



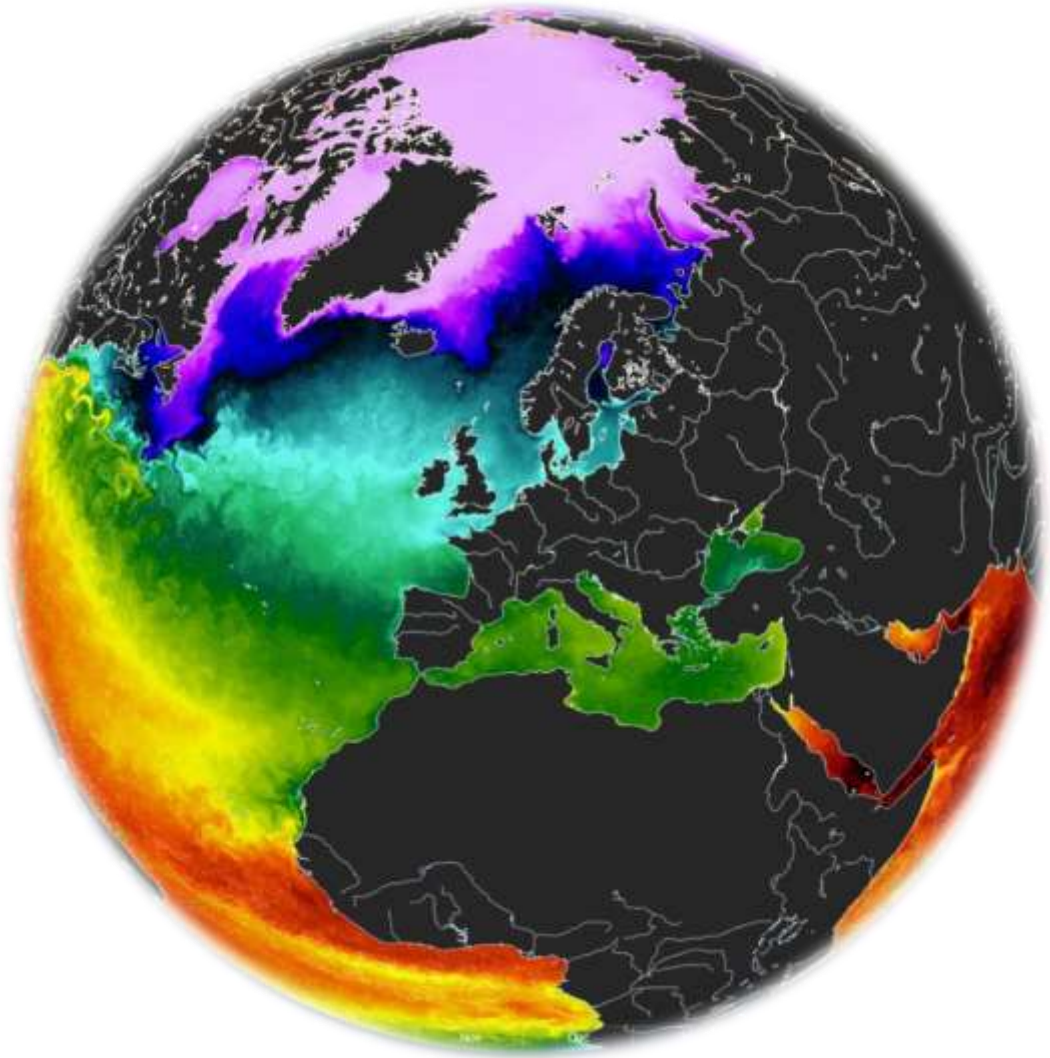
EUROPEAN UNION



EUROPEAN DIGITAL TWIN OF THE OCEAN

Alain ARNAUD, Director of Digital Ocean
Mercator Ocean international

What is the EUROPEAN DIGITAL TWIN OF THE OCEAN



What NOW?

Real-time monitoring of ocean conditions using data from satellites, in-situ sensors and models.

What NEXT?

