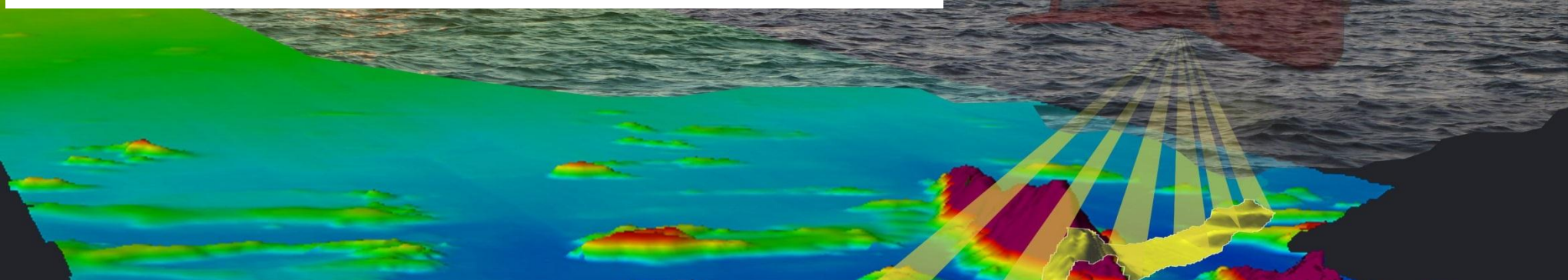




GAP 2014 & PHYSINDIEN 2014



“...much more than nautical charts...”

GAP 2014 & PHYSINDIEN 2014

2 sea-trials **from March to May**

PHYSINDIEN'14 :

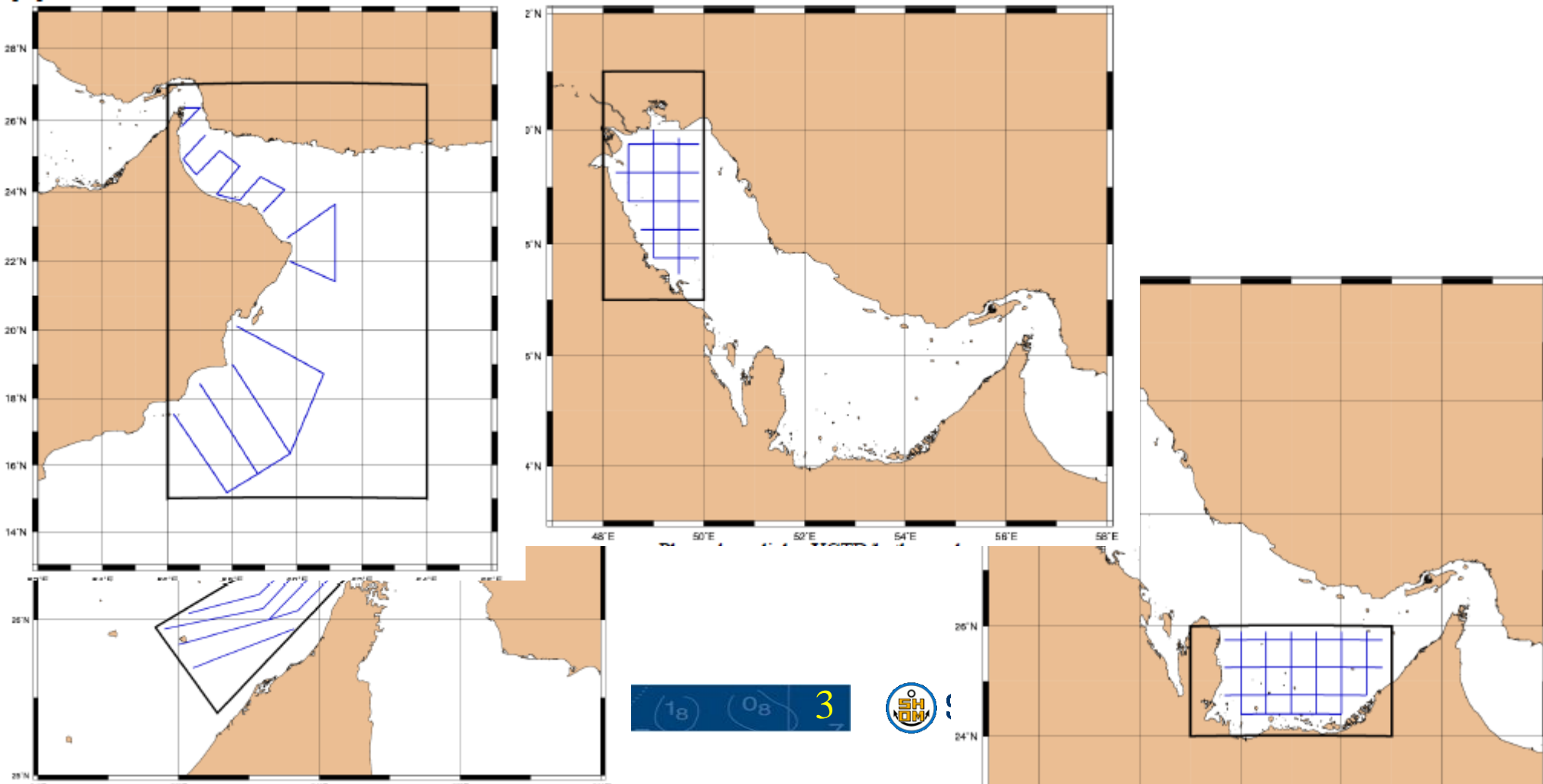
- Oceanographic sea-trial
- 2 legs :
 - Leg 1: **March** - Arabian sea – Gulf of Oman - Strait of Hormuz
 - Leg 2: **May** - the Gulf

GAP'14 :

Hydrographic sea-trial – **April / May** – the Gulf

GAP 2014 & PHYSINDIEN 2014

**UNCLOS Marine Scientific Request prepared in June 2013
Sent in July 2013 through diplomatic channels to:
Iraq, Iran, Koweit, KSA, Qatar, Sultanate of Oman, UAE**



