Vlab 1:

**Unlocking the potential for integration of Coastal Ocean Observations along Europe (ICOOE)**

João Vitorino (IH), Juan Gabriel Fernández (SOCIB), Miguel Charco (SOCIB), Jay Pearlman (IEEE France)

Integration of ocean data and information from different sources is an essential step to build an in-depth knowledge base for applications and to support policy decisions
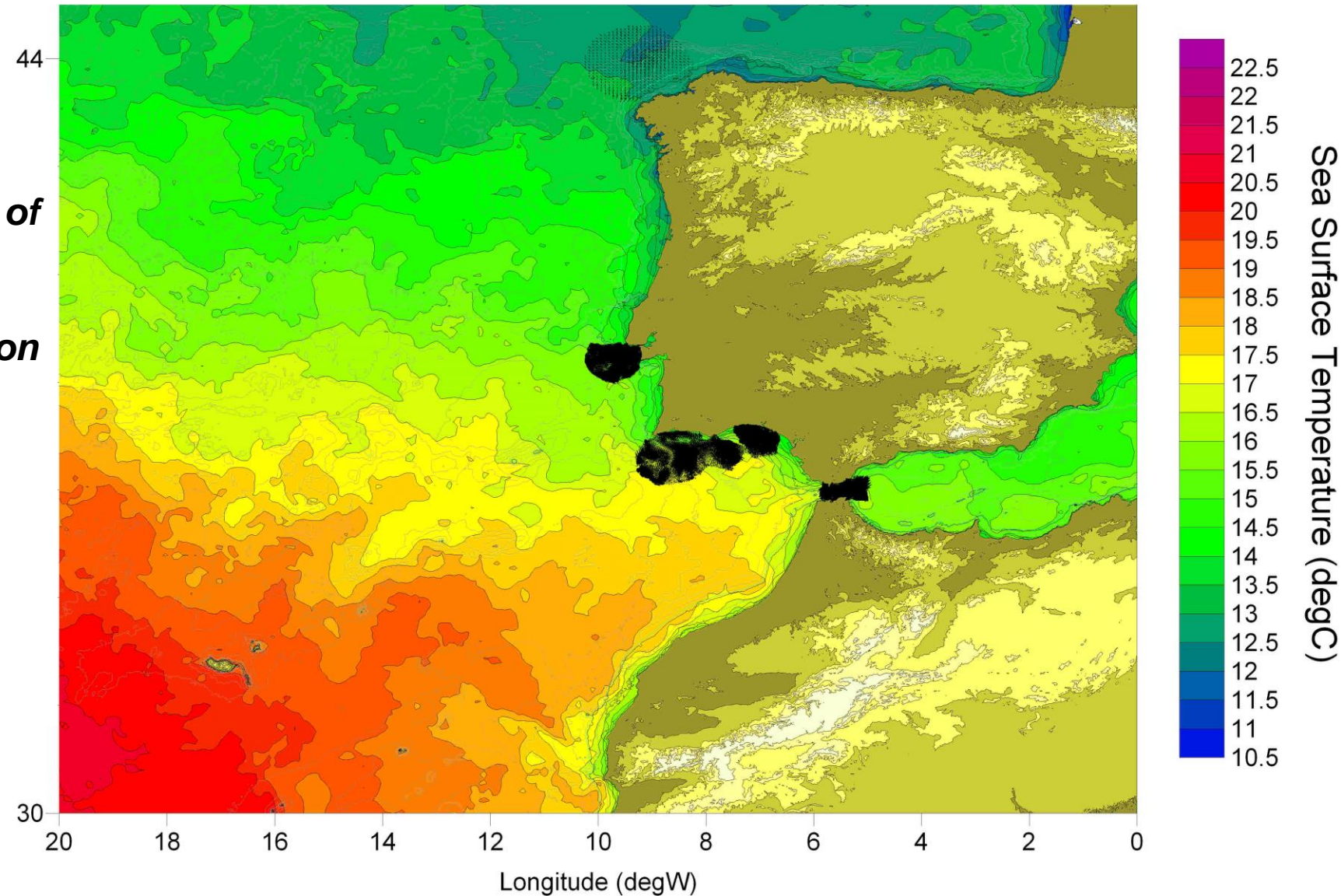
PARTICULARLY IMPORTANT IN COASTAL OCEAN AREAS

