

INTER-COMMISSION / INTER-PROGRAMME ACTIVITIES

WIGOS/WIS GOS/GAW Pilot Project

(submitted by C/AER and C/OSD)

Purpose of Document and Major Decision(s) Requested

This document provides a summary of the WIGOS/WIS GOS/GAW Pilot Project

APPENDIX: GOS GAW Pilot Project "Improvement of Dissemination of Ozone (total column, profiles and surface) and Aerosol observations through WIS (GAW-IDOA)"

REFERENCES: Final report of the third session of the Expert Team on Evolution of the Global Observing System (ET-EGOS), Geneva, 9-13 July 2007

Report of the First Session of the Executive Council Working Group on the WMO Integrated Global Observing Systems (WIGOS) and the WMO Information System (WIS), Geneva, 4-7 December 2007

Report of the First Meeting of the Ad-hoc CBS CAS Expert Group on "Joint GOS-GAW Pilot Project to Accelerate Implementation of WIGOS/WIS", Geneva, 25 – 27 March 2008

Summary of Activity

The GOS-GAW WIGOS pilot project development started during the OPAG-IOE ET-EGOS meeting in July 2007. The project plans were discussed at the First meeting of the Executive Council Working Group on the WMO Integrated Global Observing Systems (WIGOS) and the WMO Information System (WIS) in December 2007 and the proposal was finalized at the First Meeting of the Ad-hoc CBS CAS Expert Group on "Joint GOS-GAW Pilot Project to Accelerate Implementation of WIGOS/WIS" in March 2008, please see the final description in the Appendix.

The GOS GAW Pilot Project "Improvement of Dissemination of Ozone (total column, profiles and surface) and Aerosol observations through WIS (GAW-IDOA)" will improve availability of ozone, aerosol optical depth (AOD) and surface particulate matter (PM) observations to the user community and prepare documentation to help other communities make their observing practices compatible. GAW-IDOA builds upon and combines already proposed activities of the following Advisory Groups: SAG Ozone, SAG Aerosol, ET-NRT, ET-EGOS. The main outcomes will be: identification of the benefits and challenges associated with moving to the use of the WIS for data dissemination and integration of GAW

data, documentation of a procedure that could be used to guide interoperability of atmospheric chemistry components with WIS/WIGOS, expansion of number of stations submitting data in NRT and the increase in availability and use of ozone and AOD observations. It is expected that this will improve ingestion of data into atmospheric models, improve forecasts of weather, surface UV and air quality, and verification of models.

The GAW-IDOA proposal has been submitted to the GAW SAG Ozone, SAG Aerosol, ET-NRT, and the Expert Team on World Data Centres (ET WDC) for consideration. The SAG Ozone supports the proposal and is working towards the NRT data delivery as has been already planned. The AOD observations, part of SAG Aerosol activities, as measured by PFR instruments on GAWNET sites, are progressing towards NRT collection of the data. The most recent data are available on the PMODWRC website:

http://www.pmodwrc.ch/worcc/pmod.php?topic=aod_graphs_recent_data

With some stations it was possible to establish a true RT access over secure IP connections, while for others there is a 24h lag due to security problems. Available data is processed for 'quick-look' results every day at 8:00 CET and made available graphically, but not numerically on the above website. Practical questions remain: how to submit the data into the WIS System and how to retrieve data, external access to WIS. These are to be dealt with by forming a small group of experts that will make a practical pilot study of submission and retrieval of data. In addition the connection to other AOD networks (NASA Aeronet and partners) and their data delivery systems will be considered.

GOS GAW Pilot Project (PP) Proposal**Improvement of Dissemination of Ozone (total column, profiles and surface) and Aerosol observations through WIS**

Project Name	Improvement of Dissemination of Ozone (total column, profiles and surface) and Aerosol observations through the WIS
Acronym	GAW-IDOA
Project Type	WIS-WIGOS Pilot
Project Status	Planning
Project Overview	<p>This pilot will improve availability of ozone and Aerosol Optical Depth (AOD) and surface Particulate Matter (PM) observations to the user community and prepare documentation to help other communities make their observing practices compatible.</p> <p>This pilot project combines activities already proposed by four advisory groups: SAG Ozone, SAG Aerosol, ET-NRT, ET-EGOS. The original proposals as provided to the March 2008 meeting are in annexes to this pilot project document.</p>
Project Aims	<p><i>Improve dissemination of ozone (total column, profiles and surface) and aerosol observations through the WIS (noting that WIS includes the GTS)</i></p> <p><i>for:</i></p> <p>Ingestion into atmospheric models using data assimilation Support improved forecasts of weather, surface UV and air quality Verification of models</p> <p><i>by:</i></p> <p>Dissemination on timescales appropriate to the applications Instituting a Rolling Review of Requirements (RRR) Process, as prescribed by the Manual on GOS (WMO-No. 544) Supporting training and capacity building as necessary</p> <p><i>Assist other observing communities to make their observations more widely available by documenting:</i></p> <p>Benefits, challenges and solutions encountered Procedures developed for the ozone and AOD communities</p>
Partners/Participants	<p><i>Key participants</i></p> <p>MACC partnership (Monitoring Atmospheric Composition and Climate, led by ECMWF) with collaborating environmental agencies, WDCA (World Data Centre for Aerosols), WOUDC (World Ozone and Ultraviolet Radiation Data Centre), CBS, CAS, CIMO, PMOD/WRC, JMA (WDCGG, World Data Centre for Greenhouse Gases), WMO Secretariat</p>

