OCEAN AND ENVIRONMENTAL TECHNOLOGIES AND SERVICES

Part 1 : Ocean Focus

Wednesday 20 October
9:00 AM to 01:15 PM

European Investment Bank

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Copernicus Marine Service

Early Warning System for Coastal Regions and Ports

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LABORATÓRIO NACIONAL DE ENGENHARIA CIVIL

- R&D institution founded in 1946
- Unique multidisciplinary perspective in civil engineering studies

Hydraulics & Environment

Scientific instrumentation

Transportation

Structures

Buildings

Materials

Concrete dams

- Supports best practices, unbiased and independent

+ 450 Staff members

34% PhD

30+ Labs

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Coastal risks due to waves

- Flooding
- Erosion
- People safety
- Port operation disruption
- Structural damages

Coastal flood risk will largely increase over the 21st century under a global warming scenario

2030 Agenda calls for urgent action to combat climate change impacts

Early Warning Systems are key to achieve this

Preparedness is the key!

Early Warning Systems allow local authorities to define and implement necessary measures to avoid major destruction and risk

Risk Mitigation

Release alerts, restrict access, displace assets…

Alerts with 72 h anticipation

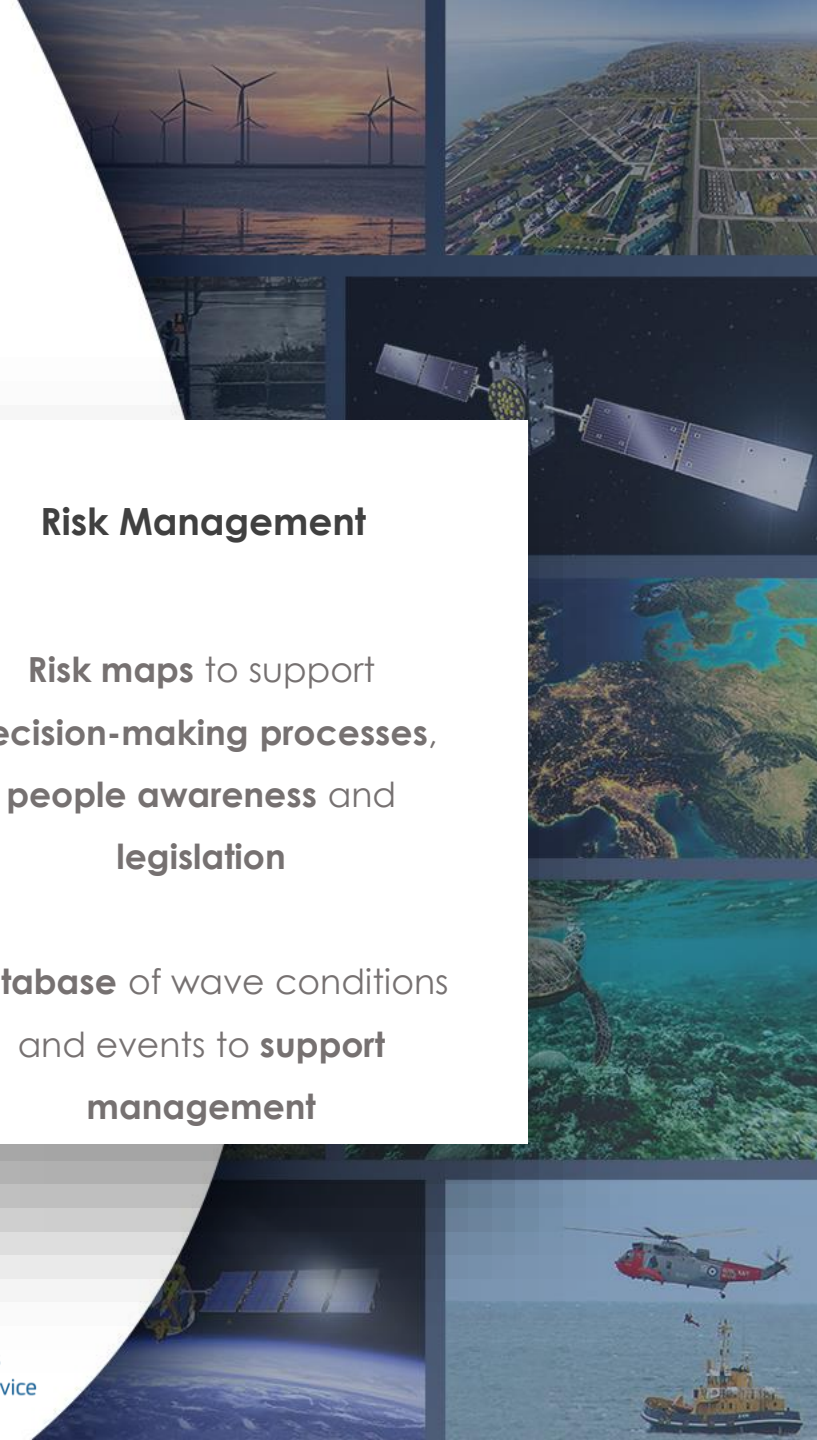
Contributes to people safety

Reduces damage costs

Risk Management

Risk maps to support **decision-making processes**, **people awareness** and **legislation**