Surveys by hydrographic and oceanographic vessel *Beautemps-Beaupré*

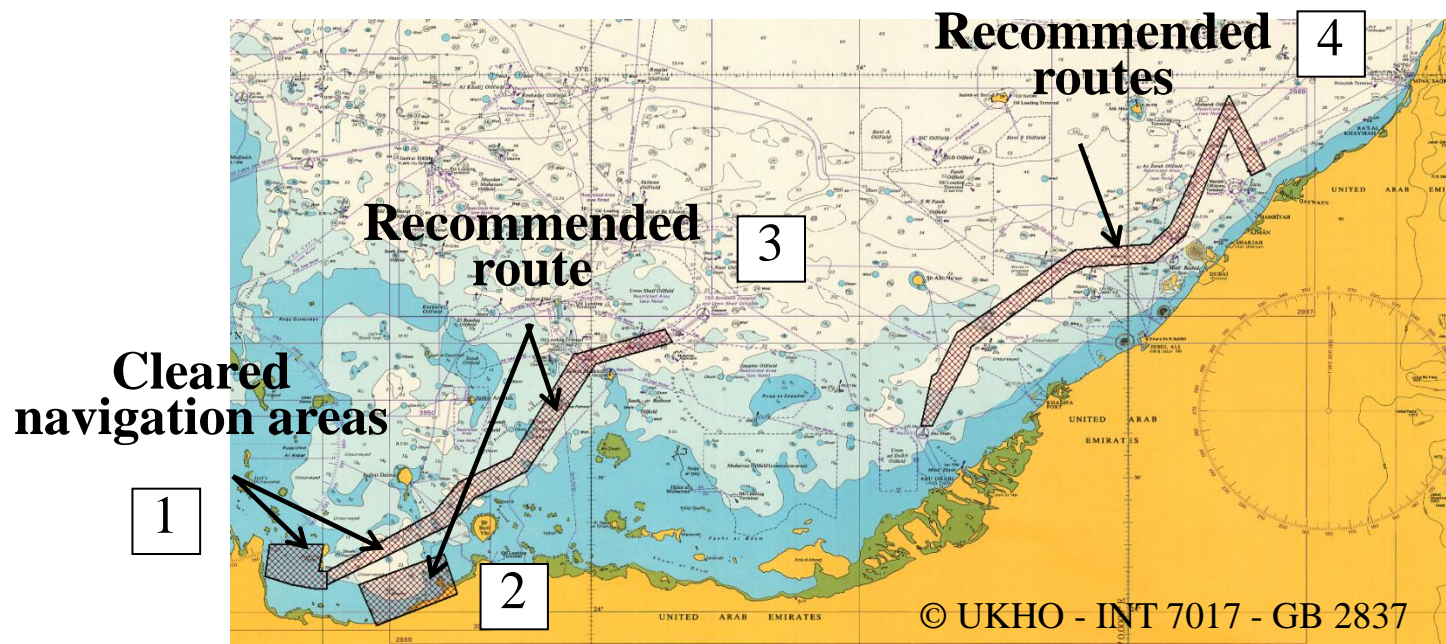


Scientific equipments



Bathymetry for safety of navigation

Main assets : Multibeam echo sounders / side-scan sonars

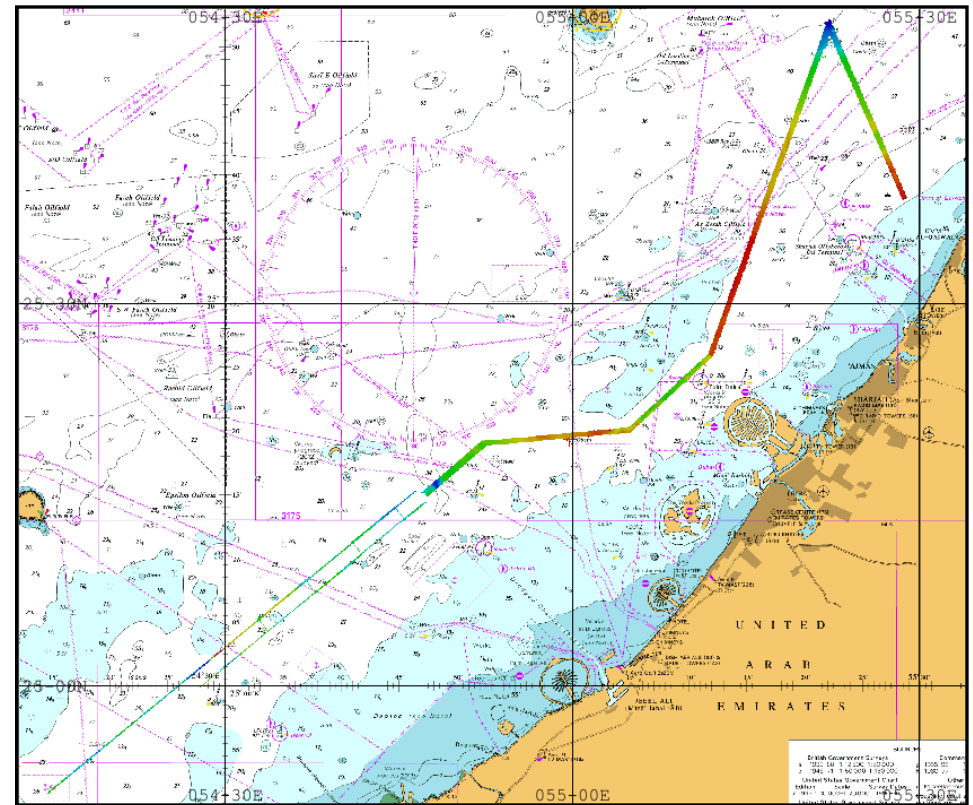
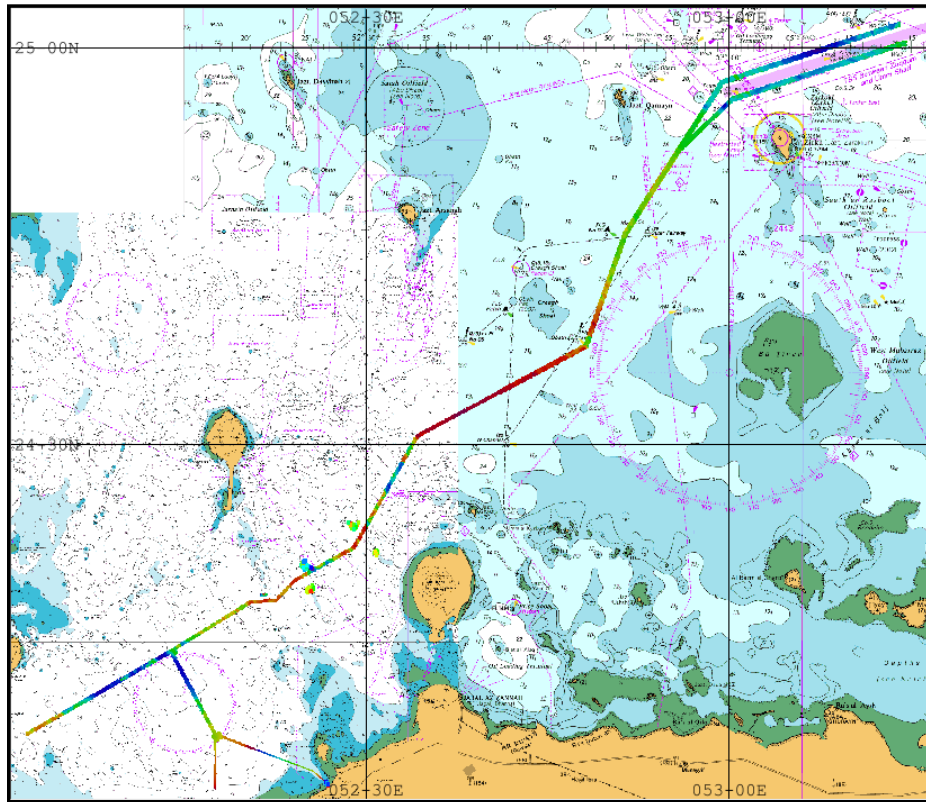


