



Service Hydrographique et Océanographique de la Marine

French Navy METOC support requirements Aspects

Laurent Kerléguer, Didier Jourdan

SHOM

Centre Militaire d'Océanographie Toulouse

SOAP background

A 15 years sustained effort to build operational oceanography

Altimetry
and blue
waters

New
operational
stakes

Altimetry
req.

1988 Athena sea trials

→ interest of altimetry for operational oceanography

→ French DOD participates funding of Topex/Poséidon

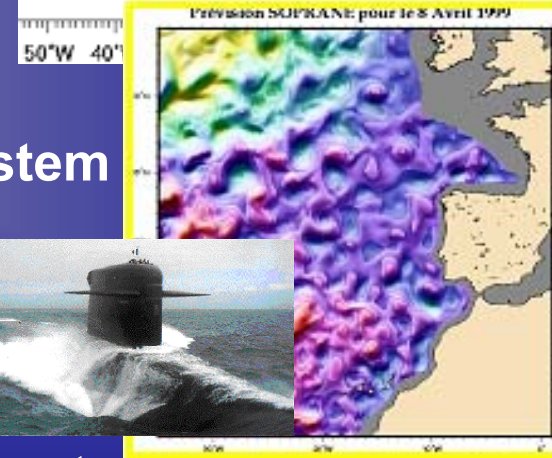
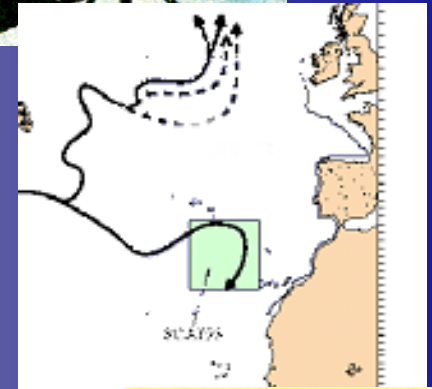
→ first ocean forecasting bulletin
↳ Launch of demonstrator SOAP 93

1998 SOAP 1

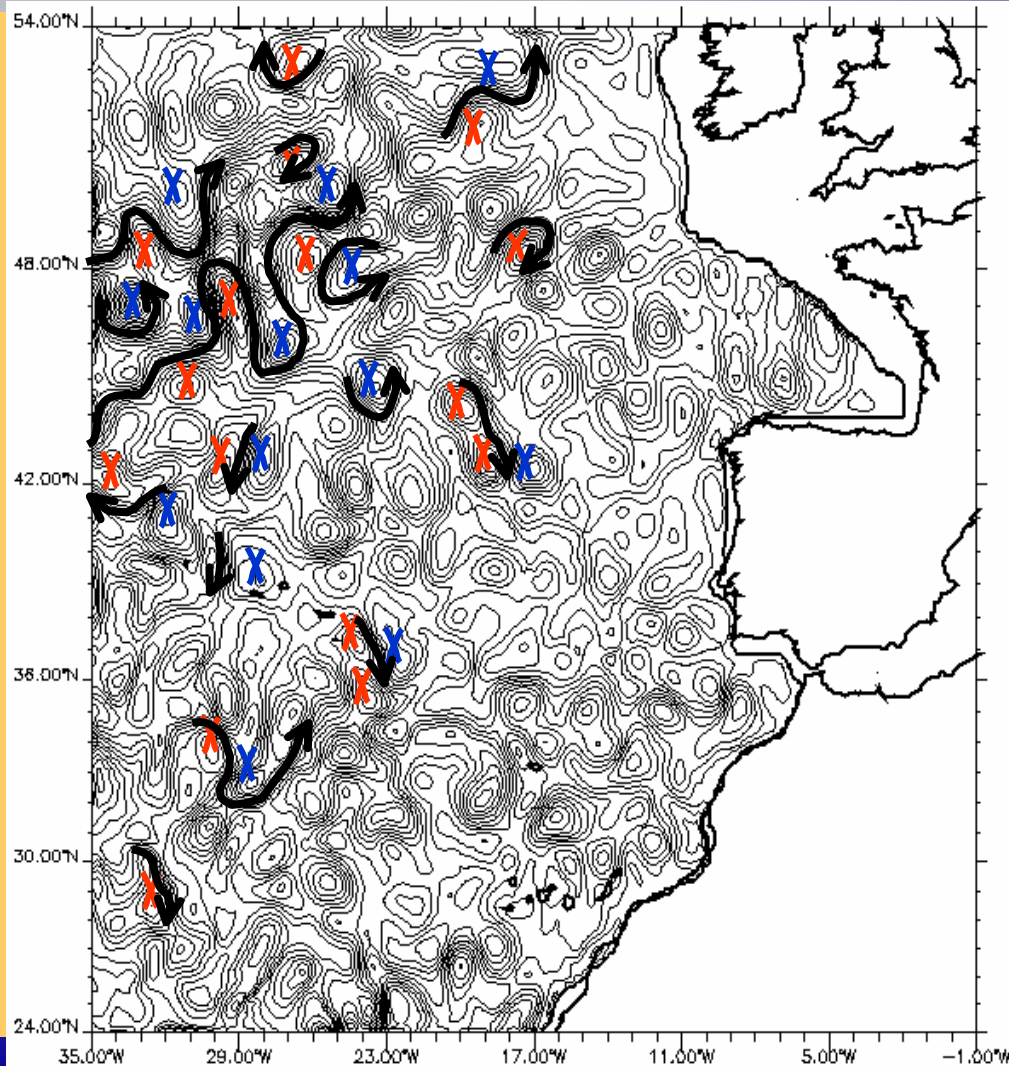
→ first operational ocean forecasting system (support of FOST –SSBN)