Database of wave conditions and events to **support management**



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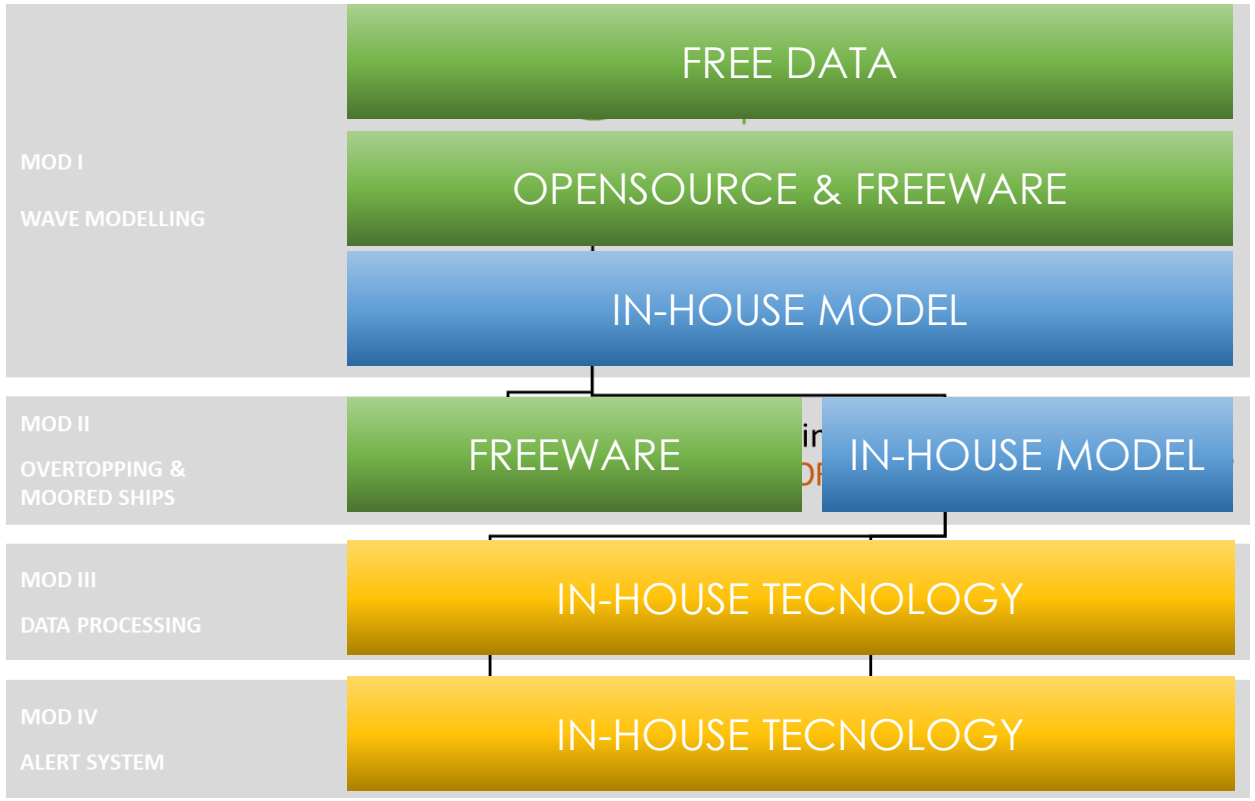
Overview HIDRALERTA EWS



