



Joint WMO-IOC Technical Commission  
for Oceanography and Marine Meteorology

# CLIMAR-III 6-10 May 2008

**Bob Keeley**  
**Chair - JCOMM Data Management Programme Area**



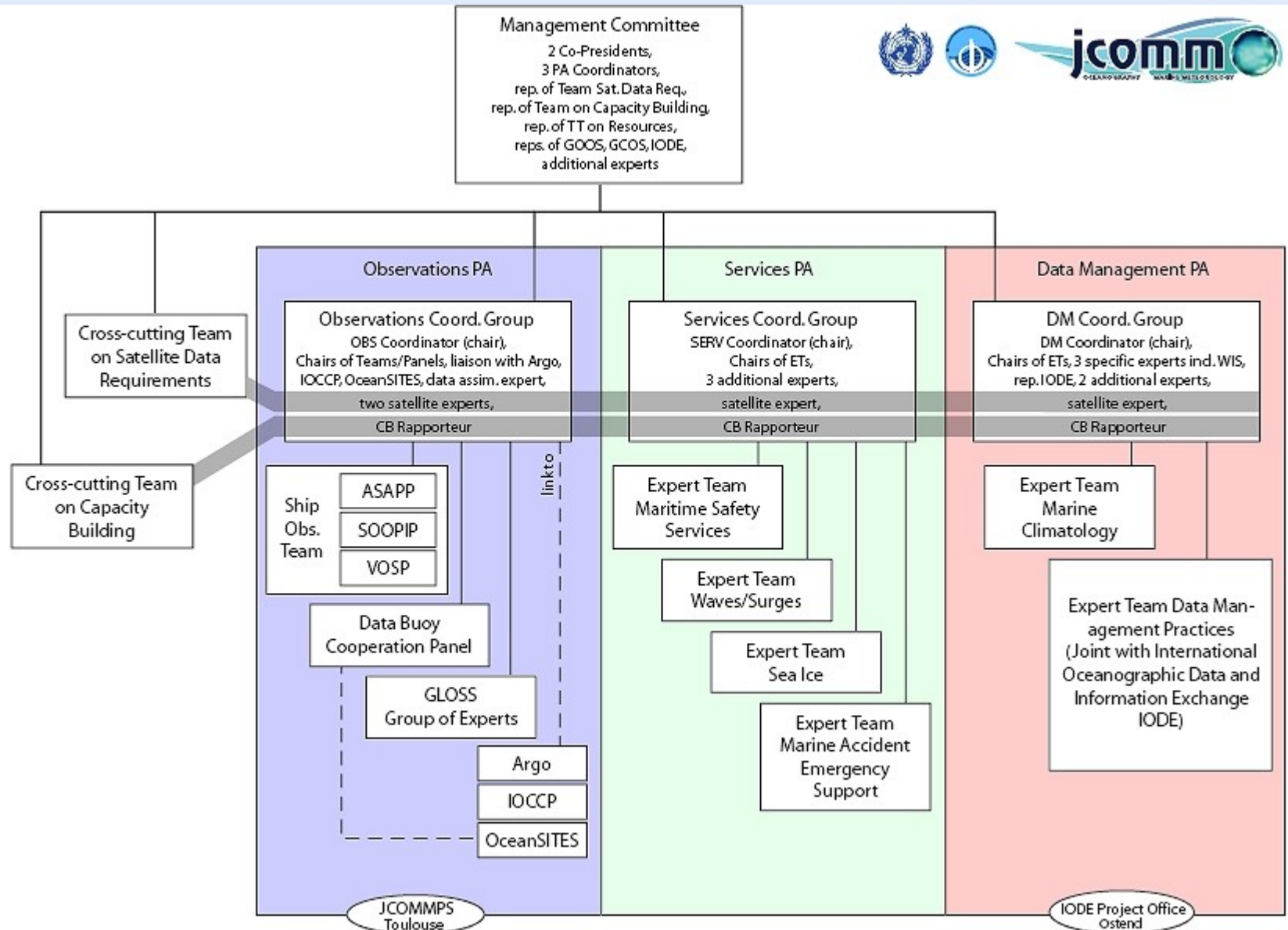
WMO



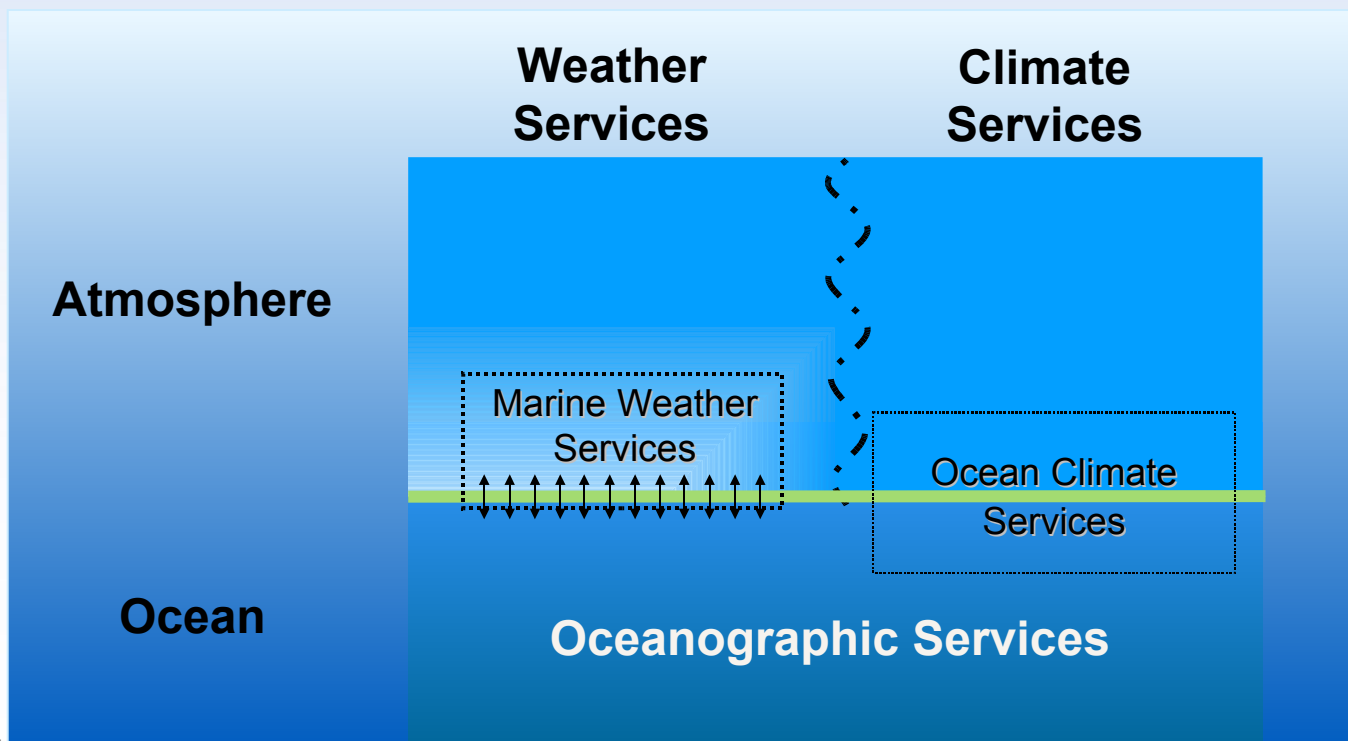
IOC/UNESCO

- Integrated ocean observing system
- Integrated data management
- State-of-the-art technologies and capabilities
- New products and services
- User responsiveness and interaction
- Involvement of all maritime countries





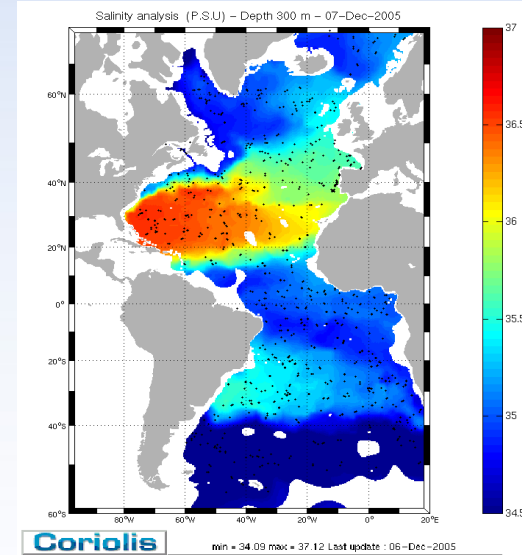
# Marine Meteorological and Oceanographic Services



- JCOMM as the bridge between meteorology and oceanography  
Operational oceanography is now a reality  
Community welfare, socio-economic impacts, hazard mitigation, climate change....  
National and international cooperation essential – IOC, WMO, met and ocean agencies

# Achievements since JCOMM-II

- Programme Areas
  - Observations
    - Initial surface drifter network, Argo complete
    - Interactions with OceanSITES, Ocean Carbon
    - Integration of ship-based observations
    - JCOMMOPS
  - Data Management
    - Close coordination with WIS and IODE
    - DM strategy
    - Pilot projects, including E2EDM & WIGOS
  - Services
    - Maritime Safety Services and the MPERSS
    - Guide to Storm Surge Forecasting
    - Input to IPY
- Cross-cutting activities
  - Capacity building
  - Satellite Observations