2001...

→ FOST acknowledges the value of the system



Altimetry derived product

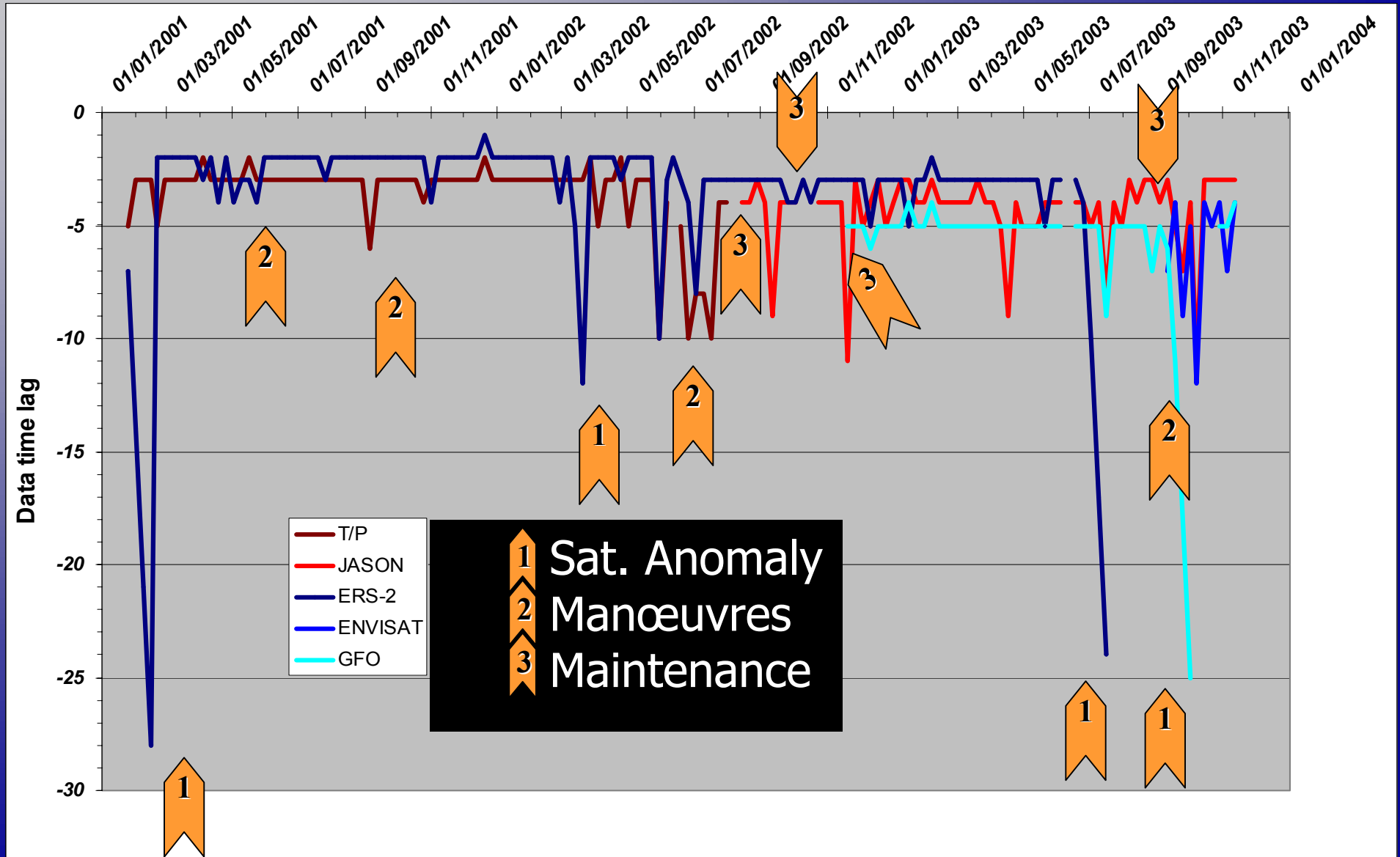


Mesoscale activity map

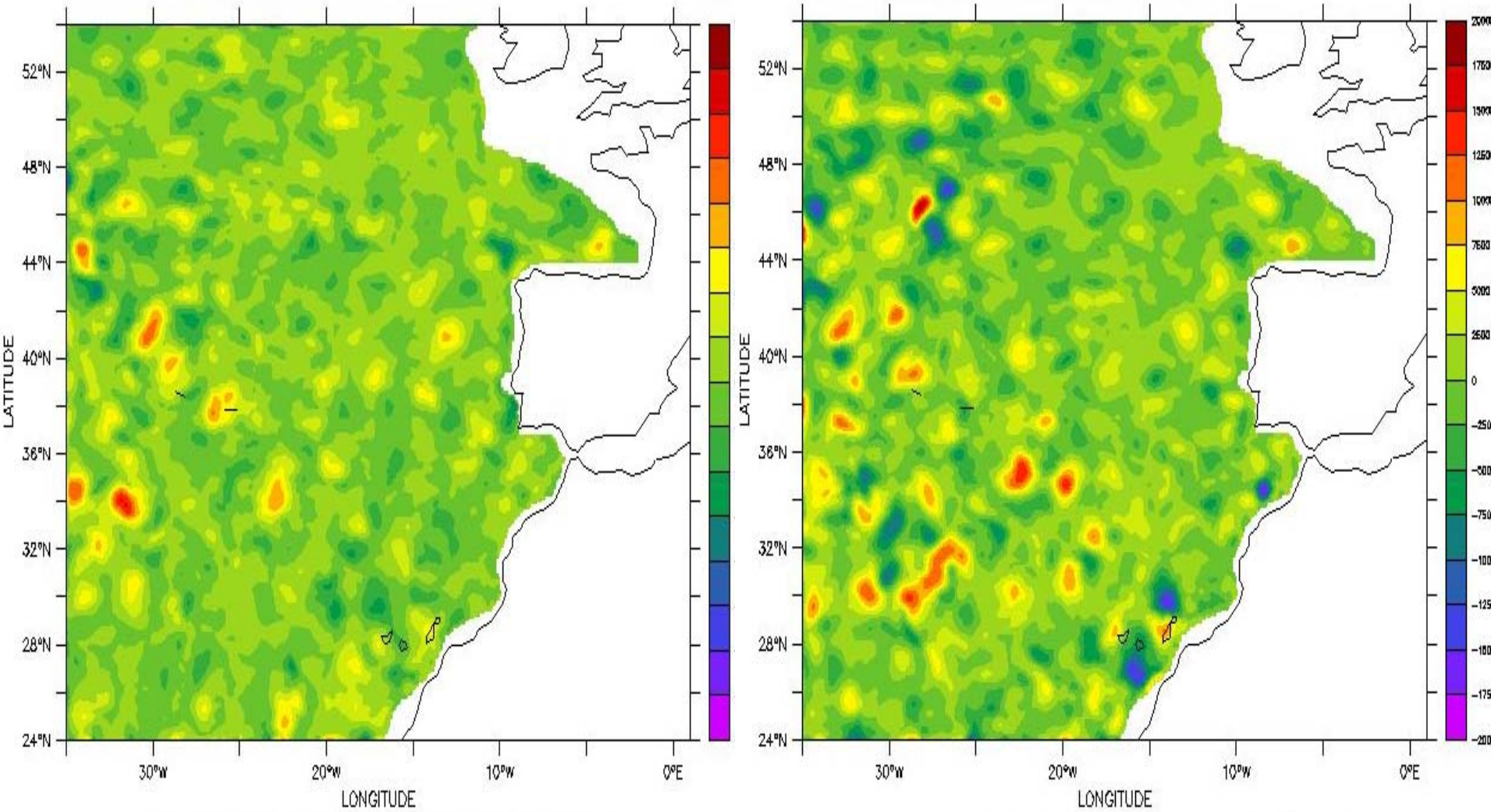
- Based on
 - Streamfunction
 - Velocity currents
 - Horiz. T gradients
- Lead to select
 - Dynamical and hydrological frontal areas
 - Potential structures with potential impact



