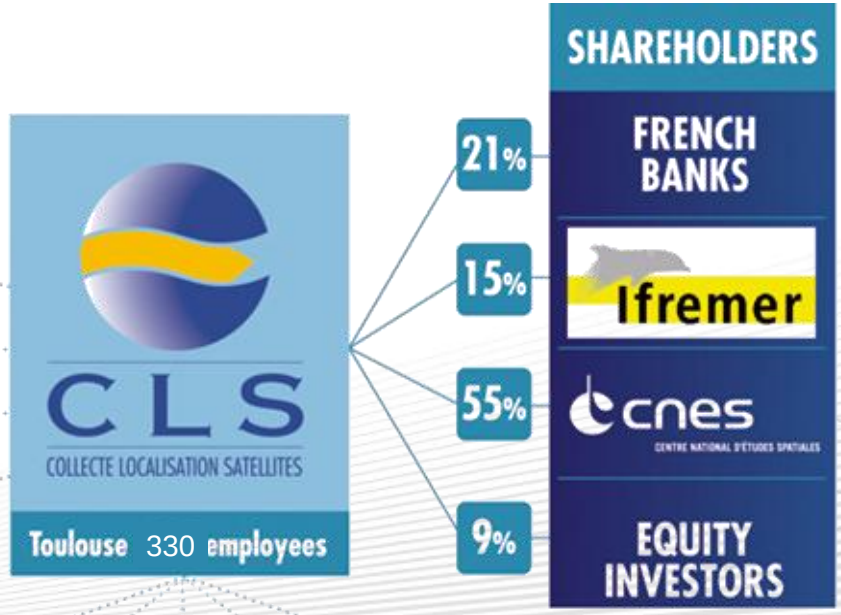


Public-owned

- *Space Agency*
- *Institute of oceanography*

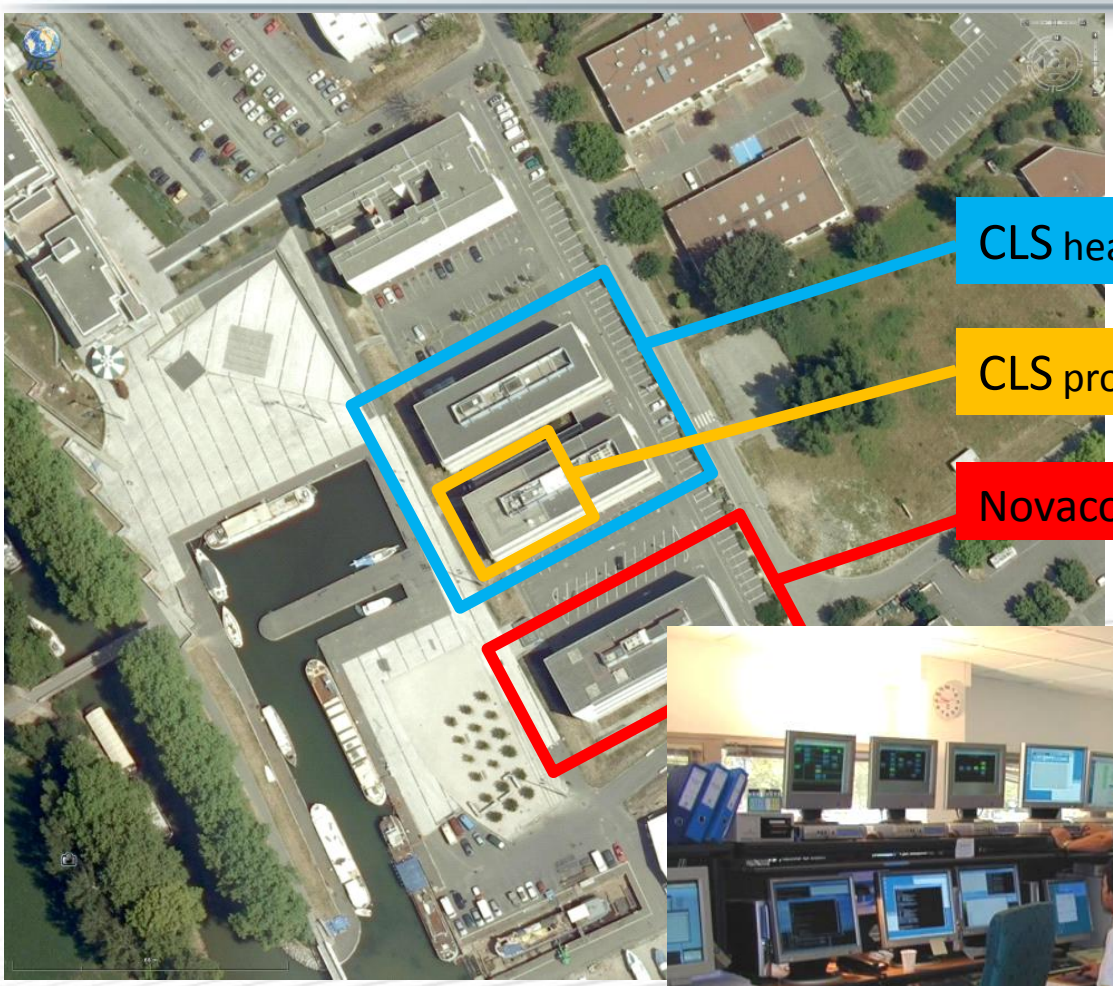
Created to operate ARGOS

CLS operates a global processing center 365/7/24

CLS hosts the processing centres H24 for customers.

No outsourcing.

Disaster recovery centre in a separate building.



Secure architecture.

Secure Internet.

Full redundancy.

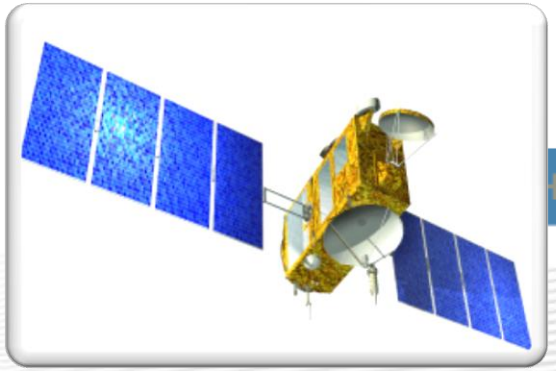
Trained staff.

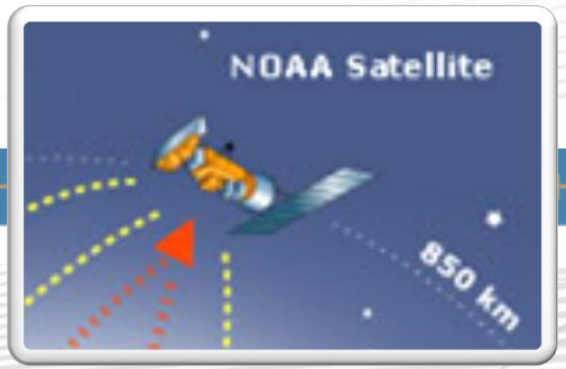
CLS's main mission in this context

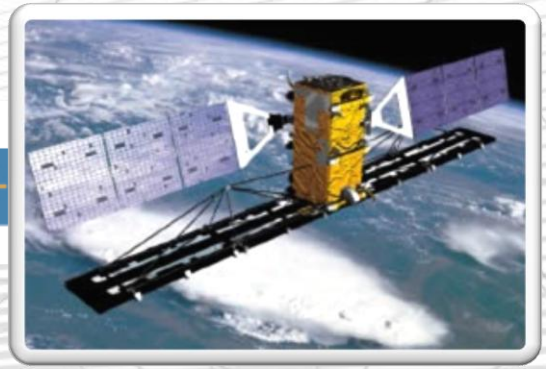
Act as privileged partner for public organizations and Space Agencies by operating worldwide satellite systems