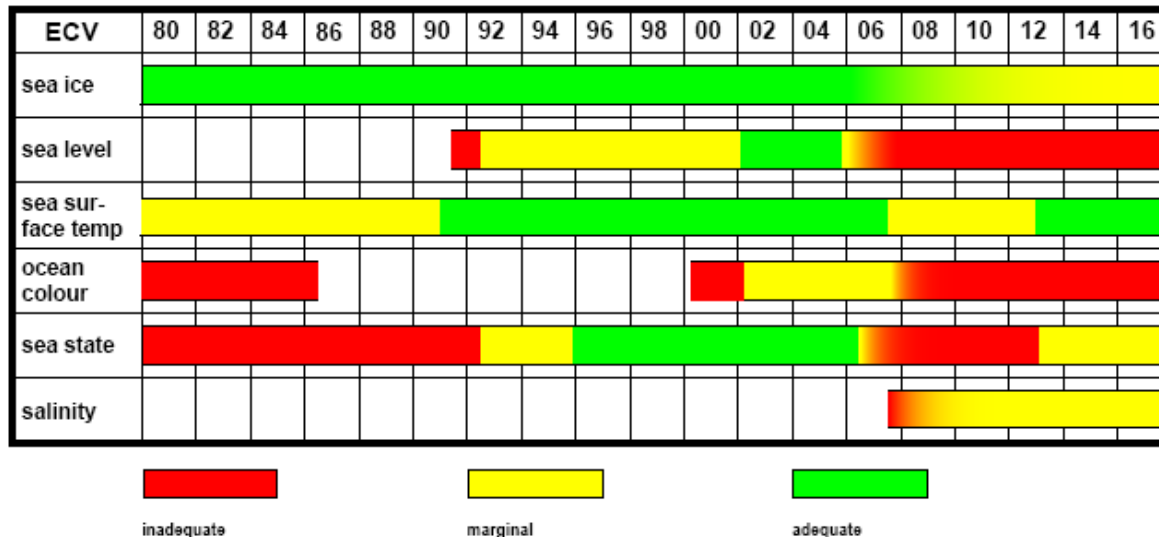




# Major issues on our way towards a Global Ocean Observing System

- Timely, global and open access to shared data/products
- Continuity, sustainability, improvement of observations
  - *In Situ* ocean networks
  - Space-based ocean observing systems
- Improvement/expansion of modeling/prediction capabilities
- CEOS assessment of adequacy of remote sensing component

Oceanic Domain ECV Status as of Mid-2006



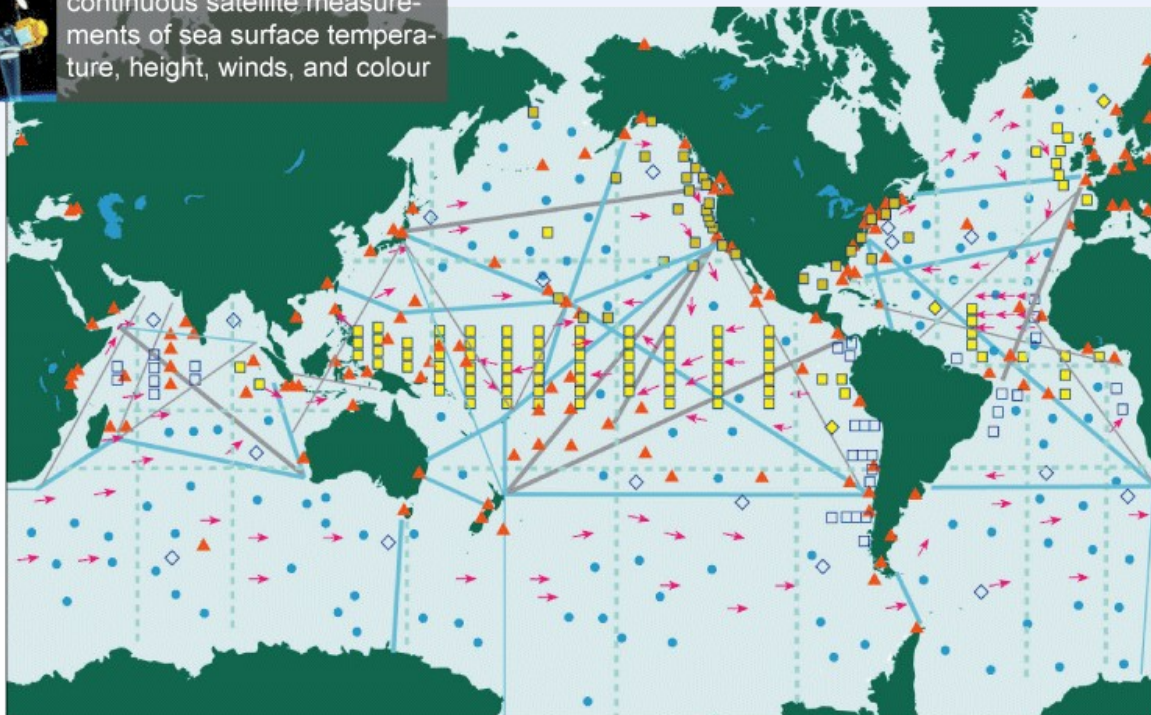
# The global ocean observing system for climate