GEBCO bathymetry
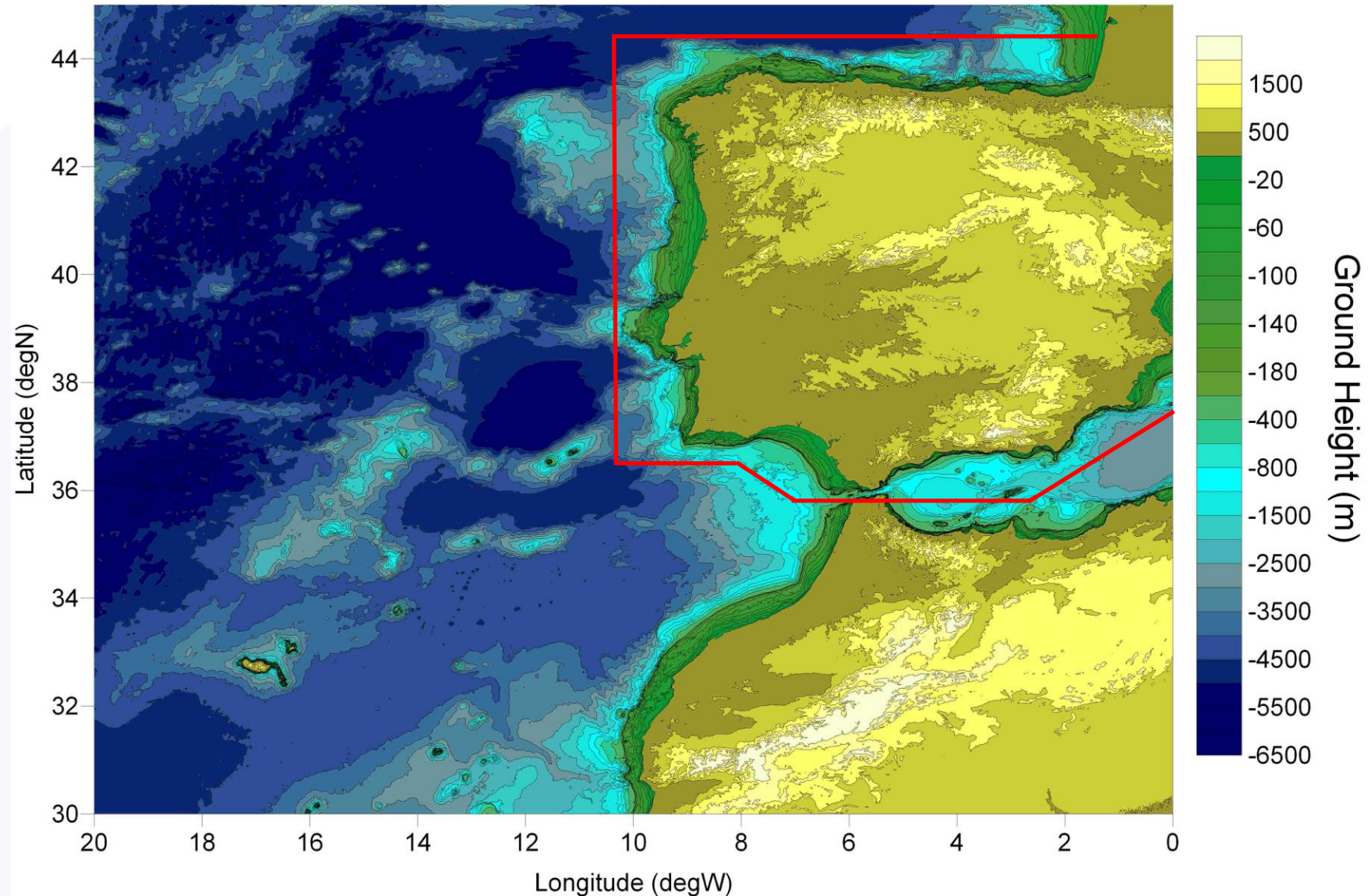
VLAB#1 will improve the integration and combined analysis of JERICO-RI observations and related information with other available observations and information to get unprecedented insight on key coastal ocean processes

