



THORPEX PROGRESS REPORT

March 2008

1. Introduction

THORPEX, an element of the WMO World Weather Research Programme, is a major contribution to the WMO Natural Disaster Reduction and Mitigation Programme. Under the auspices of THORPEX, regional and global projects and experiments will be carried out to

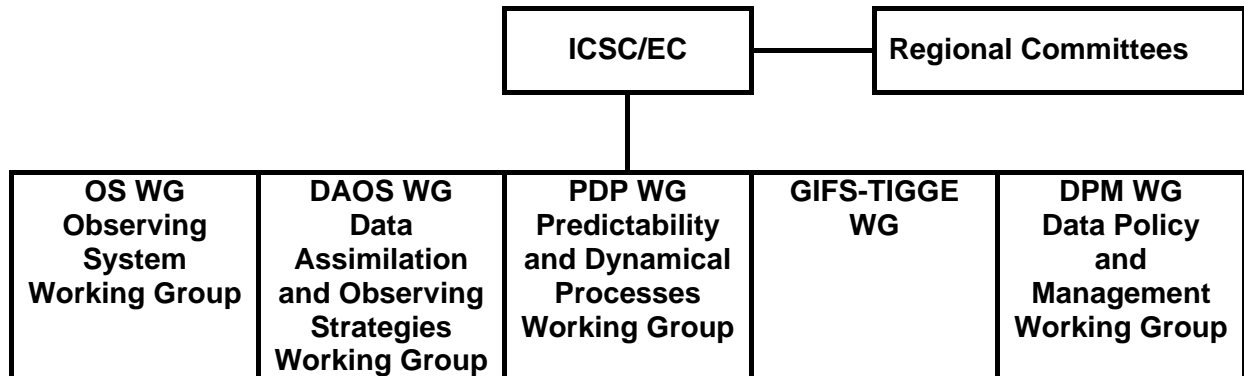
- improve forecast skill by advancing the knowledge of global-to-regional influences on the initiation, evolution and predictability of weather systems
- target satellite and in situ observations to design the strategy for interactive forecasting and observation, thus contributing to the evolution of the WMO Global Observing System (GOS), a core component of the Global Earth Observation System of Systems (GEOSS)
- to create and evaluate systems for the assimilation of targeted observations from satellites and in situ measurements
- accelerate improvements in the accuracy of numerical weather prediction, probabilistic forecasting and the description of uncertainty in initial conditions
- test and demonstrate the effectiveness of a global multinational multi-model multi-analysis ensemble forecasting system
- demonstrate societal and economic benefits of improved forecasts, by improving decision-support tools, which utilize advanced forecasting products to benefit directly social and economic sectors

The THORPEX International Science Plan was published in November 2003 and this was followed by a THORPEX International Research Implementation Plan in December 2004 (both plans are available on www.wmo.int/thorpex/plans.html).

The THORPEX International Programme Office (IPO) and the international programme activities are supported through voluntary contributions of the governments of the WMO Members participating in THORPEX, including donations to the THORPEX Trust Fund established by WMO. The Director of THORPEX IPO, and the THORPEX Working Groups and Regional Committees, report to a THORPEX International Core Steering Committee (ICSC).

The sixth meeting of the THORPEX International Core Steering Committee (ICSC 6) took place in Geneva (25 to 27 March 2007) and the report from ICSC 6 is available on the THORPEX website (www.wmo.int/pages/prog/arep/thorpex/documents/ICSC-6.pdf) or as document (WMO/TD No. 1389; WWRP/THORPEX No. 8).

At ICSC 6 it was agreed that the Chief of the WWRP would assume the responsibility for directing the THORPEX IPO. In addition, the Executive Board (EB), the Science Advisory Board (SAB) and the Technical Advisory Board (TAB) were disbanded, the ICSC was reconstituted and an Executive Committee (EC) was established. This resulted in the following simplified structure for the THORPEX element of the WWRP.



The membership of these Working Groups is listed in annex I below. The original Societal Economic Research and Applications Working Group (SERA WG) had already been moved by the CAS to the WWRP to serve the interests of the whole WWRP including THORPEX.

