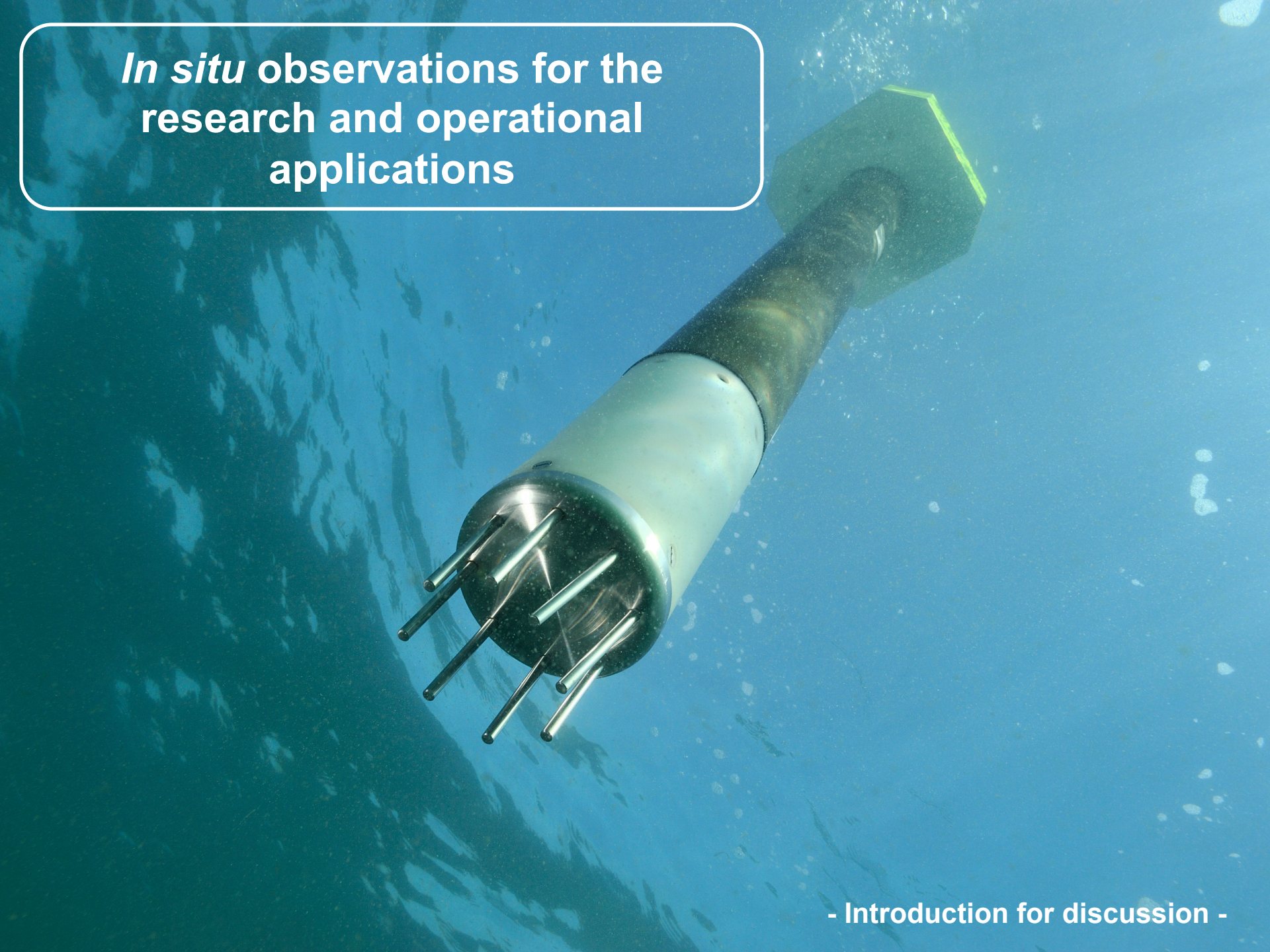
In situ observations for the research and operational applications



- Introduction for discussion -

In situ observations for research studies and operational applications

What are the existing oberving systems ?

What are planed expansions and evolutions ?
… a coastal Coriolis

Discussion

In situ observations for research studies and operational applications

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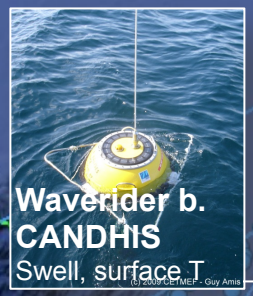
The *in situ* observing networks …
… for the Coastal Operational Oceanography
- March 2013 -


The *in situ* observing networks …
… for the Coastal Operational Oceanography
- September 2012 -