## Current status against GCOS/JCOMM recommendations

Total *in situ* networks **60%**

February 2008

continuous satellite measurements of sea surface temperature, height, winds, and colour



**87%** Surface measurements from volunteer ships (VOSclim)

200 ships in pilot project



**100%** Global drifting surface buoy array

5° resolution array: 1250 floats



**62%** Tide gauge network (GCOS subset of GLOSS core network)

170 real-time reporting gauges



**81%** XBT sub-surface temperature section network

51 lines occupied



**100%** Profiling float network (Argo)

3° resolution array: 3000 floats



**43%** Repeat hydrography and carbon inventory

Full ocean survey in 10 years

**Reference time series 24%**

58 sites



**48%** Global reference mooring network



29 moorings planned

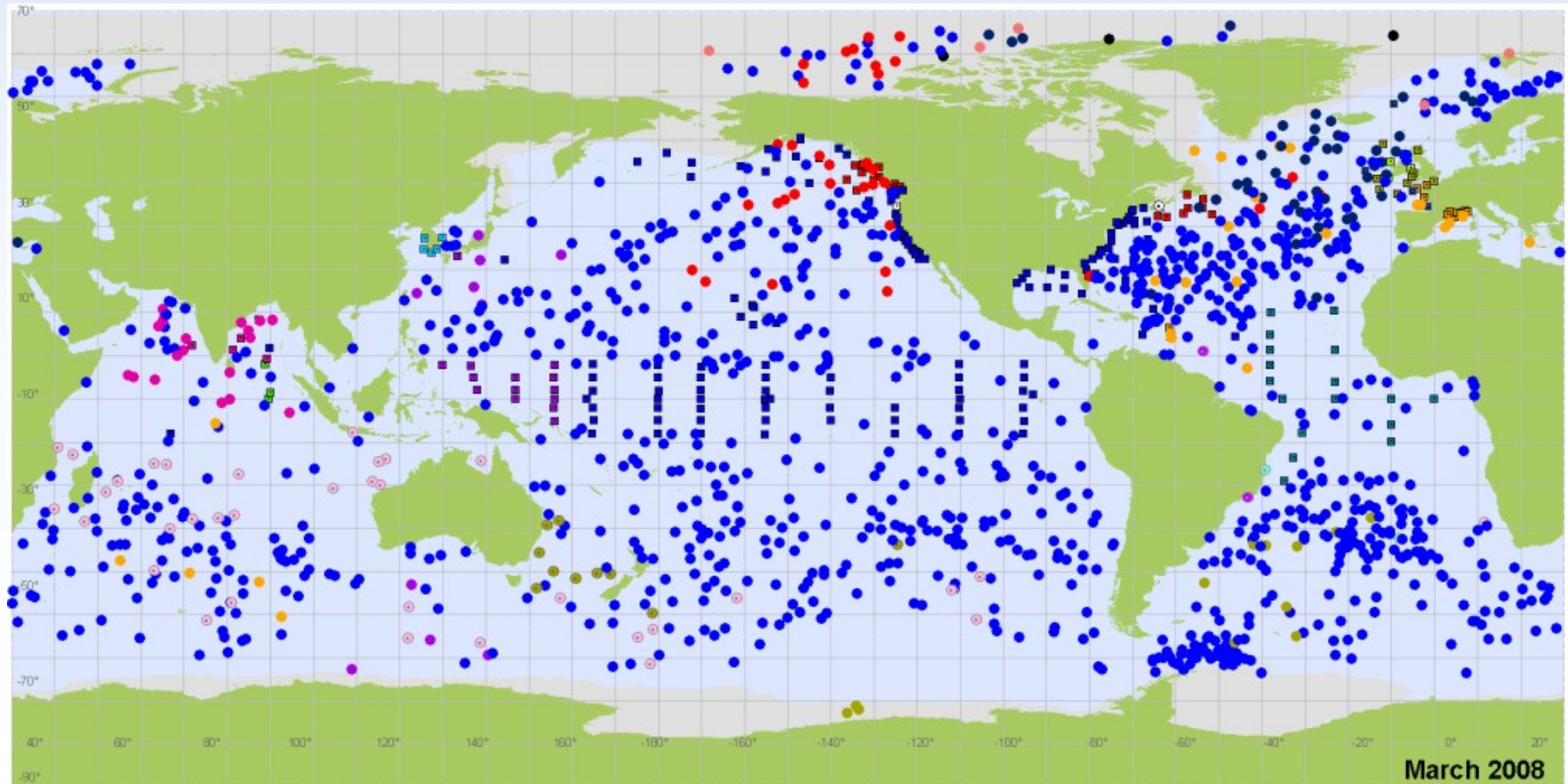


**79%** Global tropical moored buoy network



119 moorings planned

# The DBCP array of moored & surface buoys



## Drifting Buoys (1219)

- AUSTRALIA (35)
- BRAZIL (2)
- CANADA (33)
- EUROPE/ESURFMAR (53)
- FRANCE (24)
- GERMANY (3)
- INDIA (19)
- JAPAN (10)
- NEW ZEALAND (10)
- NORWAY (6)
- SOUTH AFRICA (3)
- UK (12)
- USA (1008)
- UNKNOWN (1)

