

16 JANUARY 2002 : GLOBAL OBSERVING NETWORK

Dr F Lalaurette, ECMWF - An Assessment of the Current Performance of the Global Observing System Based on Monitoring at ECMWF - f.lalaurette@ecmwf.int

As any other global NWP centre, ECMWF is heavily dependant on the quality and completeness of the GOS for the quality of its forecasts. A quick overview of the GOS components currently used will be provided, together with an indication of their impact on the forecast skill. The quality of short-range model forecasts is now such that for many components of the GOS, observation errors have the same order of magnitude as Day-1 forecast errors. The implication is that systematic errors from some types of observations can be identified from statistics of model forecasts versus observations. Other cases however are less straightforward, and the use of multi-model and/or multi-observation comparisons are necessary in order to detect errors to one component or the other. Finally, some results from ECMWF Reanalyses projects will be shown from the perspective of long trends in the GOS performance.

Dr J Eyre, Met Office - The Global Observing System of the World Weather Watch: What do we have and what do we need? - jonathan.eyre@metoffice.com

The World Weather Watch (WWW) forms the core of the WMO programmes. It combines observing, telecommunication and data processing systems - operated by WMO Members - to make meteorological information available to all countries. The Global Observing System (GOS) is a key part of the WWW, and it includes both surface-based and space-based components. This talk reviews briefly the current constituents of the GOS and then discusses activities to determine the observational requirements of WMO programmes. It describes the "Rolling Requirements Review" process currently used within WMO to compare requirements for observations (to meet the diverse needs of WMO programmes), with the capabilities of present and planned observing systems. Through such an analysis, gaps between requirements and capabilities are identified, and recommendations are made on the changes needed within the GOS to close these gaps.

Dr F Gerard, Meteo France - Methods and Plans for an Optimised European Composite Observing System (EUCOS) as part of the GOS - francois.gerard@meteo.fr

The EUMETNET consortium established a strategy for a EUMETNET Composite Observing System (EUCOS) in 1997. A co-operative process for definition, implementation, operation and management of the ground based observing systems is now underway. The EUCOS implementation programme started in 1999, to seek a decrease of the cost of the territorial component through the intensive use of AMDAR and through automation, and to allocate the necessary resources to the data sparse areas recognised as sensitive for general forecasts over Europe. The results of the studies achieved in 1999 and 2000 together with outputs from FASTEX and results obtained in America under the NAOS programme, have helped to define the short-term evolution (2002-2006), whose features will be described.

Dr P Mason, Met Office - An Update on the Global Climate Observing System - paul.mason@metoffice.com

The Global Climate Observing System (GCOS) was established in 1992 to ensure that the observations and information needed to address climate-related issues are obtained and made available to all potential users. It is intended to be a long-term, user-driven operational system capable of providing the comprehensive observations required for monitoring the climate system, for detecting and attributing climate change, for assessing the impacts of climate variability and change, and for supporting research toward improved understanding, modelling and prediction of the climate system. It addresses the total climate system including physical, chemical and biological properties, and atmospheric, oceanic, hydrologic, cryospheric and terrestrial processes. The current 'state of play' will be reviewed.

Dr J Gould, Director, WOCE and CLIVAR International Project Offices - Global Ocean Observations - Needs, Status and Challenges - wjg@soc.soton.ac.uk

The past decade has seen a revolution in our ability to observe the global ocean. This has come about through the availability of satellite altimetry and of satellite-derived surface wind fields. It has been matched by enormous advances in in-situ measurements - particularly the development of greatly improved surface drifters and of profiling subsurface floats. These technologies, developed during the WCRP's WOCE project now form the basis of a global ocean observing system Argo that should by 2005 have 3000 profilers. The paper will describe the progress made during WOCE, describe what has been learned about ocean variability and how this will be used in future observing systems.

Dr T Mohr, Director-General, EUMETSAT - Evolution towards an Integrated Global (Earth) Observing System - mohr@eumetsat.de mohr@eumetsat.de

Based on technology trends and supported by 4 D VAR schemes one can expect a fully automated Global Observing System based on in-situ and remote sensing techniques either surface or space based. Their developments together with the need to implement a large number of global observing systems will lead to an Integrated Global Earth Observing System.