

WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR INSTRUMENTS AND METHODS OF OBSERVATION

AD-HOC WORKING GROUP ON WIGOS PILOT PROJECT
Second Session

St. Petersburg, Russian Federation

24 – 25 (a.m.) November 2008

FINAL REPORT



WMO General Regulations 42 and 43

Regulation 42

Recommendations of working groups shall have no status within the Organization until they have been approved by the responsible constituent body. In the case of joint working groups, the recommendations must be concurred with by the presidents of the constituent bodies concerned before being submitted to the designated constituent body.

Regulation 43

In the case of a recommendation made by a working group between sessions of the responsible constituent body, either in a session of a working group or by correspondence, the president of the body may, as an exceptional measure, approve the recommendation on behalf of the constituent body when the matter is, in his opinion, urgent, and does not appear to imply new obligations for Members. He may then submit this recommendation for adoption by the Executive Council or to the President of the Organization for action in accordance with Regulation 9(5).

EXECUTIVE SUMMARY

The CIMO Ad-Hoc Working Group on the CIMO WIGOS Pilot Project (CIMO-WIGOS-PP-2) held its second session at Roshydromet's Arctic and Antarctic Research Institute in St. Petersburg, Russian Federation, from 24 to 25 November 2008.

Following consultation with other technical commissions and pilot projects, the meeting reviewed the draft Role and Responsibilities of CIMO within the framework of WIGOS that it had developed and finalized its proposal for consideration by the Executive Council Working Group on WIGOS and WIS.

The meeting refined its pilot projects, and its implementation plan to account for the requests of collaboration from other pilot and demonstration projects. The meeting decided to put emphasis on the support of the JCOMM and AMDAR pilot projects since they had clearly showed an interest to collaborate with CIMO. The meeting was of the opinion that the demonstration projects of Brazil and Morocco were those most closely linked to CIMO activities and could significantly benefit from collaboration with CIMO. The meeting therefore decided to support these two demonstration projects in priority.

The meeting was open to support additional pilot and demonstration projects as they would be developed and would request CIMO's expertise and/or support.

AGENDA

1. ORGANIZATION OF THE SESSION

- 1.1 Opening of the meeting
- 1.2 Adoption of the agenda
- 1.3 Working arrangements

2. REPORT OF THE CHAIRPERSON

3. DEVELOPMENT OF THE CIMO PILOT PROJECT ON THE WMO INTEGRATED OBSERVING SYSTEMS (WIGOS)

- 3.1 Proposed Role and Responsibilities of CIMO
- 3.2 Pilot Project Plan and Pilot Project Implementation Plan

4. INVOLVEMENT OF CIMO IN OTHER PILOT AND DEMONSTRATION PROJECTS

5. ANY OTHER BUSINESS

6. CLOSURE OF THE SESSION

Annex I List of Participants

Annex II Role and Responsibilities of the Commission for Instruments and Methods of Observation (CIMO) within the framework of the WMO Integrated Global Observing Systems (WIGOS)

Annex III CIMO Pilot Project Template

Annex IV CIMO Pilot Project Implementation Plan

GENERAL SUMMARY

1. ORGANIZATION OF THE SESSION

1.1 Opening of the meeting

1.1.1 The second session of the CIMO Ad-Hoc Working Group on the CIMO WIGOS Pilot Project (CIMO-PP-2) was opened by the Vice-President of CIMO, Mr Rainer Dombrowsky, on Monday, 24 November 2008 at 10:00. The list of participants is provided in Annex I.

1.1.2 Dr Sergei Priamikov, Head of the International Science Co-operation Department of the Arctic and Antarctic Research Institute of Roshydromet welcomed the participants to St.-Petersburg and gave a presentation on the varied activities of the institute.

1.2 Adoption of the agenda

1.2.1 The meeting adopted the agenda as reproduced at the beginning of this report.

1.3 Working arrangements

1.3.1 The working hours and tentative timetable for the meeting were agreed upon.

2. REPORT OF THE CHAIRPERSON

2.1 The CIMO Vice-President (CIMO-VP) and CIMO Pilot Project Manager, Mr Rainer Dombrowsky, informed the meeting about the activities that were carried out following the first session of the Ad-hoc Working Group meeting (CIMO-PP-1).

2.2 The CIMO President, Dr John Nash consulted the presidents of the other technical commissions at the occasion of the meeting of the Presidents of Technical Commissions (18-20 February 2008, Geneva) on the proposed Role and Responsibilities of the Commission for Instruments and Methods of Observation (CIMO) within the framework of the WMO Integrated Global Observing Systems (WIGOS) that was developed by CIMO-PP-1. The proposal was favourably received and no suggestions of changes were made by the other presidents.

2.3 The CIMO-VP attended the meetings of the other pilot projects (PP), apart from the pilot project of the Commission for Hydrology that held no meeting. At each of these meetings, he presented the proposed role and responsibilities of CIMO and the type of support that CIMO could be providing. Each of the projects responded with interest and indicated some areas of desired collaboration. The JCOMM and AMDAR pilot projects have already developed comprehensive pilot project plans and clearly indicated the areas in which they wish to collaborate with CIMO. The GOS-GAW pilot project needed to be further developed, before it could clearly state the desired areas of collaborations. The CHy project was not sufficiently advanced at present to state whether a CIMO contribution would be desired and appropriate.