Ferryboxes
T, S, flu., turb, surface O_2

Ferryboxes
T, S, flu., turb, surface O_2

Tide gauges RONIM
Sea level



Waverider b.
CANDHIS
Swell, surface T

Ferryboxes
T, S, flu., turb, surface O_2

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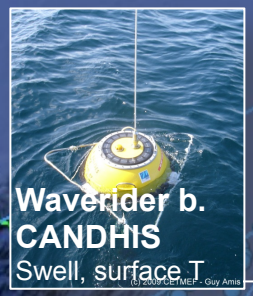
Sea level



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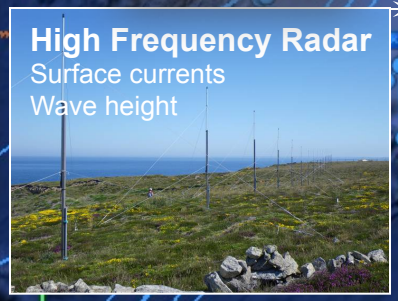
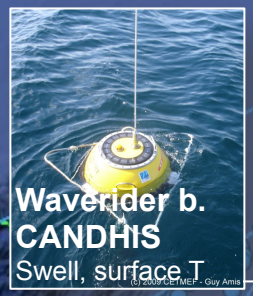


High Frequency Radar
Surface currents
Wave height



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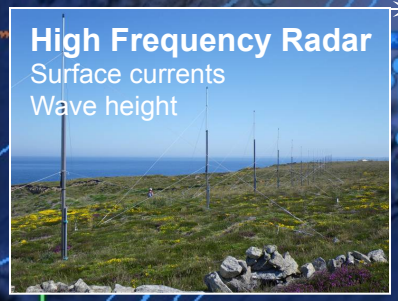

High Frequency Radar
Surface currents
Wave height

ARVOR-C profilers
T,S in the water column


Waverider b.
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RECOPESCA, network on fishing vessels
T, S, turb. in the water column


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T,S in the water column
Data from cruises
TSG, ADCP, XBT/CTD
Drifters
RECOPESCA, network on fishing vessels
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Fixed platform network
RESOMAR, MAREL, Météo-France …
… Island network, Velyger
ARVOR-C profilers
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In situ observations for research studies and operational applications

What are the existing oberving systems ?

What are planed expansions and evolutions ?
… a coastal Coriolis

Discussion

Evolution of coastal observing systems in coastal/regional seas

✓ Sustain existing networks

✓ Evolution european/international context

- Interreg MyCoast, FP7 JERICO, Regional Operational Oceanographic Systems (e.g. IBI-ROOS, MONGOOS), Godae OceanView (Coastal Ocean and Shelf Seas Task Team) -

✓ Expansion of coastal and regional observing networks

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✓ Expansion of coastal and regional observing networks

To an expansion of Coriolis perimeter to coastal/regional regions

Coastal/regional Coriolis

Working group: Guillaume Charria, Pierre-Yves Le Traon, Philippe Bertrand, Patrick Farcy, Bruno Le Squère, Patrick Raimbault, Gérard Eldin, Joël Poitevin, Jean Rolland, Gilbert Emzivat

Coastal/regional Coriolis in 2013, this is not …

The existing perimeter of Coriolis (as the inter-organism convention) does not include:

- a participation of the coordination of coastal/regional observing networks

- the data diffusion of:
  - surface currents from HF Radars,
  - High frequency tide gauge data,
  - CTD measurements (integrated during limited updates)
  - SOMLIT (local databases)

- The management of coastal observing infrastructures – taken care by organisms (*e.g.* RECOPESCA, REFMAR, MOOSE, FerryBox)

Needs and future evolutions of Coriolis to the coastal/regional domain

Proposed definition of the new perimeter of the coatal/regional branch from Coriolis:

Domain

Coastal/Regional = North-West Mediterranean sea, Bay of Biscay, Channel
(including a gradual extension to the overseas areas – DOM/POM)