The first meeting of the Executive Committee took place in Geneva on 7 February 2008 and the progress and plans reported below are summaries of reports submitted to the Executive Committee. The agenda for the Committee meeting and the Actions and Decisions are set out in annexes II and III.

2. Regional Activities

Regional THORPEX Committees, coordinate activities of regional groups of nations. Currently, there are Regional Committees and Regional Plans for North America (2002), Asia (2003), Europe (2003) and the Southern Hemisphere (2006). The most recent progress reports from the Regional Committees may be found on www.wmo.int/pages/prog/arep/thorpex/7_ec_meeting.html

The most recent effort has been to develop an African (RA I) Plan for THORPEX and to establish an African Regional Committee for THORPEX activities.

The first THORPEX Africa planning meeting was held in February 2007 in Ouagadougou where the THORPEX Africa Task Team was established with a mandate to revise the draft THORPEX Africa Science and Implementation plan.

The second Africa planning meeting which was held in Karlsruhe (23 to 24 November 2007) provided the opportunity to present and discuss the revised THORPEX Africa Science Plan, to review the Implementation activities (feasibility, priority, timeline, resources, etc), identify stakeholders to establish a the Regional Committee.

During the coming year the African Regional committee will:-

- Complete the implementation plan
- Seek endorsement of the THORPEX AFRICA science and implementation plans to NMHS and research institutes via WMO
- Allocate responsibility for each THORPEX Africa related project

- Disseminate the plans to a wider community
- Build partnerships and mobilize resources for implementation
- Monitor, facilitate implementation and prepare progress reports for WMO

Activities

The four established Regional Committees are making contributions to the work to build and maintain the THORPEX Interactive Grand Global Ensemble (TIGGE) data-base (section 4.1), to the planning of the Year Of Tropical Convection (YOTC) campaign, and the three northern hemisphere regions have made major commitments to the TPARC observation field campaign (section 4.2) which will take place in two phases (1 August- 6 October) 2008 and January-March 2009.

All the regional committees are involved in overseeing and contributing to the management of research activities, including societal research on the applications of weather forecasts, and in efforts to implement mature techniques into operational practice. A great deal of the work on regional data assimilation strategies and the deployment of targeted observations is now carried out under the auspices of THORPEX.

3. THORPEX Working Groups

The second meeting of the THORPEX Observing Systems Working Group (OS WG) took place in Louisville, Colorado, from May 2-4, 2007. A full report from this meeting may be found at www.wmo.int/pages/prog/arep/thorpex/7_ec_meeting.html as will a major review of the state of the Chinese Observing network which the OS WG carried out. Shorter progress reports from three of the other working groups are also available on this site. A summary of progress with TIGGE is given in section 4.1 below and brief summaries the PDP and DAOS reports follow.

The PDP WG has prepared, for the BAMS, an overview of a selection of key PDP research topics based upon the summary reports from the eight PDP Interest Groups. The full reports will be published in the THORPEX report series. Members of the working group have been involved with the preparation of TPARC, planning for the YOTC, HyMeX and T-NAWDEX (a field campaign envisaged by the European regional committee).

Following the Reading Workshop held in March 2006, the DAOS-WG was asked to:

- to coordinate with the OSWG to clarify how the THORPEX activities could contribute to the mandate given to the Expert Team on the Global Observing System (ET-GOS),
- to promote the activities of the DAOS-WG through presentations at comprehensive meetings,
- to create an interest group approach to help engage academics in Data Assimilation,
- to promote research activities to better understand the value of adaptive observations in observation campaign. In particular, provide input and guidance for the organization of the THORPEX Pacific-Asia Regional Campaign (TPARC) (this relates also to adaptive thinning and the evaluation of impact of observations),
- to address special issues and problems of data assimilation in the Tropics, and
- to use high resolution sub-sets from TIGGE should be used to support studies of model error

During the last 18 months, the emphasis has been on the evaluation of the impact of observations in view of having more advanced reliable ways to make statements on the optimality of the observing networks. There will be a lot activity on TPARC associated with targeted observations, use of targeting information to improve the use of satellite data (adaptive thinning). The data from the AMMA campaign have not yet been fully analyzed but this is planned by several Centres and this will help address the problems associated with data assimilation in the Tropics. In relation to the International Polar Year, data assimilation activities are also taking place in the context of the THORPEX-IPY cluster for both the Polar Regions to improve the assimilation of satellite data over these data-sparse regions.

