

**REPORT BY THE DBCP ACTION GROUPS TO THE
TWENTY-SEVENTH SESSION OF THE DBCP**
(Fremantle, Australia, 2-6 October 2012)

1) Summary

Name of Action Group	Surface Marine programme of the Network of European Meteorological Services, EUMETNET (E-SURFMAR)
Date of report	31 July 2012
Overview and main requirements addressed	The EUMETNET Composite Observing System (EUCOS) surface marine (E-SURFMAR) programme is an optional programme involving 17 out of the 29 EUMETNET members, who fund the activity on a GNI basis. Its main objectives are to coordinate, optimise and progressively integrate the European meteorological services activities for surface observations over the sea – including drifting and moored buoys, and voluntary observing ships. E-SURFMAR is responsible for coordination of buoy activities carried out by the European meteorological services, and the programme supports a Data Buoy Manager (DBM) to manage these activities. The DBM is supported and advised by the E-SURFMAR Data Buoy Technical Advisory Group (DB-TAG) which is an action group of the DBCP.
Area of interest	Ocean areas potentially affecting NWP over European countries. This covers the North Atlantic Ocean North of 10°N and the Mediterranean Sea (90°N-10°N; 70°W - 40°E).
Type of platform and variables measured	<u>Drifting buoys</u> : air pressure, SST, (wind) <u>Moored buoys</u> : air pressure, wind, air temperature, SST, waves (directional spectra), relative humidity.
Targeted horizontal resolution	250 km x 250 km, >150 drifting buoys, 4 moored buoys for satellite calibration/validation.
Chairperson/Managers	Manager E-SURFMAR: Mr Pierre Blouch, Météo-France Chairperson, Data Buoy Technical Advisory Group (DB-TAG): Mr Jon Turton, UK Met Office
Coordinator	Data buoy Manager: Mr Jean Rolland, Météo-France
Participants	Belgium, Croatia, Cyprus, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, and the United Kingdom
Data centre(s)	Météo-France as SOC ISDM (Canada) as RNODC/DB
Website	http://www.eucos.net , under the heading “EUCOS Public” in “EUCOS networks” http://esurfmar.meteo.fr (restricted working area web site for E-SURFMAR participants)
Meetings	DB-TAG meets once a year. DB-TAG9 Las Palmas 3-4 May 2012
Current status (mid-2012)	77 E-SURFMAR drifting buoys in operation (68 Iridium, 9 Argos)+ 39 others reporting AP. 4 E-SURFMAR supported moored buoys in operation, plus a further 40 others operated by members.
Summary of plans for 2013	Maintain a network of 100 drifting buoys, and the 4 reference moored buoys in operation.

2 Deployment plans for 2013

The drifting buoys will be deployed from various locations (Canada, Iceland, France, Norway, UK, USA, ...) in the Atlantic Ocean. Drifters from GDP are regularly upgraded with barometers and deployed in the North Atlantic Ocean by vessels plying from North America to Iceland, from North America to Europe and from Europe to North America. Within the allocated budget more than 100 buoys (including 30 upgrades (Iridium)) will be deployed in the E-SURFMAR area of interest in the coming twelve months. New deployment routes will be investigated.

E-SURFMAR will continue to be actively involved in the GHRSSST/DBCP Pilot Project in which the DBCP collaborates with the Group on High Resolution Sea Surface Temperature (GHRSSST) to make measurements of 0.01°C precision from drifters.

E-SURFMAR will continue to deploy buoys in the Arctic Ocean through IABP. The main challenge with the ice buoys is their ability to survive after being released from frozen ice.

At present, Cabo Silleiro (transmission through Inmarsat) is the only EUCOS moored buoy which reports directional wave spectra onto the GTS. Spectral data on K series buoys (transmission through Iridium) are still experimental. Lion moored buoy (transmission through Meteosat) reports omni-directional spectra and M6 (transmission through Meteosat) is only reporting mean wave height and period. It is expected that a version of the system developed by the Met Office for K series buoys will be also installed on the Lion buoy with similar capability on M6 in due course.

3 Data management

3.1 Distribution of the data

3.1.1 Data policy

ESURFMAR encourages free and open access to data, in the spirit of WMO data exchange policy defined in WMO Congress Resolution 40 (Cg-XII). All basic meteorological and oceanographic data are coded in the appropriate WMO code form and disseminated on the WMO Global Telecommunication System (GTS)

3.1.2 Real-time data exchange

All the data are put on the GTS as quickly as possible.