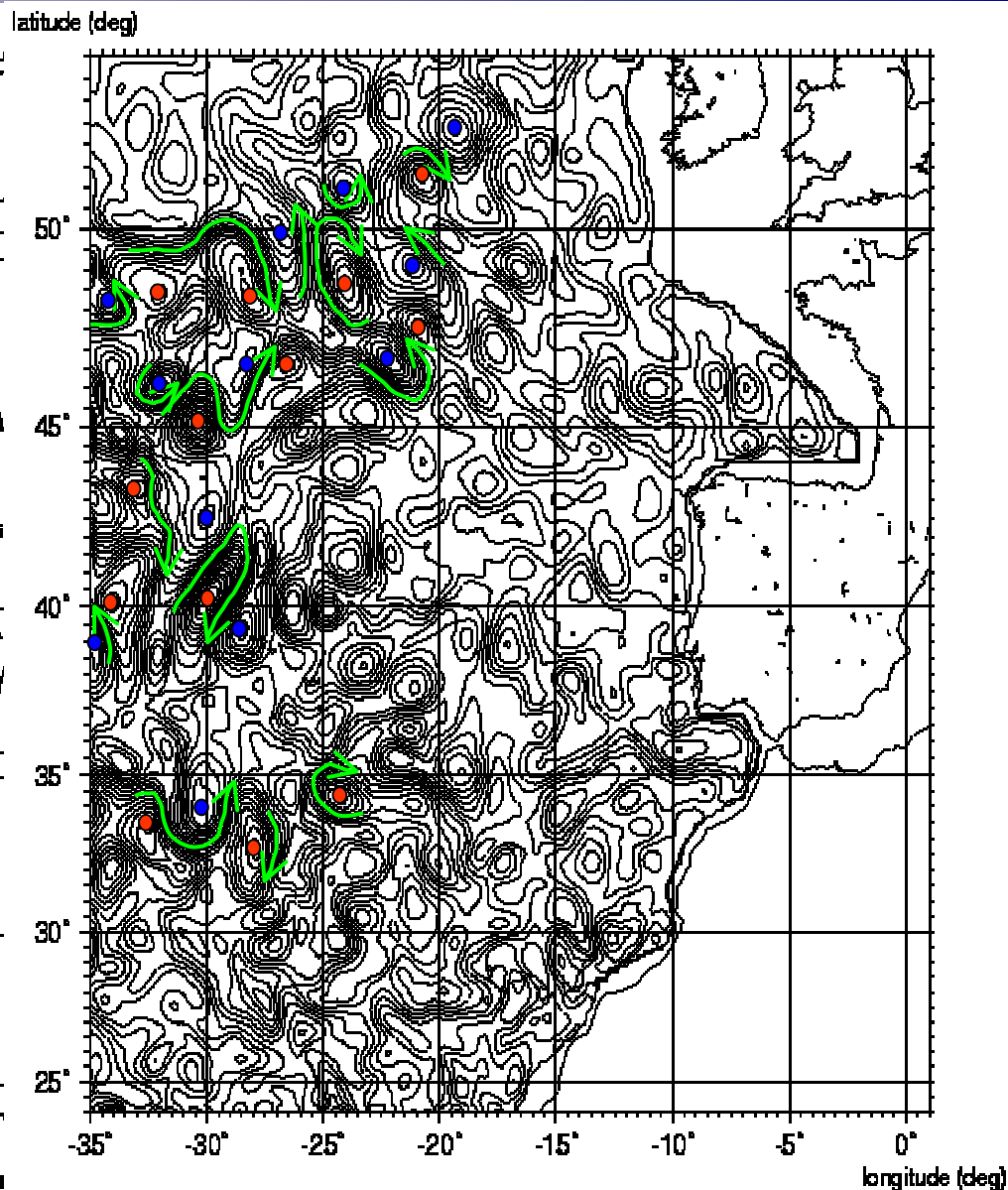
