

**WORLD METEOROLOGICAL ORGANIZATION**

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**COMMISSION FOR BASIC SYSTEMS**

OPEN PROGRAMME AREA GROUP ON  
INTEGRATED OBSERVING SYSTEMS

**EXPERT TEAM ON OBSERVATIONAL DATA  
REQUIREMENTS AND REDESIGN OF THE  
GLOBAL OBSERVING SYSTEM  
SIXTH SESSION**

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ITEM 7

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**PLANS FOR THIRD WMO WORKSHOP ON  
THE IMPACT OF VARIOUS OBSERVING SYSTEMS ON NWP  
(Alpbach, Austria, 9 to 12 March 2004)**

*(Submitted by Dr Paul Menzel, NOAA, USA)*

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**Summary and Purpose of Document**

This document details the agenda and planned outcomes for the Third WMO Workshop on the Impact of Various Observing System on NWP (Alpbach, Austria, 9 to 12 March 2004).

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**ACTION PROPOSED**

The meeting is asked to review and approve the suggested agenda and plans.

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## DISCUSSION

### 1. Announcement

1.1 The Third WMO Workshop on the Impact of Various Observing Systems on Numerical Weather Prediction will be organised by the Expert Team on Observational Data Requirements and Redesign of the Global Observing System in Alpbach, Austria from 9 to 12 March 2004. Participants are expected to come from all the major NWP centres, which are active in the area of impact studies. The workshop will be conducted in English. As on the first two workshops, it is planned to produce a workshop report to be published as a WMO Technical Report that will include the papers submitted by the participants.

1.2 The Coordination Group for COSNA, CGC, organised the first two Workshops on Impact Studies that took place in Geneva (April 1997) and in Toulouse (March 2000) respectively. They were co-sponsored by WMO. Results from Observing System Experiments (OSEs), both with global and regional aspects were presented and conclusions were drawn concerning the contributions of the various components of the observing system to the large scale forecast skill at short and medium range (Workshop Proceedings published as WMO World Weather Watch Technical Report No. 18 and 19 respectively). Since then, some significant changes and developments have affected the global observing system. Following the upgrade of the NOAA satellites from TOVS to ATOVS, a series of new satellites with new instruments (MODIS on Terra and Aqua, AIRS on Aqua, Meteosat Second Generation) have been launched recently. Intensive data assimilation studies (including impact studies) on these new data are expected to be carried out from 2002 onward. Design studies on satellite missions planned for this decade are also going on. The conventional observing systems are also changing, like the radiosonde and aircraft observations, through regional programmes like EUCOS or NAOS. Targeting strategies are also used or considered more and more, for example, through the THORPEX project and in operational programmes. More and more efforts are devoted to meso-scale observing and assimilation systems. It is expected that, at the Third workshop on Impact Studies, the key NWP centres will present recent results in all these areas. The results will then be reviewed in plenary discussion sessions. Conclusions helping for the design of an optimised Global Observing System for NWP should be drawn.

1.3 The workshop will be organised in the following sessions:

Session 1: Global forecast impact studies

Session 2: Regional aspects of impact studies

Session 3: Observation targeting studies and Observation network design studies

Session 4: Workshop discussions and conclusions.

1.4 Abstracts should be submitted to the co-chairmen [jean.pailleux@meteo.fr](mailto:jean.pailleux@meteo.fr) and [horst.boettger@ecmwf.int](mailto:horst.boettger@ecmwf.int) and to the Editor of the Proceedings [paul.menzel@noaa.gov](mailto:paul.menzel@noaa.gov) by 31 October 2003. The full papers for the workshop report will be required at the time of the meeting and should be sent in electronic form. Information on hotel accommodation and local transport will be posted in a subsequent announcement. There will be the possibility of financial support for a limited few upon request to the co-chairmen.

1.5 The co-chairmen are being assisted by the Organizing Committee that includes John Eyre, Met Office; Nobuo Sato, JMA; Tom Schlatter, NOAA/FSL; Paul Menzel, NOAA/ORR; Helmut Rott, Univ Innsbruck; Alexander Karpov, WMO. Information about Alpbach and local arrangements can be found at [www.alpbach.at](http://www.alpbach.at). A congress office will coordinate hotel arrangements for the attendees.