GAP-2014 - Results

Recommended routes : surveyed

Cleared navigation areas : not surveyed due to the lack of time

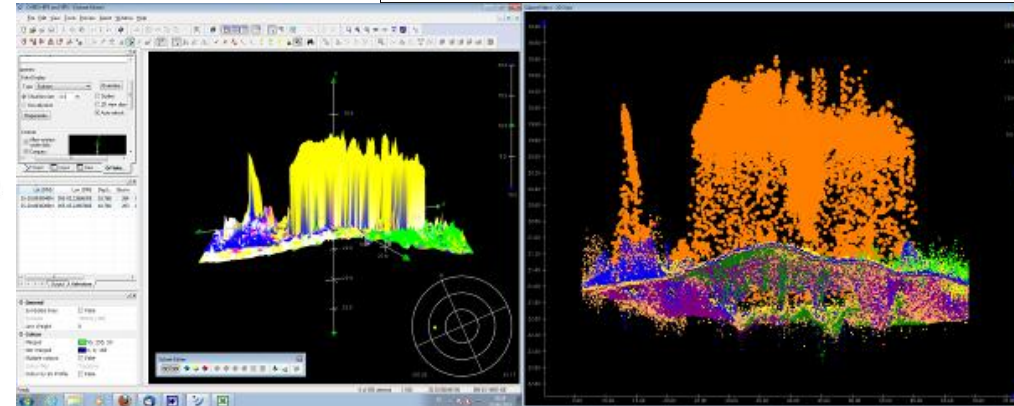
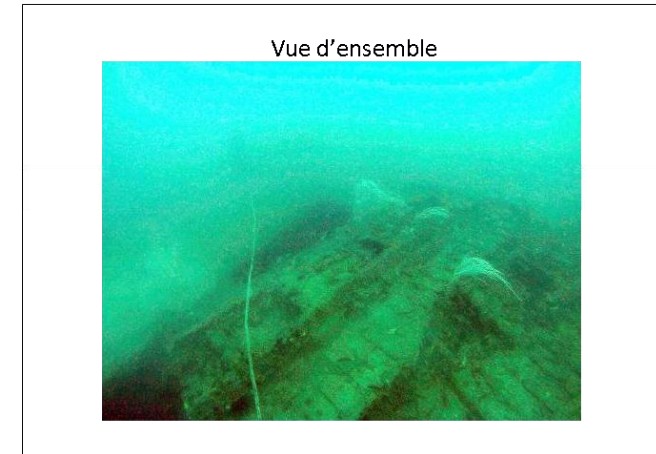
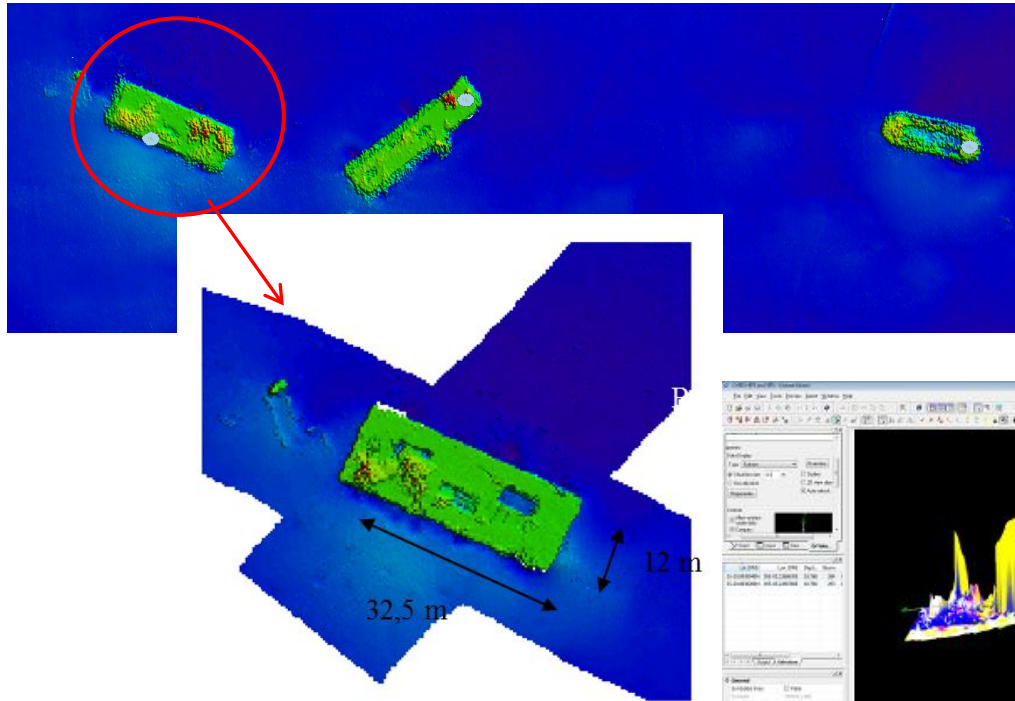
Most areas surveyed at IHO PS44 order 1a