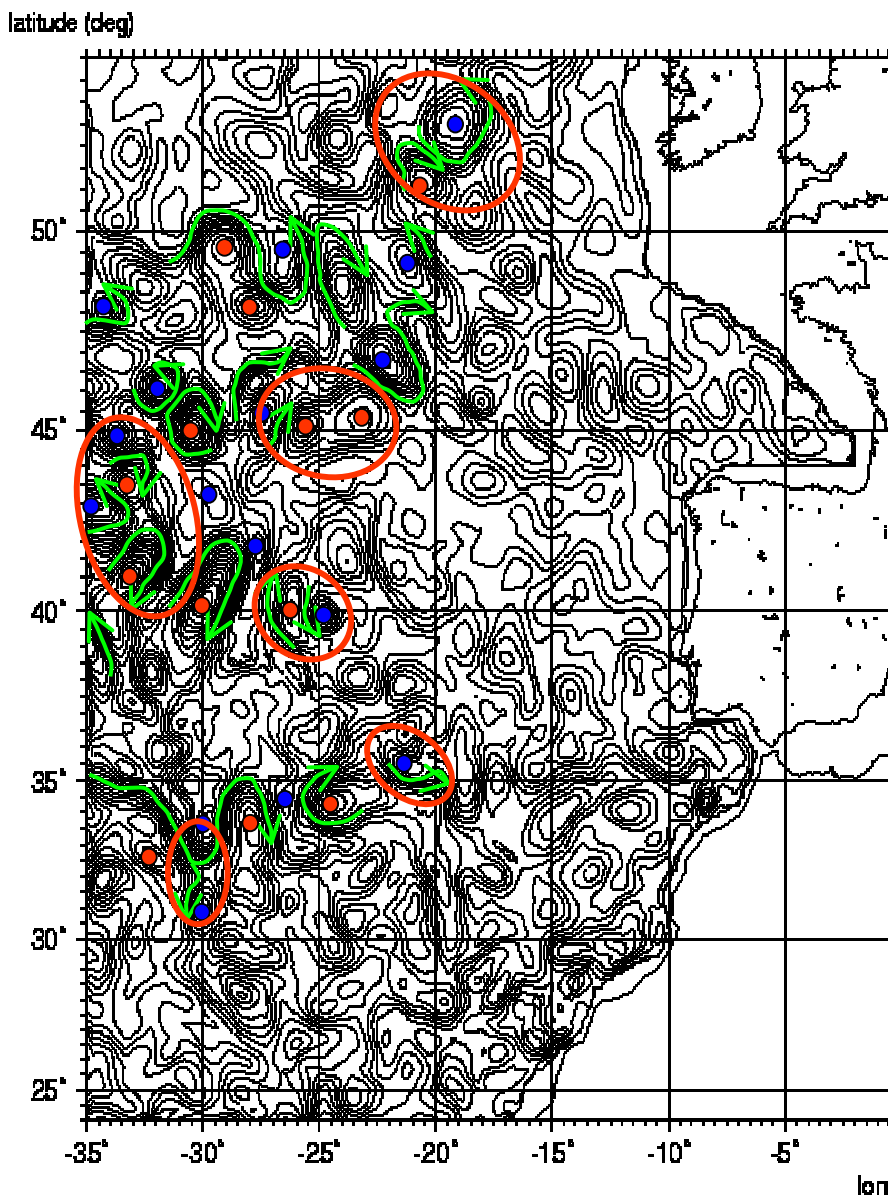
High standard of data availability