Develop environmental and maritime applications that capitalize on satellite technology

CLS draws on the capacities of 3 satellite systems:







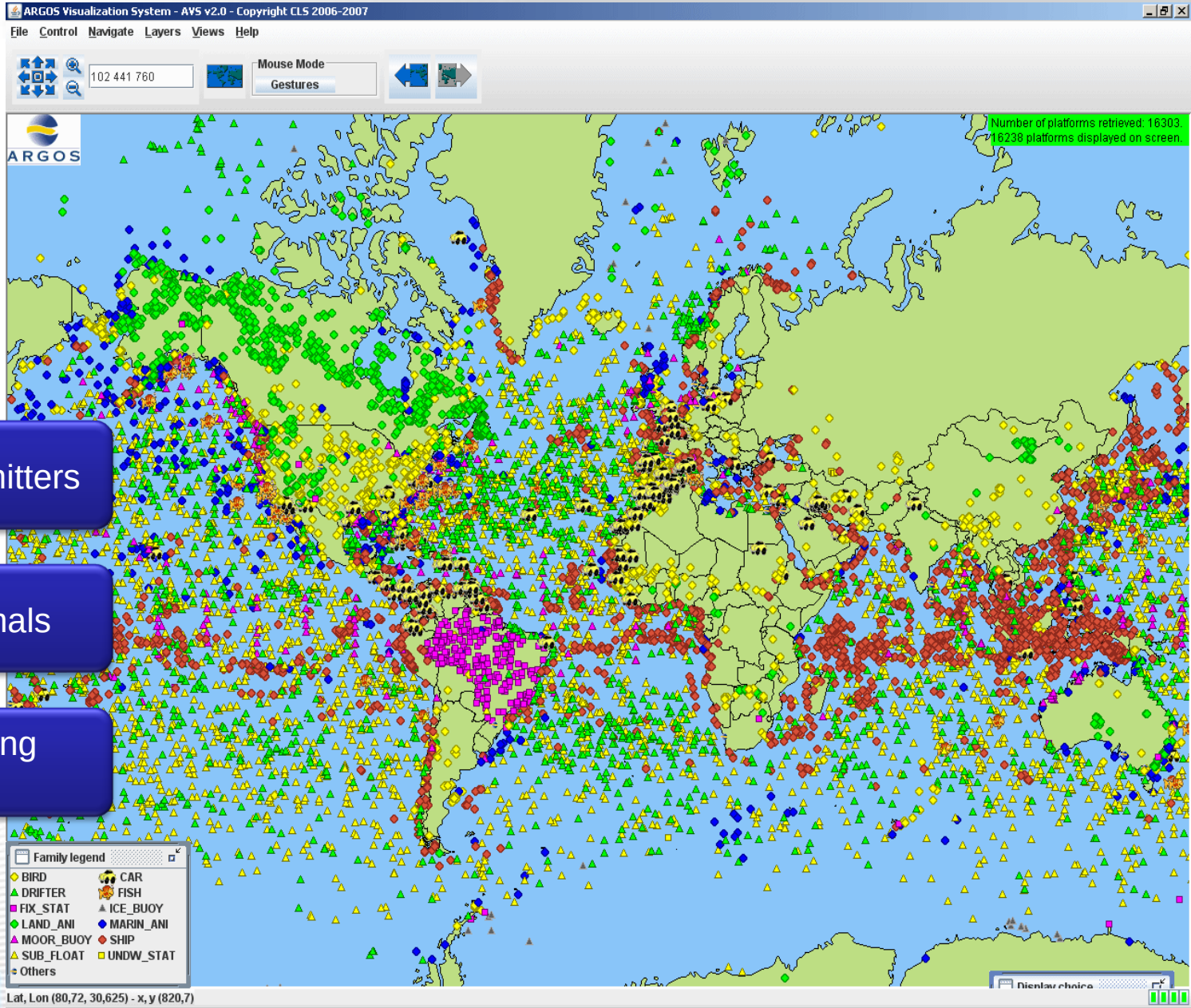
Active Argos transmitters

Over 1 million positions are received and processed each day in CLS processing center

19659 transmitters

13003 Animals

4780 Fishing vessels



Current context

A changing environment

International awareness

A disturbing drop in fish stocks → Quotas

Global warming → Green tax

Rise in maritime pollution → Severe legal action and penalties

The international community has identified **sustainable development** as one of its top priorities and has decided to take

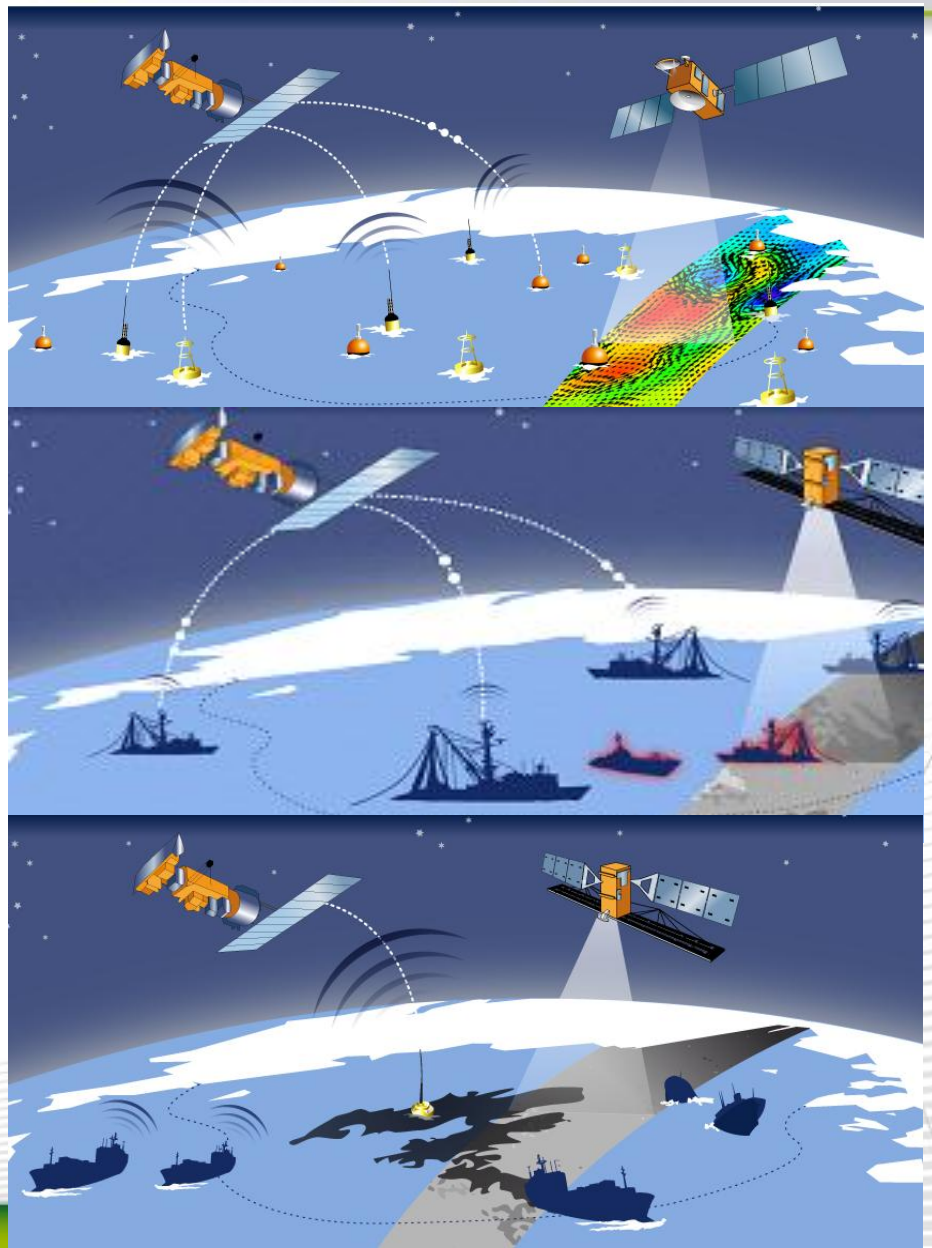
precautionary measures for environmental management purposes