## 2. Proposed Agenda

2.1 Tuesday, 9 March 2004

### **Welcome and Opening Remarks**

- 8:30 am Jean Pailleux (Météo France)  
"Welcome"
- 8:40 am Paul Menzel (NOAA/NESDIS) and Alexander Karpov (WMO)  
"GOS evaluations within the ET-ODRRGOS"
- 8:50 am Horst Boettger (ECMWF)  
"Major conclusions from Last NWP OSE Workshop"
- 9:10 am M. Ehrendorfer (U. Innsbruck)  
"Atmospheric predictability and data assimilation"

### **Session 1: Global forecast impact studies**

- 9:30 am Erik Andersson (ECMWF)  
Impact studies of main types of conventional and satellite humidity data
- 10:00 am Werner Wergen (Deutscher Wetterdienst)  
Impact studies at Deutscher Wetterdienst
- 10:30 am Break
- 11:00 am Steve Lord (EMC)  
Results from a battery of observing system impact experiments
- 11:30 am Graeme Kelly (ECMWF)  
OSEs of all main data types in the ECMWF operational system
- 12:00 am Richard Dumelow (Met Office)  
OSEs using the Met Office operational global model
- 12:30 pm Lunch
- 2:00 pm Lars Peter Riishojgaard (NASA DAO)  
Discussion of respective contributions to DAO forecast skill of various main components of the observing system (RAOBS, ACARS, ATOVS, GEO-AMVs, etc.) and some of the newer data (AIRS soundings, MODIS winds, AMSR)
- 2:30 pm Jean-Noel Thepaut (ECMWF)  
Surface data impact studies
- 3:00 pm Gilles Verner (CMC)  
Data impact studies in the CMC global NWP system
- 3:30 pm Break
- 4:00 pm Florence Rabier (Météo-France)  
Impact studies performed with the global ARPEGE NWP system
- 4:30 pm Steve English (Met Office)  
Satellite data OSEs
- 5:00 pm Peter Steinle (BMRC)  
Impact of various observing systems on the BMRC NWP systems
- 5:30 pm Ko Koizumi (JMA)  
Meso 4D-VAR and global data assimilation studies

2.2 Wednesday, 10 March 2004

### **Session 1: Global forecast impact studies (continued)**

- 8:30 am Alan O'Neill (DARC)  
Impact of Research Satellite Observations in a Data Assimilation System for the Troposphere and Stratosphere
- 9:00 am Clément Chouinard (CMC)  
Recent OSE studies with the revised CMC 3D-Var system in hybrid coordinates with lid at 0.1 hPa

9:30 am Rolf Langland (NRL)  
Estimation of Observation Sensitivity using the NAVDAS Adjoint System

10:00 am Break

**Session 2: Regional aspects of impact studies**

10:30 am Stan Benjamin (NOAA/FSL)  
Data denial experiments with the Rapid Update Cycle (RUC) with raob, aircraft, profiler, GOES, and surface data; a RUC-based OSSE for a space-based, wind-finding lidar

11:00 am Per Unden (SMHI/HIRLAM)  
Observation impact studies with HIRLAM

11:30 am Jean Quiby (Meteo Swiss)  
Impacts and promises of non-conventional observing systems on regional NWP

12:00 am Chen Dehui (CMA)  
Use and impact of satellite and radiosonde data: some case studies performed with GRAPES\_3DVAR in China

12:30 pm Lunch

2:00 pm Hilarie Riphagen (SAWS, South Africa)  
Impact of AMDAR data in a regional Eta model forecasts over South Africa.

2:30 pm Y. Wang (ZAMG)  
Impact studies performed with the ALADIN NWP system, especially with the MAP SOP data

3:00 pm Alexander Beck (Univ. Vienna)  
Observation impact on data assimilation with dynamic background error formulation

3:30 pm Paul Menzel (NESDIS/CIMSS)  
Polar orbiting and geostationary satellite versus in situ impact on Regional NWP

4:00 pm Break

**Session 4: Workshop discussions**

4:30 pm Working Group Discussions

2.3 Thursday, 11 March 2004

**Session 3: Observation targeting studies and Observation network design studies**

8:30 am Richard Hodur (NRL)  
Summary of past and current efforts on targeted observations

9:00 am Jim Caughey (EUCOS)  
Evolution of the EUCOS Operational Programme and experiences from the THORPEX Atlantic TOST

9:30 am Johannes Schmetz (EUMETSAT)  
Overall contribution of Meteosat and MSG satellites to observing systems at global and regional scale

10:00 am Oleg Pokrovsky (MGO, Russia)  
Optimal design of the sonde network in Siberia.

10:30 am Break

11:00 am Frank Grooters (KNMI Netherlands)  
The global AMDAR system.

**Session 4: Workshop discussions**

11:30 am Working Group Discussions

12:30 pm Lunch

2:00 pm Working Group Discussions

2.3 Friday, 12 March 2004

**Session 4: Workshop Conclusions**

8:30 am Working Group Presentation

10:30 am Break

11:00 am Conferences Conclusions

12:30 pm Adjourn

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