Working Group members have also been involved with the *WMO WWRP-THORPEX Workshop on 4D-Var and Ensemble Kalman Filter Intercomparisons* to be held in Buenos Aires, Argentina (10-13 November 2008) and preparations for the *5th WMO Symposium on data assimilation in meteorology and oceanography* to be held in Melbourne in 2009.

4. Major international projects and campaigns

4.1 TIGGE

The THORPEX Interactive Grand Global Ensemble (TIGGE) is a key component of THORPEX which in turn is a major component of the World Weather Research Programme (WWRP) of the World Meteorological Organization. A key goal of WWRP-THORPEX is to accelerate improvements in the accuracy of 1-day to 2-week high-impact weather forecasts.

The highest priority data accumulated in the TIGGE archive are the ensemble forecasts generated routinely (operationally) at major forecast centres around the world. This core data stored in the TIGGE archive is accumulating at a daily rate of approximately 300GB from ten providers around the world. Additional special datasets will be added in the future for specific research and applications.

The TIGGE project is developed under the leadership of the GIFS-TIGGE Working Group, under THORPEX. Phase I databases are developed by three archive and distribution centres, ECMWF, the US National Centre for Atmospheric Research and the China Meteorological Agency. The operational forecasting centres supplying daily forecasts are:- BMRC (Australia), CMA (China), CPTEC (Brazil), ECMWF, JMA (Japan), KMA (Korea), Meteo-France, MSC (Canada), NCEP (USA), and Met Office (UK). In addition, the TIGGE web site is maintained by ECMWF, the meta-data centre by NCAR, and the verification web by JMA. The WGNE/WWRP joint working group on verification advises the project on verification methodology. In addition the WMO Expert Team on Ensemble Prediction Systems advises the project on a number of issues, for instance, metadata formulation.

TIGGE has strong links with the North American Ensemble Forecasting System (NAEFS). Although NAEFS is initially an operational project, TIGGE and NAEFS share many technical aspects, and NAEFS plans to implement results from TIGGE. It is believed that TIGGE and the NAEFS will ultimately evolve into a single operational system.

TIGGE is registered as GEO Task WE-06-03. It has general relevance to GEO societal benefit areas that will benefit from access to advanced multi-model global weather forecasts and the derived products, especially in areas related to risk management, disaster mitigation, energy, health etc.

TIGGE Users

It is expected that TIGGE will accelerate meteorological research at large and in particular the scientific programmes of WWRP-THORPEX. Much of this research will be conducted in Universities and other academia.

The forecast demonstration projects of WWRP-THORPEX (e.g. Beijing 2008 FDP/RDP or the sand and dust-storm project), TPARC, the future field campaigns on adaptive observations and the IPY projects will be active users of TIGGE. This research will, in turn, lead to targeted applications reducing societal risk to severe weather through better forecasts (health, energy, flood warning, fire weather, etc. The hydrological community (e.g. through HEPEX) is also expected to be a strong user of TIGGE data.

Current status of the TIGGE database

A complete list of data requested from the data providers can be found at the TIGGE Internet site <http://tigge.ecmwf.int> .

All ten providers are delivering data, with initial dates varying from Autumn 2006 to Autumn 2007. The archive length is therefore reaching one year in some cases.

Access to TIGGE data for research and education

Data providers supply their products to the TIGGE archive centres under an agreed set of rules, which include re-distribution rights. Access is provided for Research & Education through a simple electronic registration process, with valid e-mail address and acknowledgment of conditions of supply. Under the simple registration process, access is given with a delay (48 hours) after initial time of the forecast. Real-time access is granted in some cases, e.g. for field experiments and projects of special interest to THORPEX. Registration for real-time access is handled via the THORPEX IPO.

