



6-8 December 2022  
Grimaldi Forum  
Monaco







Hydro22, Monaco 6-8 dec. 2022





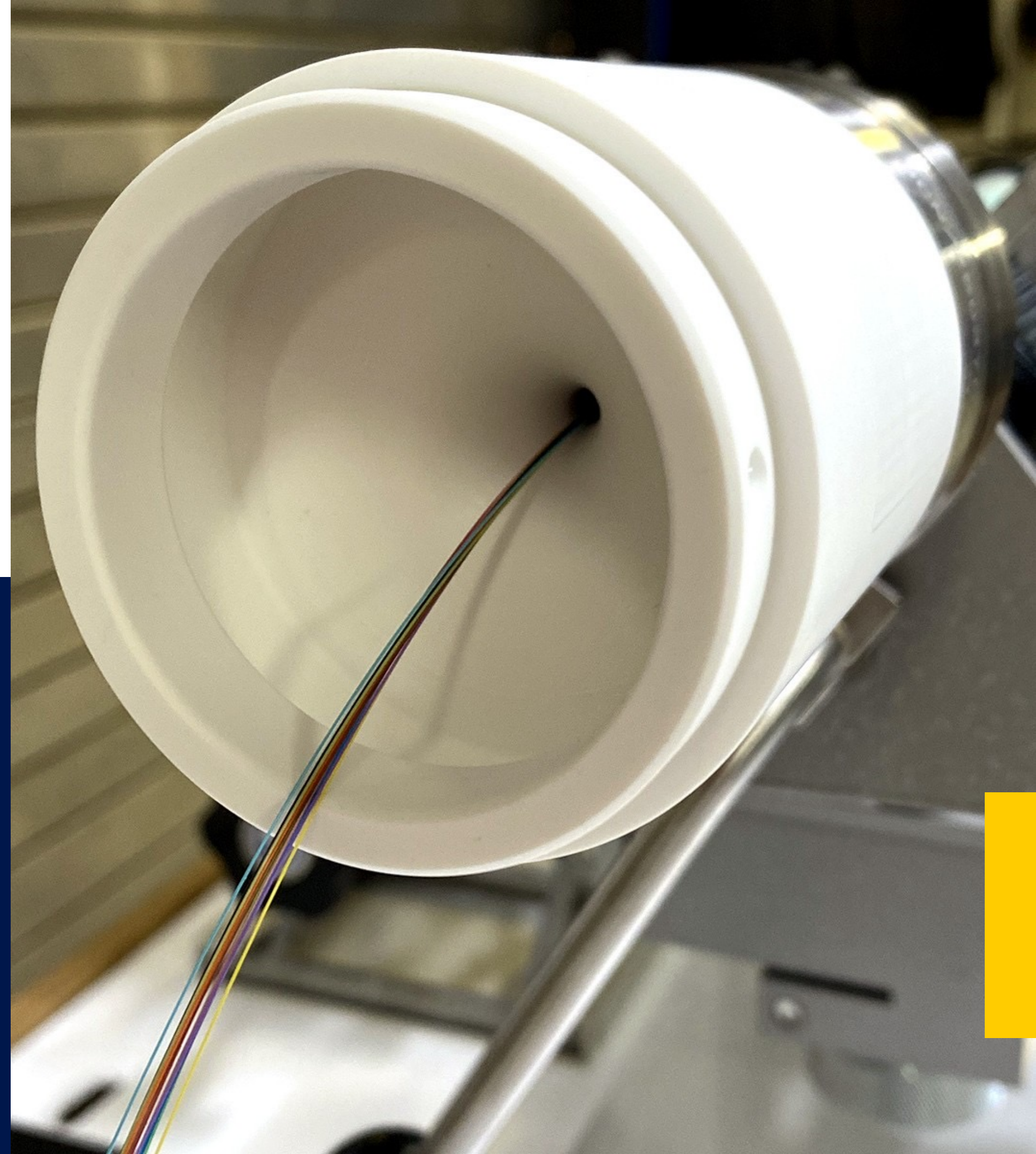
# The problems of the new SLOCs within the cyberspace, accidents/events in the maritime environment and their geopolitical impact

