IBI-ROOS - Existing observations

1 Tide gauges: Sea level (Spain IEO)
4 tide gauges in Santander, Coruña, Vigo and Cádiz and 3 in the Canary Island
operating since 1940. Near real-time
Mareógrafos, IEO, Spain
www.ieo.es/indamar/mareas/mareas.htm

2 Tide gauges: Sea level (Spain PDE)
9 tide gauges in the Iberian peninsula (IBI area), plus 9 in the Canary Islands.
10 of these are in operation since 1992
1 min/5min real time
Puertos del Estado,
Spain
http://www.puertos.es/en/oceanografia_y_meteorologia/index.html

3 Tide gauges: Sea level (Portugal)
13 stations on continental coast, 5 in the Azores
archipelago and 2 in Madeira
Hydrographic Institute (IH)

4 Tide gauges: Sea level (France)
17 tides gauges are installed from Dunkerque to St Jean de Luz.
Ifremer is planning to operate real-time diffusion
7 stations switched to real time of which 5 in the IBI region(Brest, Le Conquet, Le Havre, Cherbourg, Saint Nazaire)
SONEL/RONIM, SHOM,
France
http://www.shom.fr/fr_page/fr_act_oceano/maree/maree14.htm
http://www.sonel.org/english/index.htm

5 Tide gauges: Sea level (Ireland)
5 tide gauges around Ireland Marine Informatics, Marine
Institute
www.irishtides.com/

6 GLOSS stations (Ireland)
Once every 5 minutes Department of Communications,
Marine and Natural
Resources
www.dcmnr.ie

7 Fixed structures: Ocean & meteorological
ADCP, tide gauges, T profile and meteo at 6 locations in the
Basque country. Real-time
Ocean-Meteorological stations
Basque Meteorological Agency – Euskalmet and AZTI-Tecnalia, Spain.
http://www.euskalmet.euskadi.net/s07-5853x/es/meteorologia/selest.apl?e=5

7b Fixed structures: Meteorological data
23 coastal meteorological stations
15 automatic stations at coast
National Meteorological
Stations Network, IM, Portugal

7c Meteorological Automatic Stations: Air Temperature,
Preassure, Wind, Humidity,
Precipitation and Sun
Radiation
Galicia (NW Spain), each 10 min since 2000. MeteoGalicia, Conselleria de
Medio Ambiente, Xunta de
Galicia, Spain.
www.meteogalicia.es

7d Coastal Meteorological Stations
6 stations; Dublin Rosslare Valentia, Malin, Roches point, Bellmullet hourly data
Met Eireann
www.met.ie

8b Fixed Buoys and Stations at Galician Rias,
Air Temperature, Humidity, winds, ADCP and CTD. At Arousa and Vigo
Galicia (NW Spain), each 10 min since 2008. INTECMAR & MeteoGalicia, Xunta de Galicia, Spain.
www.intecmar.org
www.meteogalicia.es

9 Automatic buoys: Waves, current & met
11 wave coastal buoys (3 of them with SST) and 8 buoys with meteorological, waves, currents and oceanographic data in deep waters.
Operating since 1996. Real-time hourly transmission.
Puertos del Estado, Spain
http://www.puertos.es/en/oceanografia_y_meteorologia/index.html

9b Automatic buoys: Meteorological, Waves, TS & current profiles
2 buoys at 500 m water depth in the Basque Country
Operating since 2007. Real-time
Basque Meteorological Agency – Euskalmet
http://www.euskalmet.euskadi.net/ (data available in summer)

9c. Automatic buoys: Meteorological, Waves, TS & current profiles
1 buoy at deep water (2850m) of the Southern Bay of Biscay operating since June 2007.
Real-time hourly transmission.
Instituto Español de Oceanografía. Spain.
www.ieo.es

10 Automatic buoys: Waves
19 buoys from Dunkerque to Bayonne. One buoy added in Iroise sea (Pierre Noire)
Real-time Candhis, CETMEF, France
http://www.CETMEF.equipement.gouv.fr/donnees/candhis/

11 Automatic buoys: Waves,
5 ODAS buoys.
Real-time Marine Institute
www.marine.ie/databuoy

11b Automatic Buoys: Waves
3 Stations in Portugal
2 Stations in Madeira islands
4 stations in Azores Islands
Operated by IH, APRAM (Madeira Harbour Authority) and University of Azores
www.hidrografico.pt