Impact on modelisation



Impact on product



Experience feed back

Altimetry
and blue
waters

New
operational
stakes

Altimetry
req.

- SOAP has become indispensable for Deterrence

1

A meso-scale compatible altimetry constellation is a first priority Defense need

- Objective for future versions
 - **Availability: ensure a sufficient number of satellites is "always" available**

2

Spare satellite to ensure permanence of "meso-scale capacity" needed



New strategic environment

Altimetry
and blue
waters

New
operational
stakes

Altimetry
req.

From open sea (maritime lanes protection) to coastal waters

→ Task force projection

→ Unit projection

Public service (SAR, Oil Spill...)



New METOC needs

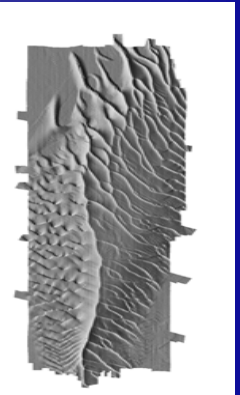
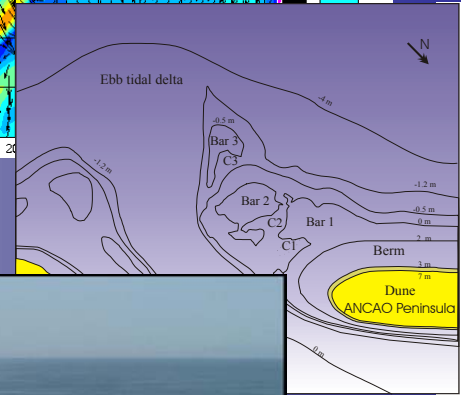
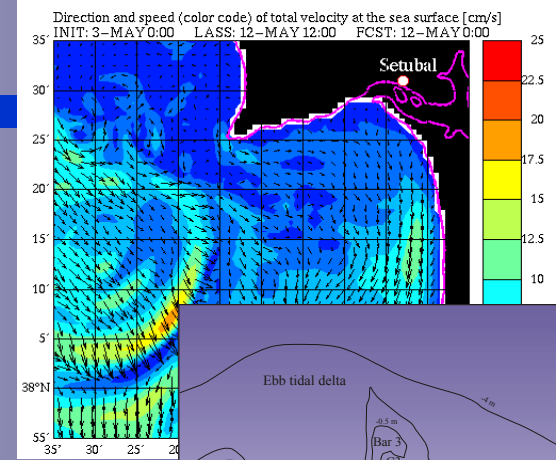
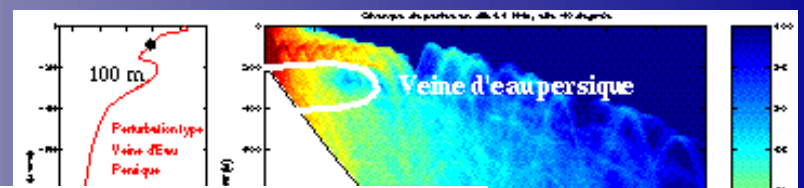
Altimetry and blue waters

New operational stakes

Altimetry req.

