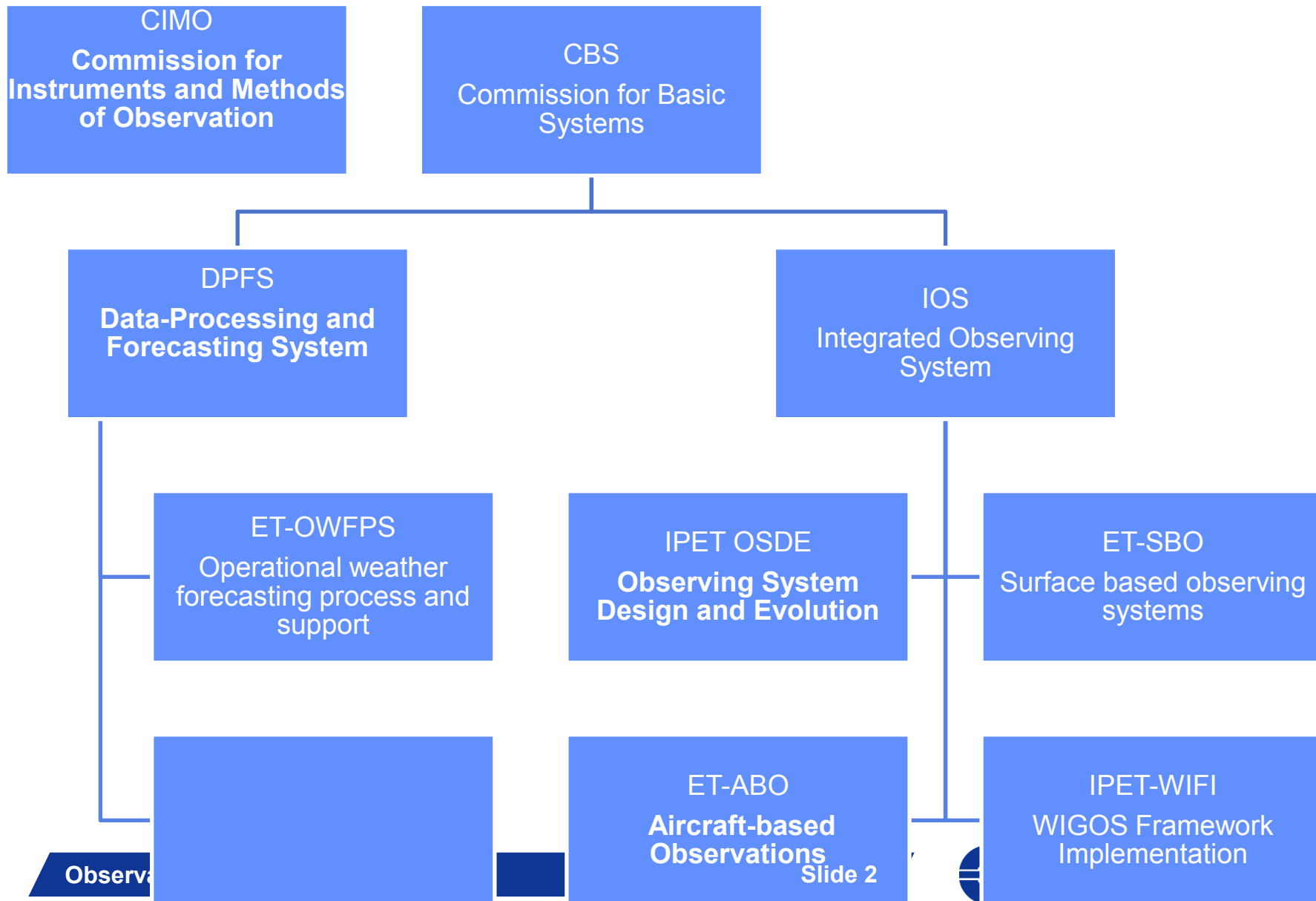


2013 Observation Monitoring Workshop

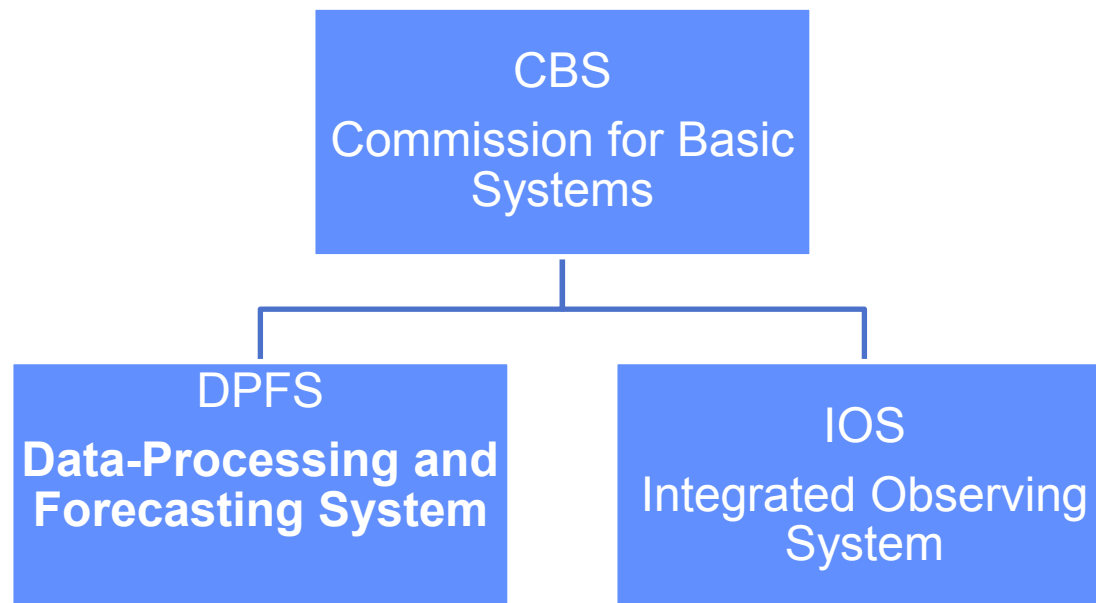
3 - 4 July 2013

ECMWF, Reading, UK

WMO observation monitoring



WMO observation monitoring



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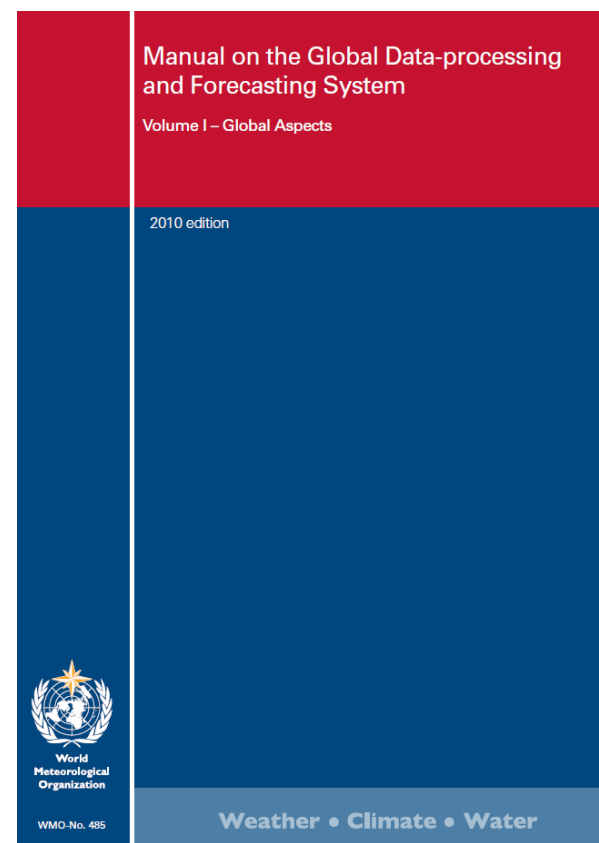
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WMO monitoring procedures

- The WMO rules/guidelines are currently in the WMO Manual on the GDPFS (No. 485):

http://www.wmo.int/pages/prog/www/DPFS/Manual_GDPFS.html

- Attachment II.9: procedures to produce our monitoring reports for WMO
- Attachment II.7:
 - Superseded by RRR?