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JERICO-RI observations

- *Surface Currents from HF*

CMEMS

- *Sea Surface Temp*

CCS

- *Surface Winds*
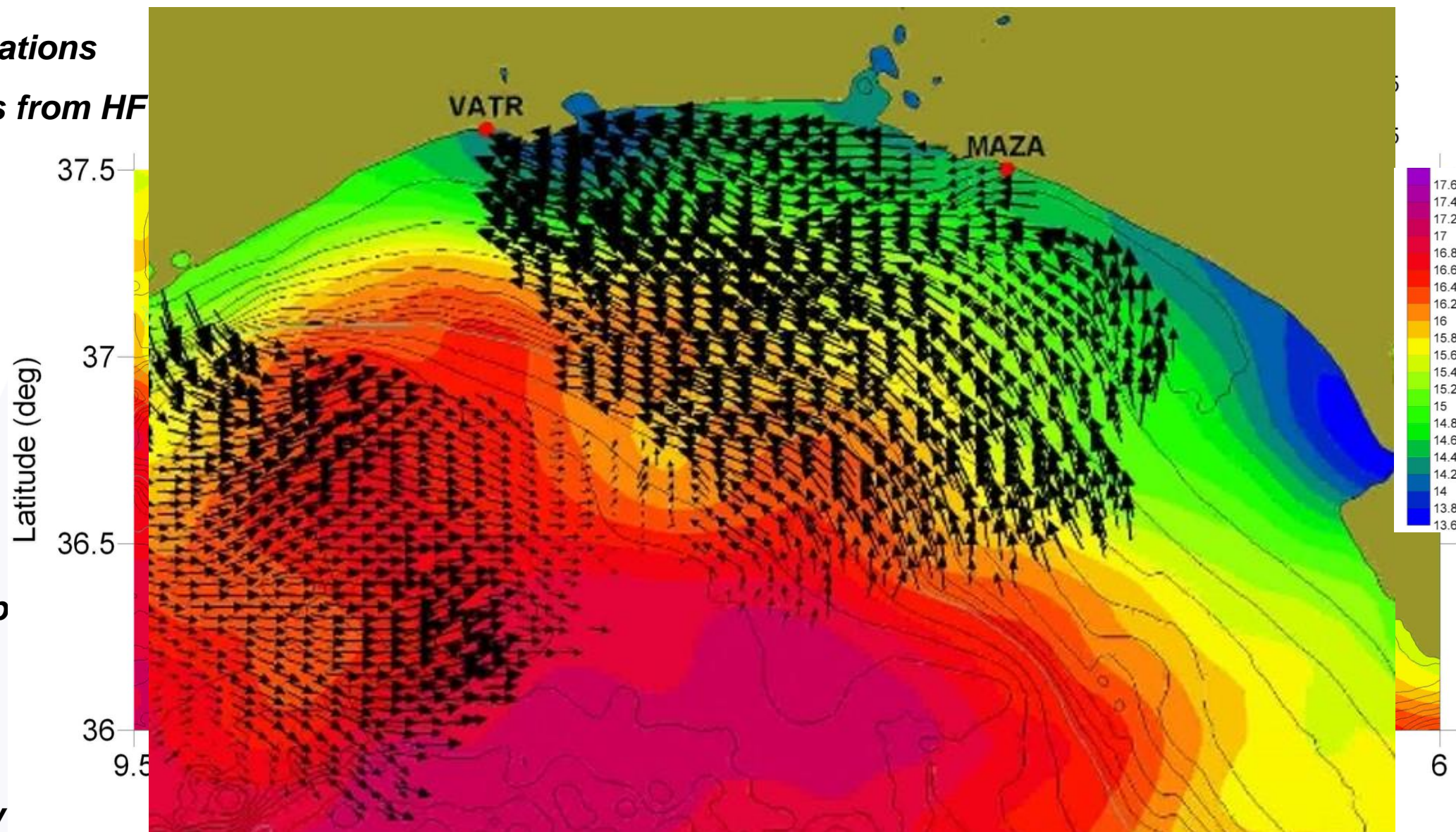
GEBCO bathymetry

JERICO-RI observations