## Moored Buoys (245)

- BR-FR-US (17)
- CANADA (29)
- EUROPE/ESURFMAR (4)
- FRANCE (12)
- INDIA (5)
- IRELAND (3)
- JAPAN (14)
- SOUTH KOREA (5)
- UK (9)
- USA (143)
- USA-INDIA (3)
- USA-INDON. (0)
- UNKNOWN (1)

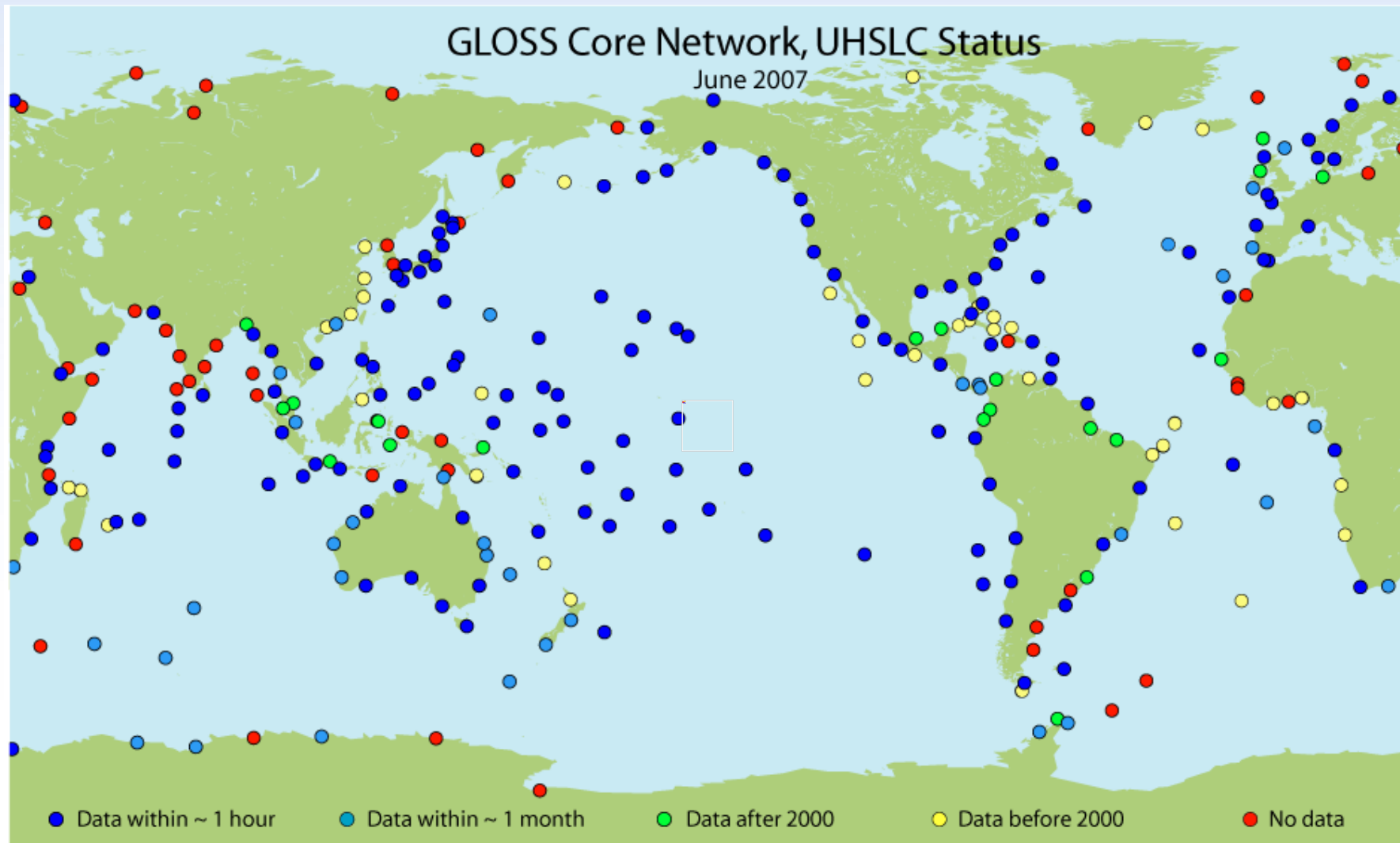


# The Argo array of profiling floats



Argo network has attained the initial design plan,  
BUT maintenance is still a challenge