- Shallow Water ASW
 - Bathymetry
 - Hydrology
- Mines Warfare (drift, burial)
 - Currents
 - Sediment nature & dynamic
- AW
 - Currents
 - Waves (surf zone)
 - Optic (H&V visibility)
- SAR
 - Currents

■ ...

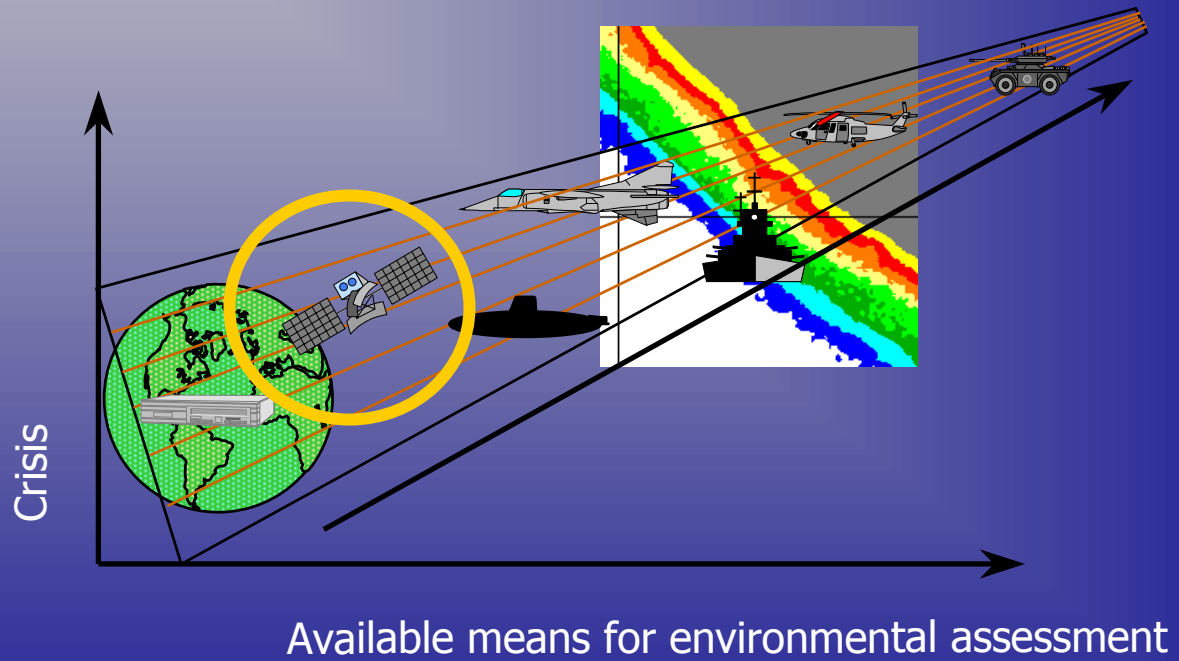


REA

Altimetry
and blue
waters

New
operational
stakes

Altimetry
req.



Consequence

Altimetry
and blue
waters

New
operational
stakes

Altimetry
req.

3 Satellites remain essential for METOC environment assessment in operational new context

4 Efficiency of altimetry and alternative sources should be compared for cost effectiveness purpose (Altimetry vs SAR, Seacolor, SST...).



Synthesis

Altimetry
and blue
waters

1 Meso-scale altimetry
constellation → 1st priority

2 Spare satellites for ops
availability

New
operational
stakes

3 Satellite essential
mean even in new ops
context

4 Altimetry input for
coastal predictions still
to be evaluated

Altimetry
req.

French Navy is keen to support ALTIKA surveys

- as a potential solution for coastal systems
- and also because the network approach might solve the redundancy pb for meso-scale.

