

THORPEX: A GLOBAL ATMOSPHERIC RESEARCH PROGRAMME

(Submitted by WMO)

Summary and purpose of document

To inform CGMS Members on the status and activities of the THORPEX and seek CGMS involvement in THORPEX through the naming of a Rapporteur

ACTION PROPOSED

- (1) CGMS Members to note the status of THORPEX.
- (2) CGMS Members to nominate Rapporteur to the THORPEX ICSC

REFERENCES: Terms of Reference and a more complete description of THORPEX may be accessed via Internet at the following address: <http://www.wmo.int/thorpex>

DISCUSSION

Background

1. THORPEX was established in May 2003 by the Fourteenth World Meteorological Congress (Resolution 12) as a ten-year international global atmospheric research and development programme under the auspices of the WMO Commission for Atmospheric Sciences (CAS). THORPEX is a component programme of the WMO World Weather Research Programme (WWRP).
2. THORPEX: A Global Atmospheric Research Programme is an international research and development programme to accelerate improvements in the accuracy of 1 to 14 day weather forecasts and longer range seasonal forecasts for the benefit of society and the economy. The programme builds upon ongoing advances within the basic-research, climate research and operational-forecasting communities, and will make progress by enhancing international collaboration between these communities and with users of forecast products. It will also play an important role in the development of the GEOSS.
3. At CGMS-XXXII WMO-WP 28 informed CGMS Members on the status and activities of THORPEX and sought CGMS involvement in THORPEX. CGMS Members requested representation in observer status on the THORPEX ICSC.
4. At CGMS-XXXII, Members agreed to contribute to development of the THORPEX Implementation plan in coordination with the WMO Space Programme.

Some recent developments in THORPEX

5. THORPEX is developing a global, multinational, multi-model ensemble weather prediction system (TIGGE – the THORPEX Interactive Grand Global Ensemble). The forecasts will be held in TIGGE Data Centres, established initially in China (CMA), Europe (ECMWF) and the USA (NCAR). It is expected that the data bases will begin to be populated from early in 2006.
6. As a significant contribution to the International Polar Year (IPY) THORPEX has submitted a cluster of related projects involving some 18 institutions and 16 countries. The primary activity proposed is the development of improvements to numerical weather forecasting and climate simulations by the exploitation of in-situ, airborne remote-sensing and satellite data, advanced modelling systems and basic research into polar processes and into global-polar interactions. The field activities are likely to take place in the Arctic, Antarctic and the Pacific Ocean.
7. Many groups are actively studying the results from the first THORPEX Regional Field Campaign conducted in the Atlantic during the autumn of 2003. It should be possible to draw some general conclusions about the value of targeted data to numerical model from this work. Further campaigns are being planned - in Asia to improve forecasting of Tropical Cyclone Tracks, in Europe to address summertime high impact weather events and in N. America to consider convection over the tropical warm pool and tropical – mid-latitude interactions.
8. A proposal for THORPEX and the WCRP to jointly develop a unified global weather and climate prediction system for one day to one season forecasting has been prepared. Such a unified system would contribute to the design and implementation of the aspects of the GEOSS that satisfy the observational requirements spanning short-term weather forecasts and the prediction and assessment of climate variability and change.
9. On the organisational side THORPEX has established an Executive Board, responsible for the day-to-day management of the Programme on behalf of the ICSC. It will coordinate programme activities and ensure delivery of the Programme in accordance with the

Implementation Plan. North American, European and Asian Regional Committees are also in operation and are developing Regional Plans and inter-regional activities. A series of working groups have been set up to consider issues such as observation systems and strategies, data assimilation, economic and societal benefits, predictability etc., on a global basis.

Relevance of THORPEX to CGMS

10. THORPEX is an exceptionally important International programme in which satellite observations will play a major role. The programme's success will help ensure optimal utilization of satellite data across forecast scales from 1 day to two weeks and into the seasonal and possibly inter-annual time-scales. Results from THORPEX will help guide the utilization of satellite data and help define the future role of satellites as part of an increasingly integrated and optimised Global Observing System. Information gleaned from THORPEX will thus help guide the future development of satellite systems.

11. To ensure maximum realization of satellites potential as a part of the THORPEX program, CGMS previously requested observer status on the THORPEX ICSC and to contribute to the THORPEX planning in coordination with WMO Space Programme.

THORPEX Response to CGMS request for observer status on ICSC

12. In September 2004, Dr Elena Manaenkova (the Director responsible for THORPEX within WMO), provided the following information with respect to the CGMS XXXII request: "I am pleased to inform you that with concurrence of the President of CAS and the WMO Secretary General the Coordination Group for Meteorological Satellites (CGMS) joined the ICSC as observer."

13. CGMS now needs to appoint a Rapporteur to undertake this activity.