	<p><i>Also contributing</i> Atmospheric composition community, WMO Members, HMEI (HydroMeteorological Equipment Industry Association), Universities</p>
Project cost	<p>Estimates to be confirmed</p> <p>Support for meetings of 3 expert groups: CHF50k One meeting of Ad Hoc group: CHF10k Consultants: 6 months: CHF60k</p>
Funding Source(s)	WIGOS Trust Fund, Government grants
Project Timescale	Report to EC WG on WIGOS/WIS at the end of 2009 on the status of the objectives.
Expected Key Deliverables	<p>Description of deliverables will be provided by the three CAS groups referenced in the project overview in coordination with CBS, using the three areas of interoperability of WIGOS: measurement, distribution (WIS), quality.</p> <p>Measurement Increase the number of stations delivering observations for use in NWP, air composition forecasting and possibly hazard warning.</p> <p>Distribution Increase in ozone and AOD observations received by Numerical Weather Prediction (NWP) and other centres (compared with 2008 baseline) on a time scale determined by the RRR “quick look” AOD data available (with initial quality control but without finalized quality assurance) to centres executing experimental sand and dust storm models (Task 6.5 of GAW strategy) on timescales determined by the RRR Document the further enhancements needed for WIS</p> <p>Quality Standard procedures for quality control in accordance with GAW strategic plan</p>
Project Links	http://need a project web site
Project Summary	<p>Ozone and aerosol observations from the GAW network are needed for ingestion into atmospheric models, via data assimilation techniques, in support of improved forecasts of weather, surface UV and air quality. To be useful, the data must be disseminated in near real time, which will benefit in addition such products as the Ozone Bulletins. This project will contribute to the design of activities that enhance the transfer of GAW data in near real time through WIS.</p> <p>A detailed implementation plan is being developed by the three component leads in cooperation with CBS.</p>

	<p>The project will be implemented on the basis of current programmes and activities, carried out by Expert Teams of CAS, CBS and CIMO. Other relevant Programmes would be involved.</p> <p>The Secretariat and component leads will facilitate the implementation of the project. The WIGOS GOS-GAW Pilot Project Ad-hoc Group Chairman will monitor the results and report to the EC SG on WIGOS/WIS.</p> <p><i>Management outcomes</i> Identify the benefits and challenges associated with moving to use of the WIS for data dissemination and integration of GAW data into the work of other Programmes, including hazard warnings Document a procedure that could be used to guide interoperability of other atmospheric chemistry components with WIS/WIGOS and propose changes to the Manual on the GOS and other Technical Regulations where appropriate</p> <p><i>Common to ozone and AOD</i> Expand the number of stations submitting ozone and AOD observations to operational users in near real time via WIS Increase the availability and use of ozone and AOD observations to NMHS and other user communities Develop and deliver training and provide capacity building to support increased provision and use of the data and products created from the data Update the WMO database of observation requirements to take account of the Rolling Review of Requirements Promote the measurement of ozone and AOD to a common set of standards Identify a set of relevant standards as a candidate for an WMO/ISO standard Standardise on BUFR/CREX format for data distribution Ensure that WIS can distribute the data (including ensuring that telecommunications headers are defined)</p> <p><i>Total Ozone and Ozone Profiles</i> Invite NMHSs to make use of the ability of the computer program DOBSON to produce total ozone data in CREX for transmission via WIS on timescales identified by the RRR Encourage NMHSs using Brewer spectrophotometers to implement the subroutine CX.RTN to prepare total ozone data in CREX for transmission via WIS on timescales identified by the RRR Initiate distribution of ozone sounding data from NILU using the WIS Invite producers of sounding systems to upgrade their software to allow production of ozone sounding data in BUFR or CREX Encourage development and implementation of BUFR/CREX encoding programs for other types of instrumentation that measure total ozone or ozone profile observations (eg DOAS, lidars, FTIR)</p>
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	<i>Surface Ozone</i> Demonstrate routine exchange of hourly data in at least one region <i>Aerosols</i> Develop communications headers for AOD information
Date of Last Update	27 March 2008
Contact Person	Dr Liisa Jalakanen