© UKHO - GB 2889 & 3951

GAP-2014 - Results

5 wrecks discovered, 26 obstructions, 1 isolated underwater rock



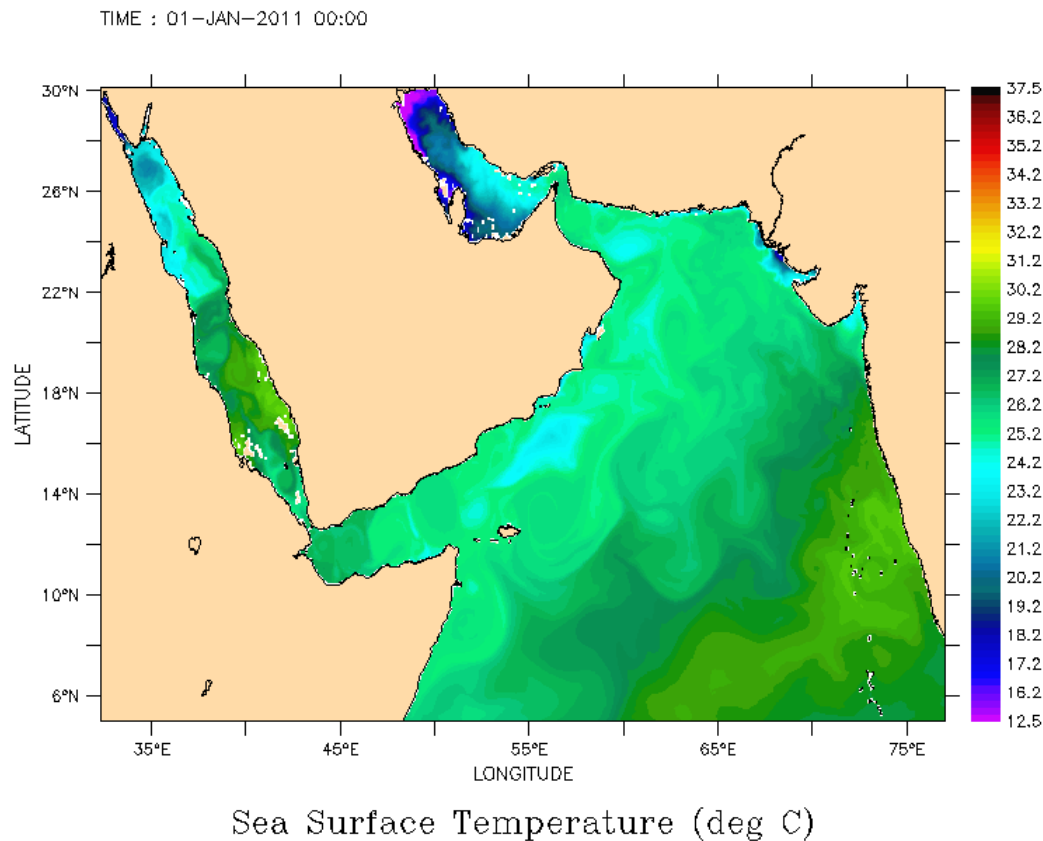
Intermediate results transmitted to UAE in May 2014, final results to be transmitted in early February 2015

- **Including processed hydro-oceanographic data on numerical storage devices**
- **Sea-trial report**

Relevant maritime safety information signaled to UKHO, as INT chart producer

- **All obstructions and wrecks**
- **9 soundings**

Ocean modelling, development and **validation** of an oceanographic forecasting system for the NW Indian ocean

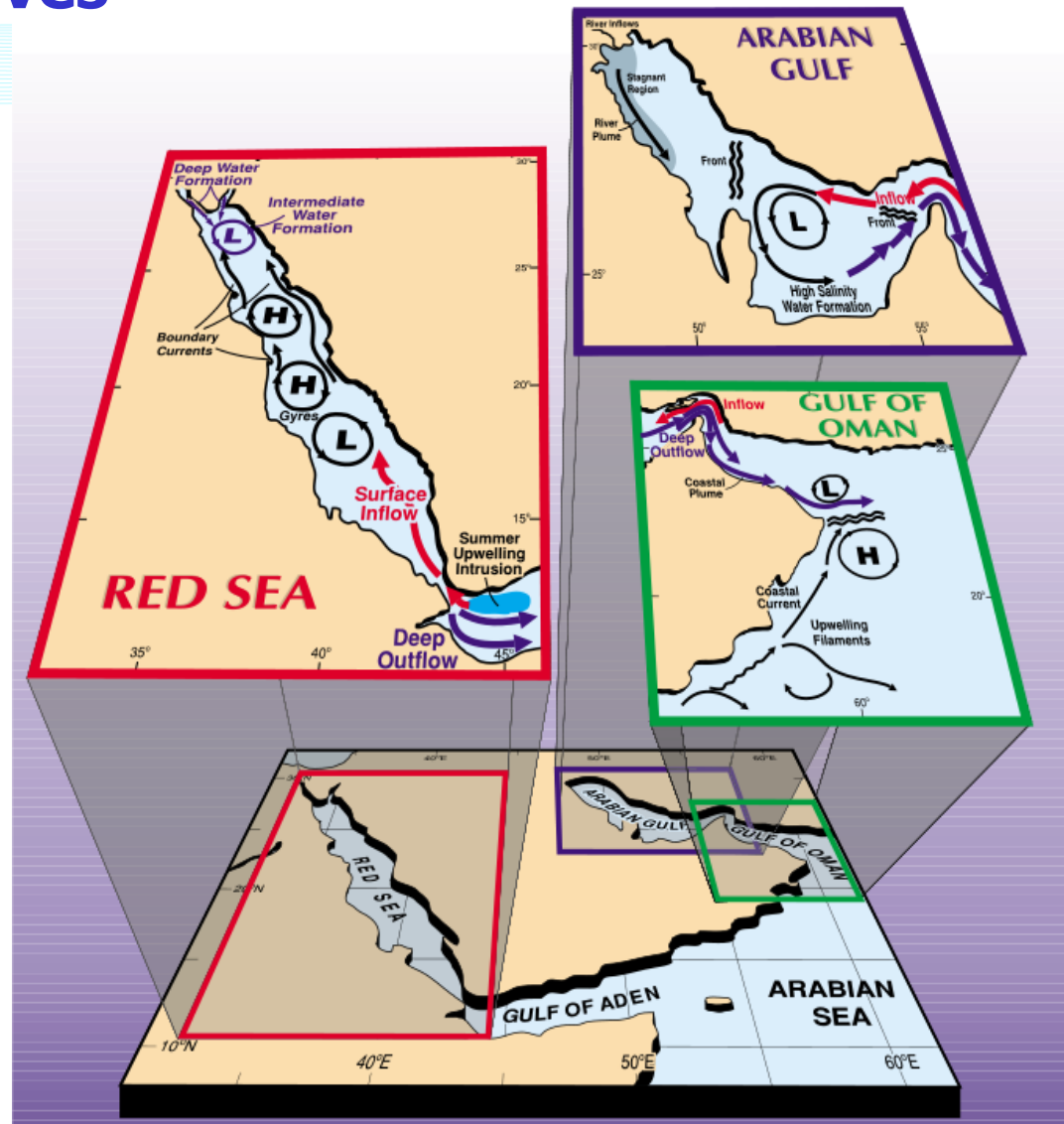


**HY
COM**
HYbrid
Coordinate
Ocean Model

Horizontal resolution: **5 km**
Vertical resolution: **40 layers**

Ocean processes :

- ✓ Mesoscale (~ 10 km) circulation,
- ✓ Mixing layer dynamics,
- ✓ Deep outflows and surface inflows (Red Sea and the Gulf),
- ✓ Up wellings,
- ✓ High density water formation (the Gulf),
- ✓ Thermal fronts.



