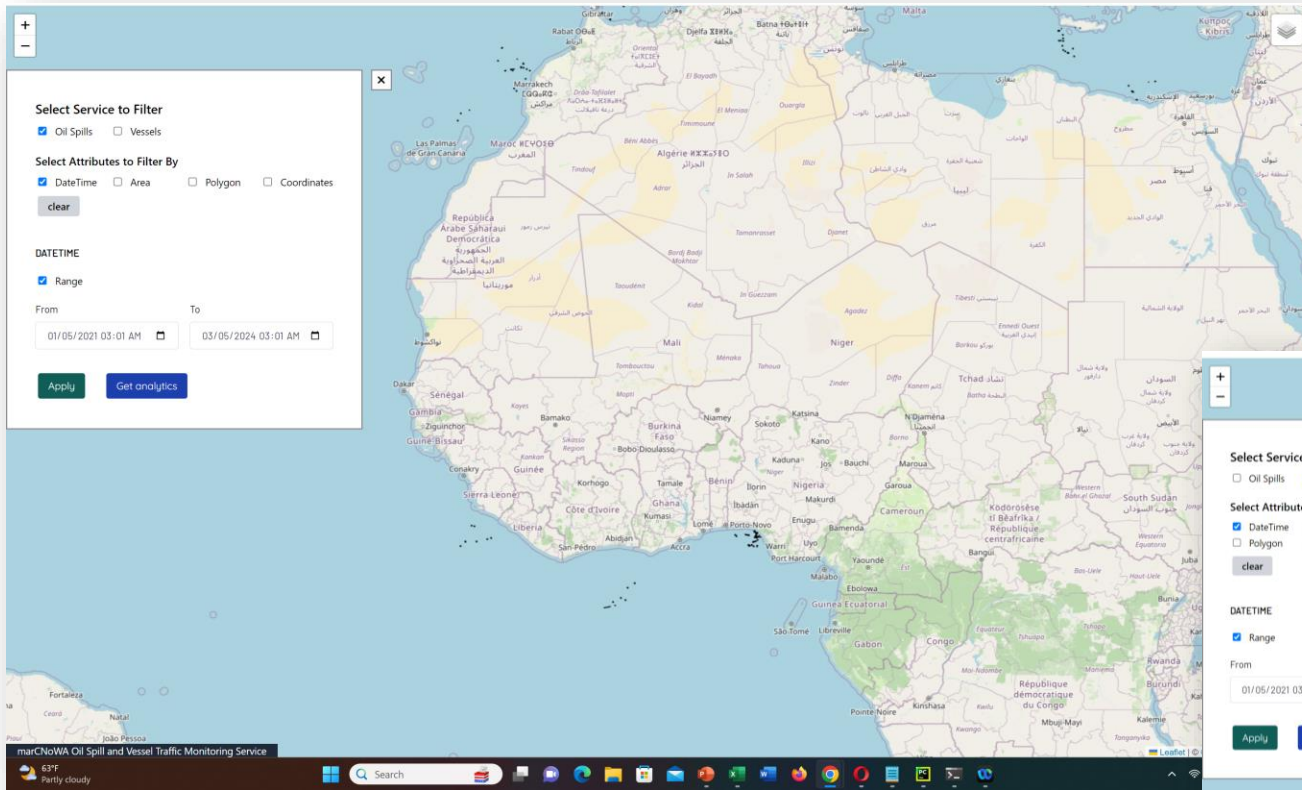


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Ship Detection & Oil Spill Monitoring Service



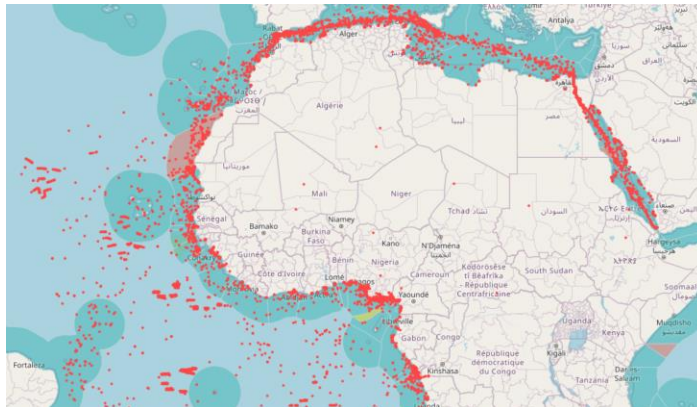
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IUU Fishing Monitoring (Transshipment)



Automatic Identification System (AIS)



Pairwise comparison of the position of fishing vessels

- Collecting position data (latitude and longitude) for both vessels at specific timestamps.
- Calculating the distance between the two positions at each timestamp.
- Comparing the calculated distance to the threshold.