*Authors: Aldo Monaca, Virgilio Scolaro, Ennio Ammatuna, Sebastiano Messina, Alessandro Maiolino, Maurizio Balsamo GioiaAlessia Chiara Grazia Indelicato.*



# A Critical Infrastructural System

- Subsea Cables Telecommunication
- 5 Domains:  
air/land/sea/undersea/Digital  
Cyber Space







# Digital Cyber Space Domain

## Protection:

- by software;
- by hardware or physical protection;

## Interruptions/incidents:

- 40% non intentional damage;
- 12% natural Hazard;
- **48%** intentional damage







# THE CYBER THREATS

- ❑ Phishing, Ransomware, Insider threat, Social Media Deception ...
- ❑ Physical problems link with SLoC



# INFRASTRUCTURES



- □ 530 active and planned submarine cables (2022)
- 
- □ 1.3 million kilometres of submarine cables in service globally (2021)
- 

There is a «*hybrid war*» for a subsea cables control -Rona Rita David @ Energy Industry Review-





## Cyberattacks Factors

- ❑ Growing volume of data flowing through the cables
- ❑ Growing capital intensity of these structures

The oil crisis, the advent of war conflicts, both historical and new, and the growing interest in a world still unknown globally such as that of submarine cables means that the utmost attention must be paid to how any data leaks can impact on some government structures with security gaps.



A large, multi-level offshore oil rig is shown in the background, with its complex metal structure and various platforms extending over the dark blue ocean. The rig is supported by several legs, and a long horizontal platform extends from one of the main structures.

## Which kind of possibility of cyber attackers UOCS Underwater Optical Cable Systems

The safety of the submarine cable network, it has a double aspect:

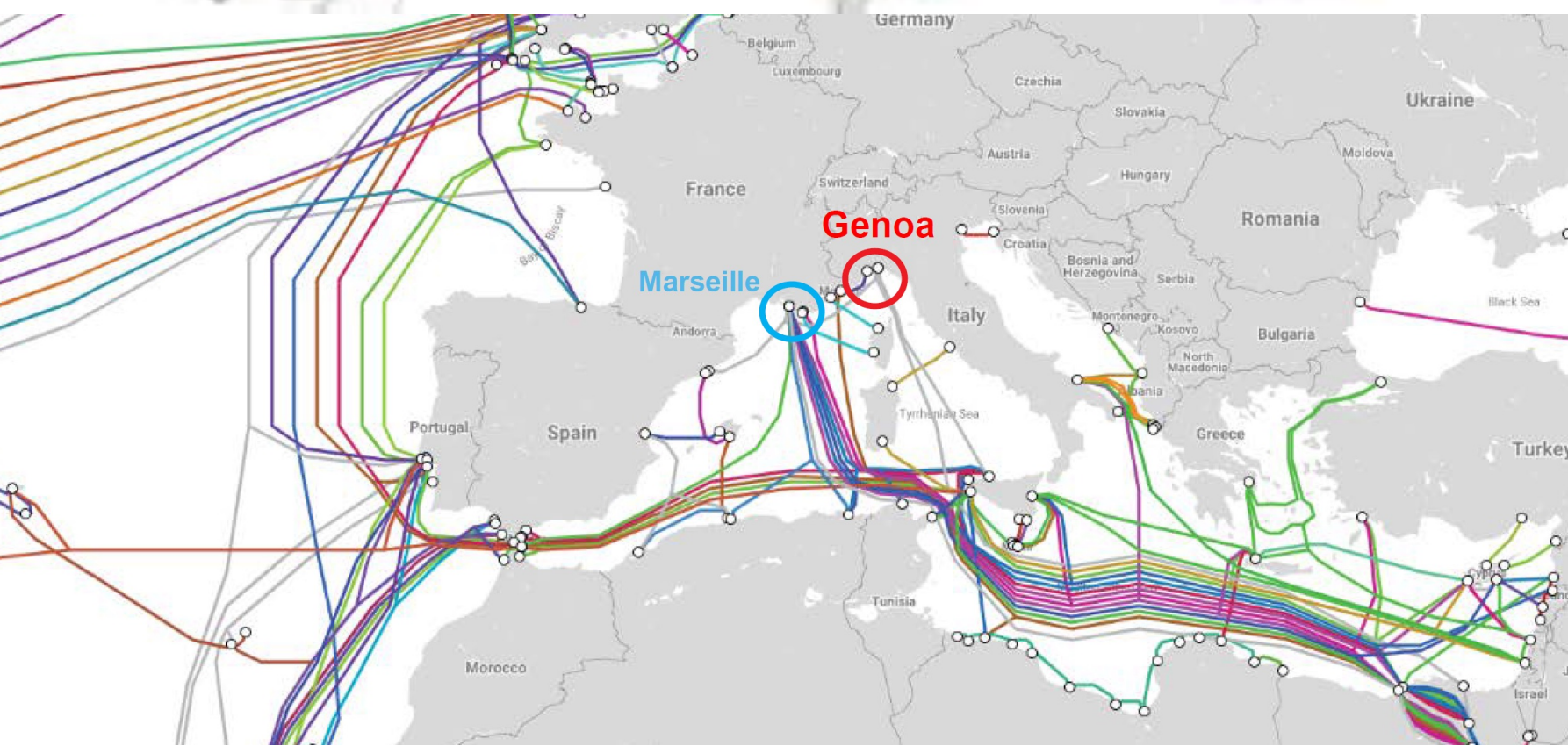
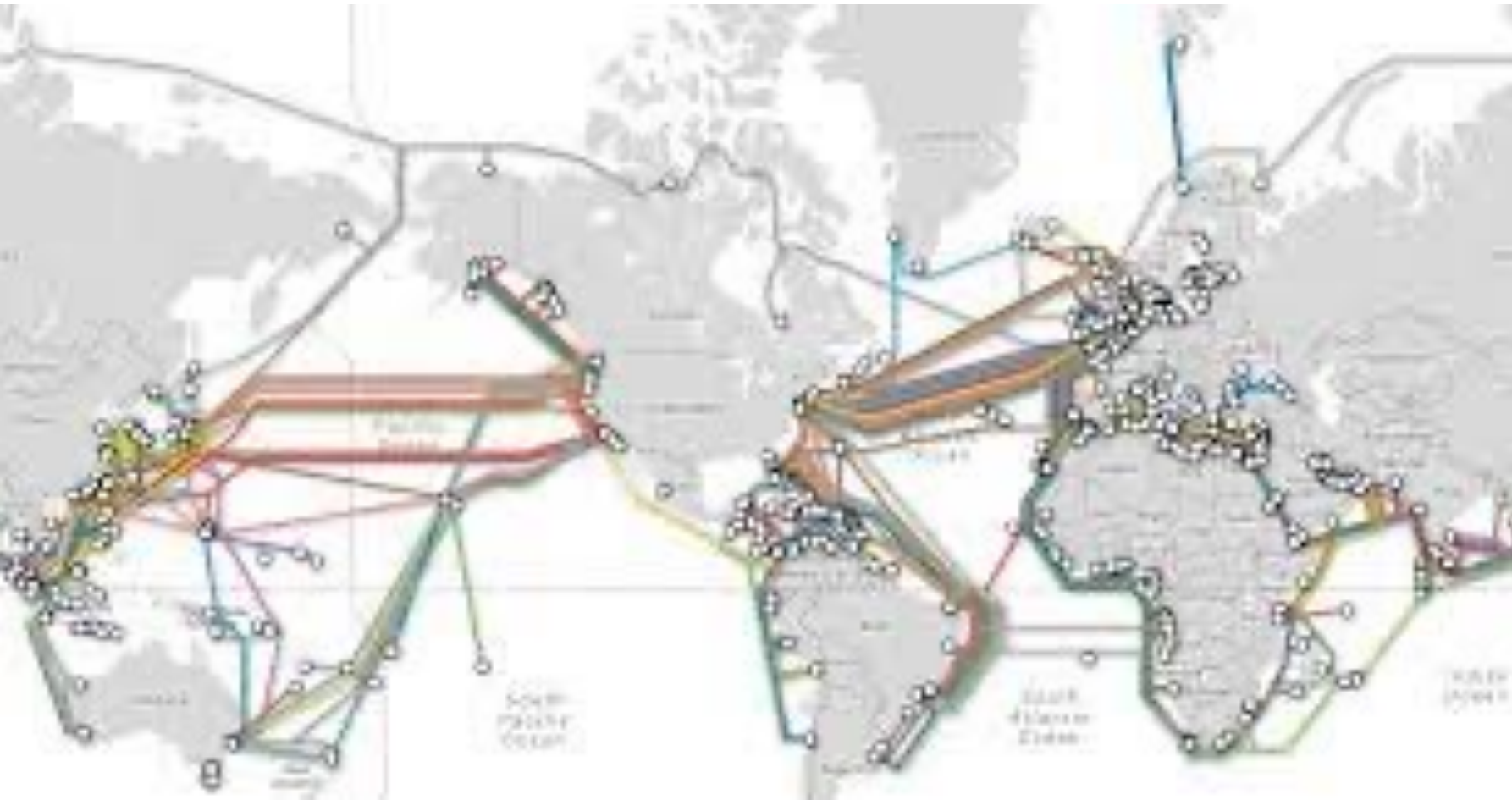
1. Maritime Safety
2. National Cybersecurity