3 domains of interest

Satellite oceanography

Argos

Radar



Research

Climate

Ecosystems

Catch effort

Law enforcement

Fish stock planning

Law enforcement

Traffic control

Pollution

Environmental monitoring

examples

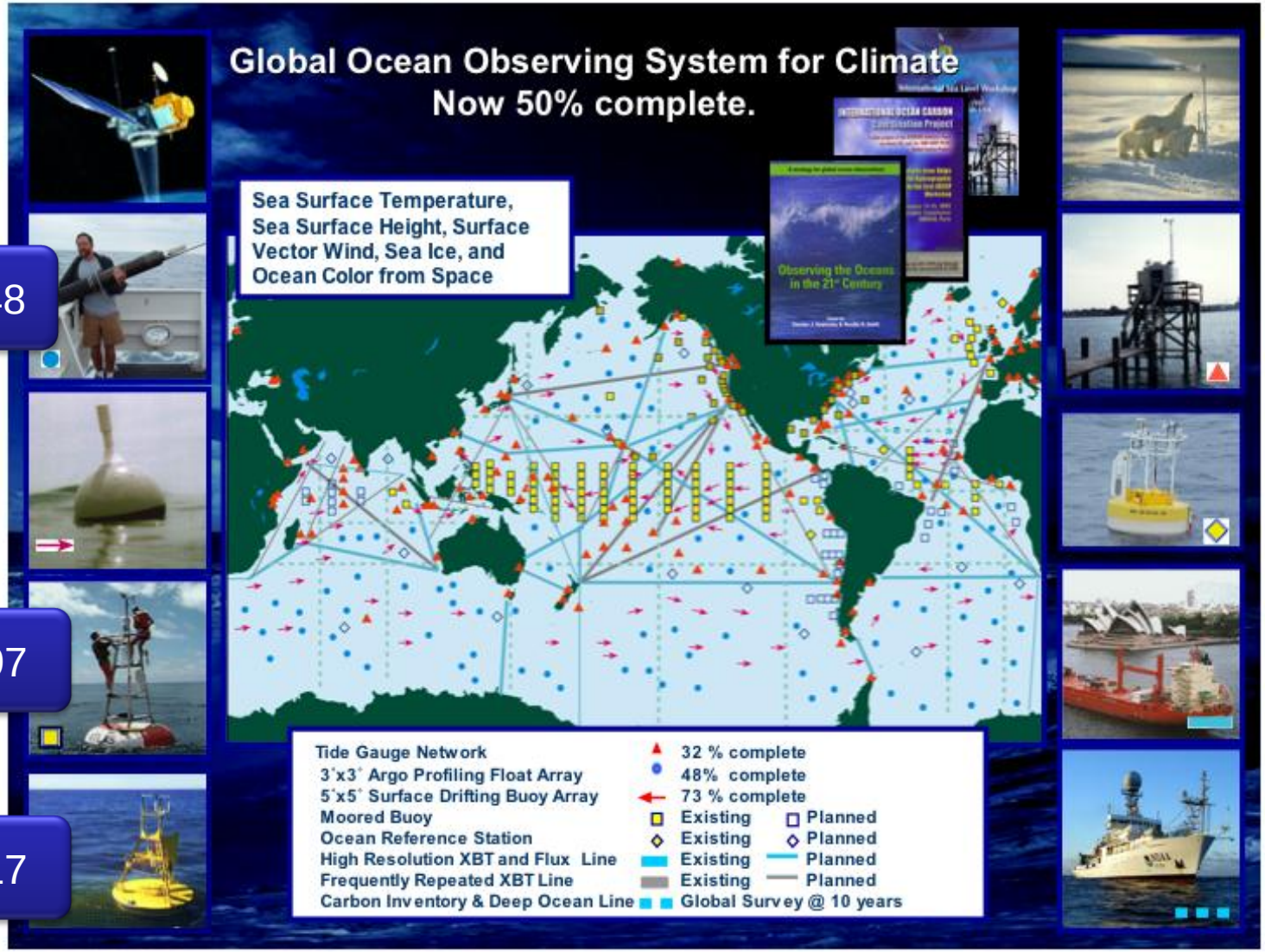
In-situ - Global Climate Monitoring network