2.4 A meeting of the EC-WG-WIGOS-WIS Subgroup on WIGOS was held in November 2008 which reviewed the WIGOS Concept of Operation (Conops) and the WIGOS Development and Implementation Plan (WDIP). The CIMO president was invited to be the chairman of this subgroup. At this occasion, a few additional possible pilot projects were identified, but were not clearly formulated yet.

2.5 The CIMO-VP indicated that he developed a pilot project plan that was more comprehensive than the pilot project template as well as a pilot project implementation plan that are discussed in more details under agenda item 3.2.

2.6 The meeting participants stressed the need for having a WMO body, such as presently CIMO, that would keep technical knowledge and expertise on instruments, methods of observation and related matters to provide the technical advice needed by decision makers and network responsables that usually have a managerial background. The meeting also recognized that increased communication would be needed with other technical commissions to make Members fully benefit from this role. CIMO's technical ability, as demonstrated in particular in the conduction of intercomparisons, is very valuable both to Members and manufacturers providing them among others with a testing of the instruments that would otherwise not be available and that lead to significant improvements in the available instrumentation. However, it appears that improved communication and outreach would be needed as some Members do not know how to use the results of intercomparisons for their own benefit.

3. DEVELOPMENT OF THE CIMO PILOT PROJECT ON THE WMO INTEGRATED OBSERVING SYSTEMS (CIMO-WIGOS-PP)

3.1 Proposed Role and Responsibilities of CIMO

3.1.1 The meeting reviewed the draft Role and Responsibilities of CIMO within the framework of WIGOS that it had proposed during CIMO-PP-1 and that were presented to PTC and to the other pilot projects for comments. The meeting took into account the expertise gained at those occasions in finalizing its proposal and adopted the Role and Responsibilities as provided in Annex II which finalizes the first phase of the pilot project.

3.1.2 The meeting reviewed the pilot project template and recalled that it was meant as a living document used for monitoring the progress of the project. The meeting adopted for the time present the version of the pilot project template provided in Annex III and agreed that the CIMO PP-manager would continue to update it as the project evolved and would consult with the other members of the team prior to adding new tasks and responsibilities to the project. The latest version of that template would be posted on the WIGOS website (http://www.wmo.int/pages/prog/www/wigos/index_en.html) and regularly updated.

3.2 Pilot Project Plan and Pilot Project Implementation Plan

3.2.1 The CIMO-PP consists of three phases. The first phase focused on the development of revised TOR for CIMO in the context of WIGOS and was completed as mentioned in the previous section. The second phase consisted in reaching out to partners (other pilot projects) identifying areas of collaboration and was also largely completed, while the third phase would consist in meeting partners expectations and remains to be done.

3.2.2 The CIMO-VP developed a pilot project plan (PPP) that provided a more comprehensive description of the project than the pilot project template and which included the chronology of steps that had already been carried out, the requests for support/collaboration received from other pilot and demonstration projects and the remaining work. The PPP will help in ultimately determining whether the CIMO-PP was successful in meeting its partners' expectations.

3.2.3 The meeting requested the PP-Manager to further develop a PP Implementation Plan that is provided in Annex IV, so that it would provide a detailed description of all the tasks that CIMO would carry out if appropriate funding would be made available for the WIGOS development to support these tasks. The Ad-hoc working group and/or the CIMO Management Group would have to review and approve this list of tasks as well as its future updates. Both the PPP and the PP Implementation Plan would also be living documents that should be regularly updated by the PP-Manager and posted on the WIGOS website (http://www.wmo.int/pages/prog/www/wigos/index_en.html).

3.2.4 The meeting agreed that WIGOS should be considered as a unique opportunity to work together with other communities to improve global observing systems and that CIMO

should cease this opportunity to collaborate with a broader range of stakeholders and to improve its collaboration with other technical commissions and communities. This would also be beneficial to avoid duplications and increase efficiency and effectiveness in areas of common interests, such as automatic weather stations, coding and AMDAR for example.

3.2.5 WIGOS should aim at assuring the quality of data to published standards. The increased interoperability between the various systems should allow for easier access to the information, making use of the cataloguing information made available by WIS and will lead to improved observational services. It is expected that WIGOS would have 3 areas of standardization: a) measurements and observations, b) data exchange, discovery, access and retrieval and c) end-product quality management.

3.2.6 Though the far aim of WIGOS will require a tremendous amount of work, CIMO can already start supporting it with its limited means focusing on specific subjects. Different users need similar data, but have different requirements. For example delivery time and accuracy of observations are not the same if the data is to be used for forecasting (needing real-time observations) or climate applications (needing higher-quality observations in a delayed mode). Therefore, some standards could account for different quality of observations, recognizing that all observations are useful, but not necessarily for all purposes, so that users could trace which standards were used for producing specific data and choose the data fitting their requirements. This would also help in deploying cost-effective observation systems.