# GLOSS High Frequency Sea Level Stations



# JCOMM Data Management

- ET – Marine Climatology
  - TT-MOCS, DMVOS (re-organization of work)
  - Marine indices (emphasize the “MC” of ETMC)
  - Meta-T (metadata project)
  - Marine QC surface met and ocean
- ET – Data Management Practices
  - E2E prototype (basis for distributed data access)
  - Follow on with WIGOS
  - IODE/JCOMM Forum on Standard (Jan 2008)
- Table Driven Codes (use of BUFR by JCOMM)
- Collaborations (IODE, etc)
- Strategy and Implementation Plan

JCOMM Services Programme Area: focused on marine safety and coastal forecasts



The screenshot shows the homepage of the JCOMM Services website. At the top, a browser window displays the URL <http://www.jcomm-services.org>. The website header features the JCOMM Services logo, navigation links for 'Enquiry Form', 'Login', and 'Contacts', and icons for the International Oceanographic Commission and the United Nations. Below the header is a banner image showing a group of people in a control room looking at a large screen displaying a 3D oceanographic model. A navigation bar below the banner lists key service areas: 'Sea Ice | Waves & Surges | Maritime Safety | Marine Accident Emergency Support |'. On the left side, there is a vertical menu with links to 'Home', 'About JCOMM', 'JCOMM-EPB', 'Site-FAQ', 'What's New', 'Calendar', and 'Documents'. The main content area features a heading 'JCOMM Services Program Area.' followed by a paragraph describing the program's focus on a state-of-the-art globally distributed and inter-connected system. Below this, there are two columns: 'Sea Ice' and 'Waves & Surges', each with a small image and a brief description of the expert teams. On the right side, a 'What's New' section lists recent updates, including 'Buoy verification', 'Final report of the Third Services Coordination Group (SCG to III) Meeting released', and 'First JCOMM Storm Surge'.

<http://www.jcomm-services.org>

**jcomm services**  
OCEANOGRAPHY & MARINE METEOROLOGY

Enquiry Form | Login  
Contacts |

Sea Ice | Waves & Surges | Maritime Safety | Marine Accident Emergency Support |

▶ Your location: [Home](#) /

## JCOMM Services Program Area.

**JCOMM promotes a state-of-the-art globally distributed and inter-connected system** based on present and next-generation technologies and capabilities. The system is responsive to the evolving needs of all users of marine data and products and a close dialog with the user community is fundamental to the system design. In addition, JCOMM promotes the implementation of an outreach programme to enhance the national capacity of all maritime countries to work effectively for the maritime community and the management of the marine environment.

**Sea Ice**  
Current activities of the JCOMM Expert Team for Sea Ice (ETSI)

**Waves & Surges**  
Activities of the Expert Team for wind waves and storm surges (ETWS)

### What's New

▶ Added: 27-04-2007  
**Buoy verification**  
[Read More](#)

▶ Added: 27-02-2007  
**Final report of the Third Services Coordination Group (SCG to III) Meeting released**  
[Read More](#)

▶ Added: 23-02-2007  
**First JCOMM Storm Surge**

**Supported by:**

WMO IOC/UNESCO



GODAE: real-time ocean mesoscale and surface fields, short-range ocean forecasts



The screenshot shows the GODAE website homepage. At the top, there is a navigation bar with a search box containing "http://www.godae.org" and a "Google" search button. The main header features the GODAE logo and the text "Global Ocean Data Assimilation Experiment". Below the header is a sidebar with a menu of links: Home, What is GODAE, Activities, Science, Data & Products, Special issues, Related Websites, What's New, Calendar, and Documents. The main content area is titled "Towards operational oceanography" and includes a paragraph about GODAE's mission, a "What's New" section with several news items, and four columns of featured content: Activities, Science, Data Products, and Special Issues. At the bottom, there is a section for sponsors, including logos for WMO, IOC/UNESCO, and EUMETSAT.

<http://www.godae.org>

**GODAE**  
Global Ocean Data Assimilation Experiment

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## - Towards operational oceanography -

GODAE aims to make ocean monitoring and prediction a routine activity similar to weather forecasting. GODAE will contribute to an information system for the global ocean that will serve interests from climate change and coastal preservation through to fisheries and the off-shore industry. More about GODAE efforts and links to [ocean forecasting centres](#) can be found [here](#).