CLIMATE

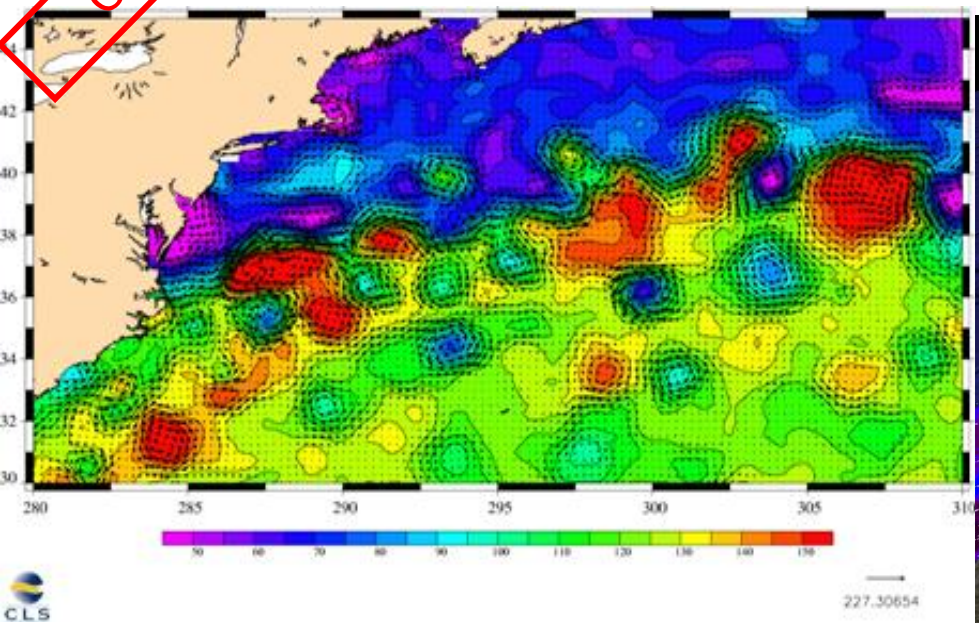
3148

197

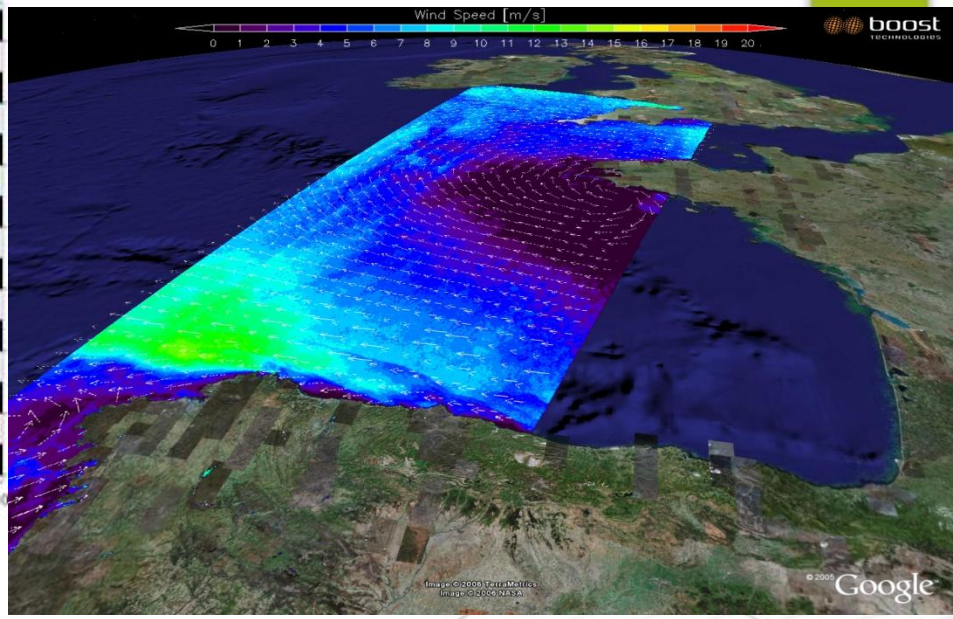
617



SSALTO/DUACS : Altimetry



Sea level and currents high resolution monitoring using ENVISAT and GFO



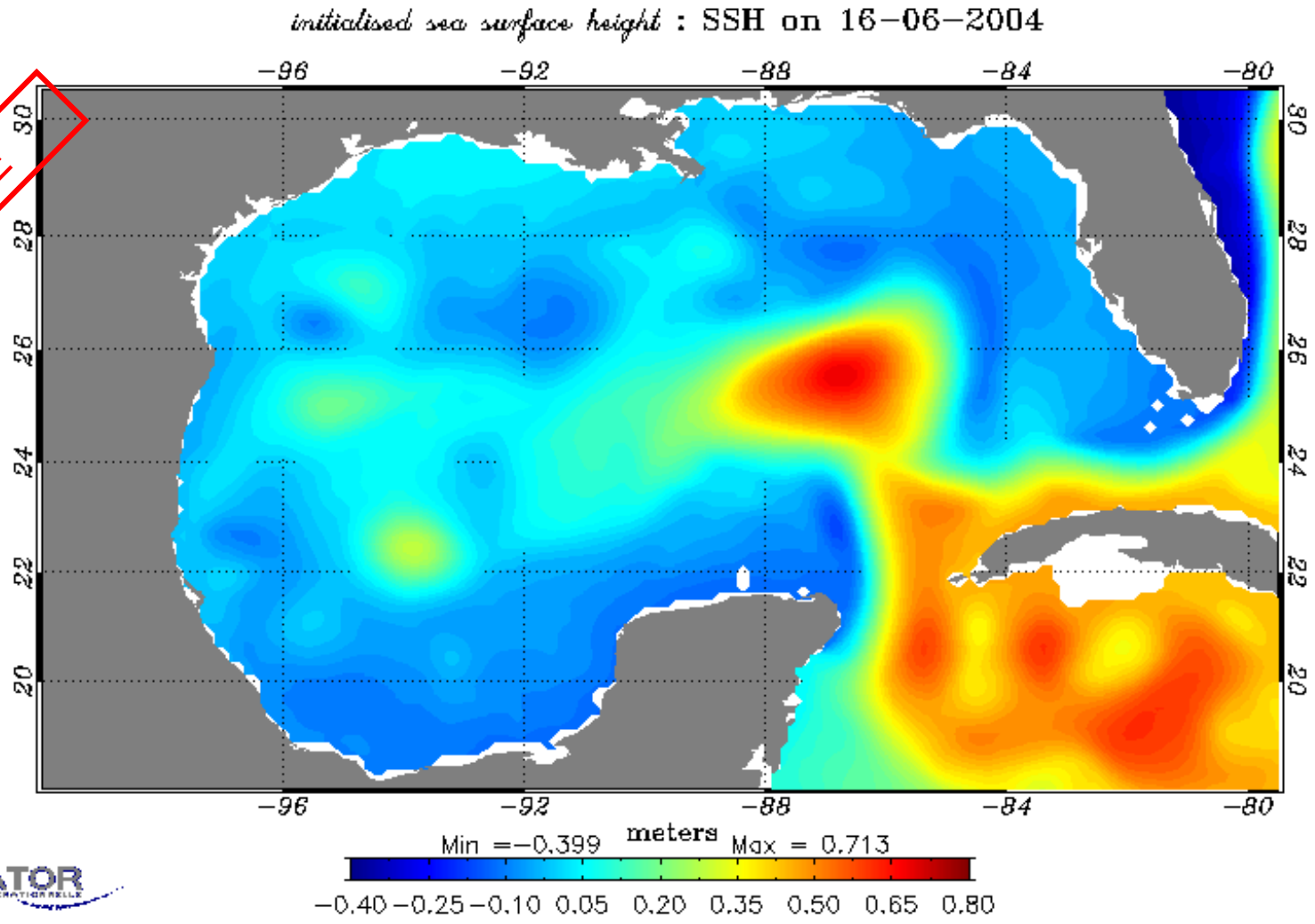
High resolution currents

Beneficiaries

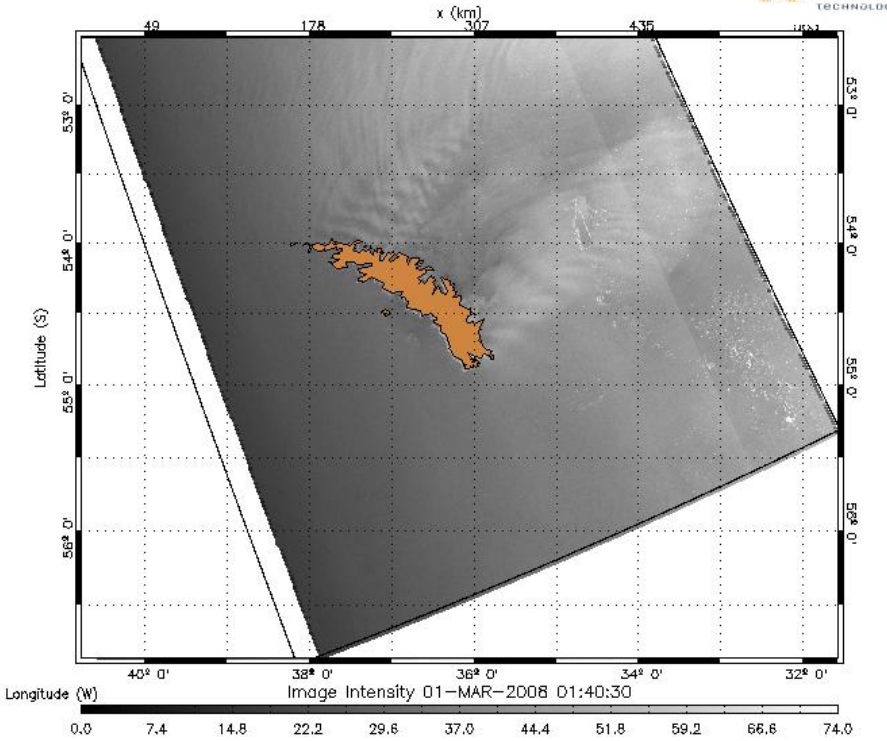
- International programs GODAE, MyOcean, GMES, GEOSS
- Modelling centres: MERCATOR, SOAP, FOAM, TOPAZ, MFS,
- Meteorological services