3.2.7 WIGOS will derive benefits from putting various observing systems together. In this context, the meeting stressed that some types of observations were not necessarily available throughout the day, while others may not be accurate enough under certain meteorological conditions. Therefore, it was not possible to rely on single observing systems, but a range of observing systems were required to make informed forecasts and decisions. It should be recalled that unity of performance of the various observing systems relies among others on a thorough testing of the systems before their large scale deployment, system maintenance ensuring that the system performs to the expected levels, effective quality management allowing to detect anomalies and follow-up actions. Though some projects will need more than 2 years to be completed, some projects should be carried out in a short time frame to test the WIGOS concept.

3.2.8 The meeting agreed that the implementation of CIMO's pilot project should not only rely on the conduction of other PPs, but that it should also independently demonstrate that CIMO would provide valuable support to WIGOS that it had not necessarily planned to do in its work programme. CIMO should carefully use its limited resources focussing on projects addressing the needs of WMO Members.

3.2.9 The meeting decided to strongly support the development of a siting classification system for weather stations and agreed that it would use some of its resources for that purpose. The meeting also recognized that it should improve its web-site which would allow Members to have an easier access to the information they needed.

3.2.10 CIMO could also provide a significant contribution to the development of WIGOS by putting more emphasis in its work program on the topic of weather radars and in particular by organizing an intercomparison of radar algorithms. This topic being of high relevance to various communities would need building up working relationships with them as well as with radar manufacturers as has been done in the past with radiosonde manufacturers.

4. INVOLVEMENT OF CIMO IN OTHER PILOT AND DEMONSTRATION PROJECTS

4.1 The meeting reviewed the requests for collaboration with and input from CIMO that were received from the other PP and decided to assist in priority the two pilot projects (JCOMM and AMDAR) that expressed highest interest for collaboration and that had already clear plans. CIMO would be willing to collaborate with the other pilot projects once they

would have refined their plans and specified their needs. The meeting agreed that CIMO should participate in the AMDAR-PP in testing the AMDAR humidity sensors, which shall be done with proper collaboration with the CIMO ET on Upper-Air Instrument Intercomparisons. CIMO's participation in JCOMM-PP was also supported by the meeting stressing that its scope needed to be realistic to be completed within 2 years. The meeting requested the CIMO PP-Manager to develop a detailed list of tasks, responsibilities and timelines and to include it in the the pilot project implementation plan provided in Annex IV (see also 3.2.3 above).

4.2 The meeting recalled that the first assessment of the AMDAR humidity sensor would be done by AMDAR and that subsequent testing should involve CIMO. A preparatory meeting to define rules and procedures to be followed for the comparison of AMDAR data with other upper-air data should be done in Q3 2009 and involve CIMO (provided the preliminary tests carried out by AMDAR would be satisfactory) to possibly enable their testing during the China radiosonde intercomparison that will take place in 2010.

4.3 The meeting reviewed the description of the demonstration projects available at the time of the meeting in view of assessing whether they could significantly benefit from a direct CIMO support. The meeting decided to primarily support the demonstration project of Brazil providing support to traceability and calibration issues and of Morocco to help strengthen its Regional Instrument Centre. The meeting also agreed that CIMO would consider providing support to other demonstration projects in case they would ask for such a support from CIMO. The meeting encouraged Brazil and Morocco to liaise with CIMO to identify how CIMO could support their demonstration projects.

4.4 Plans for new pilot and demonstration projects are being developed and may be relevant to CIMO. The meeting agreed that the CIMO PP-Manager should review new proposals and bring the projects of highest relevance for CIMO to the attention of the ad-hoc working group for further decision on CIMO's participation in those projects. The meeting also urged the persons developing the new pilot and demonstration projects to identify as clearly as possible the expectations they had from CIMO to ease a prompt reply from CIMO.

4.5 The meeting recognized that the support to pilot and demonstration projects was to be funded by the respective projects and that CIMO's support could only be provided if the needed funds would be made available for the conduction of the said projects.

4.6 The meeting stressed that the success of the pilot and demonstration projects, in particular of CIMO's contribution to the other pilot and demonstration projects, would be depending on a strong and effective collaboration with the staff of the WIGOS Planning Office within the WMO Secretariat. This collaboration would be essential to achieve results by November 2009 for timely submission to the EC-WG Subgroup on WIGOS and subsequent submission to the Executive Council and Congress. It appears that only short proposals/projects would be likely to meet the corresponding deadlines, but other projects should be allowed to last longer to render their full potential.

5. ANY OTHER BUSINESS

None.

6. CLOSURE OF THE SESSION

The session closed on Tuesday, 25 November 2008 at 13:10 hours

LIST OF PARTICIPANTS

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Role and Responsibilities of the Commission for Instruments and Methods of Observation (CIMO) within the framework of the WMO Integrated Global Observing Systems (WIGOS)

Within the framework of the WMO Integrated Global Observing Systems (WIGOS):

The Commission shall be responsible for matters relating to international standardization, compatibility and sustainability of instruments and methods of observation of meteorological, climatological, hydrological, oceanographic, and related geophysical and environmental variables.