One cannot prevail over the other and vice versa.



# e.g. in Italy

(l'italia è un hub importante  
che unisce tre continenti)



We have 4 CLS: CT, Mazara d. V., PA, GE

9 other single CLS

They are Structural Critic Nodes

**NOW: How, What, in Which case is possible to indicate the position of the subsea cables?**



# HOPED STRATEGY



Common global policy for the physical safety of the cables themselves

Smart Cables





# CONCLUSION

The Trap of Thucydides.

Hydrospatial Metadata can give a great support.

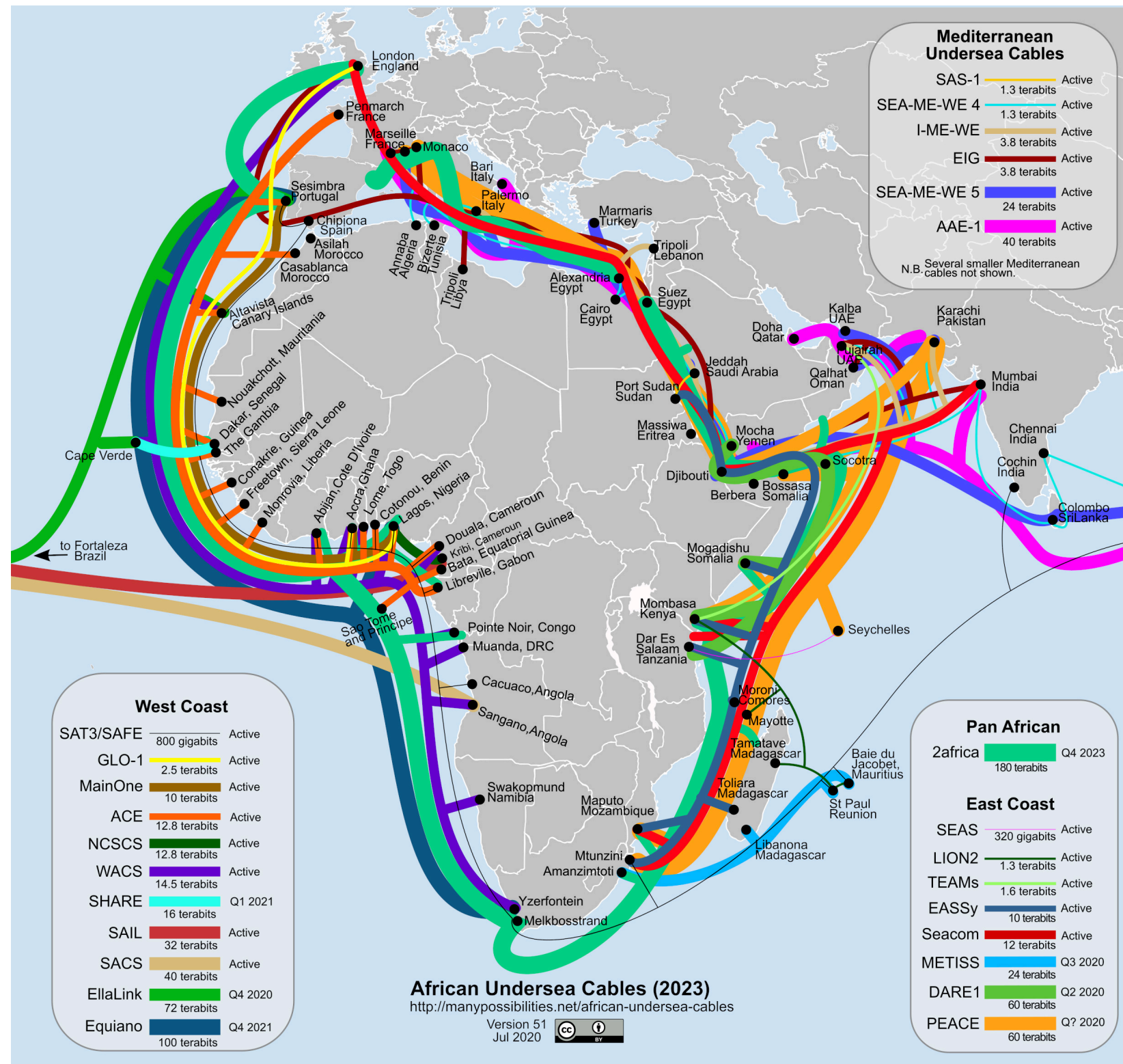
The geopolitical implications are to be found in the thalassocracy that every state would like to have but we must look forward to a global hegemony to safeguard what have become the most important communication routes of our 21st century and for the near future the Digital Sea Lines of Communications (DSLOC).