Ocean modelling

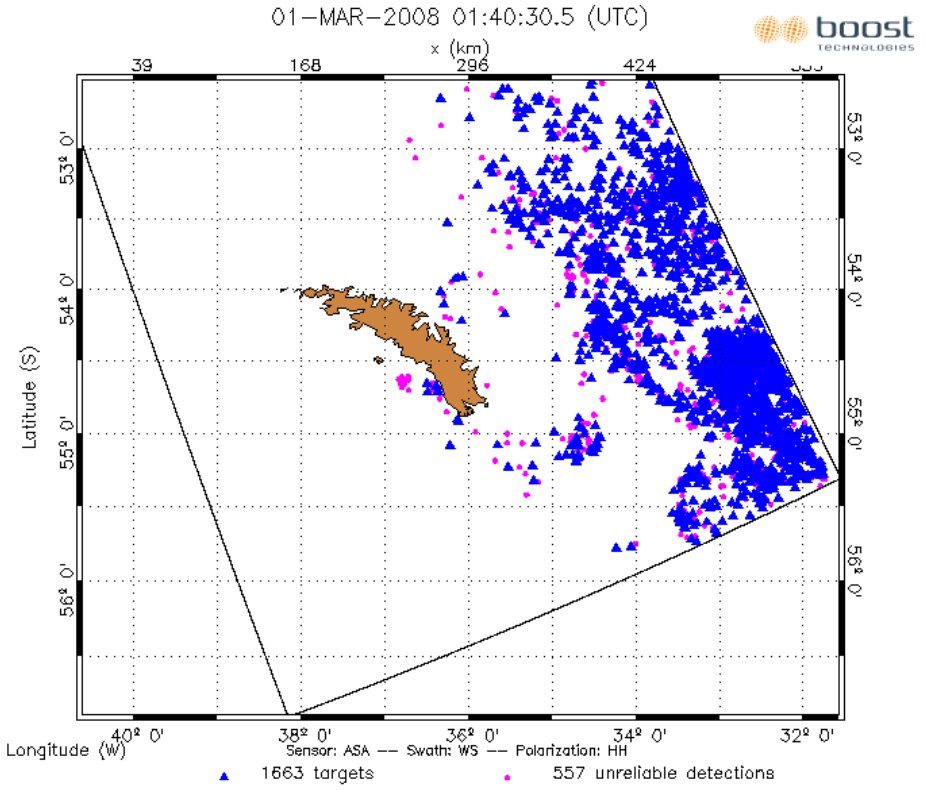
CLIMATE



Iceberg monitoring

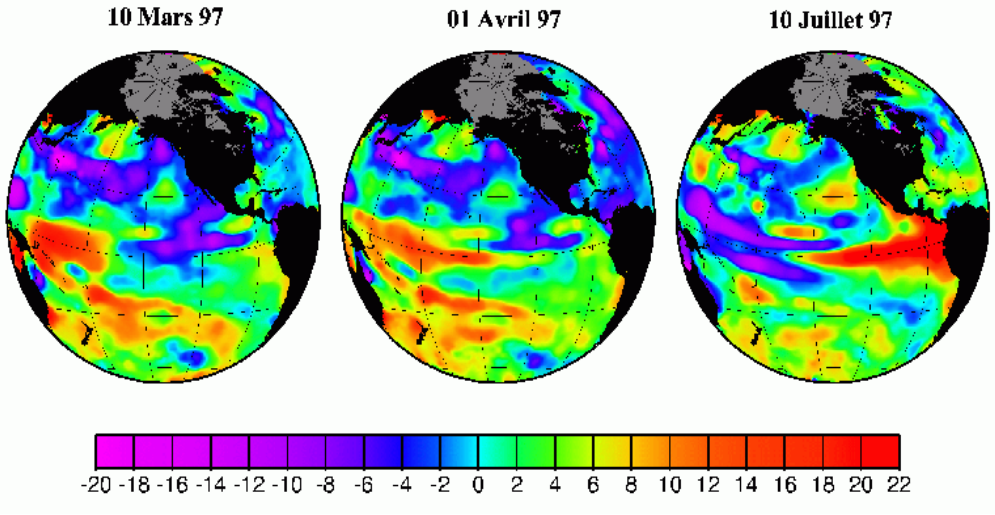


A53 giant iceberg monitoring
March, 1st 2008

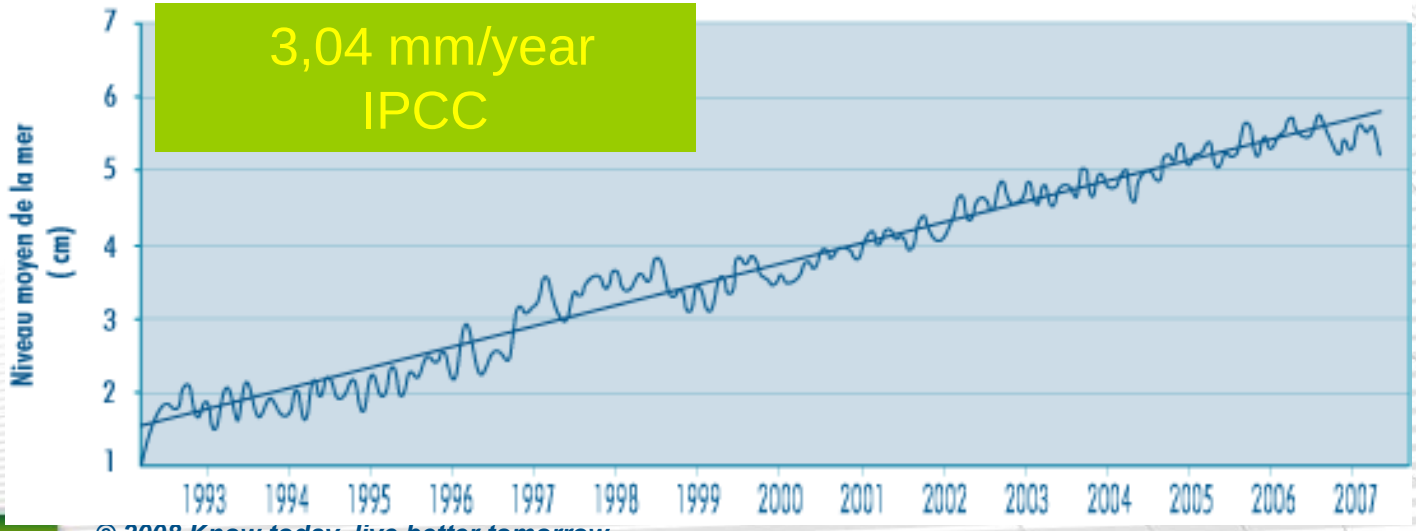


Climate change indicators

CLIMATE



Mean sea level and sea level rise (altimetry, SST, in-situ and ARGO)