Forecasting of ocean dynamics using state of the art modeling based on current data trends

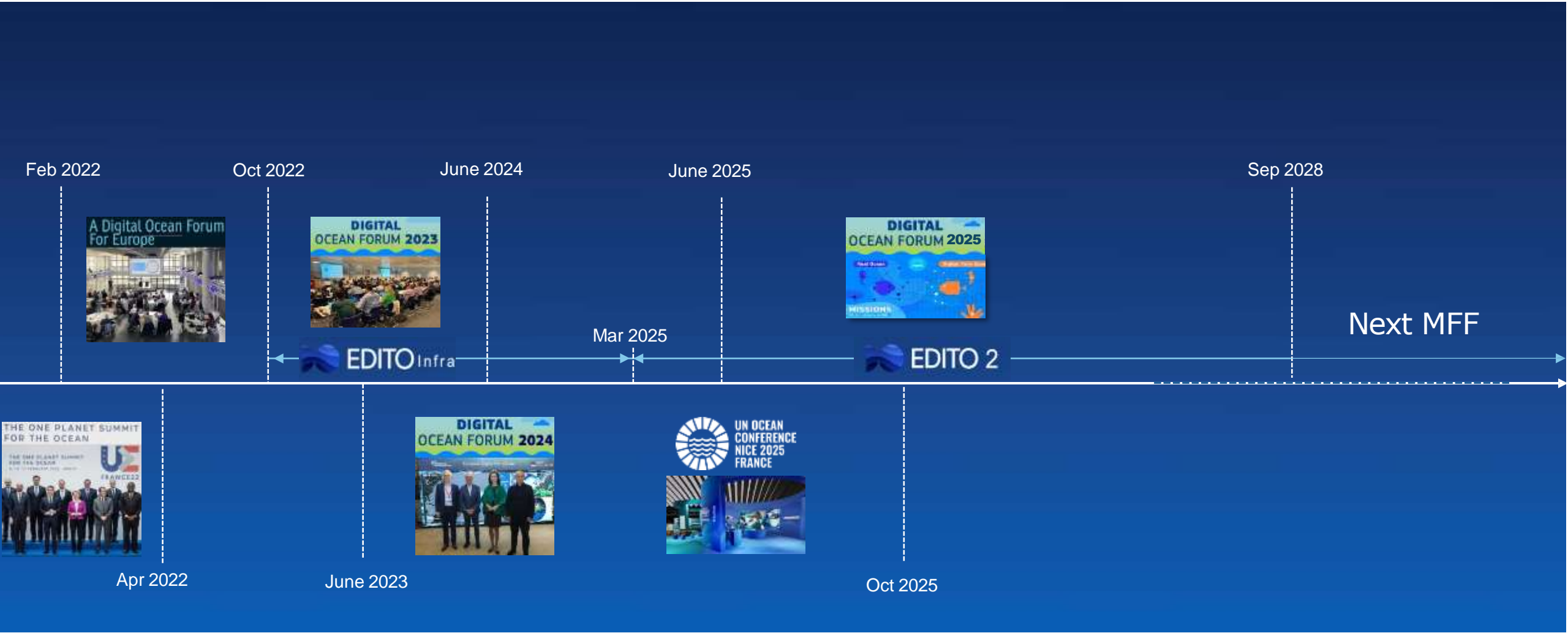
What IF?

Advanced simulations and scenario modeling to assess future impacts and adaptation strategies helping citizens and stakeholders enhance ocean sustainability and resilience.