The developments on a processing chain at Météo-France producing GTS reports from Iridium SBD data were consolidated. The chain is able to produce FM13-SHIP, FM18-BUOY or FM94-BUFR messages. The distribution of BUFR messages allows to transmit the data of the first drifters having a resolution of 0.01K for SST.

Eighty percent of drifters operating are now using Iridium. This improves the data timeliness (see Annex). Between 1,500 to 2,000 daily observations are carried out on to the GTS. The target (90%) of the percentage of data received within 50 minutes was reached. This results from efforts made during several years to have all buoys reporting through Iridium.

The mean lifetime (for Air Pressure) of the SVP-B drifters decreased to 273 days (344 days last year). One hundred and sixty one buoys failed to report air pressure measurements. This is the reason more buoys had to be deployed to maintain the network.

The availability of moored buoy data depends on the number of buoys operating. More than 90 hourly observations per day have been reported from E-SURFMAR buoys to the GTS, except in March where Lion buoy was out of order.

Since buoy Cabo Silleiro was taken into account in the performance computations, the percentage of EUCOS moored buoys data available within 50 minutes dropped from 100% to 75% i.e. below the target of 90%.

3.1.3 Delayed mode data exchange

The raw data from drifters (Argos and Iridium) are archived at "Centre de Meteorologie Marine" (CMM) at Meteo-France.

Data inserted onto the GTS are routinely archived by various centres (for drifting buoys ISDM, GDP, Coriolis..., Meteorological Services for drifting and moored buoys).

Archived data from drifters are also used to produce surface currents deduced from the buoys movement on a weekly basis

The metadata collection system at JCOMMOPS is used for drifting buoys.

E-SURFMAR members will compile DBCP Moored Buoy Metadata, once a standard template is published.

3.2 Data quality

The web page giving access to the Quality Control (QC) tools was maintained. The transmission delays onto the GTS is now monitored. (see <http://www.meteo.shom.fr/qctools>). Monthly statistics and 14-day graphs are available for all surface marine observations through the same interface. Buoys reporting in BUFR are monitored as those reporting through BUOY or SHIP alphanumeric messages. The blacklists, automatically issued for air pressure every day, are used to identify and correct potential problems.

For drifters the Air Pressure (AP) differences from the French model outputs the target of 1% of Gross Errors was achieved excepted by the end of 2011 and the beginning of 2012. The RMS of AP differences still has a seasonal variation, being higher in winter (0.8 to 1.0 hPa) than in summer (0.4 to 0.6 hPa).

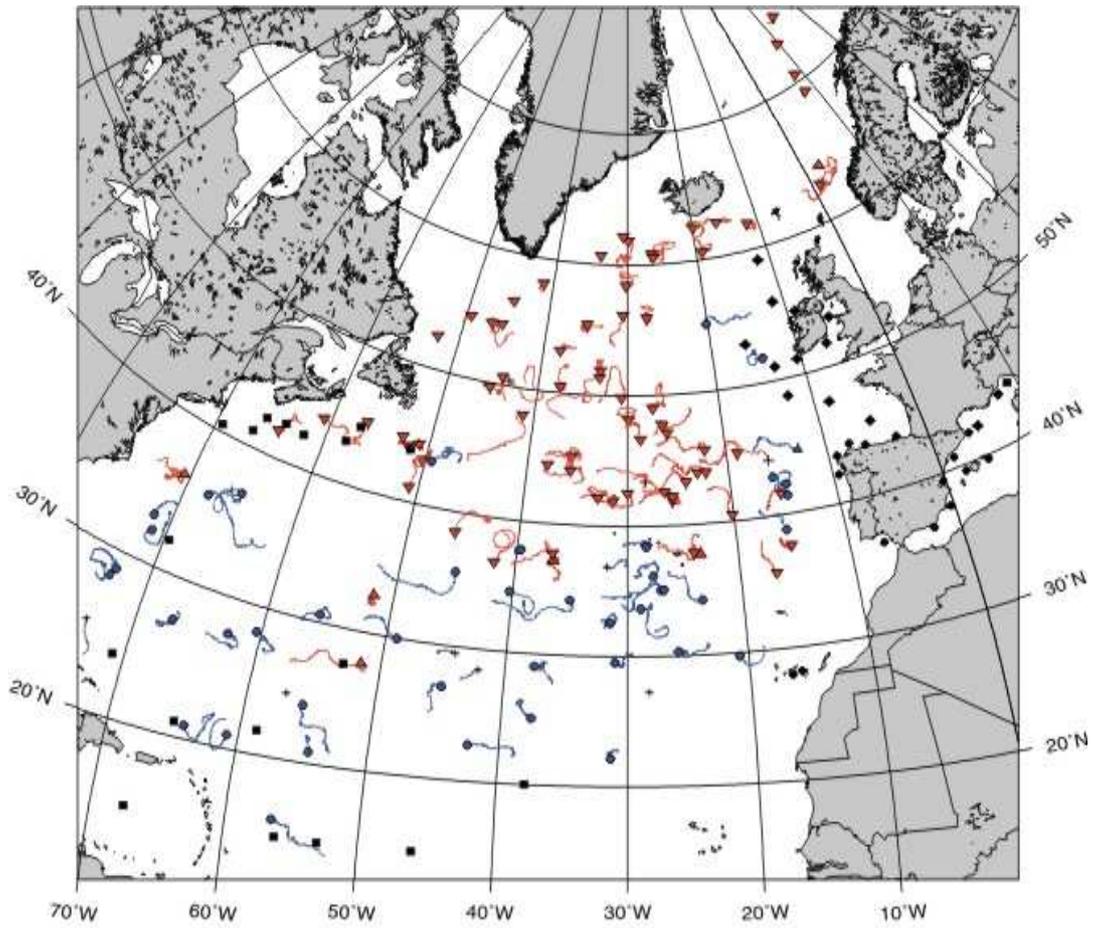
For moored buoys the Air Pressure (AP) differences with the French the target of 0.5% of Gross Errors was achieved. The RMS of AP differences are about 0.5 hPa.