**Activities**  
 GODAE activities are of international dimension. Many projects and working groups have emerged. [more >](#)

**Science**  
 Observational networks, models and estimation tools are the essential elements of GODAE. [more >](#)

**Data Products**  
 GODAE partners produce distinctive and unique products for the research and user communities. [more >](#)

**Special Issues**  
 GODAE benefits climate research and supports the Global Ocean Observing System. [more >](#)

**What's New**

- Added: 04-06-2007  
**SCS-IO Workshop postponed**  
[Read More](#)
- Added: 30-05-2007  
**GODAE-OOPC Meeting on OSE-OSSE, IOC, Paris, 5-7 November 2007**  
[Read More](#)
- Added: 30-05-2007  
**First GODAE-IMBER Meeting, Paris, France, 12-13 June 2007**  
[Read More](#)
- Added: 21-05-2007  
**IGST XII Meeting, St John's, Newfoundland, Canada 7-9 August 2007**  
[Read More](#)

GODAE is sponsored by

 WMO  
 IOC/UNESCO  
 EUMETSAT  
 IOC  
 WMO  
 NOAA

GHRSSST: global coverage high-resolution SST



<http://www.ghrsst-pp.org>

**GHRSSST-PP**  
 GODAE High Resolution Sea Surface Temperature Pilot Project

Accessibility | Contacts | Enquiry Form | Login

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- > Data Access
- > Data Products
- > Applications
- > Product Validation
- > Science Team & Groups
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- > What's New
- > Calendar
- > Documents

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## Integrated SST Data Products.

The **Global High-Resolution Sea Surface Temperature (SST) Pilot Project** (GHRSSST-PP) provides a new generation of global coverage high-resolution (<10km) [SST data products](#) to the operational oceanographic, meteorological, climate and general scientific community, in real time and delayed mode.

Every day, **GHRSSST-PP global processing systems** produce SST products from several complementary satellite and in situ SST [data streams](#) to a common netCDF format. Both integrated observation (L2P) and analysis (L4) products are available. [More>](#)



Click image for Today's Global SST

### Data Access

GHRSSST PP data products are freely available in real time every day through various delivery services [more >](#)

### Applications

A variety of applications are now using GHRSSST-PP products and services [more >](#)