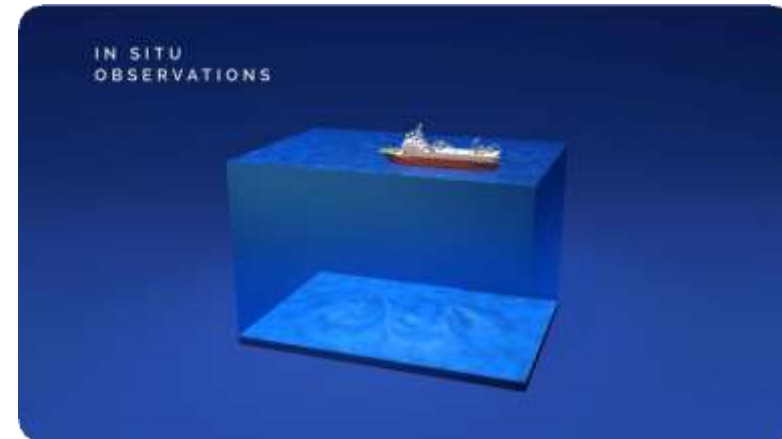
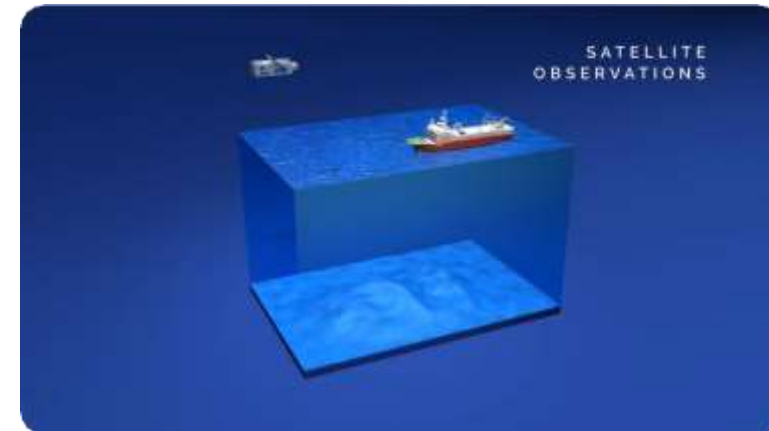
Better decision-making

European digital twin ocean

A long-term vision and a fast deployment

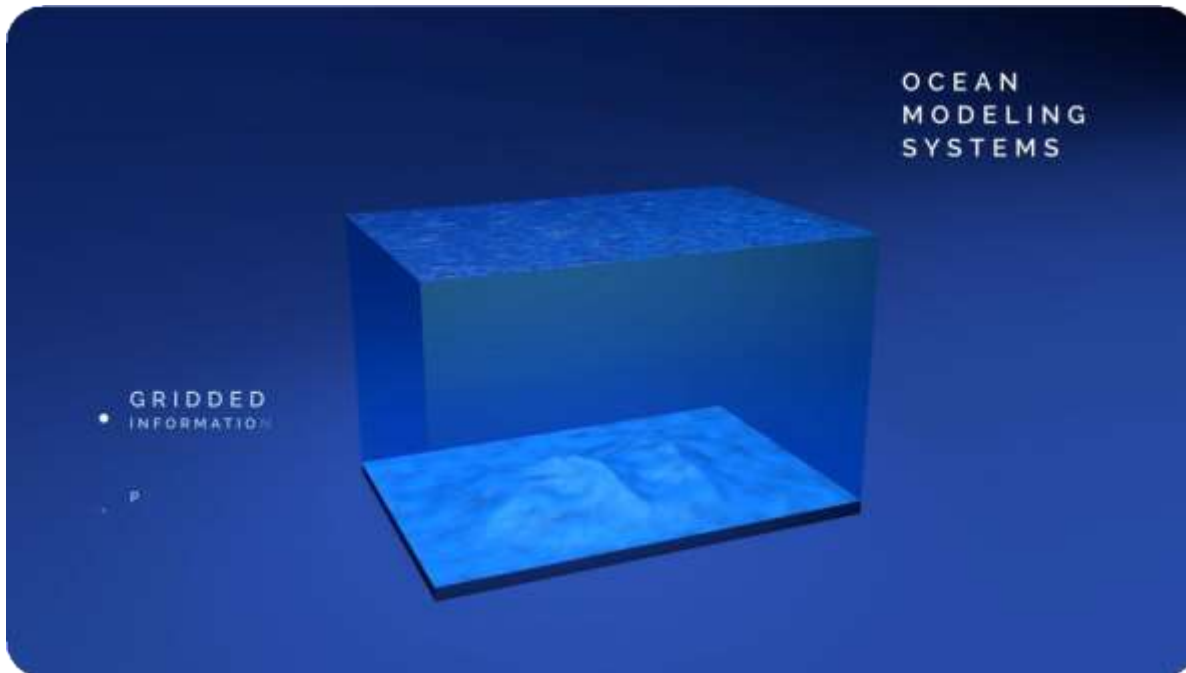


What NOW? How is our OCEAN?