# HYDRO22

## MONACO, TUESDAY 6TH AND WEDNESDAY 8TH DECEMBER 2022



## SUBMARINE CABLES IN AFRICA:

## A NETWORK OF NEW DEVELOPMENTS

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IHS - Oceans & Cables - Marine One -*



# A New Information Age for Global Communications



- Instantly
- No time
- No distance

- Physical fibre optic cables infrastructures
- A strategic axis of international geoeconomics and geopolitics
- Africa is currently surrounded by cables already installed and in the planning stage





# Geopolitically & Grow Opportunities



- Digital Silk Road
- Build World Initiative

*competing for commitments towards  
Africa's digital transformation*

## African digital market:

- 1 Billion people
- 19/20 growing country
- 2030 young Africans represent 42% of the world's youth

**Invest in today's connectivity to address the needs of tomorrow!**



# Economic Impact



**Opportunity to accelerate growth, industrialize, innovate and improve people's lives:**

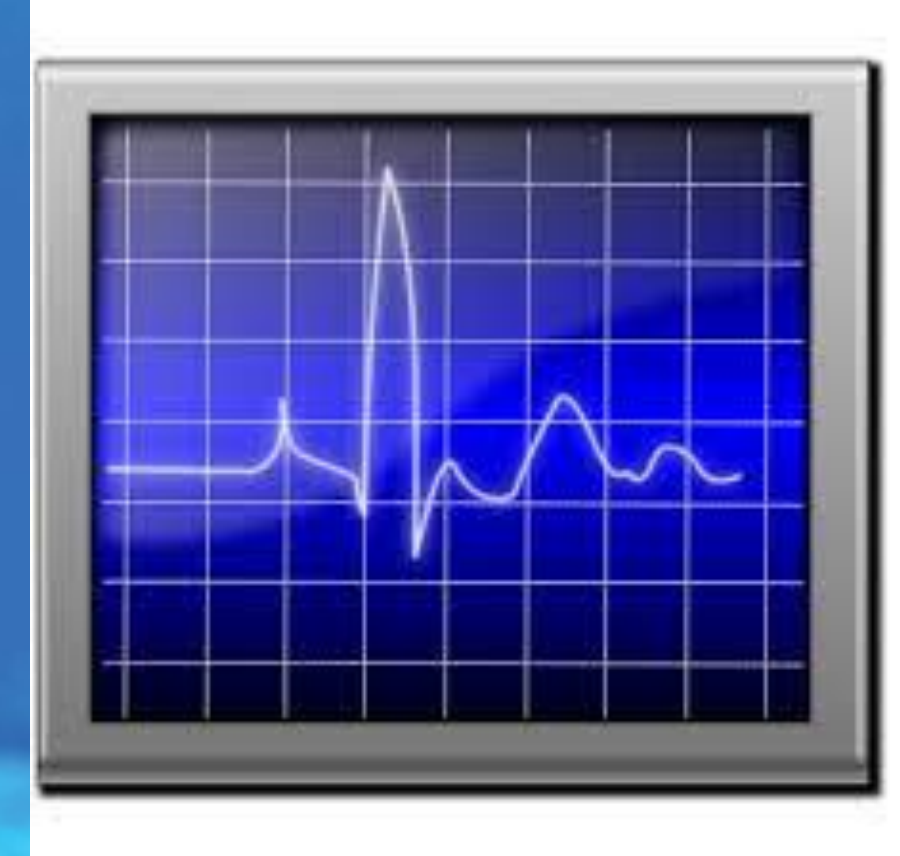
- Individual: to acquire new knowledge and skills
- Enterprise: increased productivity, reduces the cost of international communications, e-commerce, healthcare technology, media and entertainment, local transport, electronic logistics etc. ...
- governments: more efficient services health, education, public admin
- Saving in CO2, paper & fossil consumption.