Arabian Marginal Seas and Gulfs - Report 1999

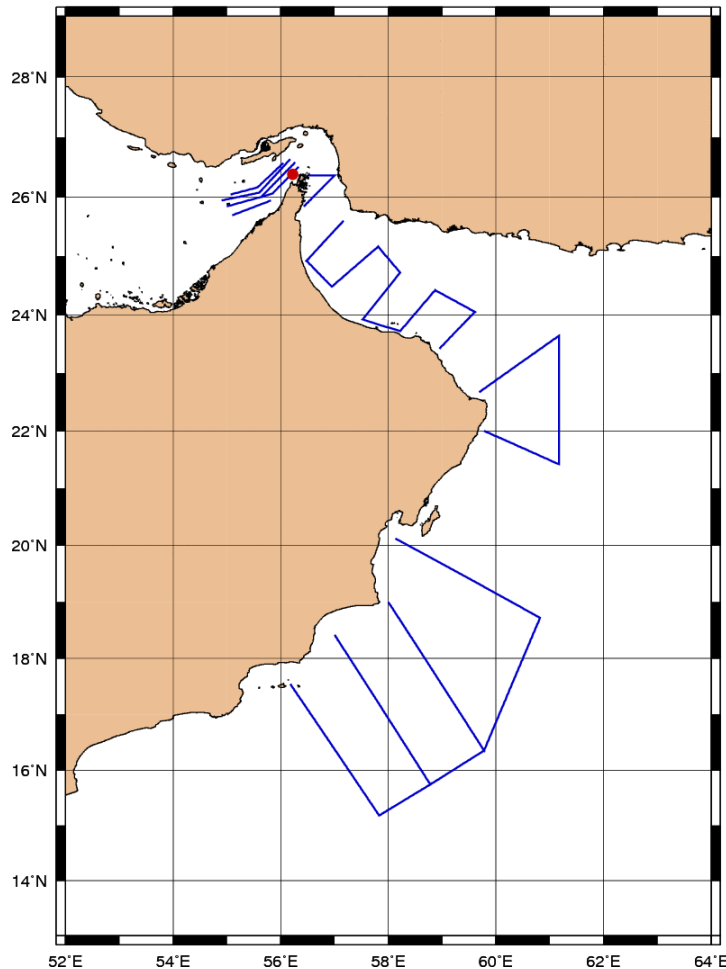
Model validation

To validate and improve the Indian ocean forecasting model, assessment and analysis based on a direct comparison between model outputs and field observations are required

This validation is made using :

- ✓ satellite data → surface data
- ✓ in-situ data → data over the whole water column

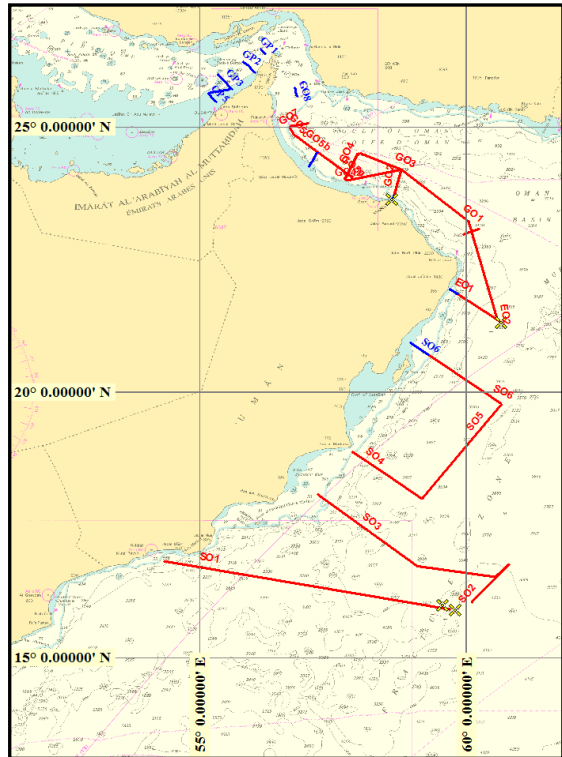
Model validation – In-situ data Research oceanic cruises



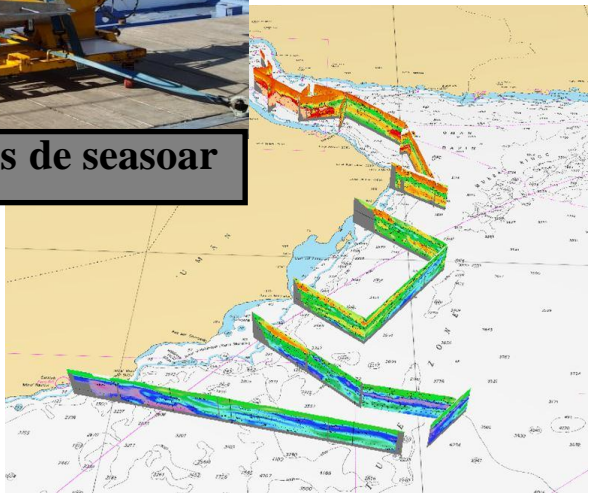
March 2014 programme of work:

→ To carry out current and hydrology measurements along the Oman coast, in the Oman gulf and in the Strait of Hormuz to study mesoscale dynamics and the Gulf water outflow