Gathering European assets – EMODnet, Copernicus Marine Service and international

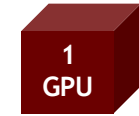
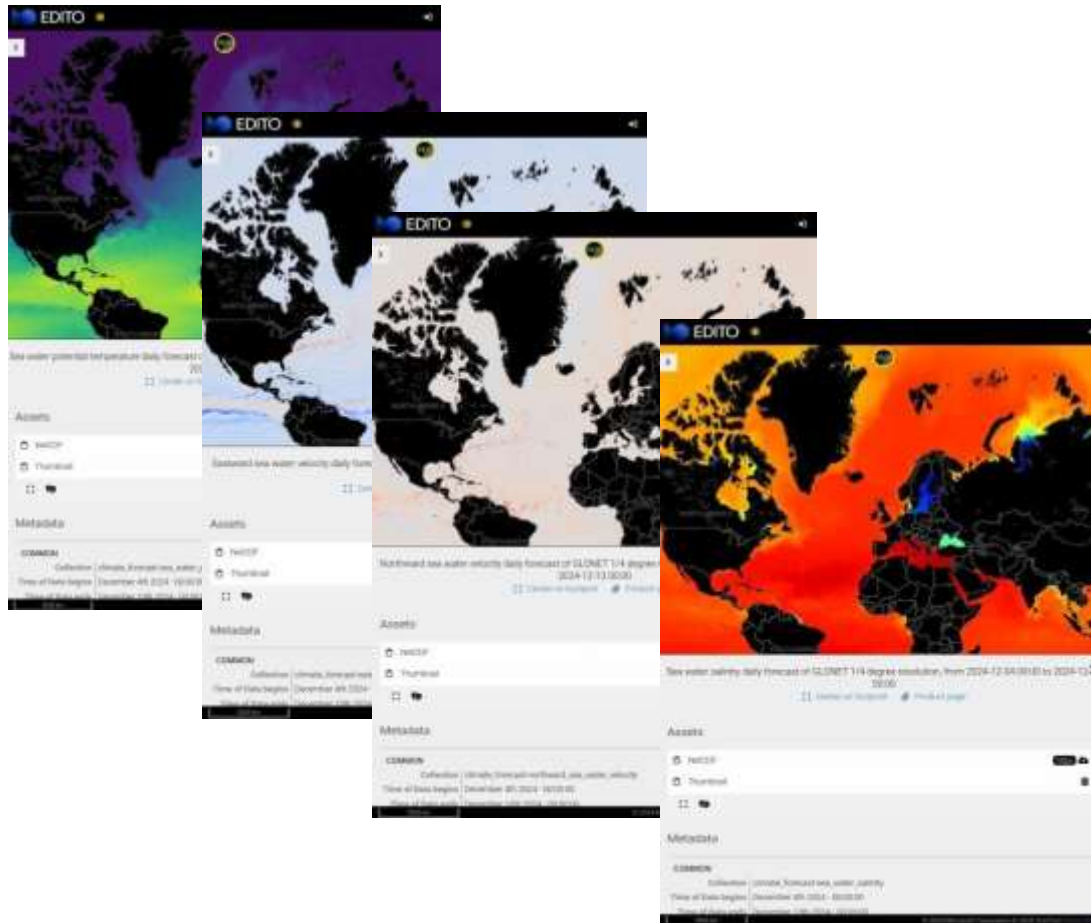
What NEXT? Ocean Prediction



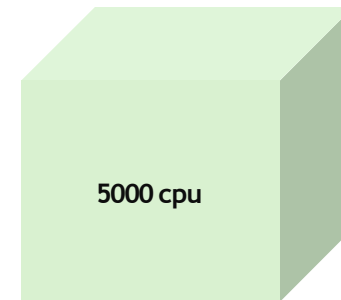
Ocean Prediction enables 10 days predictions for ocean Physics (Temperature, Salinity, Sea Level, Waves...), Biochemistry, Biology...

In addition to European operational service like the Copernicus Marine Service, the DTO enables international collaboration in the framework of the UN Decade Collaborative Center for Ocean prediction.