Global

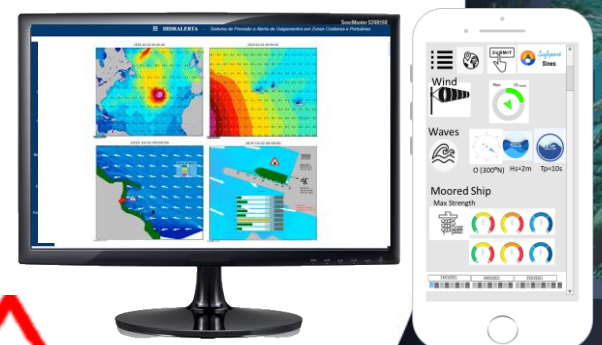
Regional

Local

Specific parameters

Risk

Alert



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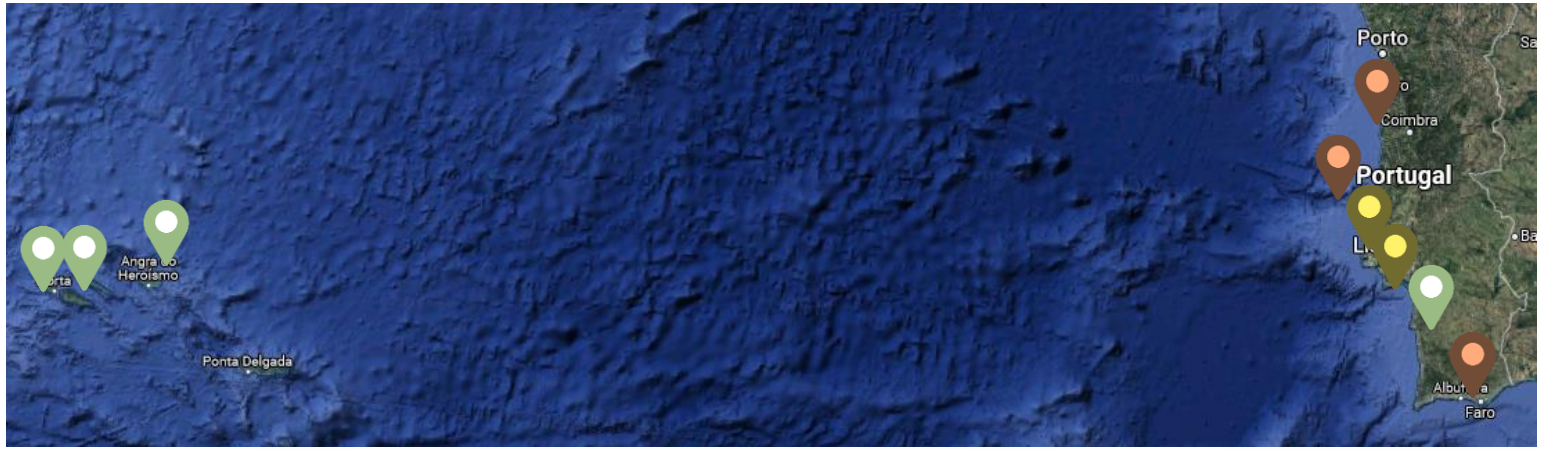
PROTOTYPES



- Operational/Private
- Operational/Public
- Under development/Public

Our vision for the future

Deliver a system you can trust

Validate using video-cameras and field data

Broader Coverage

Expand to other coastal areas and ports

Expand the processes included and the tools available

More comprehensive risk indicators

Fine tune the system

Contribute to adaptative process

Risk awareness and literacy

Articulation with civil protection

Definition of mitigation measures

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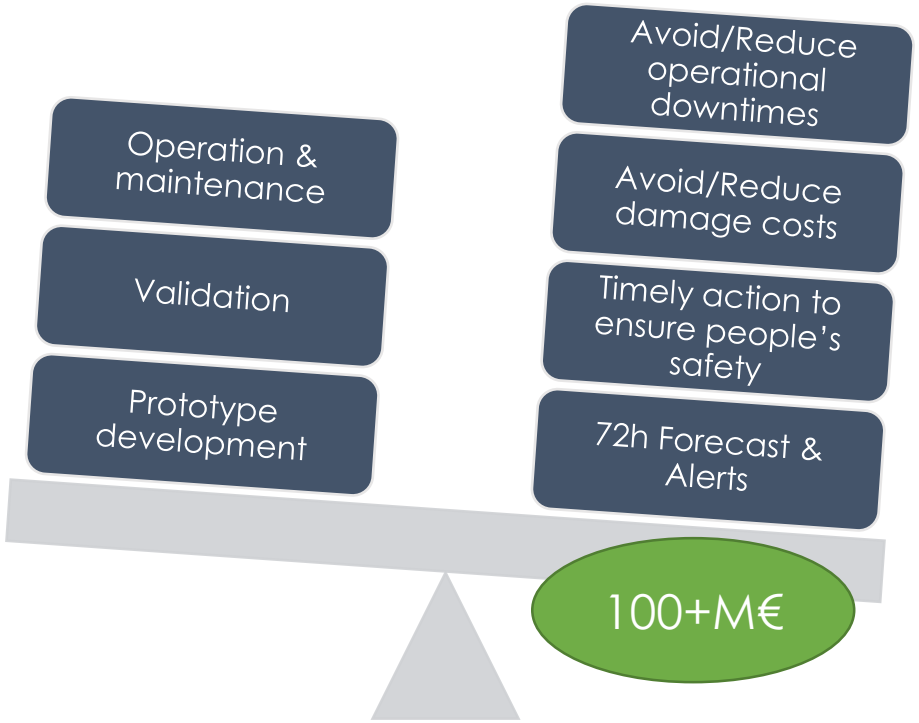
COSTS & BENEFITS

Application development & operation

Risk Mitigation & Management



What we need

Hardware

HPC – High performance computing cluster

High capacity storage servers

Specialized equipment

Onshore wave buoys

Motion Tracking Video-cameras

Human resources

Enhance Modelling Processes

Expand GUI capabilities

Maintain the system

Connection with society

~5M€ 20 new prototypes over 5-yr period

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