PHYSINDIEN 2014 leg 1 (March 2014) - Results



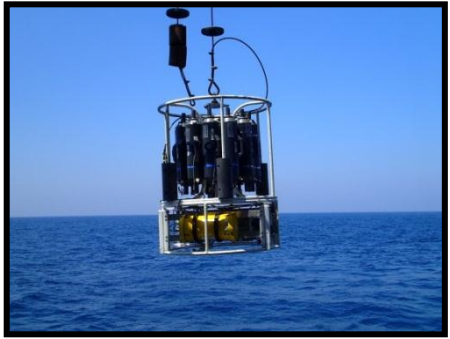
Fullfilled hydrological network



1 ADCP mooring



8 drifting buoys

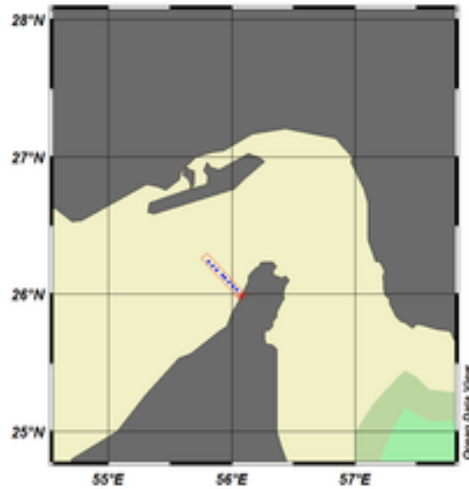


110 L-CTD

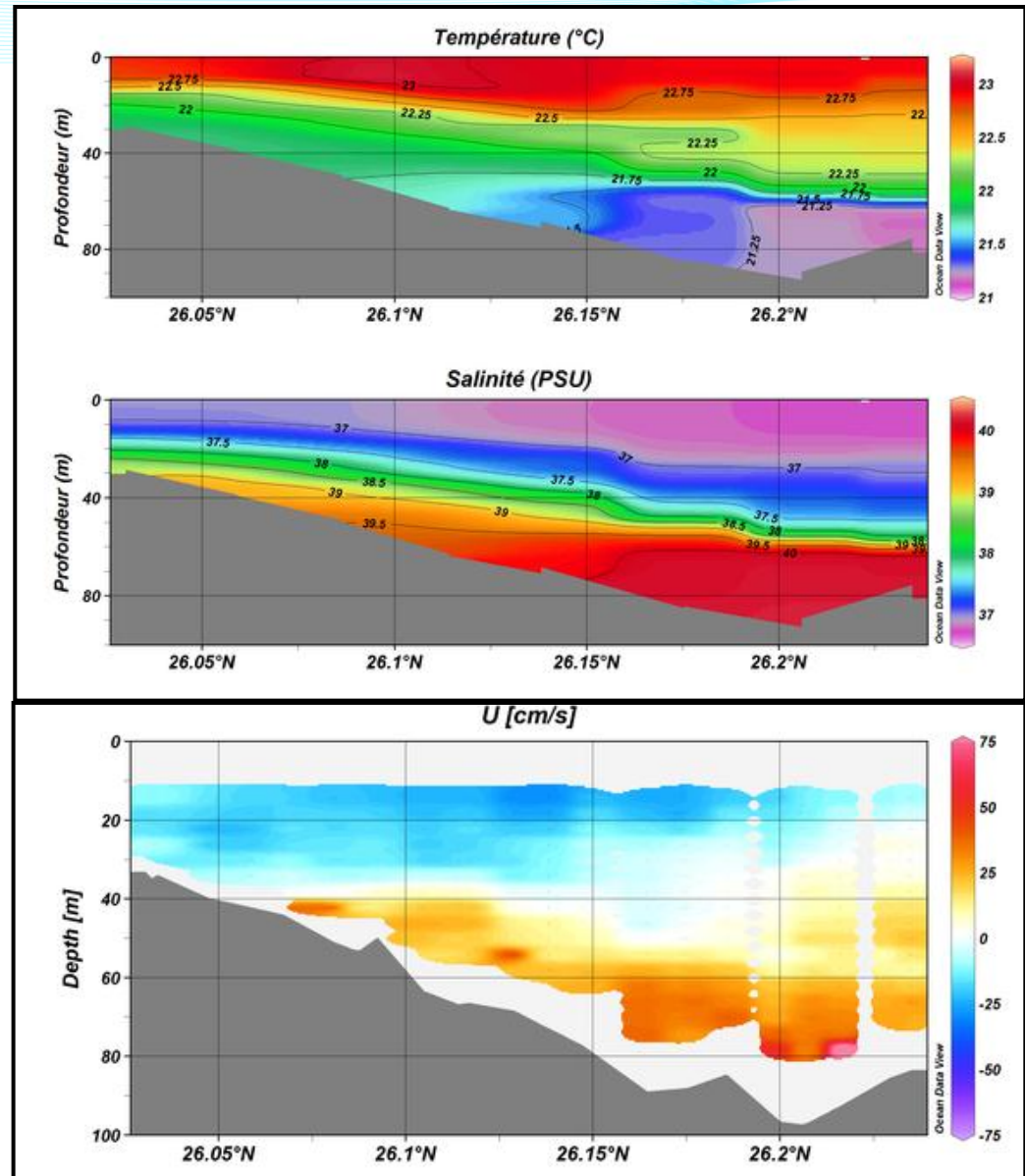


2 Argo profilers

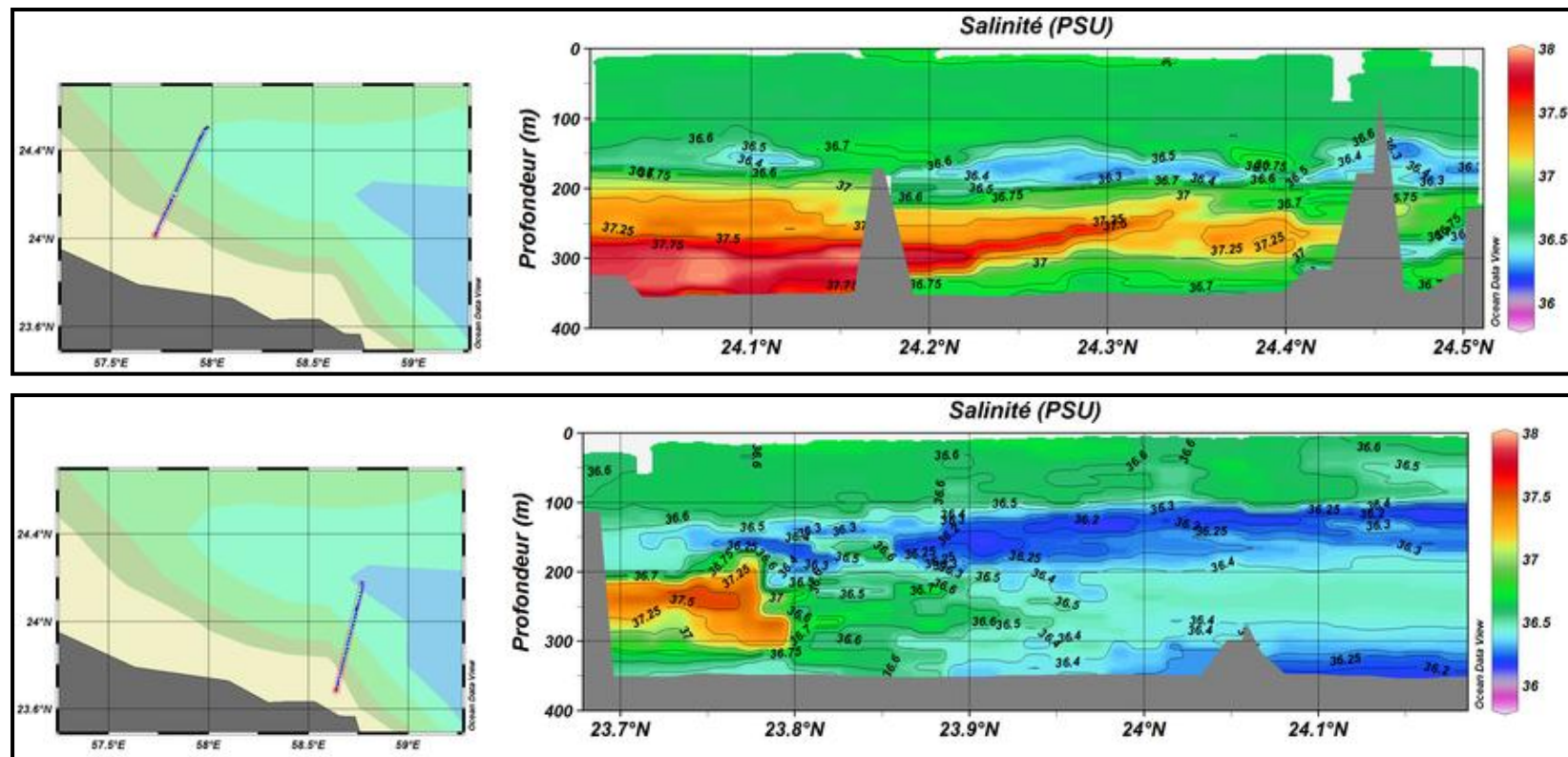
PHYSINDIEN 2014 leg 1 (March 2014) - Results