Species conservation

Observation

Photo Courtesy Will Heyman/Rachel Graham

Localisation

Environmental conditions

Migrations, habitats

Biology

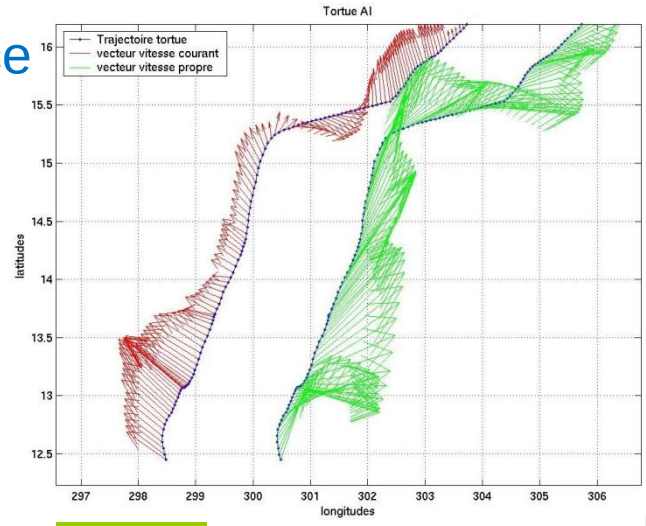
Modelling

Marine ecosystems modelling

Near real time surveillance

Critical habitats (« hot spots »)

Abundance and distribution of useful stocks



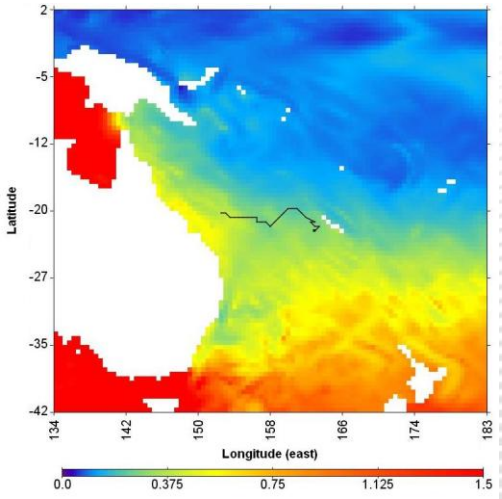
turtles

big eye tuna

Impact analysis

Simulate the impact of protection measures (quotas, area closure, MPAs)

Simulate the potential impact of global warming on tuna populations



Protection of species

Behaviour analysis

Biomass

Climate change impact

Stocks assessment

Pressure on stocks estimates

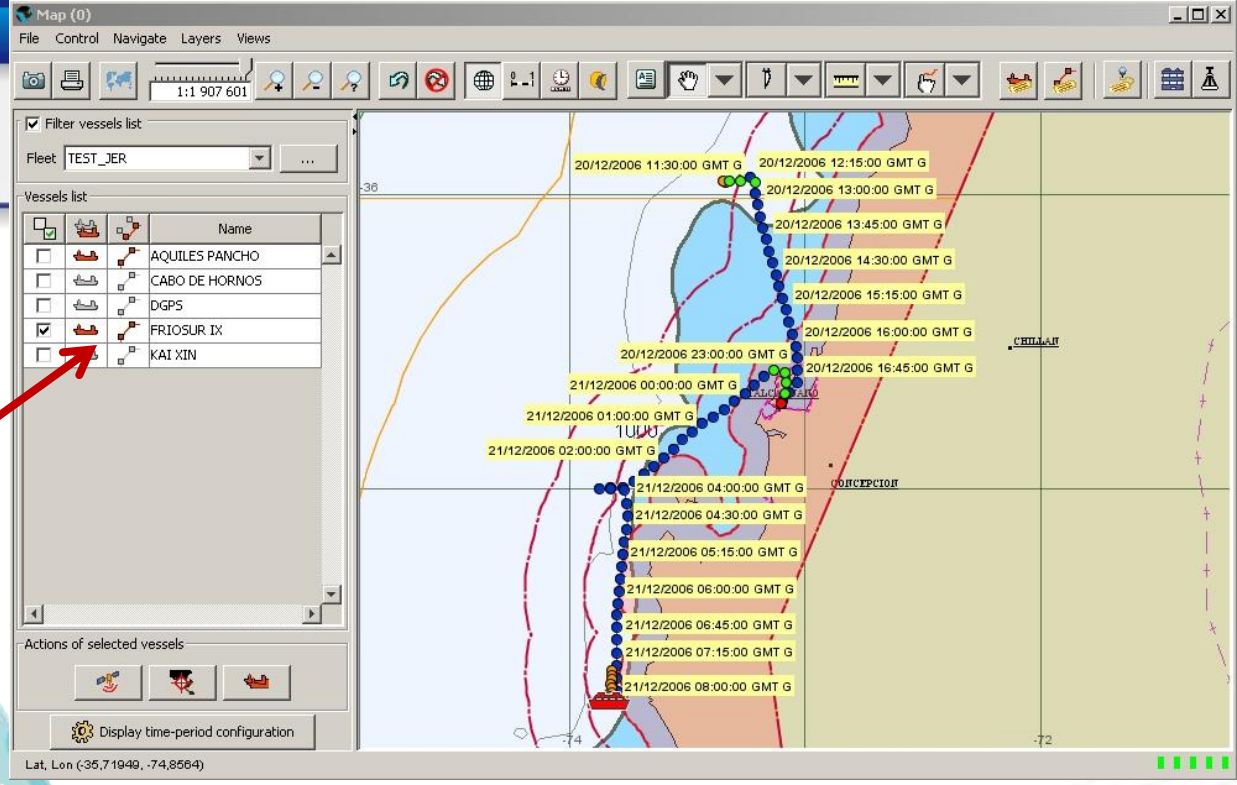
Seasonal forecasting of habitats and stocks