This responsibility underpins all observations within WIGOS, and will be carried out in close consultation with relevant WMO partner organizations that co-sponsor, own and/or operate some of the observing systems.

This shall include in particular (priority to be defined at later stage):

- (a) Respond to the requirements for standardized and compatible observations, including data content, quality and metadata;
 - (b) Provide advice, and recommendations, and promote studies concerning effective and sustainable use of instruments and methods of observation, including quality management procedures such as methods for testing, calibration and quality assurance;
 - (c) Conduct and / or coordinate global and regional intercomparisons and performance testing of instruments and methods of observation;
 - (d) Promote the development of measurement traceability to recognized international standards, including reference instruments and effective hierarchy of world, regional, national and lead centres for instrument calibration, development and testing;
 - (e) Promote compatibility, inter-calibration, integration and inter-operability with respect to both, and between, space-based and surface-based (in situ and remote-sensing) observations, including conducting testbed observing experiments;
 - (f) Encourage research and development of new approaches in the field of instruments and methods of observation of meteorological, climatological, hydrological, oceanographic, and related geophysical and environmental variables;
 - (g) Promote the appropriate and economical production and use of instruments and methods of observation with particular attention to the needs of developing countries; and
 - (h) Support training and capacity-building activities in the area of instruments and methods of observation.
 - (i) Liaise with the scientific research community and HMEI in introducing new observing systems into operations
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The CIMO Pilot Project on WIGOS

“Elaboration of the underpinning / crosscutting role and responsibilities of the Instruments and Methods of Observation Programme and CIMO in the context of WIGOS”

Project Name	Elaboration of the underpinning / crosscutting role and responsibilities of the Instruments and Methods of Observation Programme and CIMO in the context of WIGOS
Acronym	N/A
Project Type	Pilot
Project Status	<p>Phase 1: of Pilot Project planning and implementation is nearly completed. CIMO has actively worked with each of the ad hoc Working Groups, except for CHy. Planning and implementation is currently in various stages with GOS / GAW, AMDAR and JCOMM and as soon as CHy completes its initial planning and confirmation of its pilot CHy and CIMO can begin its dialogue addressing the CHy Pilot Project and how CIMO might provide assistance. This awaited meeting will likely not take place prior to the WIGOS/WIS Subgroup meeting scheduled for November.</p> <p>Phase 2: is underway with the three remaining pilot projects. At these meetings each program addressed how CIMO could assist each in meeting the goals of their respective pilot projects. Each meeting resulted in identifying activities and tasks in which CIMO could provide the necessary assistance to complete the requisite activity / task. The pilots are currently at different stages of development; JCOMM has fully developed its implementation plan and will be seeking JCOMM and IOC approval. The AMDAR and GOS / GAW Pilots are in the process of drafting their implementation plans.</p> <p>Phase 3: support activities will commence once each implementation plan has been finalized and approved. Due to the advanced nature of the JCOMM plan CIMO and JCOMM representatives have initiated work on several activities.</p>
Project Overview	This Pilot Project is directed at defining the CIMO's role and responsibilities within the WIGOS framework. Once these proposed roles and responsibilities (Terms of Reference (ToR)) are endorsed by the EC-WG-WIGOS/WIS and Sub-group on WIGOS, the proposal will be tested and demonstrated across the remaining WIGOS Pilot and Demonstration Projects to validate the effectiveness of the proposed ToR in addressing the WIGOS needs.
Project Aims	<p>Phase 1: of this project is to elaborate the underpinning / crosscutting roles and responsibilities of the CIMO in the WIGOS (ToR for CIMO in the context of WIGOS).</p> <p>Phase 2: of this project will involve meeting with the remaining four pilot project ad hoc working groups.</p> <p>Phase 3: of this project is to develop and implement a plan which demonstrates the process by which CIMO fulfils it's newly, EC-agreed upon roles and responsibilities within the WIGOS framework. It will also address CIMO's collaborative activities with pilot projects and select demonstration projects.</p>

Partners / Participants	<p>Phase 1: All WMO Technical Commissions, Co-sponsored Programmes and related International Organizations.</p> <p>Phase 2: Selected WIGOS Pilot & Demonstration Projects relevant to the CIMO-Pilot Project.</p> <p>Phase 3: Selected WIGOS Pilot & Demonstration Projects relevant to the CIMO-Pilot Project.</p>
Funding Source(s)	The three phases of this project will, to the maximum extent possible, make use of the expertise to be provided through the working structure of the CIMO and its WIGOS partners. Additional support will be required through the WMO budget and / or WIGOS-WIS Trust Fund.
Project Timescale	<p>Phase 1: Pilot Project proposal for the role of the CIMO within the WIGOS and draft implementation plan development: fourth quarter 2008.</p> <p>Phase 2: Meet with each of the Pilot Project groups to determine the CIMO's role with each Pilot Project: fourth quarter 2008.</p> <p>Phase 3: Implementation: 2009-2011.</p>
Expected Key Deliverables	<p>Phase 1: Proposed CIMO ToR within the framework WIGOS and draft proposal for implementation.</p> <p>Phase 2: Project approval and implementation and management, periodic evaluation and reporting of lessons learned and the documentation as well as tracking of recommendations and actions.</p> <p>Phase 3: Complete collaborative efforts with all pilot and demonstration projects to insure the delivery of pilot and demonstration objectives with which CIMO has been asked to participate.</p>
Project Links	TBD Developed
Project Summary	The Commission shall be responsible for matters relating to international standardization, compatibility and sustainability of instruments and methods of observation of meteorological, climatological, hydrological, oceanographic, and related geophysical and environmental variables.
Date of Last Update	10/20/2008
CIMO Contact Person: Name: Organization: Address: Telephone: Fax E-Mail:	<p>Mr Rainer Dombrowsky Representing NOAA / NWS 111 Clubside Drive TANEYTOWN, MD 21787 United States of America</p> <p>H: +1 410 756 2521; C: +1 410 428 7252</p> <p>dombrowskyr@comcast.net</p>