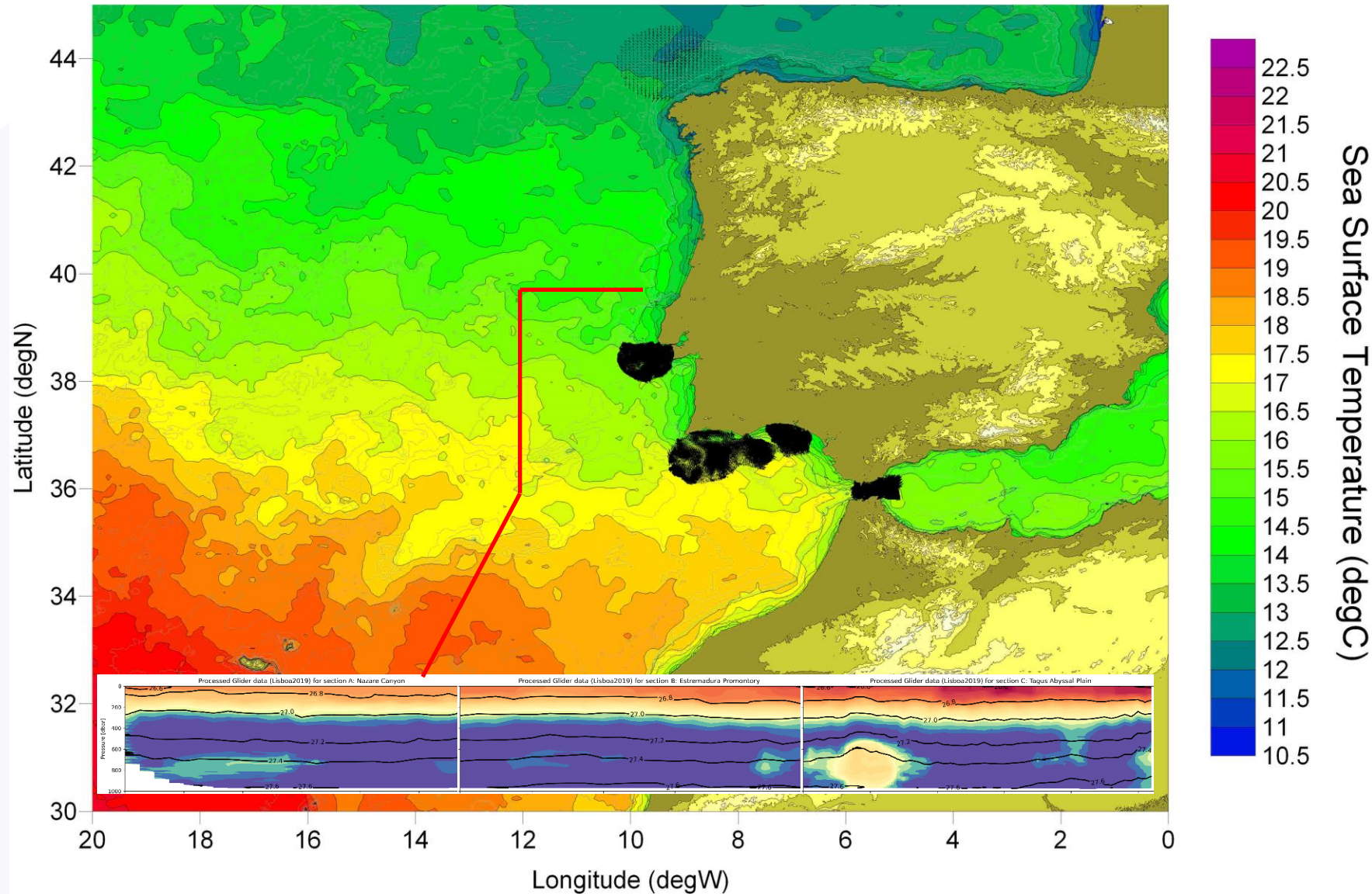
- **Glider sections**

photo PLOCAN-IH

CMEMS

- **Sea Surface Temperature**

CCS

- **Surface Winds**

GEBCO bathymetry

METHODOLOGY

Three thematic services (TSs) will be implemented and used as demonstrators of integration capacities:

TS1 "transboundary processes and connectivity along the European coastal margins" will explore the potential of data integration, analysis and advanced visualization in the understanding of transboundary processes along the European coastal ocean and mapping their potential impacts (e.g biological connectivity, contaminant spread)
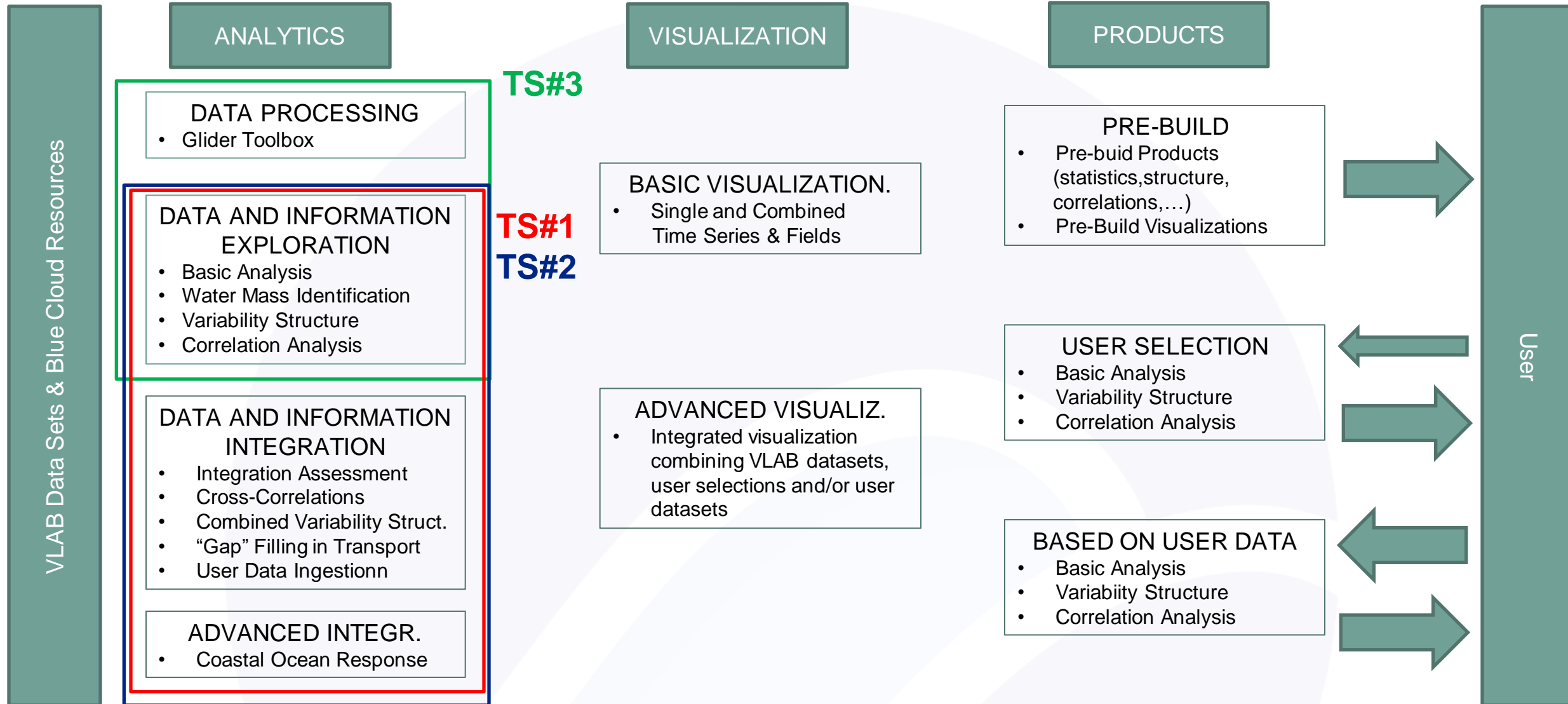
TS2 "Extreme Events" will focus on the impacts of major storms in the European coastal ocean and littoral domain..

