REPORT BY THE DBCP ACTION GROUPS TO THE THIRTY-FIRST SESSION OF THE DBCP

(La Jolla, USA, 17-21 October 2016)

1) Summary

Name of Action Group	**Operational Service of the Network of European Meteorological Services, EUMETNET (E-SURFMAR)**
Date of report	31 August 2016
Overview and main requirements addressed	The EUMETNET operational service E-SURFMAR is an optional programme involving 19 out of the 31 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 Expert Team-Data Buoy (ET-DB). E-SURFMAR ET-DB 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), the Mediterranean Sea and a part of the Arctic. In 2015, E-SURFMAR started to extend its activities in the North of the South Atlantic (from 20S to 10N) in the frame of AtlantOS project (April 2015- March 2019).
Type of platform and variables measured	Drifting buoys: air pressure, SST Moored buoys: air pressure, wind, air temperature, SST, waves (directional spectra), relative humidity.
Targeted horizontal resolution	E-SURFMAR: 250 km x 250 km, >100 drifting buoys, 4 moored buoys for satellite calibration/validation. AtlantOS: a network of 13 drifting buoys.
Chairperson/Managers	E-SURFMAR Operational Service Manager: Mr Pierre Blouch, Météo-France Expert Team-Data Buoy (ET-DB), Outgoing Chairperson: Mr Jon Turton, UK Met Office
Coordinator	E-SURFMAR Data buoy Manager: Mr Gilbert Emzivat, Météo-France
Participants	Belgium, Croatia, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxemburg, The Netherlands, Norway, Portugal, Serbia, Spain, Sweden, Switzerland, and the United Kingdom.
Data centre(s)	CORIOLIS as French trial GDAC for drifting buoys DFO/OS as Canadian trial GDAC for drifting buoys NOAA/AOML for DBCP/GDP
Website	http://www.eumetnet.eu/, http://esurfmar.meteo.fr (restricted working area web site for E-SURFMAR participants)
Meetings	ET-DB meets once a year. ET-DB13 in Hambourg, 12-15 April 2016
Current status (mid-2016)	148 E-SURFMAR drifting buoys in operation (all Iridium including 14 AtlantOS, 17 MF and 51 SVP-B upgrades) + 23 others

	reporting AP. 4 E-SURFMAR supported moored buoys in operation, plus a further 30 others operated by members.
Summary of plans for 2017	Maintain : - a network of 100 drifting buoys in North Atlantic, - a network of 13 drifting buoys in South Atlantic, - and the 4 reference moored buoys in operation.

2 Deployment plans for 2017

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) will be deployed in the E-SURFMAR area of interest in the coming twelve months.
E-SURFMAR will maintain a permanent network of 13 SVP-B in the Tropical South Atlantic in the framework of the AtlantOS project. Drifters are deployed in the South Atlantic by vessels plying from France to South Africa and research campaigns.

E-SURFMAR will continue to deploy buoys in the Arctic Ocean in collaboration with IABP.

The 4 E-SURFMAR moored buoys K5 (6400045)(59.1N – 11.5 W), M6 (6200095)(53.1N – 15.9W), Cabo Silleiro (6200084)(42.1N – 9.4W) and Lion (6100002)(42.1N – 4.7E) are operated by United Kingdom, Ireland, Spain and France, respectively. At present, Cabo Silleiro and K5 are equipped to report directional wave spectra. Spectra data from K5 are disseminated on GTS by the Met Office

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 forms 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 processing chain at Météo-France producing GTS reports from Iridium SBD data was consolidated. This 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 drifters having a resolution of 0.01K for SST. New OMM template for drifting buoys (TM315009) is used by “Centre de Meteorologie Marine” (CMM) at Meteo-France since th 1st of June 2015.

Since March 2016 CMM is using non-convertible 7 digit WMOId.

CMM is processing about 750 BUFR messages per day, that is to say about 6600 observations reports per day.

All the operating drifters are now using Iridium. This improves the data timeliness (see Annex). In June 2016, the number of daily observations transmitted onto the GTS was more than 3,000. The target (90%) for the percentage of data received within 50 minutes continue to be met. This results from efforts made during recent years to have all buoys reporting through Iridium.

The mean lifetime (for Air Pressure) of the SVP-B drifters increased to 408 days (368 days last year). 122 buoys failed to report air pressure measurements (73 last year), including 12 buoys failed at deployment.