CIMO Pilot Project Implementation Plan

OVERARCHING IMPLEMENTATION PLAN FOR THE CIMO WIGOS PILOT PROJECT

BACKGROUND

The purpose of WIGOS is to create an organizational, programmatic, and procedural and governance structure that will significantly improve the availability of observational data and products and which will provide a single focus for the operational and management functions of all WMO observing systems as well as a framework for interacting with WMO co-sponsored observing systems. It is anticipated that Integration will lead to efficiencies and cost savings which can be reinvested to overcome known deficiencies and gaps in the present structure.

The goal of the WMO is to aggressively and continually infuse science and technological advances to improve products and delivery of services that best meet and anticipate customer needs of its global Members. Sound science and innovative technologies are the foundation of WMO Member services. Improving products and services to meet current and future customer needs is critically dependent on providing sound information and techniques as Members build a well trained work force through the continual infusion of new and proven scientific ideas and technological systems.

By way of WIGOS the WMO will become better positioned to take advantage of emerging applications and technologies to work with its partners in addressing global challenges for the betterment of Nations and the world. As the WMO becomes better poised with the tools, capabilities, and partnerships it can then seize the opportunity to address the many emerging global water, weather, and climate issues affecting the international community.

SCOPE

This plan addresses the activities and organizational responsibilities required to successfully implement CIMO target capabilities within the framework of WIGOS. The overarching aim of WIGOS is to provide a sustainable framework to bring improvement in operations to its Members and partners. The focus of this thrust is to utilise an integrated approach by supporting WMO Member national mandates including, response to natural hazards, environmental monitoring, adaptation to climate change and man-made environmental impacts. This approach is consistent with the decision of the Fifteenth WMO Congress concerning enhanced integration between WMO Observing Systems and the WMO Strategic Plan.

The framework of WIGOS is built around three key areas of integration; the standardisation of instruments and methods of observation, development of a common data and information distribution infrastructure (WIS), and establishment of a common quality management framework. CIMO is considered by the WMO as one of several crosscutting organisations within the WMO. In this capacity CIMO will play a major role in the success of WIGOS as it leads the effort in bringing about standardisation of instruments and methods of observation. Within the WIGOS framework CIMO will:

- work to better understand and apply technology and science, in the art of obtaining observational data;
- improve the use, integration, quality, and cost effectiveness of observations;
- work more closely with partners, academia and the private sector;
- openly exchange information and ideas while assisting Members and partners in establishing standards and traceability across all WIGOS instruments and systems;
- better serve WMO Members and partners by building on the existing knowledge base and best practices of Members and partners in the establishment of globally accepted standards;
- assist other WMO Commissions and programmes in the delivery of better products and services by capitalising on technical and scientific advances;
- support national and international education efforts and technology transfer programmes;

- support improved accessibility and availability of weather, water, and climate data and information to WMO Members and partners;
- support efforts in reducing the time required to implement proven research and technology into operations, and
- work with Members and partners in establishing experimental test beds to accelerate the infusion of new science and technology into the forecast process.

CIMO DELIVERABLES: CIMO will, at the request of pilot and demonstration projects, apply the aforementioned activities in delivering services to WMO Commissions, programmes, and WIGOS partners. This will be accomplished through newly drafted Terms of Reference (TOR) which will be tested during the validation period for WIGOS/WIS. The draft TOR were developed by the CIMO Ad-hoc WG on the WIGOS Pilot Project, in consultation with other WMO Commission and programme representatives to insure that CIMO was consistent with the goals of WIGOS and operated in an efficient manner within the WIGOS framework. If through the proof of concept process the draft TOR are deemed worthy of consideration by Congress, CIMO will submit a formal request that the draft TOR be accepted and implemented.

Deliverable 1: *Reaching out to Partners* – CIMO will reach out and initiate a dialogue with each of the pilot project teams and respond to requests from demonstration projects to begin the process of determining whether CIMO target capabilities and experiences with instruments and methods of observation could assist other WIGOS projects in meeting their project needs and goals. More effective outreach to our partners is highly dependent on the draft TOR developed by the CIMO Ad hoc working on the WIGOS Pilot Project. The draft TOR will be presented to other technical commissions for review and comment.