TS3 "Ocean glider" aims to demonstrate the added value chain of repeated glider sections from data acquisition to advanced products and visualisations for improved coastal information, integrating water mass information derived from repeated glider sections
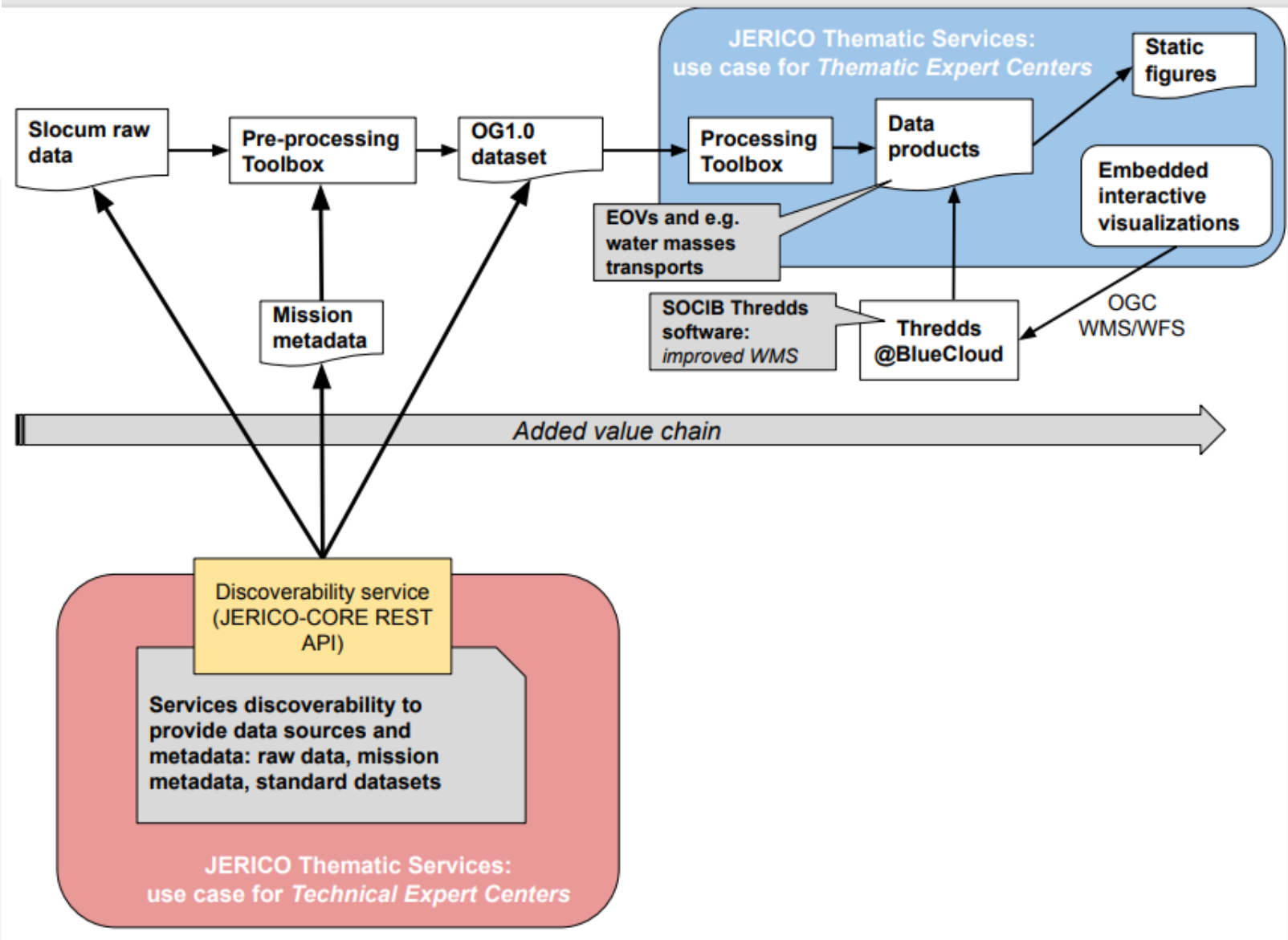
Added-value products consist of advanced data and information products & interactive state-of-the-art visualizations

Providing FAIR tools and services that take advantage of the
JERICO-Coastal Ocean Resource Environment (J-CORE) e-infrastructure
as well as globally accepted Ocean Best Practices and OGC standards (e.g., WMS and WFS)
.

J-CORE functionalities (API, web services, client libraries, tools...), will be expanded in the context of WP5 BC2026

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VLAB Data Sets & Blue Cloud Resources

ANALYTICS

VISUALIZATION

PRODUCTS

User

TS#3

TS#1

TS#2

DATA PROCESSING
- Glider Toolbox

DATA AND INFORMATION EXPLORATION
- Basic Analysis
- Water Mass Identification
- Variability Structure
- Correlation Analysis

DATA AND INFORMATION INTEGRATION
- Integration Assessment
- Cross-Correlations
- Combined Variability Struct.
- "Gap" Filling in Transport
- User Data Ingestionn

ADVANCED INTEGR.
- Coastal Ocean Response

BASIC VISUALIZATION.
- Single and Combined Time Series & Fields

ADVANCED VISUALIZ.
- Integrated visualization combining VLAB datasets, user selections and/or user datasets

PRE-BUILD
- Pre-buid Products (statistics,structure, correlations,…)
- Pre-Build Visualizations