### What's New

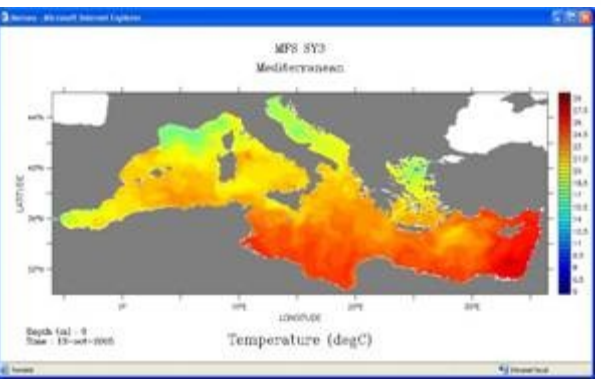
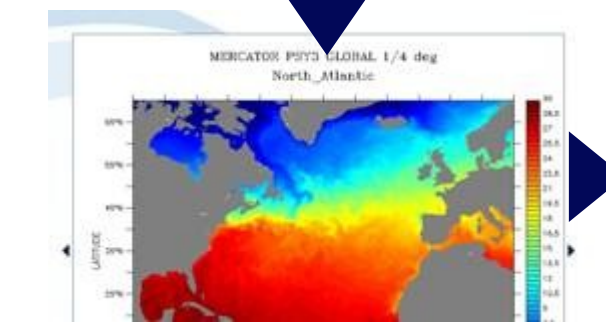
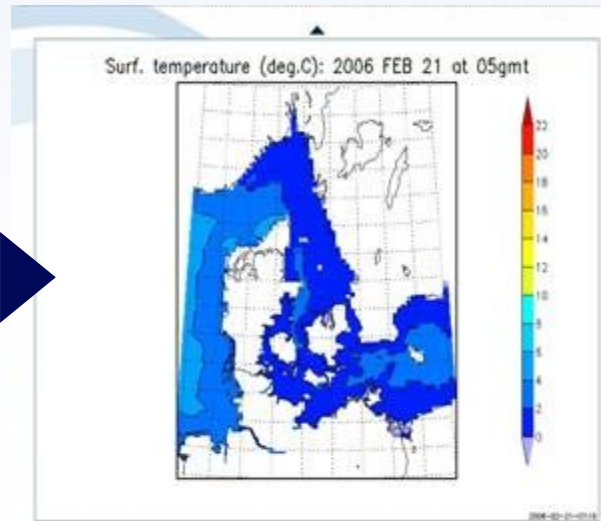
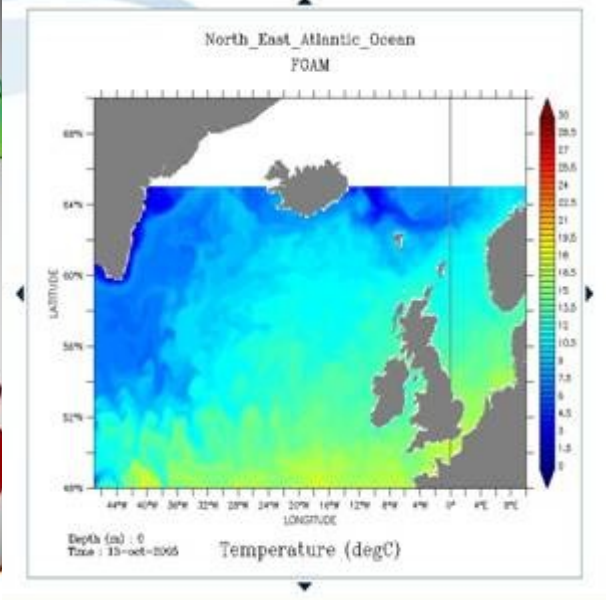
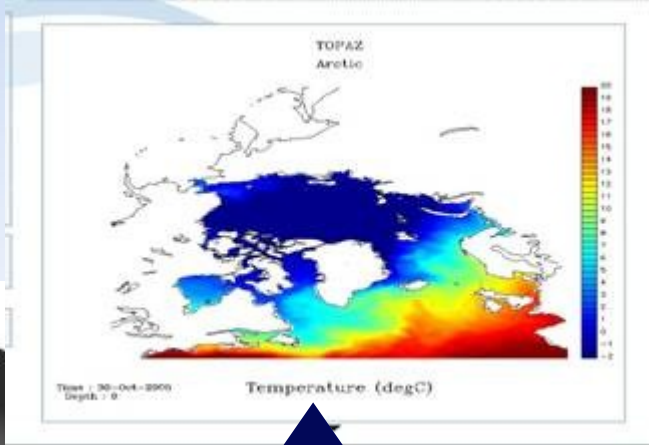
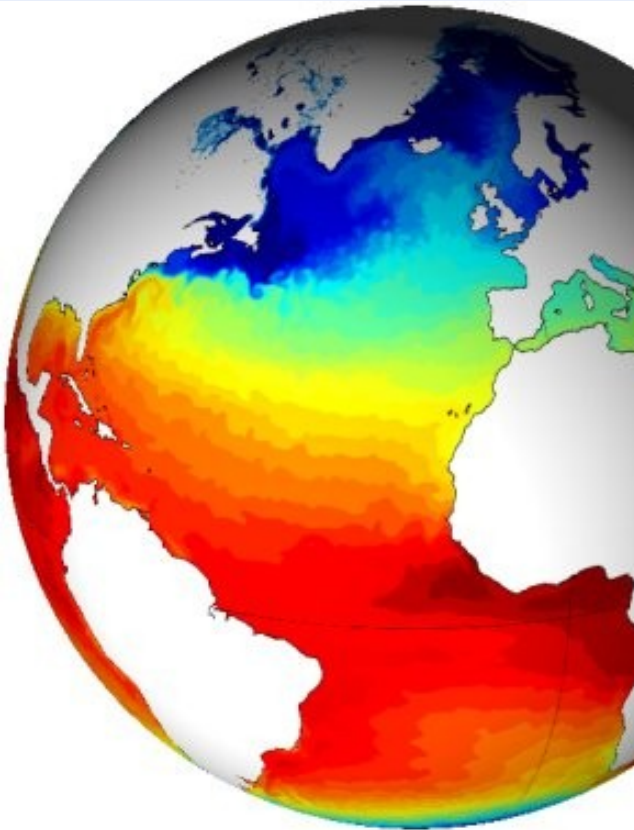
- Added: 12-06-2007 **Action list from G8 Meeting now available** [Read More](#)
- Added: 13-04-2007 **MODIS SST Feb 2000 to present now available** [Read More](#)
- Added: 14-03-2007 **Real to time global and regional L4 SSTs from Bom available** [Read More](#)
- Added: 08-03-2007 **NASA Sport Program using GHRSSST-PP data** [Read More](#)

**Sponsors:**





# Ocean Analysis System



# Observational Programme Support Centre (OPSC)

- JCOMMOPS, Toulouse
  - DBCP
  - SOT
  - Argo
- EXPANSION
  - IOCCP
  - OceanSITES
  - Ship hydrography
  - GLOSS
  - Cruise database
  - Satellite (ECVs)





- Programme Areas
  - Catalogue of standards / best practices for ocean products and services
  - Full implementation of operational ocean observing system
    - Long-term maintenance of system, including pilots, and key ocean satellite missions
  - DM pilot projects and integration with IODE and WIGOS
  - Operational ocean products and services
- Cross-cutting
  - Support for marine multi-hazard warning systems
  - Support for coastal GOOS implementation
  - Engagement with the private sector
  - Focused CB to support implementation, especially in smaller maritime countries



- JCOMM Development
  - Funding issues
    - 50% of planned work from regular budget
    - Need for extra-budgetary support
  - Strategic Development
    - Strategy Document
    - Implementation plan – objectives, deliverables, performance indicators, etc
    - System-wide monitoring based on IP
    - JCOMM review
- Communications
  - Communications plan
  - Brochure update, electronic newsletter
  - Integrated website development