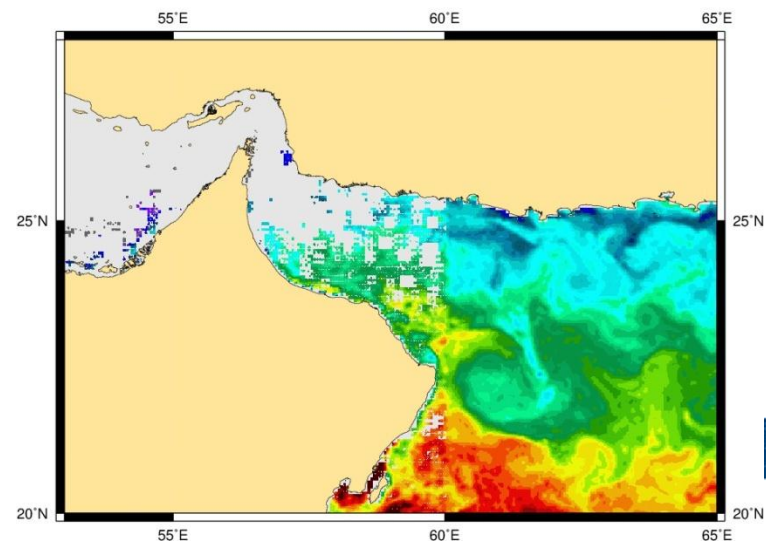
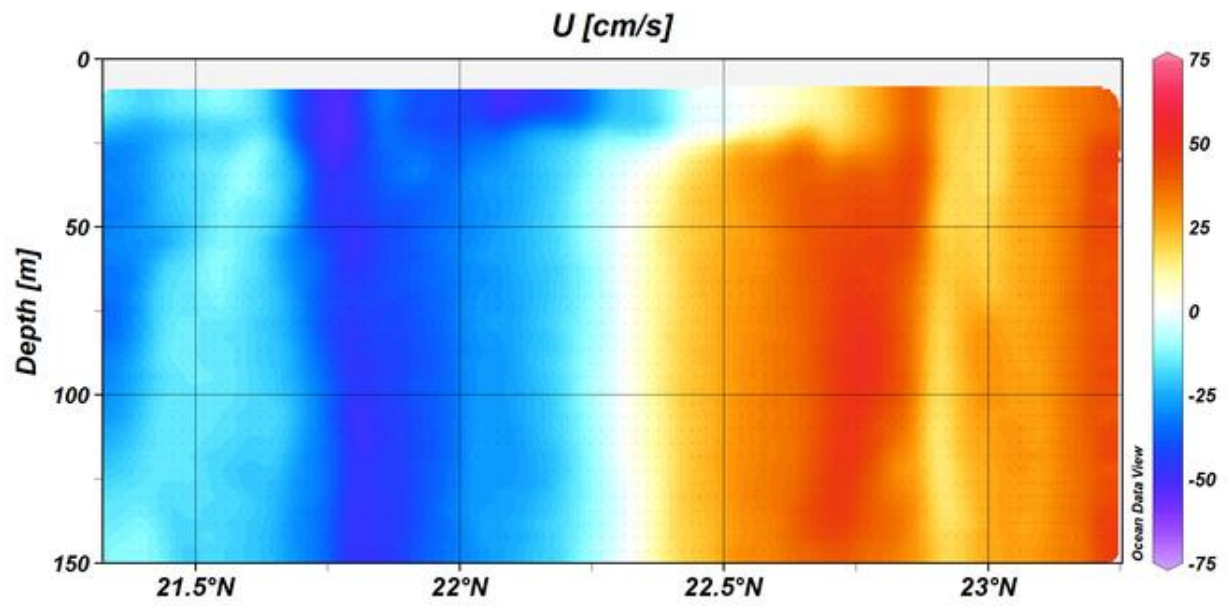
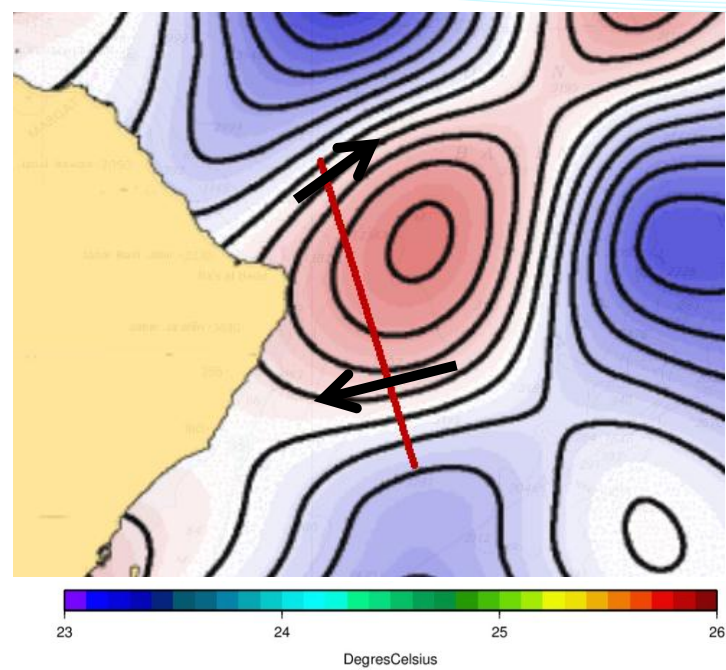
Deep outflow and
surface inflow