Sustainable management of marine resources

examples

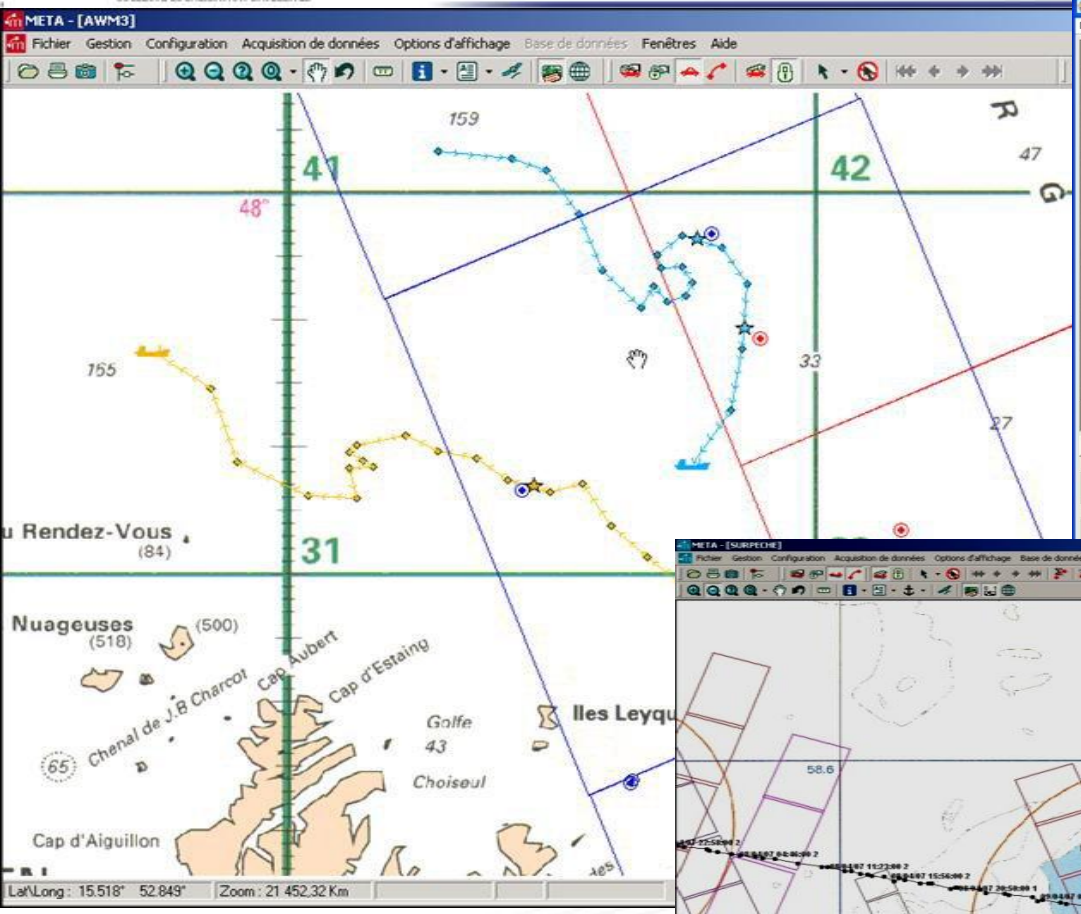
CLS
COLLECTE LOCALISATION SATELLITES

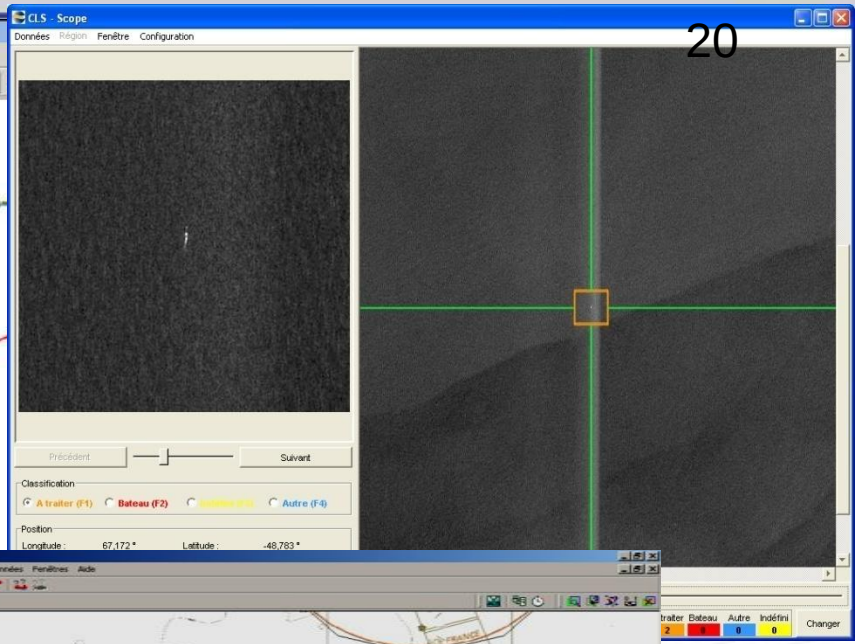
Support to fisheries

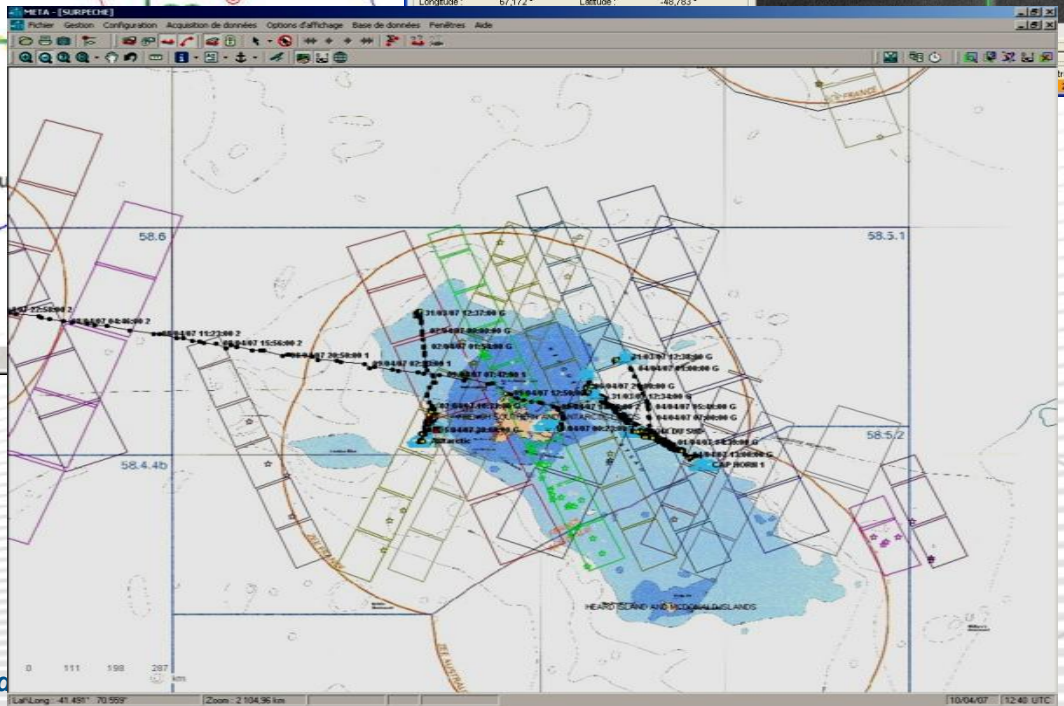


Cyclone Alert
03/05/2007 08:17:44
3°24'39.96" S
116°01'25.32" E
100 nmi / S-SE 50kt

Coupling satellite Radar and VMS







Maritime security

examples

SSAS
ANTI-pIRACY

Volontary tracking by vessel owners within the regulatory framework of SSAS (Ship Security Alert System).

LRIT

Long Range Identification and Tracking

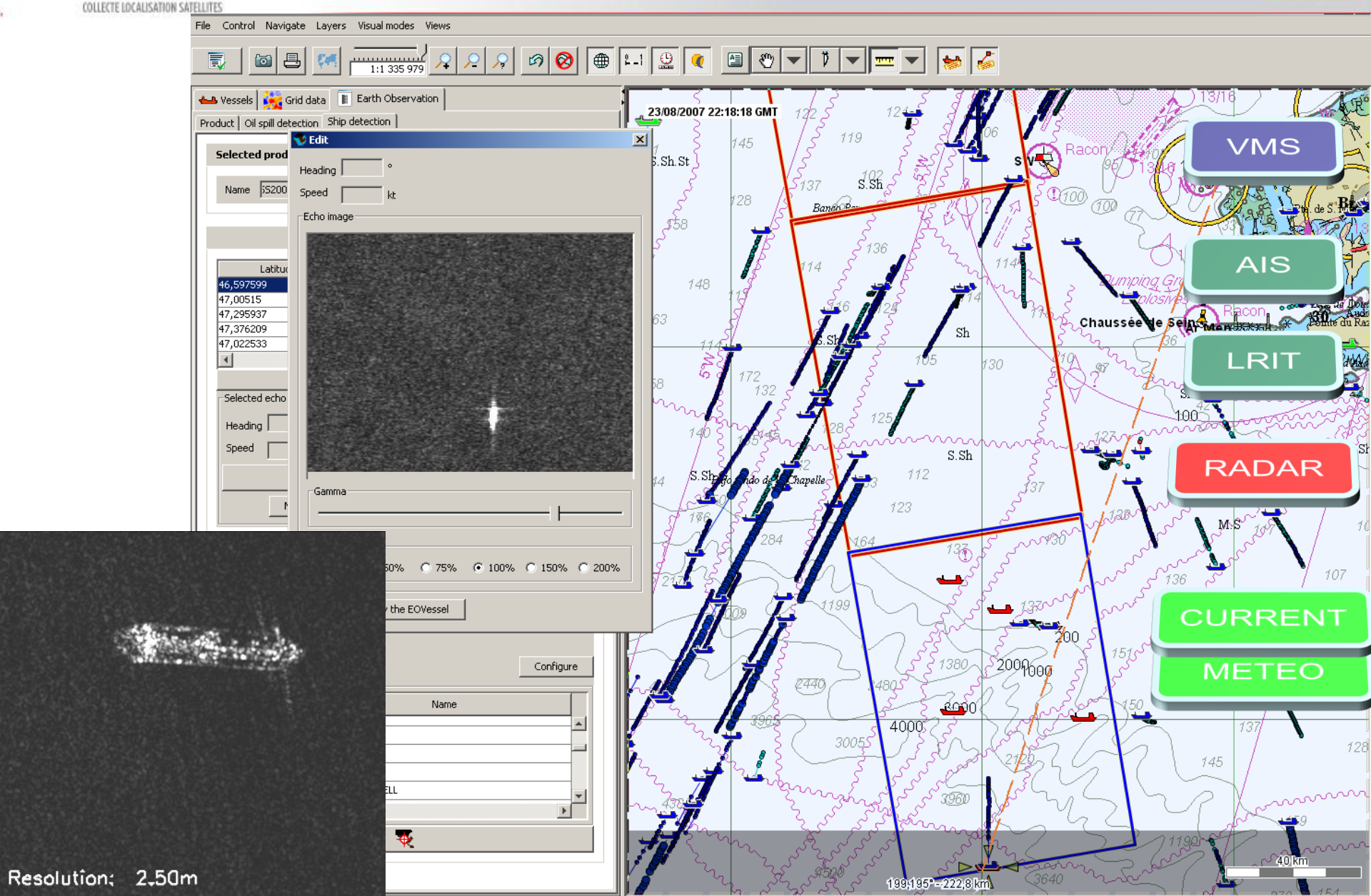
Legal reporting to the maritime and port authorities