4) Instrument practices

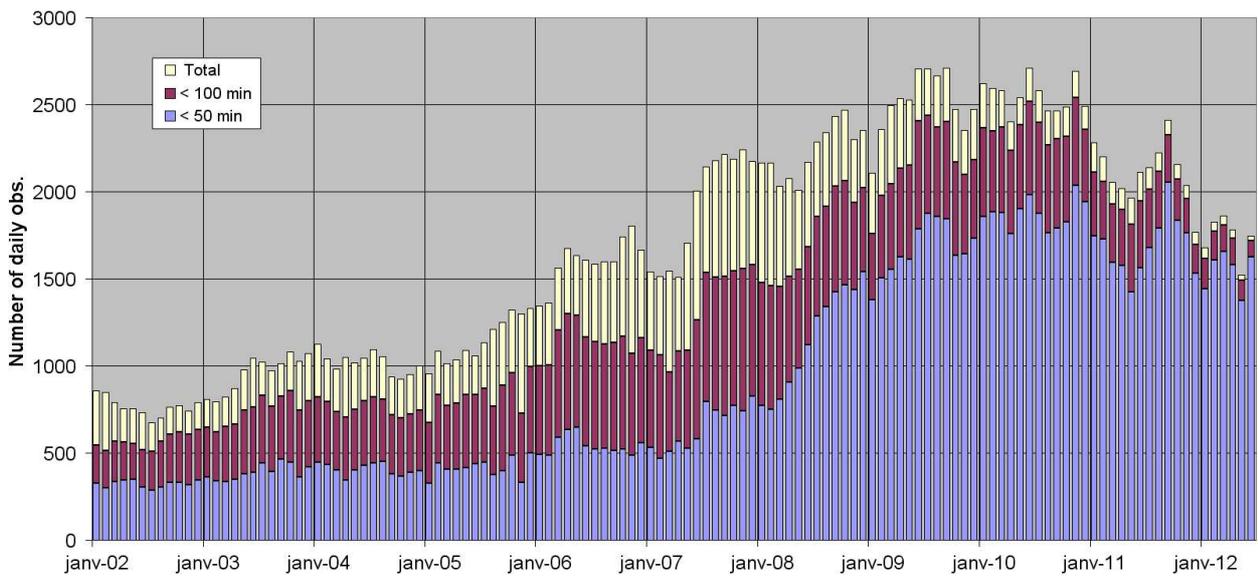
ESURFMAR drifting buoys uses recommended DBCP formats (DBCP-M2 for Argos, formats published on Iridium PP website for Iridium).

A technical document on E-SURFMAR moored buoys was reviewed at DBTAG meeting in May 2012.

Annex



Drifting buoy trajectories and moored buoy positions
(June 2012)



Drifting buoys data availability