Deliverable 2: *Active Participation in WIGOS Project Planning and Implementation* - Collaborate with pilot and demonstration projects in identifying CIMO target capabilities required for achieving targeted goals and deliverables of each respective project.

Deliverable 3: *Meeting Partner Expectations* – Once CIMO target capabilities are integrated into the various project implementation plans CIMO will designate experts to assist each project providing technical expertise necessary to the successful completion of activities and tasks related to each individual pilot and demonstration project within its capacities. CIMO remains poised to take on additional requests for support from the remaining pilot and demonstration projects. As additional requests are received, the CIMO MG will respond on a case by case basis to each request. If approved a CIMO expert will be assigned to assist each respective project management team. This will require each implementation plan to be updated as needed.

PROJECT MANAGEMENT - This WIGOS Pilot Project is projected to be funded by the WMO until the end of 2010. By this date, all projects will need to show that a significant number targeted deliverables have been met or that developments have started and plans and commitments are being made by Members to see the project to fruition. The precise timing of when deliverables will be met remains difficult to identify due to uncertainties such as available resources. This will become clearer as their implementation proceeds. The timetable listed in the Annex 1 is less precise than it could be, however, it targets due dates for completion.

The CIMO Pilot Project Manager will monitor and track CIMO actions and tasks in support of WIGOS pilot and demonstration projects requesting CIMO support utilizing its range of targeted capabilities. The PP Manager will also prepare all relevant reports as to the status of the activities for which CIMO has responsibility or is an active participant.

CAPACITY-BUILDING where applicable - In terms of Capacity Building, the Pilot Project will focus on assisting partners in the development of training materials and their delivery. Training would encompass such topics as metrology, technology transfer and capacity building activities in the field of instruments and methods of observation through technical conferences and training workshops.

ANNEX I
ACTION ITEMS AND RELATED SUB-TASKS OF THE CIMO PILOT PROJECT

Deliverable 1: Reaching out to Partners

Responsibility	Actions and related Sub-Tasks	Due Date	Status / Comments	Cost
CIMO MG and CIMO WIGOS Ad-hoc Working Group	Action 1.1: Conduct the initial meeting of the Ad-hoc WG and prepare the planning and implementation of the CIMO PP.	4 th Qtr 2008	All ad-hoc planning meetings have been attended and the only pilot projects requesting assistance from CIMO are JCOMM/IODE and AMDAR. (This action has been completed for pilot projects)	16K CHF
	Sub-tasks:			
CIMO Ad-hoc Working Group	1.1.1 Develop TOR which will apply to the operations of CIMO under the framework of WIGOS.	1 st Qtr 2008	(Action Completed)	6K CHF
CIMO President and CIMO PP Program Manager	1.1.2 Present the draft TOR to the PTC and other PP meetings for review and comment.	3 rd Qtr 2008	(Action Completed)	-0-
CIMO MG and CIMO Ad-hoc PP Working Group	1.1.3 Finalize draft TOR after reviewing all comments submitted. Following review of comments final editing will take place at CIMO MG-6 to be held in St. Petersburg, Russia.	4 th Qtr 2008	(Action Completed)	6K CHF
CIMO MG and Ad-hoc Working Group	1.1.4 Meeting of the CIMO WIGOS Ad-hoc working group to refine details of the CIMO WIGOS PP and prepare the project template for the WIGOS Program Office.	1 st Qtr 2008	Template prepared and a draft set of CIMO TORs reflecting CIMO operations within the WIGOS framework as well as identifying CIMO representatives to responsible for the CIMO PP. (Sub-task is in the final phases of completion)	2K CHF
CIMO Pilot Project Manager	1.1.5 Make contact with the various demonstration projects to identify whether they require CIMO assistance.	1 st Qtr 2009	The CIMO MG has identified which projects might require CIMO assistance. (Sub-task In Progress)	2K CHF
CIMO MG and Ad-hoc Working Group	1.1.6 The Secretariat will work through the WIGOS program office to extend an offer of assistance to the identified demonstration projects and any newly	2 nd Qtr 2009	Support for the initial pilot projects has been identified, however not all newly requested pilot and demonstration projects have been approved by the WIGOS Program Office. Once	-0-

	approved pilot project proposals.		approved CIMO will address any requested support actions. The Secretariat was tasked by the MG to send letters to all new projects requesting they notify CIMO as to any CIMO related support requirements.. (Sub-task in progress)	
CIMO MG	1.1.7 Identify all additional CIMO experts needed to fill support roles in future proposed projects. Following their identification CIMO will make arrangements for supporting the identified projects and make arrangements for their participation. This will require updating of the Implementation Plan.	2 nd Qtr 2009	(Sub-task in Progress)	-0-