12 Temperature and Conductivity
5 ODAS Buoys non real-time (once every 30 minutes)
Marine Institute
www.marine.ie/databuoy

13 Automatic buoys: Meteo data, waves
3 buoys Gascogne, Brittany and Ouessant operated by Meteo France and UKMO
Meteorological programme
www.ndbc.noaa.gov/Maps/France.shtml

14 Automatic buoys and Ships of opportunity: Meteorological data
Buoy data from GTS and ships of opportunity
IM, Portugal

15 Automatic buoys Meteorological
5 ODAS buoys. Real-time Marine Institute

www.marine.ie/databuoy

16 Moorings: Currentmeters,
ADCP and sediments
2 arrays in Nazaré Canyon area
1 CORSED platform in Nazaré Canyon area
EUROSTRATAFORM, IH,
Portugal
MOCASSIM, IH, Portugal

17 Moorings: Currentmeters
1 mooring off Cascais (adjacent zone to Tejo river) SIGAP, IPIMAR's fixed station
for long-term physical,
biological measurements,
Portugal

17b Moorings: Currentmeters
2 mooring, on in the Finisterre Section (43ºN, 11ºW) and in Santander Section (43º 48'N, 3º 45'W). Current meters at the core of NACW, MW and LSW. Moored since 2004.
fixed station for long-term physical measurements,
Instituto Español de Oceanografía
www. vaclan-ieo.es

18 Ships of opportunity: FerryBox, hydrological parameters
Line Portsmouth-Bilbao, Real-time, weekly, NOC at Southampton, UK
www.soc.soton.ac.uk/ops/ferrybox_index.php

19 Ships of opportunity: Plankton CPR
IB and SB lines,
Monthly, since 1958 CPR project,
SAHFOS and IPIMAR, UK and Portugal

19b Ship of opportunity: fishing boat RECOPESCA
Monitoring fishing effort programme
Deployment of low cost sensors attached to fishing gears.
30 ships equipped of which around 15 in the IBI region. Progressive extention underway.

20 Underway Data from Irish Research Vessels Surface
Temperature, Conductivity, Fluorescence
Every 10sec along ship track during survey. Typically Irish waters
Marine Institute

20b Underway Data from Spanish Research Vessels Surface
Temperature, Conductivity, Fluorescence
Every 10sec along ship track during survey. Typically Spanish and Atlantic waters.
Daily send to Coriolis Data Center and IEO web.
http://indamar.ieo.es/

21 Satellite remote sensing: Temperature
The whole area is covered every day AVHRR-NOAA, AZTI Tecnalia
and IEO, Spain
www.teledeteccion-oceanografica-ieo.net

22 Satellite remote sensing: Ocean colour
The whole area is covered every day SeaWIFS, AZTI Tecnalia,
Spain

23 Satellite remote sensing: scatterometer
The whole area is covered every day (QUICKSCAT), AZTI
Tecnalia, Spain

24 Satellite remote sensing: altimetry (sea level)
The same region is covered every week Jason1, GFO, ENVISAT,
AZTI Tecnalia, Spain

25 Satellite remote sensing: Radar

The same region is covered every 10 days SAR/ ESA, IFREMER, France
www.ifremer.fr/cersat/en/data/gridded.htm

26 Satellite remote sensing: Topography
The same region is covered every 10 days Feng Yun, AZTI Tecnalia,
Spain

27 Satellite remote sensing: Monitoring of SST, Chlorophyll using Ocean Colour
Image browser covering Bay of Biscay since 1985 IFREMER, CLS, France
Login: gascogne
Password: gascogne
www.ifremer.fr/cersat/facilities/browse/del/gascogne/browse.htm

28 Satellite remote sensing: Monitoring of SST, Chlorophyll and inorganic suspended matter using Ocean Colour
Image browser covering the English Channel since
1985
IFREMER, CLS , France
www.ifremer.fr/cersat/facilities/browse/del/roses/browse.htm

29 Satellite remote sensing: Temperature and Ocean colour
The whole area is covered every day AVHRR-NOAA and SeaWIFSÕrbView2,
DOP-Univ. Açores, Portugal
AVHRR-NOAA and SeaWIFSÕrbView2,
CEM-Univ. Madeira, Portugal
AVHRR-NOAA, IO-Univ.
Lisboa, Portugal

30 Satellite remote sensing: Temperature
The whole area is covered every day AVHRR-NOAA and Meteosat,
IM, Portugal

31 Profilers (lagrangian) : Temperature & Salinity
~10 drifting buoys, 14 days CORIOLIS-ARGO, IFREMER,
IEO, France & Spain
www.coriolis.eu.org/cdc/default.htm