Measured parameters

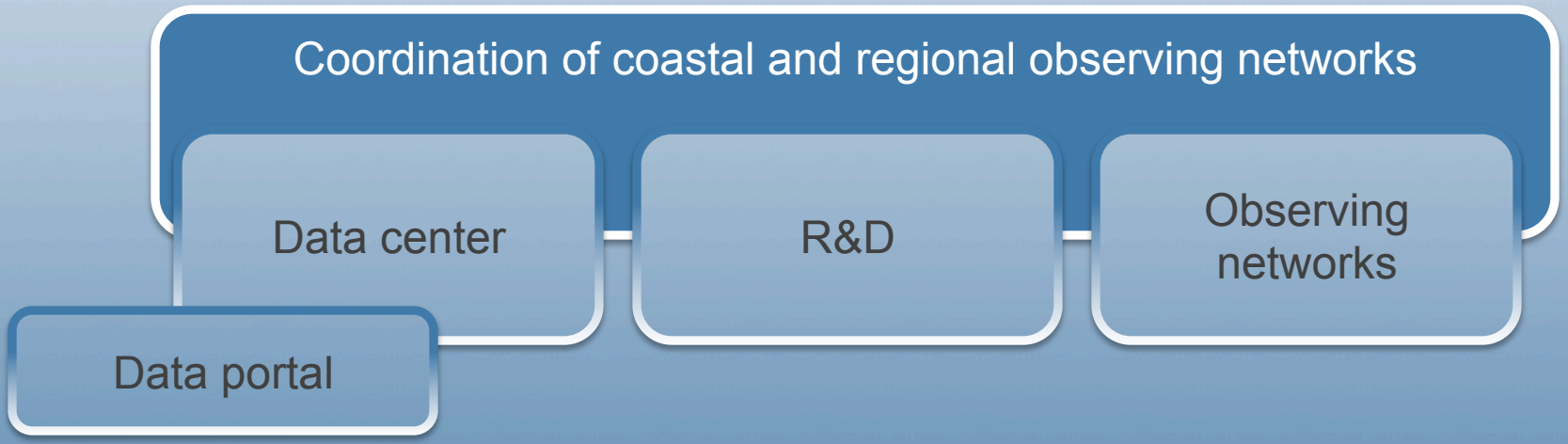
Physics: Temperature, Salinity, Sea Level, waves, swell, currents and turbidity
Biogeochemistry: Oxygen, Chlorophyll concentration

Data distribution

To sustain operational activities … (by order of priority) …

- Real time data measurements (or a least collected automatically),
- Potentially collected data in delayed mode following the sampling frequency and the qualification procedures.

Coastal/regional Coriolis



Coordination of coastal and regional observing networks

Multi-organisms:

- To federate the measuring efforts

(i.e. to avoid duplication of observing systems)

- To coordinate tehcnical evolutions

(i.e. technological choices, distribution of skills following platforms and organisms)

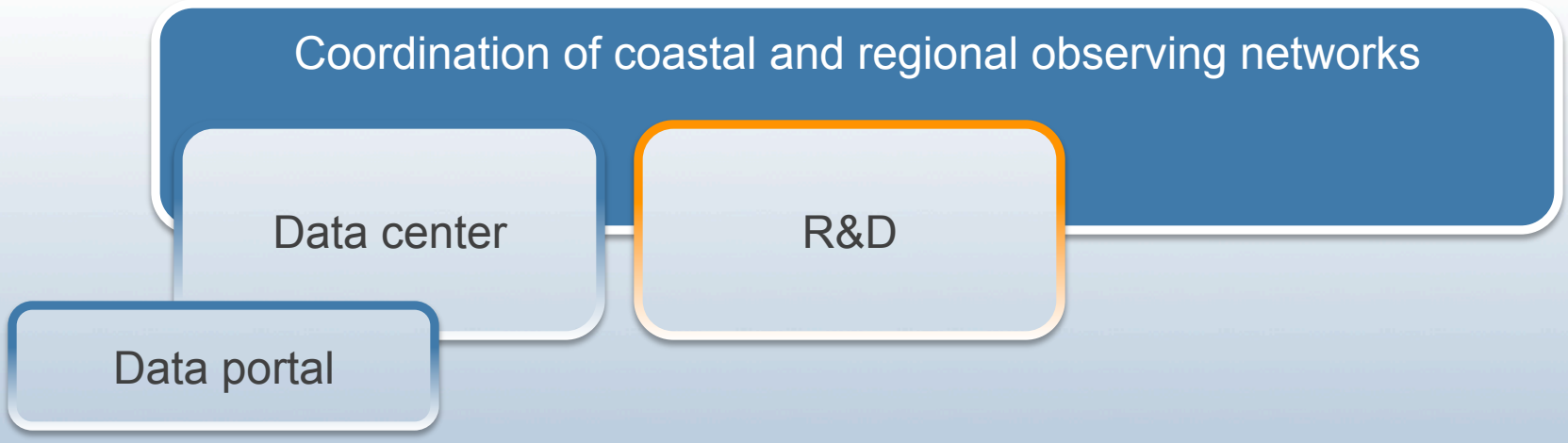
- To evaluate network extension needs

Data center:

- Heritage from the CDOCO (Centre de Données pour l'Océanographie Côtière Opérationnelle)
- Consolidation of the coastal data collection:
  - Development of qualification specific procedures for coastal/regional
  - Data exchange protocol (i.e. interoperability)

Data portal:

- Unique desk to access data
  (including databases outiside Coriolis)