The availability of moored buoy data depends on the number of buoys operating. More than 80 hourly observations for all the intersessional period except in March 2016 due to Cabo Silleiro (February and March) and M6 (February to May) failure.

3.1.3 Delayed mode data exchange

The raw data from drifters are archived at CMM. CMM processing about 750 BUFR messages per day, that is to say about 6600 observations reports per day.

Data inserted onto the GTS are routinely archived by various centres (for drifting buoys DFO/OS, AOML/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 are invited to compile Moored Buoy Metadata in line with the metadata variables defined on the DBCP website (http://www.jcommops.org/dbcp/data/metadata.html).

3.2 Data quality

The web page giving access to the Quality Control (QC) tools was maintained. The transmission delays onto the GTS are monitored (see http://www.meteo.shom.fr/qctools). Monthly statistics and 16-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.

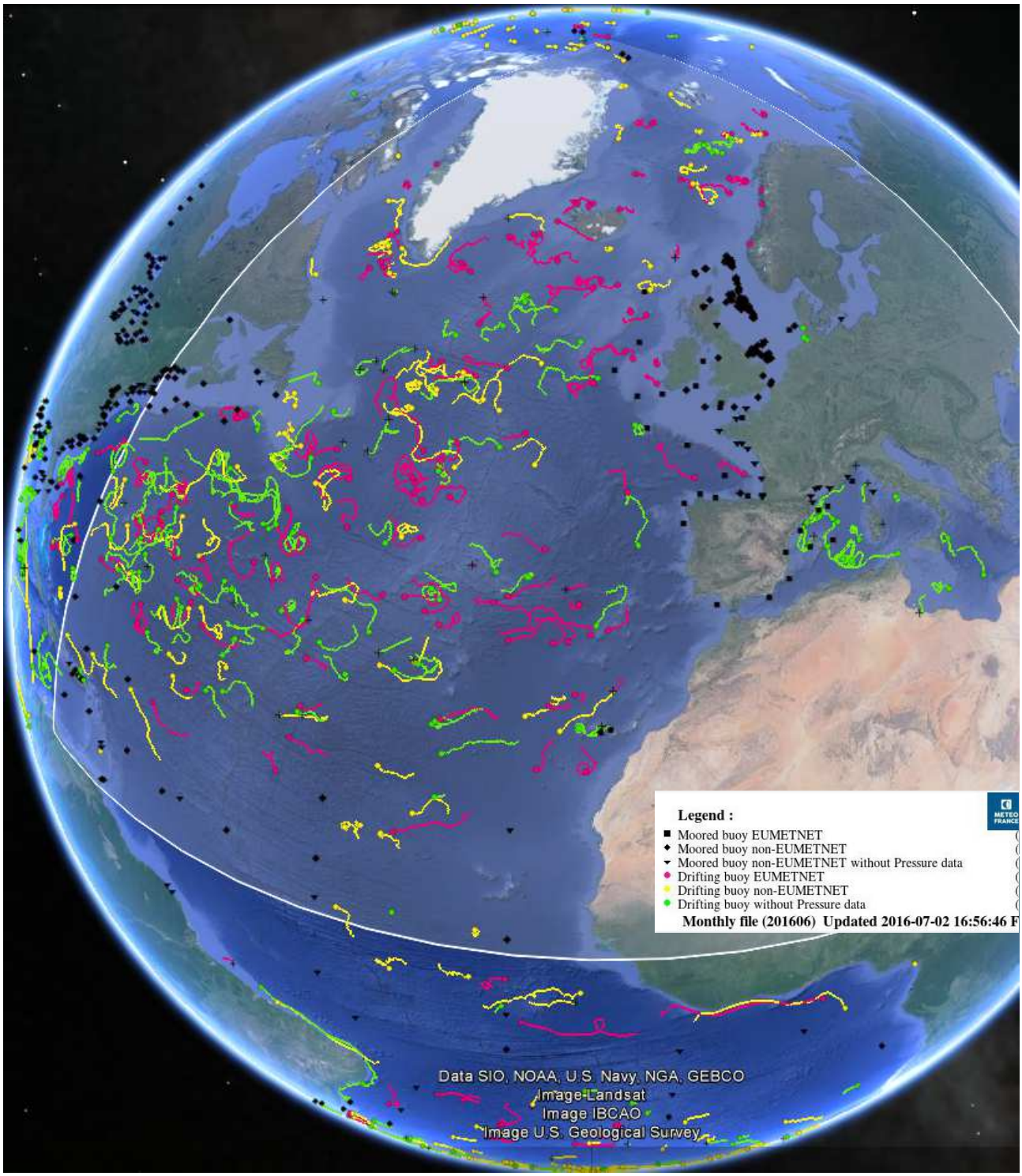
For drifters the Air Pressure (AP) differences from the French model outputs, the target of 1% of Gross Errors was achieved. The RMS of AP differences (about 0.5 hPa) still has a seasonal variation, being higher in winter than in summer.