PHYSINDIEN 2014 leg 1 (March 2014) - Results



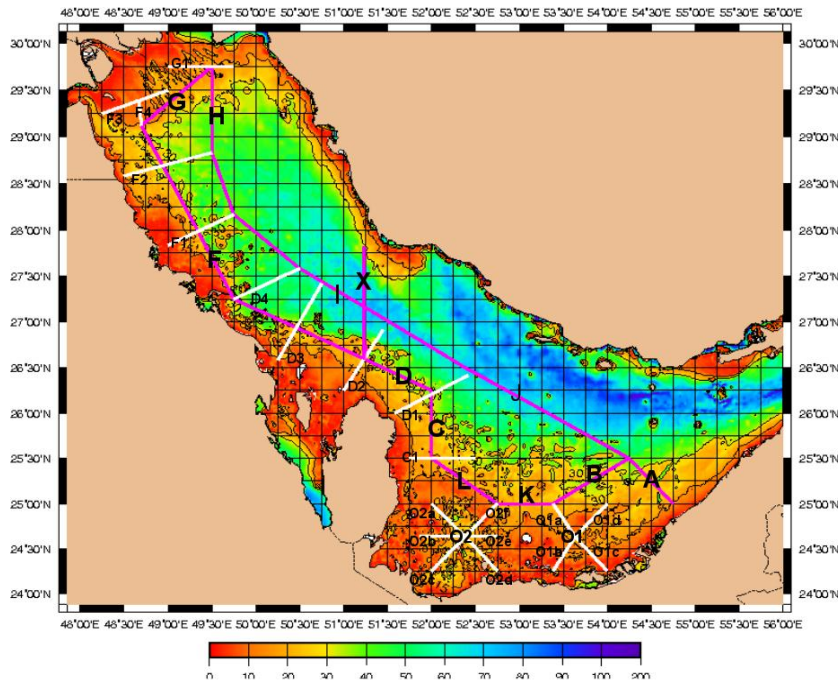
PHYSINDIEN 2014 leg 1 (March 2014) - Results



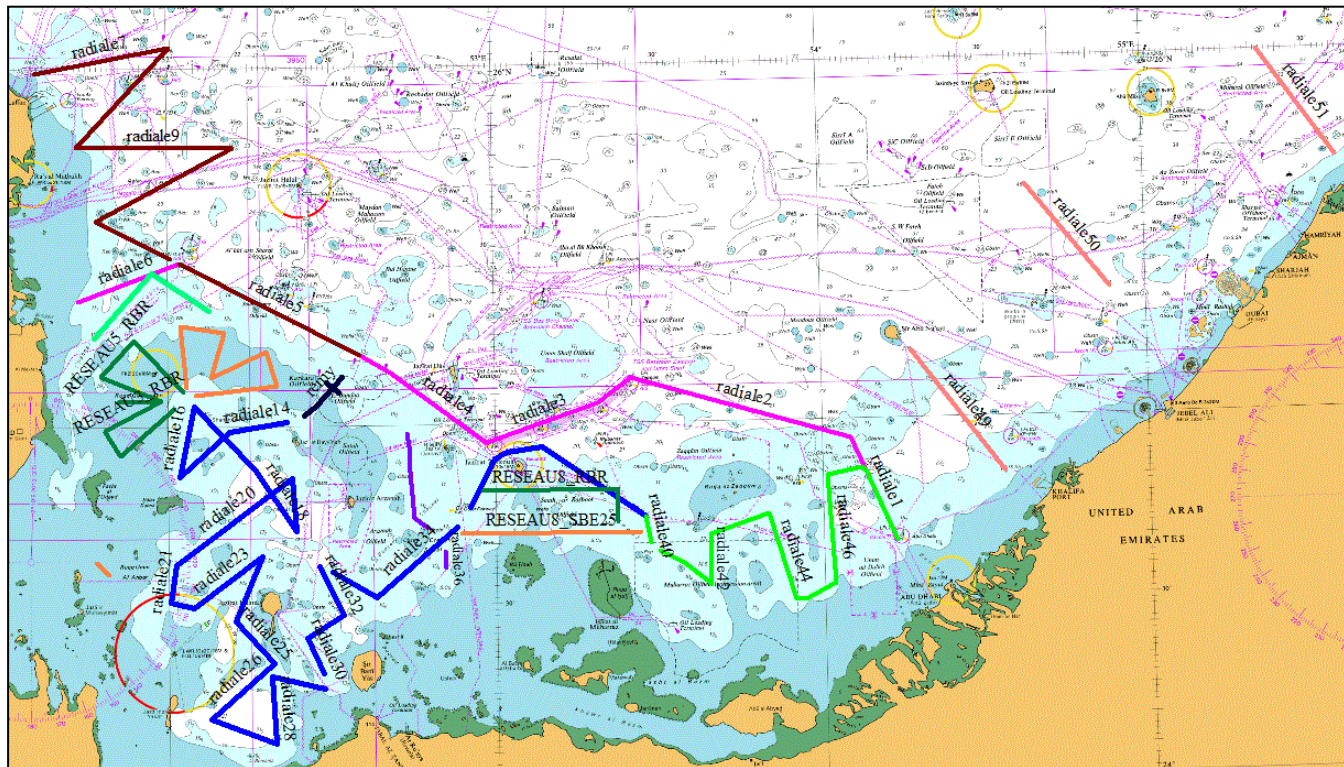
Model validation – In-situ data Research oceanic cruises

Provisional May 2014
programme of work:

→ To carry out current and
hydrology measurements in the
Gulf to study mixing layer
dynamics and dense water
formation



→ To carry out current and hydrology measurements in the Gulf to study mixing layer dynamics and dense water formation



Fullfilled hydrological network

Cruise report

- Measurement framework,
- Measurement area,
- Measurement conditions,
- Sensors, configuration (parameters set-ups),
- Issues.

Data

- Raw and processed data,
- Pictures .

Data transmission

- PHYSINDIEN leg 1 : transmitted to UAE & Oman in late August 2014
- PHYSINDIEN leg 2 : transmitted to UAE , Qatar and Oman in late November 2014

***To be continued in
2016?***

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