IMO compliant

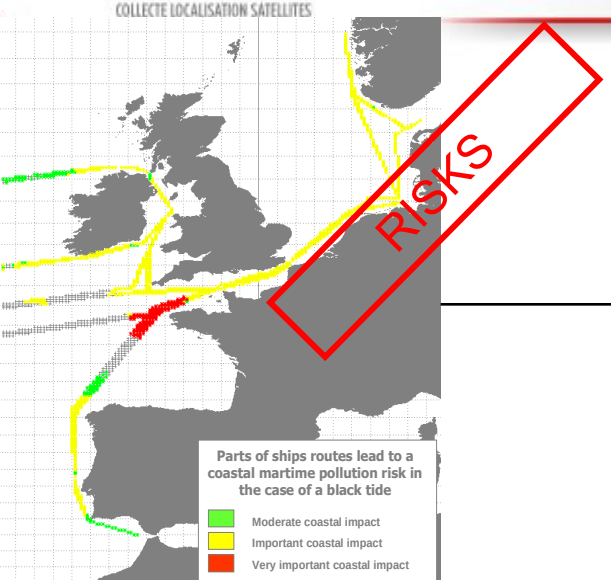
CLS hosts the European centre
10 000 vessels

EMSA

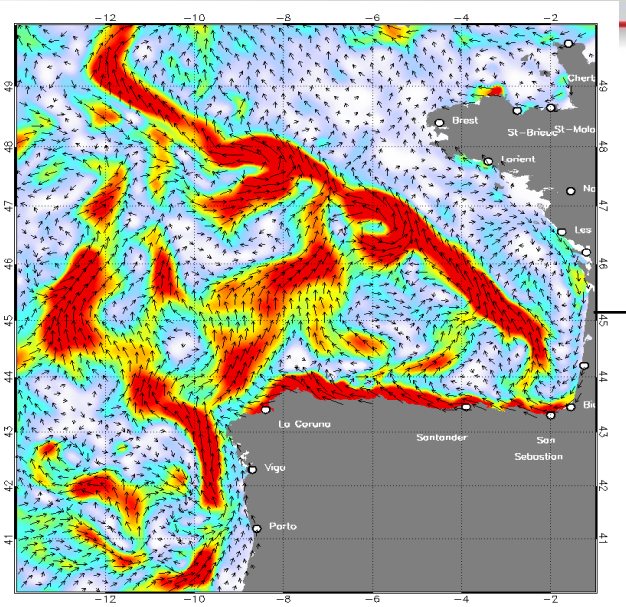
Traffic identification



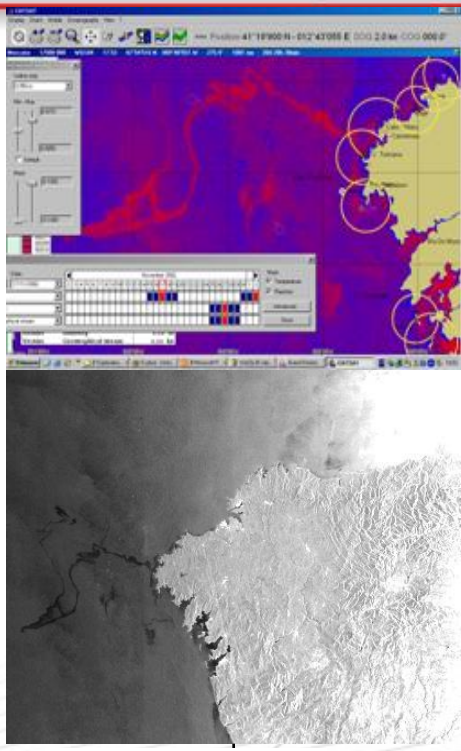
Pollution risk management



Risk maps

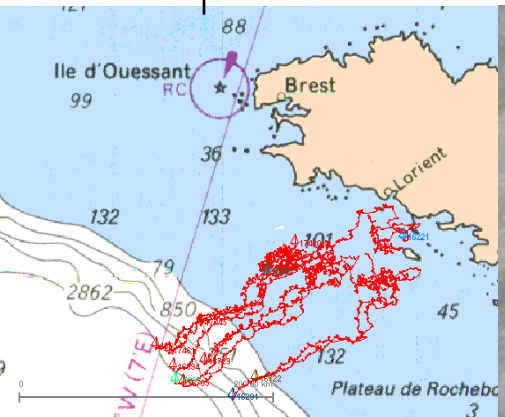


Environmental conditions

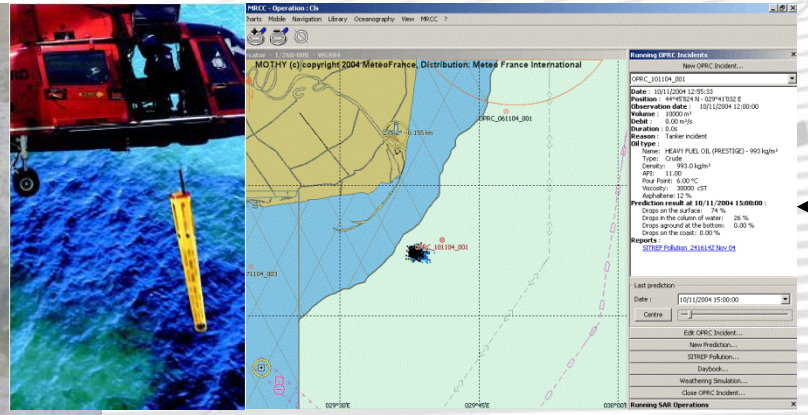


Oil spill detection

Crisis management



Drift forecast



Thank you

Fabienne Jacq
Director, Data collect & loc
Director, environmental monitoring

fjacq@cls.fr