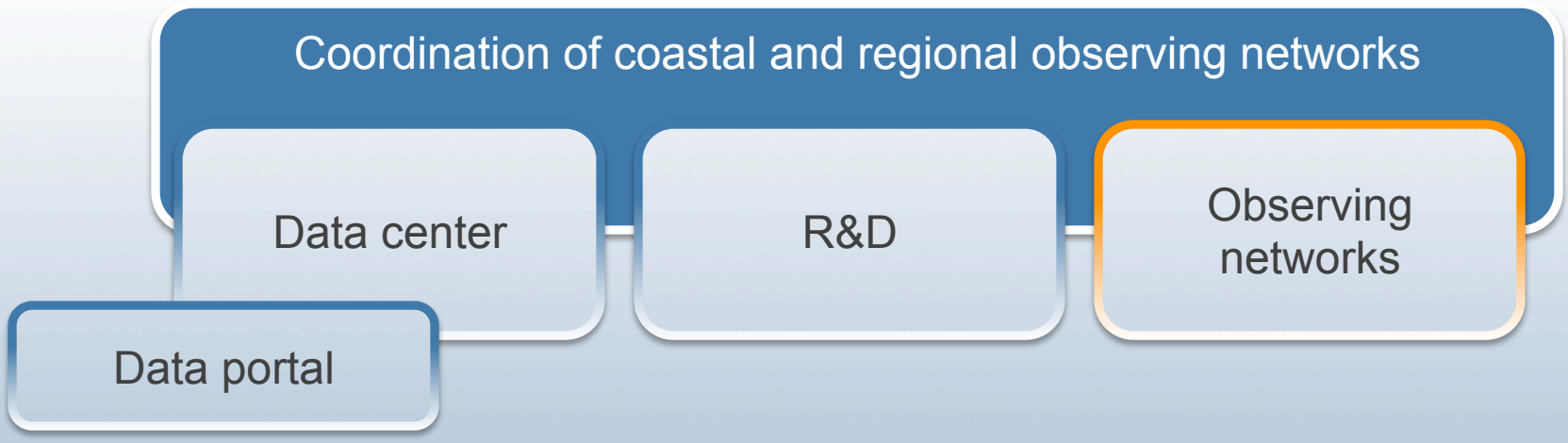


Specific research and development for coastl/regional:

- **Optimal network design** related to the targeted aims
  (e.g. OO, research, environment monitoring)

- New **data processing and qualification**

- Studies about **new sensors/platforms**



INSU
- Station vessels,
- MOOSE network,
- SOMLIT network,
- Marine stations from RESOMAR,
- Ferrybox

SHOM
- RONIM (tide gauges),
- HF Radars,
- TSG + ADCP,
- XBT/CTD

IFREMER
- MAREL buoys,
- FerryBox,
- Island network,
- Recopesca,
- Velyger network,
- ARVOR-C profilers
- TSG

Météo-France
- Multi-sensors buoys

An idea about the cost and people involved

Organisme	Moyens à la mer	Investissement provisionnel annualisé (ex sondes, groupe, batteries,…) sur 5ans	Fonctionnement total
IFREMER	**MAREL Carnot**	10 k€	35 k€
	MAREL Iroise	10 k€	15 k€
	MOLIT	10 k€	20 k€
	MESURHO	10 k€	30 k€
	Réseau des îles	20 k€	20 k€
	Réseau conchylicole	20 k€	5 k€
	FerryBox	20 k€	20 k€
	ARVOR-C	30 k€	10 k€
	RECOPESCA	5 k€	50 k€
	D4	15 k€	20 k€
	Total	150 k€	225 k€
SHOM	**Radars HF**		50 k€/couple
	Réseau RONIM (marégraphes)		180 k€
Météo-France	**Bouées**		100 k€

Tableau de répartition des coûts à la charge de l'organisme.

An idea about the cost and people involved

Moyens à la mer	Moyens Humains (H/mois)
MAREL Carnot	1
MAREL Iroise	1
MOLIT	3
MESURHO	3
Réseau des îles	1
Réseau conchylicole	2
FerryBox	1
ARVOR-C	3
RECOPESCA	4.5
D4	3
Total en ETP IFREMER	**2,5**
Radars HF	0,2
Réseau RONIM	4,5
XBT/CTD, TSG, ADCP coque	7
Total en ETP SHOM	**11,7**
Bouées	3,5
Total en ETP Météo-France	**3,5**
Total en ETP INSU	**3,5 (SOMLIT, MOOSE, RESOMAR, navires de stations)**

Tableau de répartition des moyens humains.


Ifremer
INSTRUMENT SCIENTIFIQUE
IFREMER
Technopole Brest-Iroise
29280 PLOUZANE
TEL : + 33229008596
Position mouillage :
47° 27.400 N
02° 39.400 W

Discussion …

- ✓ **Future experiments, cruises and projects based on *in situ* data (in the bay of Biscay) ?**

Cruises: AirSWOT related cruises (?), PROTEVS, MASTODON, … ??

- ✓ **Networks to sustain in priority ?**

- ✓ **Present and future needs from coastal observing systems ?**