For moored buoys the Air Pressure (AP) differences with the French the target of 0.5% of Gross Errors was achieved, except in February. The RMS of AP differences was lower than 0.6 hPa, except from October to February where the RMSAP reached 1.6 hPa, due to possible seasonal variations.

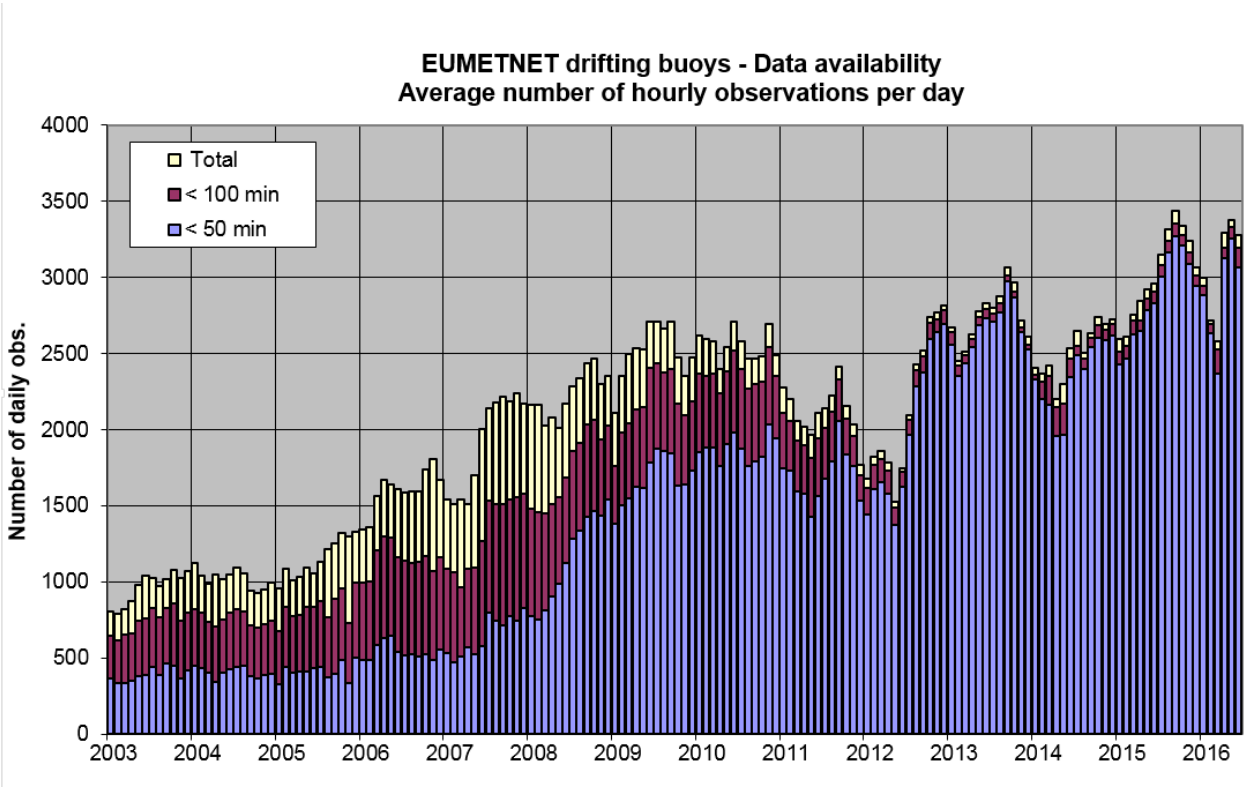
4) Instrument practices

ESURFMAR drifting buoys use recommended DBCP formats.

Annex



Drifting buoy trajectories and moored buoy positions
(June 2016)



Drifting buoys data availabilty