Deliverable 2: Active Participation by CIMO in Project Planning

Responsibility:	Actions and related Sub-Tasks:	Due date	Status/Comments	Cost :
CIMO Pilot Project Manager	Action 2.1: Attend ad-hoc planning sessions for each of the pilot projects and requested demonstration projects.	2 nd Qtr 2009	All initial PP activities have been completed, demonstration and newly accepted PP need to be contacted.	TBD
	Sub-tasks:			
CIMO Pilot Project Manager	2.1.1 Attend planning sessions of the WIGOS pilot projects and all relevant demonstration projects either through attendance or an agreed upon correspondence method.	4th Qtr 2008	March 25-27 Attended GAW/GOS WIGOS planning session and came away with no firm tasks for CIMO. March 29 Attended the JCOMM/IOE planning session and came away with a number of support tasks and activities as noted in deliverable 3. July 2-3 Participated in the AMDAR planning session and came away with a number of support tasks and activities as noted in deliverable 3. The status of the Chy PP remains uncertain as of the end of the 4 th Qtr of 2008. (Task pending need to complete contacting demonstration projects and newly proposed pilot projects)	TBD
Responsible CIMO representatives	2.1.2 Upon request attend demonstration project planning sessions to identify if CIMO target capabilities were needed to assist in the implementation of the DP.	3 rd Qtr 2009	(Action pending)	6KCHF
CIMO President and/or CIMO Pilot Project Manager	2.1.3 Annually participate in WIGOS Subgroup working sessions	Annually 2007-2010	President will chair the Subgroup sessions (Action on-going) PP Manager will represent CIMO and report on the status of the PP to the Subgroup chair. (On-going)	Annual estimate of 6K CHF
CIMO President and/or designated representative	2.1.4 Attend or designate a CIMO representative to attend annual EC-Working Group on WIGOS/WIS sessions	Annually 2007-2010	(Action on-going)	8K CHF
CIMO President and/or designated representative	2.1.5 Attend all other WIGOS related meetings and conferences.	Annually 2009-2011	First such meeting is the CBS sponsored Technical Commission meeting on WIGOS (Actions Pending)	TBD

Deliverable 3: Meeting Partner Expectations

Responsibility	Actions and related Sub-Tasks	Due Date	Status/Comments	Cost
	Action 3.1: JCOMM/IODE Support	4 th Qtr 2010	(On-going)	
	Sub-tasks:			
Rapporteur on the CIMO Guide and Dr. Teng NDBC/NOAA	3.1.1 Review and coordinate changes to the marine chapter of the CIMO Guide. (JCOMM/IODE Action 1.1 subtask 1.1.5)	2 nd Qtr 2009	Review has been completed and coordination with the Secretariat and rapporteur on the CIMO Guide is pending. (Action on-going)	TBD
Rapporteur on the CIMO Guide and Dr. Teng NDBC/NOAA	3.1.2 Work with JCOMM/IODE to determine which new materials are appropriate for entry into the CIMO Guide. (JCOMM/IODE Action 1.2, subtask 1.2.3)	2 nd Qtr 2009	Review of candidate materials is on-going. (Action on-going)	TBD
Rapporteur on the CIMO Guide and Dr. Teng a representative of the ET on Regional Instrument Centres NDBC/NOAA	3.1.3 Coordinate with WMO and IOC representatives to determine and prepare agreed upon materials for inclusion to the CIMO Guide. (JCOMM/IODE Action 1.3, subtask 1.3.2)	1 st Qtr 2009	Update awaiting review of candidate materials. Cost of the updates to the guide still to be determined. (Action pending)	TBD
Rapporteur on the CIMO Guide and Dr. Teng NDBC/NOAA	3.1.4 Coordinate with IODE/JCOMM on the development of a IODE/JCOMM Standards Process. (JCOMM/IODE Action 1.3, subtask 1.3.3)	2 nd Qtr 2009	(Action on-going)	TBD
Rapporteur on the CIMO Guide and Dr. Teng NDBC/NOAA	3.1.5 Collect and reconcile differences in standards for inclusion into the CIMO Guide. (JCOMM/IODE Action 1.3, subtask 1.3.4)	3 rd Qtr 2009	(Action pending) Cost of the updates to the guide still to be determined.	TBD
R. Dombrowsky, a representative of the ET on RICs and Dr. Teng NDBC/NOAA	3.1.6 Develop a proposal for the creation of Ocean Instrument Centres; to include Terms of Reference to be presented at the OCG meeting. (JCOMM/IODE Action 1.4, subtasks 1.4.1 -1.4.5)	1 st Qtr 2009	(Action on-going) The initial draft of TOR for a Regional Marine Instrument Center has been submitted to JCOMM as well as a proposal for consideration of the JCOMM/IODE Steering Group. The next step is to seek OCG concurrence which will be followed by establishment of a demonstration to be conducted by NOAA's National Data Bouy Centre	TBD
R. Dombrowsky, a representative of the ET on RICsand Dr. Teng	3.1.7 Following OCG agreement to the proposal, identify potential Ocean Instrument Centres and select one of the	2 nd Qtr 2009	(Action pending)	TBD