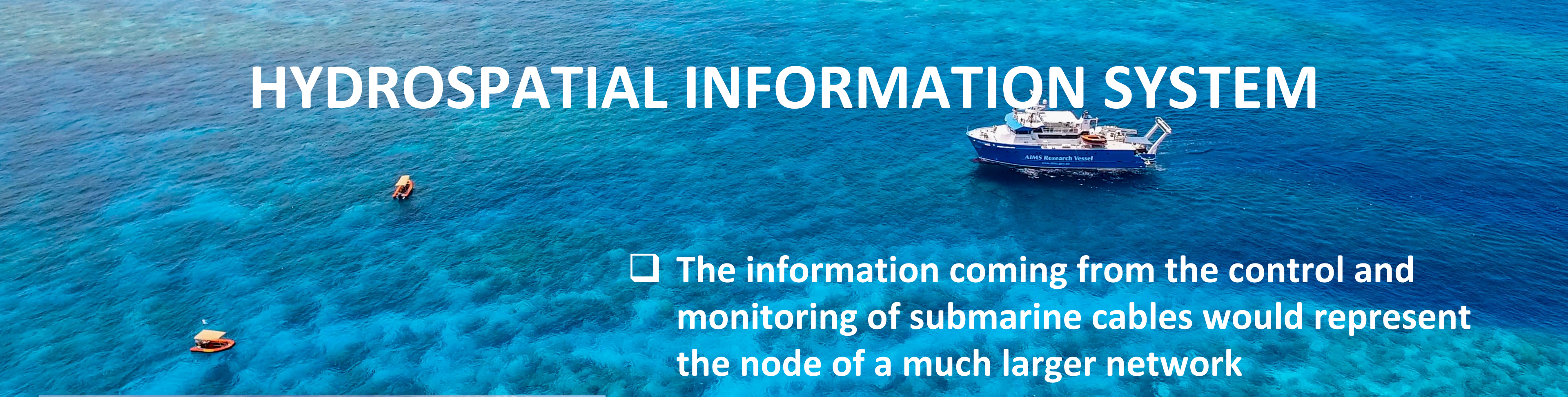
# NEED MONITORING

- DB usable informations
- ICPC & International Seabed Authority to avoid damage e.g. deep sea mining contractors
- IHO improve marine chart specification for clearly represented





# HYDROSPATIAL INFORMATION SYSTEM



☐ The information coming from the control and monitoring of submarine cables would represent the node of a much larger network

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- ☐ Hydrosatial data open new way for investments
  - ☐ Develop blue economy
  - ☐ Sustainable develop of countries: safe&secure navigation, offshore energy, construction and port operations, acquaculture, allowing to manage emergencies, SAR, protection marine enviroment



# CONCLUSION



- ❑ Submarine cables represent a key infrastructure for better connectivity and digital transformation, necessary for new paths to collective prosperity

- ❑ Hydrography in its transformation into a hydrospatial economy can represent for the African continent a source of economic development and an enhancement of safety and the safeguarding of life at sea.





**Thanks for your attention**