32 Profilers
2 Argo floats Operational since Feb 2004 Martin Ryan Institute, National
University of Ireland Galway
www.nuigalway.ie/eos

32a Profilers
4 Argo floats Operational since March 2008 Marine Institute, Galway
www.marine.ie

32b Profilers
12 new Argo floats (part for the IBIROOS area) to be deployed from 2008.
At least one with O2 probe. to be deployed in Sep 2009 in the Bay of Biscay.
Instituto Español de Oceanografía

33 River discharge (France)
National flood prevention service Ministry of environment, SHAPI
www.ecologie.gouv.fr/article.php3?id_article=119#

34 River Discharge
Approx 1000. Some are digital and some are analogue
OPW, ESB, Local Authorities,
EPA
www.opw.iewww.epa.ie

35 Fixed automated stations in Gironde estuary
4 coastal MAREL stations high frequency
measurement, real-time transmission: temperature,
salinity, DO, turbidity and sea level

IFREMER & Water Agency
http://www.epoc.u-bordeaux.fr/fr/geotransfert/rogir/index.php?page=accueil

36 Fixed automated station in Iroise sea
MAREL buoy high frequency measurement, real-time
transmission: temperature, salinity, DO, turbidity,
fluorescence, pCO_2
University of Brest,
IFREMER, France
www.ifremer.fr/mareliroise/fr/

37 Fixed automated station in Seine estuary (Honfleur) (temporarilly out of service)
MAREL buoy high frequency measurement, real-time
transmission: temperature, salinity, DO, turbidity, pH
CETMEF, IFREMER, France
www.ifremer.fr/marel/

38 Fixed automated station in Boulogne/mer
MAREL buoy high frequency measurement, real-time
transmission: temperature, salinity, DO, turbidity,
fluorescence, pCO_2
City of Boulogne, IFREMER,
France
www.ifremer.fr/difMarelCarnot/

38a fixed automated station in Bay of Vilaine
MAREL (Molit type buoy) high frequency measurement, real-time
transmission: temperature, salinity, DO, turbidity,fluorescence, nutriants near sea surface and at sea bottom.
IFREMER (PREVIMER and TROPHIMATIC projects)
www.ifremer.fr/difMarelVilaine/

39 Fixed stations and transects: Temperature & Salinity
Deep waters, 3 transects (Galicia & Cantabrian Sea),
2/year since 2004
Deep water standard sections,
IEO, Spain
http://www.vaclan-ieo.es/

40 Fixed stations and transects: Physical & Biological
Coastal waters, 5 transects (Galicia, Cantabrian
Sea), monthly since 1988
Radiales, IEO, Spain
www.seriestemporales-ieo.net

41 Fixed stations and transects:CTD, Plankton and harmful algae, nutrients and DOC
Coastal stations, (Galicia), weekly since 1992
INTECMAR, Xunta de
Galicia, Spain
www.intecmar.org

41b Fixed stations: Contaminants and hazardous substances
Coastal stations, (Galicia), annual or half-yearly since 1995
INTECMAR, Xunta de
Galicia, Spain
www.intecmar.org

41c Fixed stations: Biotoxins
Coastal stations, (Galicia), minimum weekly and diary if necessary since 1995
INTECMAR, Xunta de
Galicia, Spain
www.intecmar.org

41d Fixed stations: Faecal contamination in marine invertebrates
Coastal stations, (Galicia), since fornigthly to quaterly since 1995
INTECMAR, Xunta de
Galicia, Spain

www.intecmar.org

41e Fixed stations: Patology in aquatic organisms
Coastal stations, (Galicia), yearly and half-yearly since 1998
INTECMAR, Xunta de
Galicia, Spain
www.intecmar.org

42 Fixed stations: Contaminants and hazardous substances
~30 stations along Spanish coast sampling water,
sediments and biota
Contamination programme,
IEO, Spain

43 National monitoring networks
RNO/ REPHY/REMI
50 stations from Dunkerque to St Jean de Luz.
Hydrological parameters, chemical pollutants in
sediment and fish/phytoplankton
IFREMER, Ministry of
Environment, France
www.ifremer.fr/envlit/surveillance/index.htm#