USER SELECTION
- Basic Analysis
- Variability Structure
- Correlation Analysis

BASED ON USER DATA
- Basic Analysis
- Variabiity Structure
- Correlation Analysis

THEMATIC SERVICE TS#3

THEMATIC SERVICES TS#1 & TS#2

VLAB BASED
FOR
DEMONSTRATOR

(SPECIFIC TIME
PERIODS)

JERICO-RI
- HF Radar Currents
- T,S in MP Buoys
- Current Profile in MP Buoys
- T in Wave Buoys
- SSH at coastal tide gagues
- T,S Glider

COPERNICUS
- SST fields
- NEMO 3D T,S, SSH, Current
- ERA5 Surface Meteo Params

SeaDataNet
- Physics, BGC, Biology

EMODnet
- Physics, Chemstry, Biology

BATHYMETRY
- GEBCO
- Other

OPB and AquaDocs
Best practices and documents
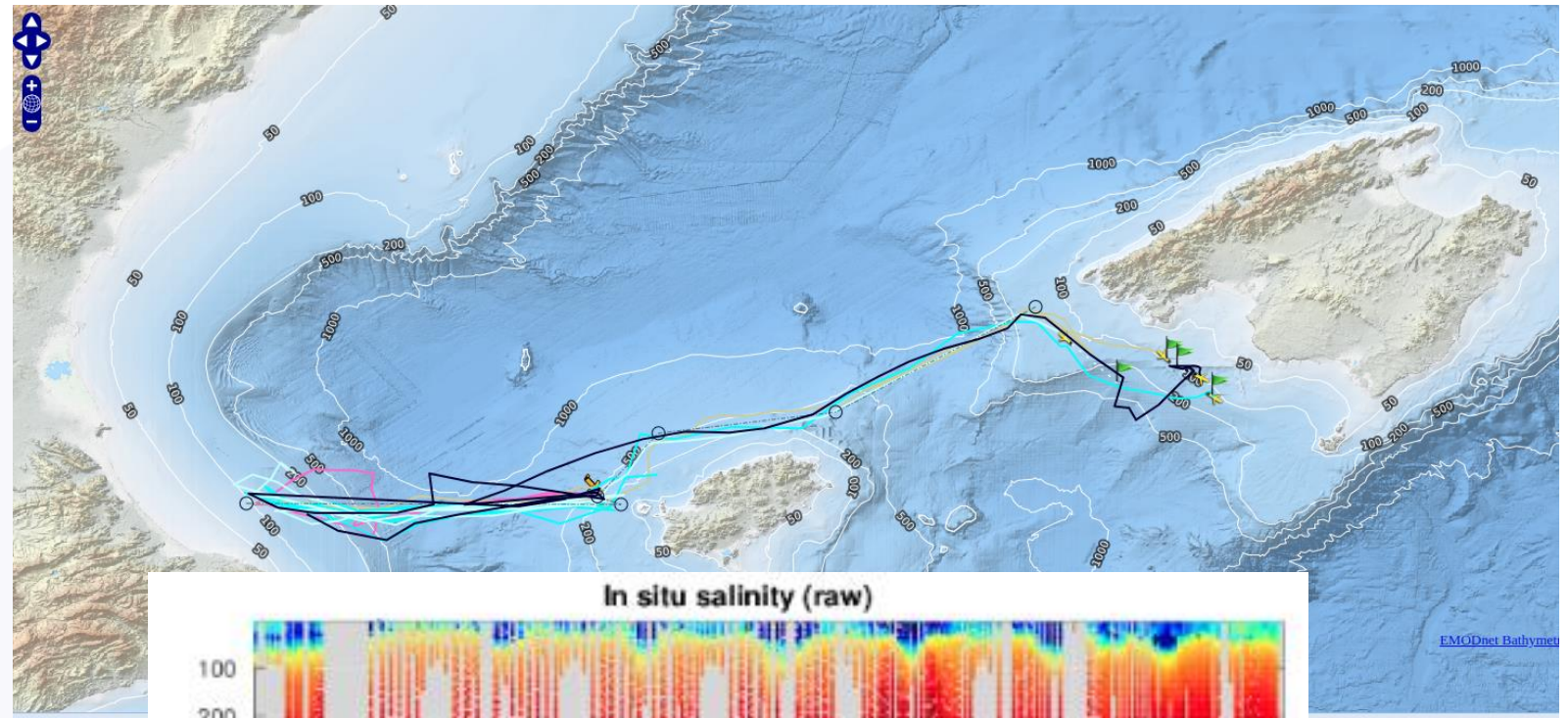
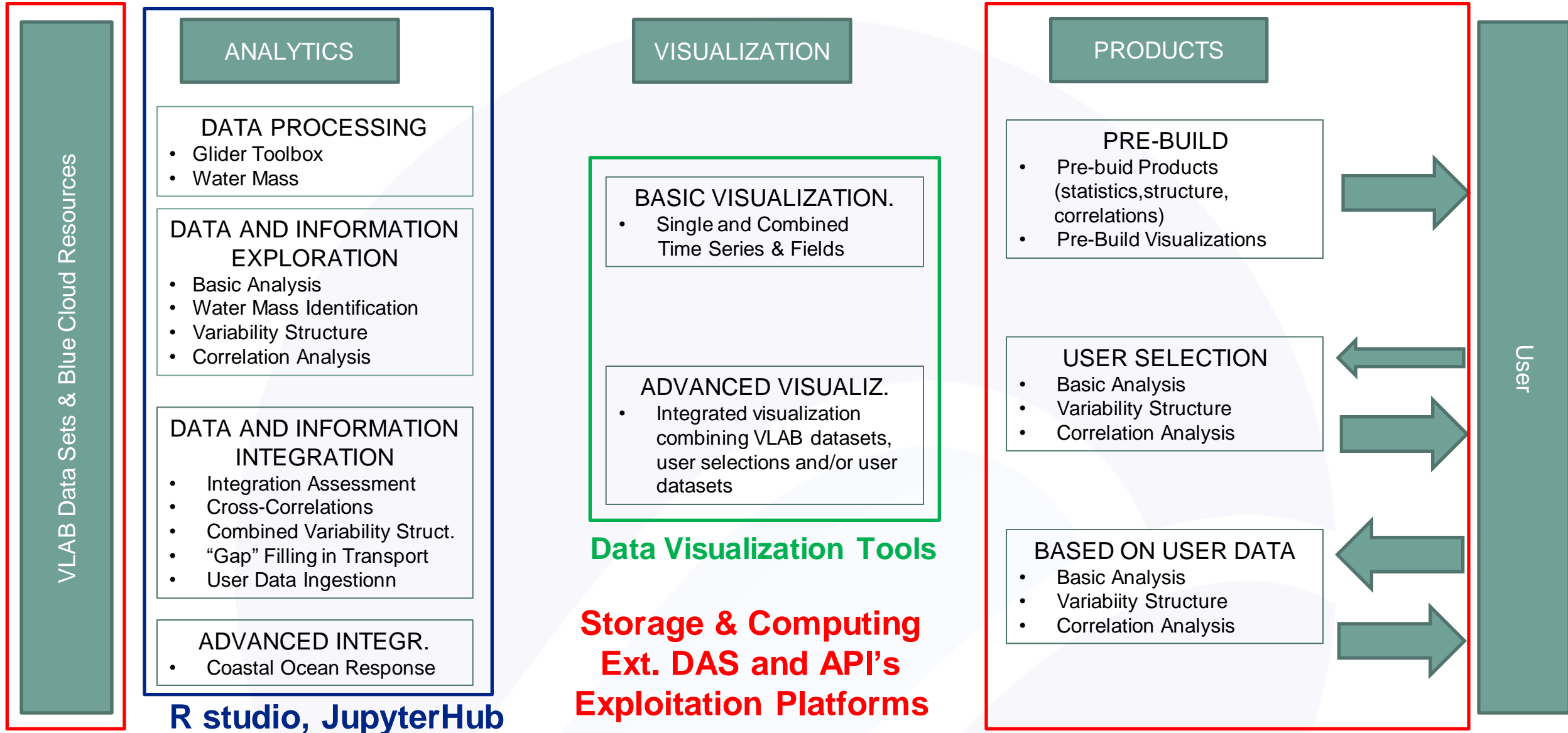## IBERIAN ATLANTIC MARGIN

THEMATIC SERVICE TS#3

JERICO-RI
- ➤ Glider profiles from endurance observations of the physical and biochemical parameters
- ➤ Associated climatology and anomaly

OPB and AquaDocs
Best practices and documents

In situ salinity (raw)