What NEXT? Artificial Intelligence used in models



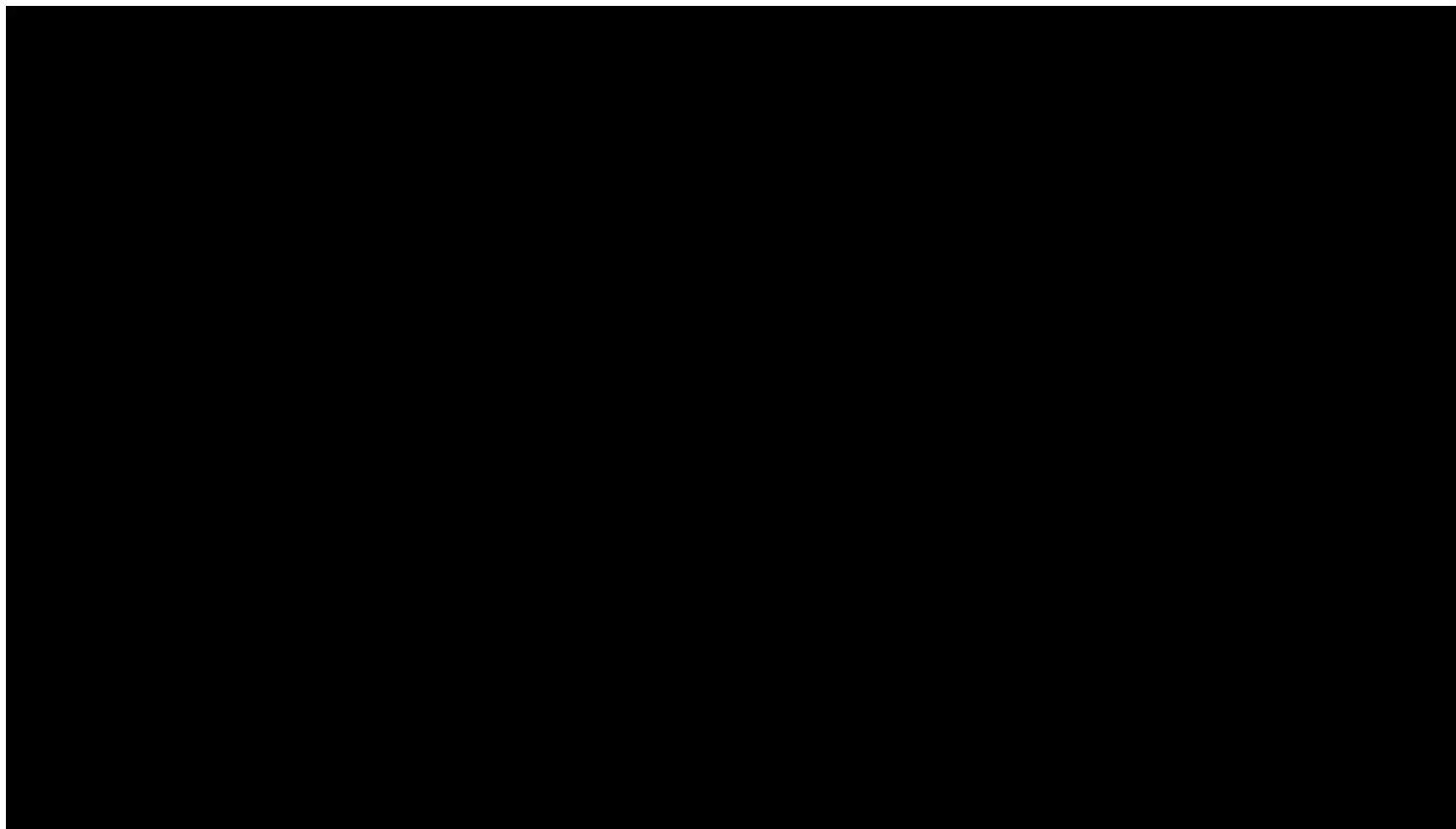
AI BASED GLO12 ~ 3 sec



PHYSICAL MODEL
GLO12 ~ 6 hours



What IF ?
Marine Plastic Tracker



CONCLUSION



- The European project follows a co-design principle on the development of the Core DTO.
- The core DTO is formed by all the existing European assets and collaborating projects and foster interoperability with other similar initiatives, with UN DCC OP and DITTO program.
- Thanks to WhatIF advanced scenario, it will support decision makers, enabling science-based decisions.