44 Fixed stations and transects: Harmful algae
Coastal stations (France) GEOHAB, IFREMER, France

45 Fixed station: Physical parameters and plankton
1 Shelf Station (Cascais), monthly, Temperature,
Salinity, Chlorophyll *a*, Phyto- and zooplankton
communities, copepod egg production.
1 Coastal station (Cascais), bi-monthly, long-term
phytoplankton cysts studies SIGAP and Profit projects,
IPIMAR, Portugal Collaboration in the National
HAB Watch Network, IO,
Portugal

46 Fixed stations and transects: Plankton and harmful algae
28 Coastal Stations (all Portuguese coast), weekly,
HAB
National HAB Watch Network,
IPIMAR, Portugal

47 Fixed stations: Contaminants and hazardous substances
Stations in beaches along the Portuguese coast for
water quality analyses. Sampling started 15 days
before the bathing season and is made weekly, biweekly
or monthly depending of quality conditions.
Monitoring waste water systems along the Portuguese coast
Contaminants studies along the Portuguese continental
shelf, monthly sampling in the mouths of main rivers
VivaPraia Programme, INAG and IA, Portugal
National Programme for Water Supply and Sanitation
Monitoring, Águas de Portugal e Associated Co., Portugal
Contamination of the Coastal Zone Programme, IPIMAR,
Portugal

48 CTD section along 53 deg N on western Irish Shelf
Annually (summer) since 1999 Marine Institute

49 Nutrient Monitoring Programme
Irish and Celtic Sea Annually
Marine Institute
www.marine.ie

50 Phytoplankton monitoring

Weekly during the summer at 60 sites Marine Institute www.marine.ie/HABSdatabase

51 Shellfish Toxins Monitoring Programme
Weekly during the summer at 60 sites Marine Institute
www.marine.ie/HABSdatabase

52 Radionucleids
6 offshore stations seawater samples annually,
5 coastal stations seawater samples quarterly
13 locations where fish species are routinely
monitored
RPII
www.rpii.ie

53 Regular research vessel cruises: Physical & Biological,
including Fish stocks using acoustic methodologies
Continental shelf of Spanish North Atlantic and Bay of Biscay waters,
Spring surveys since 1988 ICES Pelagic fisheries, IEO,
Spain

54 Regular research vessel cruises: Physical & Biological,
including Fish stocks using bottom trawl
Continental shelf of Spanish North Atlantic and Bay of Biscay waters,
Autumn surveys since 1982
ICES Demersal fisheries, IEO,
Spain

55 Regular research vessel cruises: Physical & Biological,
including Fish stocks
(Anchovy)
Continental shelf of inner Bay of Biscay from
Santander to Nantes, Spring
Anchovy evaluation, AZTI
Tecnalia, Spain

55b Regular research vessel cruises: Physical & Biological,
including Fish stocks using eggs and larvae methodologies
Continental shelf of Spanish North Atlantic waters and Spanish
and French Bay of Biscay waters, spring surveys.
Sardine, mackerel Egg Tri-yearly IEO,
Spain

56 Annual cruises ICES Fisheries monitoring, IFREMER, France

57 Regular research cruises:Physical & Biological,
including Fish stocks using
acoustic methodologies
Continental shelf of Portuguese Mainland waters,
Spring and Autumn surveys since 1984
ICES Pelagic fisheries,
IPIMAR, Portugal

58 Regular research vessel cruises: Physical & Biological,
including Fish stocks using
bottom trawl
Continental shelf and slope of Portuguese Mainland
waters, Spring and Autumn surveys since 1979
ICES Demersal fisheries,
IPIMAR, Portugal

59 Fisheries Cruises; Herring
Acoustic, Blue Whiting,
Groundfish, Nephrops
Yearly Marine Institute
www.marine.ie

60 Mackerel Egg Tri-yearly Marine Institute

www.marine.ie

61 HF Radar network: Iroise sea
SHOM
Waves and surface current http://www.shom.fr/fr_page/fr_act_oceano/vagues/VIGICOTE/temps_reel_f.html

61b HF Radar experience in Sines
IH
Waves and surface currents
www.hidrografico.pt

61c HF Radar network
Basque Country (Cantabrian Sea).
Real-time transmission.
Basque Meteorological Agency - Euskalmet, Spain.
http://www.euskalmet.euskadi.net/ (data available in summer)

62 Coastal Video Monitoring
Waves and morphodynamics
1 station in Mundaka, Urdaibai estuary, Real Time
AZTI-Tecnalia, SPAIN
www.kostasystem.com