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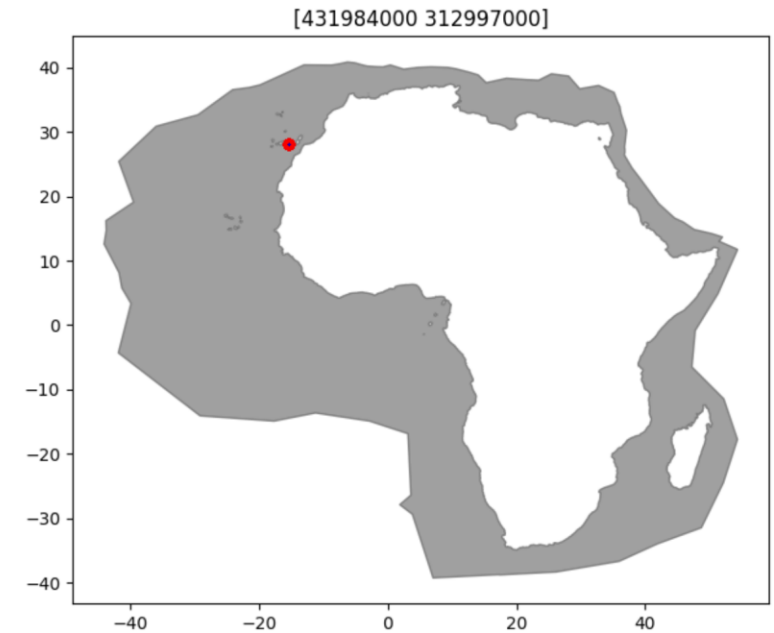
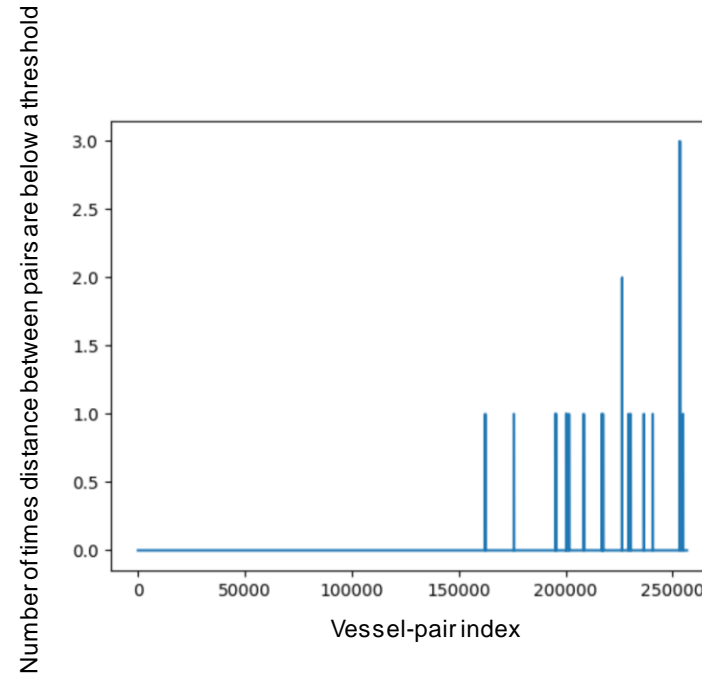
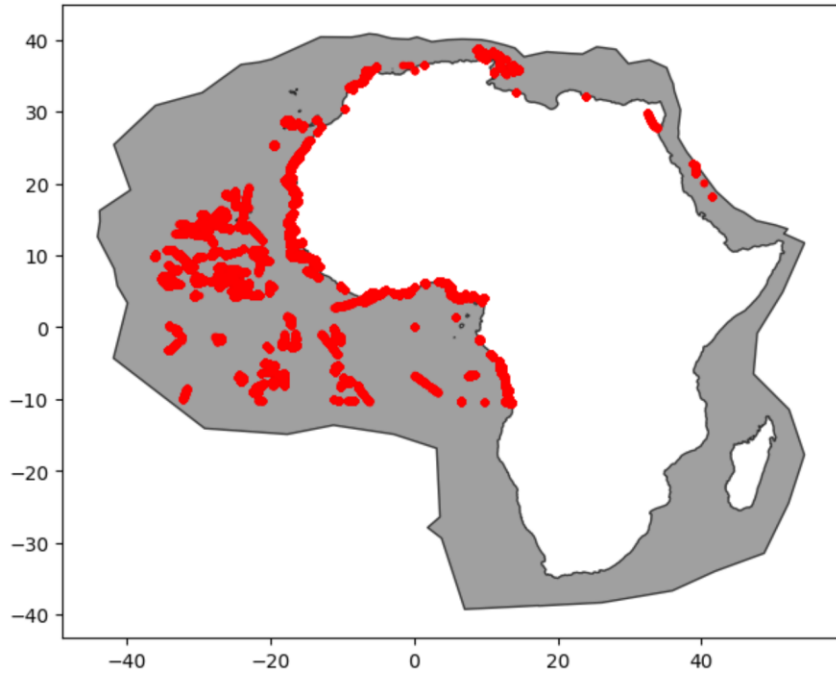
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IUU Fishing Monitoring (Transshipment)

717 fishing vessels, 256686 pairs to compare, processing in less than 5 minutes



Vessels involved, duration of transshipment, location etc can be reported



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Conclusion



Talking is good, listening is perfect... using what is produced will immensely improve the sustainable use of our resources

THANK YOU!