NDBC/NOAA	candidate centres as the initial demonstration prototype. (JCOMM/IODE Action 1.4, subtask 1.4.2)			
R. Dombrowsky, a representative of the ET on RICs and Dr. Teng NDBC/NOAA	3.1.8 Prepare and present a report on the project. (JCOMM/IODE Action 1.4, subtask 1.4.3)	1 st Qtr 2010	(Action pending)	TBD
R. Dombrowsky and IODE Program Office	3.1.9 Review documentation on standards and best practices of contributors to this project. (JCOMM/IODE Action 1.4, subtask 1.44)	1 st Qtr 2009	(Action pending)	TBD
R. Dombrowsky as a member of the Steering Group	3.1.10 CIMO participation on the JCOMM/IODE Steering Group.	Annually 2008-2010	At the request of the JCOMM/IOC ad-hoc working group CIMO will be represented on the JCOMM/IODE Steering Group as a co-chair. CIMO will be an active member through the project. (Action On-going)	TBD
R. Dombrowsky	3.1.11 Assemble the documentation on standards and best practices of contributors to this project and recommend where such materials should be stored and how this should be accomplished. (JCOMM/IODE Action 3.1, subtasks 3.1.3 – 3.1.5)	3.1.3 4 th Q 2008 3,1,4 1stQ 2009 3.1.5 3 rd Q 2009	(Action Pending , but some work has begun) (Action Pending) (Action Pending)	TBD
R. Dombrowsky	3.1.12 Participate in the organization of documentation as referenced in action 3.1.11 and also determine the most appropriate location for the identified documentation to be held, between the IODE OceanTeacher, WIGOS website and <i>CIMO Guide</i> . (JCOMM/IODE Action 3.3, subtask 3.3.2)	3 rd Q 2009	(Action Pending)	TBD
CIMO Guide Rapporteur	3.1.13 Assemble the documentation or references that describe data management procedures carried out at MCSS centres and at NODCs that contribute to this Pilot Project. There is also material in IOC	2 nd Q 2009	(ACTION Pending)	TBD

	Manuals and Guides and other such publications that are relevant and should be considered. JCOMM/IODE Action 3.4, subtask 3.4.4)			
R. Dombrowsky as a member of the Steering Group	3.1.14 Refine the business plan and initiate a cost / benefits analysis. (JCOMM/IODC Action 4.1, subtasks 4,1,1 abd 4,1,2)			
R. Dombrowsky as a member of the Steering Group	3.1.15 Project management: Steering Group Reports, Presentations and Meetings. Action 4.3, subtasks 4.3.1, 4.3.3, 4.3.5, 4.3.7. 4.3.9 and 4.3.10).	As Required	(Actions Pending)	TBD
CIMO Capacity Building Representative	3.1.16 Address capacity-building Issues according to the guidelines provided within the JCOMM/IODE document. Action 5.1, subtask 5.1.3)	3 rd Q 2009	(Actions Pending)	TBD
R. Dombrowsky as a member of the Steering Group	3.1.17 Address legacy issues in the view to make proposals for the WMO Cg-XVI through the WMO EC WG on WIGOS-WIS and its sub-group, as appropriate. Action 6.1, subtasks, 6.1.1, 6.1.2, and 6.1.3,	End of 2010	(Subtask 6.1.1 is on-going and the remaining subtasks are pending)	TBD

Responsibility	Actions and Related Sub-Tasks	Due Date	Status/Comment	Cost
	Action 3.2: AMDAR Support	4 th Qtr 2010	(On-going)	
	Sub-tasks:			
D. Helms, M. Stoll and Jitze v. d. Meulen,	3.2.1 Assist in the development of a standard BUFR template for AMDAR. (AMDAR Sub-task number 1, actions 1 and 2)	1 st Qtr 2009	(Action on-going)	TBD
D. Helms, M. Stoll	3.2.2 Assist in creation of examples and best practice guides for inclusion in the AMDAR Reference Manual and relevant CIMO documents. (AMDAR Sub-task number 2, action number 4.	4 th Qtr 2009	(Action on-going)	TBD
D. Helms	3.2.3 Prepare for validation and preparation for intercomparison of available Water Vapour sensor performance (AMDAR Sub-task number 4, action number 1).	2 nd Qtr 2009	(Action pending)	TBD
CIMO ET- UA2 Upper-air testing and intercomparison	3.1.4 Organize preparatory meeting to define the rules and procedures for the intercomparison of AMDAR and other upper-air data. (AMDAR Sub-task number 4, action number 2)	3 rd Qtr 2009	(Action pending)	40,000 CHF
CIMO ET- UA2 Upper-air testing and intercomparison	3.1.5 Take part in the WMO Radiosonde Intercomparison, China, 2010. (AMDAR Sub-task number 4, action number 3)	CY 2010	(Action pending)	200,000 CHF
D. Helms, M. Stoll, CIMO Guide Rapporteur	3.1.6 Update to both technical and scientific components of the AMDAR Reference Manual and propose changes to the <i>CIMO Guide</i> . (AMDAR Sub-task 2, action 4.	3 rd Qtr 2009	(Action pending)	TBD
Jitze v. d. Meulen,	3.1.7 Assist in the development of a Quality Framework and procedure in support of high quality AMDAR Data to users. (AMDAR Sub-task number 3, actions 1, 2 and 3)	3 rd Qtr 2009	(Action pending)	TBD