ATTACHMENT II.9

PROCEDURES AND FORMATS FOR THE EXCHANGE OF MONITORING RESULTS

1. GENERAL REMARKS

1.1 Centres participating in the exchange of monitoring results will implement standard procedures and use agreed formats for communicating the information both to other centres and to the data providers. The following list is incomplete and requires further development in the light of practical experience. Guidance will be given through the initiative of the lead centres in their corresponding fields of responsibility.

1.2 Lead centres that are informed of remedial actions being taken should provide this information to all participating centres. The WMO Secretariat shall forward, every six months, the information it receives to the relevant lead centres. All lead centres shall produce for the WMO Secretariat a yearly summary of information made available to them and/or of those actions taken within their area of responsibility.

2. UPPER-AIR OBSERVATIONS

2.1 Monthly exchange for upper-air observations should include lists of stations/ships with the following information.

2.1.1 List 1: GEOPOTENTIAL HEIGHT

Month/year

Monitoring centre

Standard of comparison (first-guess/background field)

Selection criteria: FOR 0000 AND 1200 UTC SEPARATELY, AT LEAST THREE LEVELS WITH 10 OBSERVATIONS DURING THE MONTH AND 100 M WEIGHTED RMS DEPARTURE FROM THE FIELD USED FOR COMPARISON BETWEEN 1 000 hPa AND 30 hPa.

The gross error limits to be used for observed minus reference field are as follows:

Level	Geop
1 000 hPa	100 m
925 hPa	100 m
850 hPa	100 m

Lead Centres data-quality monitoring

Lead centres for data-quality monitoring are given in WMO-No. 488, *Guide to the Global Observing System*, Part VII, paragraph 7.2.2.1

- http://www.wmo.int/pages/prog/www/OSY/Guides_GOS.html
- <http://www.wmo.int/pages/prog/www/DPS/Monitoring-home/mon-index.htm>



7.2.2 Data quality monitoring

7.2.2.1 Monitoring centres

To assess data quality, a number of data processing centres compare the information received from each of the different types of observations with the first-guess numerical short-term forecast. The participating centres produce monthly reports of the various observational data that are of consistently low quality (Table VII.3). These lists of suspect data are exchanged between participating centres, and communicated to the originating country for remedial action. National focal points have been designated to assist in this action. This feedback leads to improvements in the quality of observational data and ultimately to improved initial analysis and model forecasts.

Lead centres (Table VII.4) have been established by the Commission for Basic Systems to coordinate the monitoring results of specific types of observation. They produce six-monthly consolidated reports of the observations with data of consistently low quality. These reports are also known as suspect lists.

7.2.2.2 Procedures and formats for exchange of monitoring results

Quality monitoring procedures and formats for the exchange of the monitoring results for surface and upper-air data including marine, aircraft and satellite data have been developed, periodically updated, and published in Attachment II.9 of the *Manual on the Global Data-processing and Forecasting System* (WMO-No. 485). The six-monthly consolidated suspect reports are distributed to Members so that

Table VII.3. Data quality monitoring centres

<i>Centre</i>	<i>Report</i>
European Centre for Medium-Range Weather Forecasts	Monthly report containing monthly suspect lists of marine observations, radiosonde, aircraft and satellite observations
Regional Specialized Meteorological Centre, Bracknell	Monthly report containing monthly suspect lists of land, marine, radiosonde, aircraft and satellite observations
Regional Specialized Meteorological Centre, Montreal	
Regional Specialized Meteorological Centre, Tokyo	
World Meteorological Centre Melbourne	Monthly report containing monthly suspect lists of land, marine and radiosonde observations
Regional Specialized Meteorological Centre, Offenbach	Monthly report containing monthly suspect lists of land observations
Regional Specialized Meteorological Centre, Toulouse	Monthly report containing monthly suspect lists of land, marine, radiosonde, aircraft observations and satellite observations