Our dissemination channels



<https://gmes.rmc.africa/>



rmc@ug.edu.gh



[Regional Marine Centre](#)



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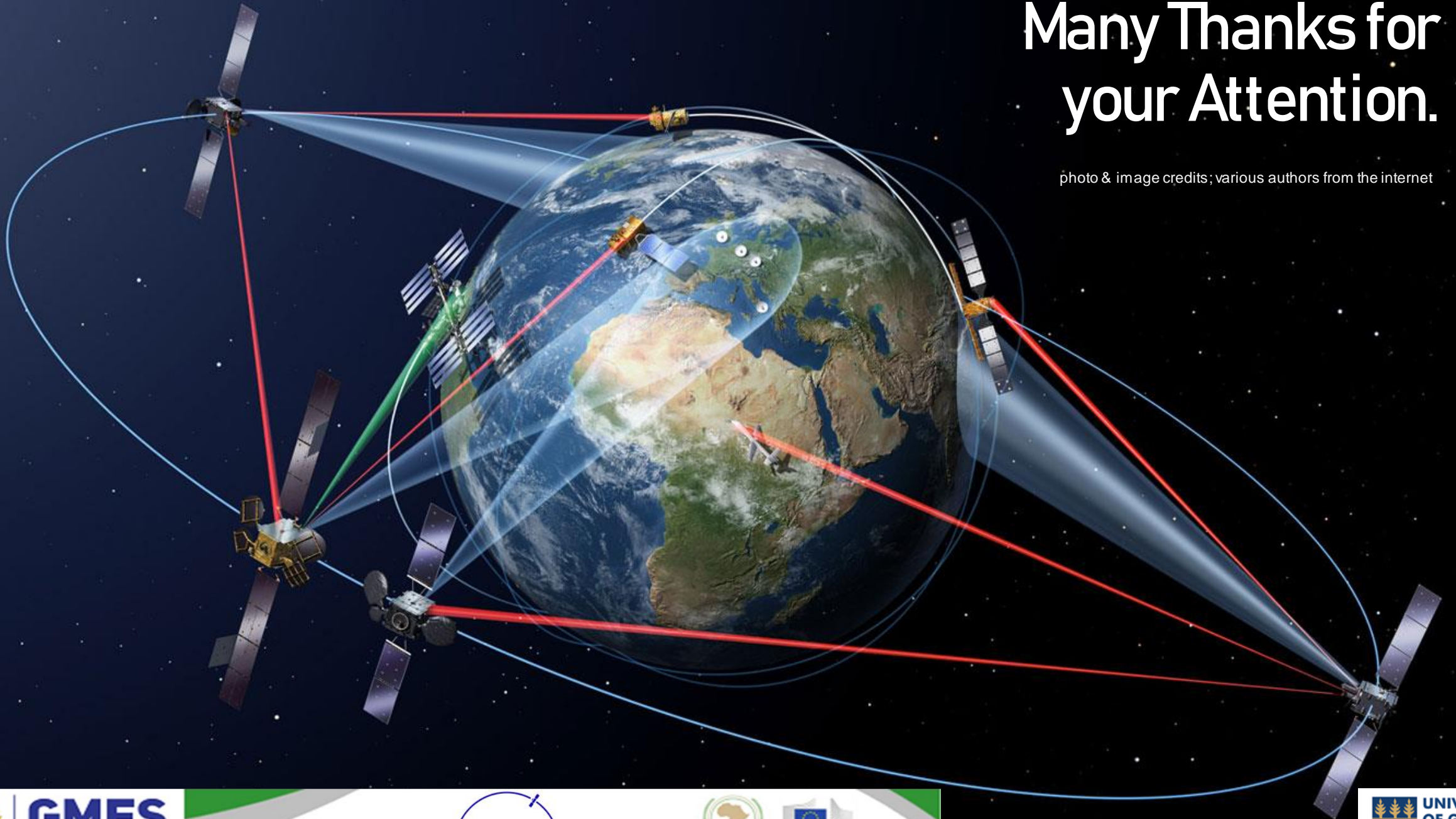


[UG-GMES Regional Marine Centre](#)



Many Thanks for your Attention.

photo & image credits; various authors from the internet



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