Table VII.4. Lead centres in charge of coordinating monitoring results

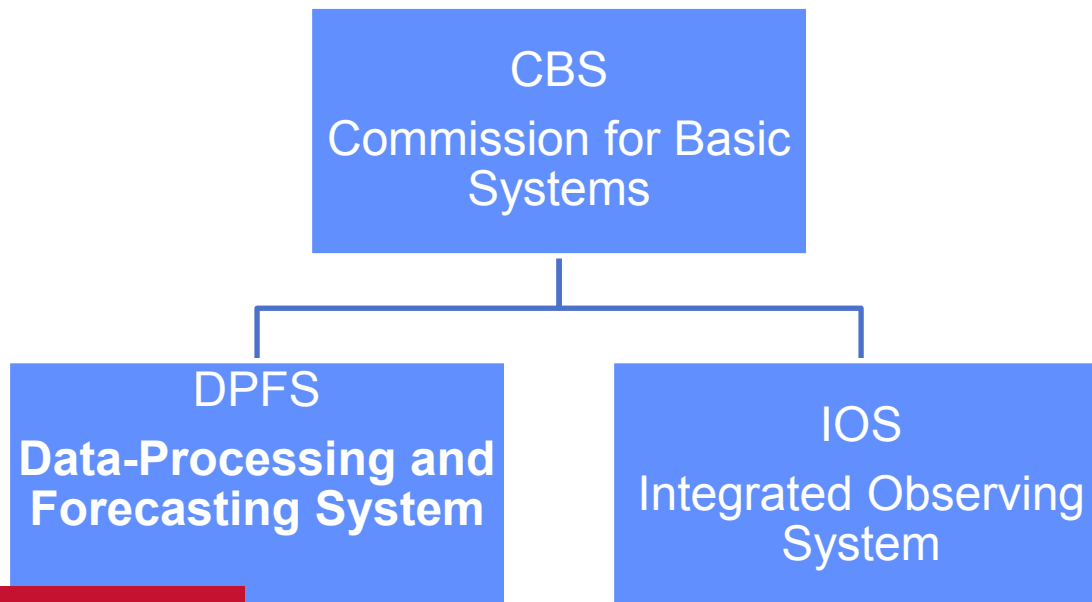
<i>Centre</i>	<i>Data type</i>	<i>Area of responsibility</i>
World Meteorological Centre, Washington	Aircraft and satellite data	Global
Regional Specialized Meteorological Centre, European Centre for Medium-Range Weather Forecasts	Upper-air data	Global
Regional Specialized Meteorological Centre, Bracknell	Surface marine data	Global
Regional Specialized Meteorological Centre, Nairobi	Land surface observations	Regional Association I
Regional Specialized Meteorological Centre, Tokyo	Land surface observations	Regional Association II
Regional Specialized Meteorological Centre, Buenos Aires	Land surface observations	Regional Association III
Regional Specialized Meteorological Centre, Montreal	Land surface observations	Regional Association IV
World Meteorological Centre, Melbourne	Land surface observations	Regional Association V
Regional Specialized Meteorological Centre, Offenbach	Land surface observations	Regional Association VI

they can take remedial action as required. These Members/agencies then report to lead centres and the WMO Secretariat on their remedial efforts.

More information on data quality monitoring, monitoring procedures and report types can be found at <http://www.wmo.int/pages/prog/www/DPS/Monitoring-home/mon-index.htm>.

References

- Manual on the Global Data-processing and Forecasting System* (WMO-No. 485)
- Manual on the Global Observing System* (WMO-No. 544)
- Manual on the Global Telecommunication System* (WMO-No. 386)



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Complete re-write of GDPFS Manual

- Monitoring to WIGOS
Technical Material
- But – check relevance first

Requests for ICT-DPFS to consider

- single Lead Centre responsible for global monitoring of surface based parameters?
- The establishment of a resource providing:
 - online access to NWP quality monitoring data and reports
 - (automated) transmission of quality monitoring reports, both realtime and monthly summary, to WMO Member Focal Points
 - support for feedback and documentation of data quality issues
- use of both assimilation QC and first guess comparison information for NWP observational data monitoring purposes
- The additional role of quantity monitoring of observational data
- Lead Centre for NWP quality monitoring being able to receive and utilize NWP QM data from other NWP monitoring centres

Some questions and issues for discussion

- **Do all NWP centres receive the same data?**
- **Use, quality, blacklisting. Cross-checking with other centres can be useful in confirming observation problems**
- **Monthly reports insufficient to pick up quickly developing serious problems.**
- **Improve feedback to data providers - data providers should be easily able to check for themselves**
 - **up-to-date web site (ideally showing consolidated results from different monitoring centres?) together with alerts for significant changes would be a big advance**
 - **Any restriction on access to the monitoring information?**
- **Include bias correction information in monitoring reports**