Data access is operated via the TIGGE data portals. The NCAR portal URL is: <http://tigge.ucar.edu> and the ECMWF portal URL is <http://tigge-portal.ecmwf.int/>. The CMA portal is also available now and the URL is <http://wisportal.cma.gov.cn/tigge/>. The current functionalities of the data portal are (i) registration; (ii) Search, discover, and download files; (iii) Select data by initialization date/time, data provider, file type and forecast time; (iv) Check volume and download data. Both portals also provide selection of parameter subsets. ECMWF offers grid interpolation and a limited amount of spatial sub-setting. NCAR plans to offer these expanded services in the future

Outlook

TIGGE is paving the way towards a Global Interactive Forecasting System (GIFS). Currently users can access TIGGE data with a delay of 12 to 18 hours, which make them unsuitable for some applications. A phased approach will be necessary to resolve this issue. In the upcoming Phase 2 of TIGGE, which is still subject to funding, requirements for massive data transfers will be alleviated by the distributed archive concept. Later on, it will be necessary to rely on dedicated telecommunication lines to realize the full benefits of the system.

It is also anticipated that limited-area ensemble prediction systems will also form an important component of the Global Interactive Forecasting System, GIFS whose development is dependent upon TIGGE. The priority requirement here is to develop standard formats enhancing the interoperability of the existing systems. One key objective is to facilitate the use of lateral boundary conditions from various global systems by various

limited-area systems. A panel of experts called TIGGE-LAM has recently been set-up to organize the limited-area-model component of TIGGE.

4.2 THORPEX Pacific Asian Regional Campaign (TPARC) 2008

The concept of a THORPEX Pacific Asian Regional Campaign (TPARC) 2008 developed as a result of a workshop held in Seattle in June 2005 and the subsequent continuing dialogue between the North American, Asian and European THORPEX Regional Committees. The campaign, to advance understanding and prediction of tropical cyclone genesis, intensity, track and structures, extra-tropical transitions, and down-stream propagation, is planned for the second half of 2008 and coincides with the IPY and with the efforts to take additional measurements in support of the Beijing Summer Olympics (including Asian measurements in the vicinity of typhoons and over the Asian continent). Collaboration has also been arranged with the teams working on the South West Monsoon experiment (SoWEX), the Korean Heavy Rainfall Programme and the WWRP Monsoon programme.

Another element of the campaign, Winter TPARC, will investigate adaptive measurement strategies within the context of propagating Rossby waves and will continue the campaign to March 2009.

The field campaigns for this summer/autumn phase of TPARC will provide monitoring and evaluation of initial tropical convection cloud clusters through to genesis, further development, structure change, re-curvedure, track prediction and land-fall, extra-tropical transition. If successful this would represent the most comprehensive overall studies of the evolution of a individual systems ever achieved. TPARC provides a great opportunity to achieve major breakthroughs in understanding and predictability of tropical convection and the various phases of typhoon development and movement in the western Pacific Ocean.

Key aircraft facilities will include:

A US Air Force C-130
The NRL P-3, the DLR Falcon

Driftsonde gondolas will be deployed from Hawaii deploying dropsondes from stratospheric balloons operated by CNES, additional upper air profiles will be provided from Japanese ships and additional radiosondes launched from countries around the Pacific Rim and islands, together with additional data from buoys and from commercial aircraft (AMDAR). Digital weather radar data will be collected from various locations. Satellite data will form a major part of the observational data base, especially the rapid scan data from the Japanese MTSAT series.

4.3 European TReC (ETReC)

The **ETReC 2007** campaign took place over 5 weeks in July 2007, in conjunction with the meso-scale experiment COPS and the MAP D-PHASE forecast demonstration project (www.pa.op.dlr.de/cops/etrec_docs.html). Sensitive regions were calculated daily at Météo-France, ECMWF and the Universitat de les Illes Balears (Spain). Special observations were made for seven events, using combinations of the DLR Falcon with wind and water vapour lidars and dropsondes, and additional radiosonde and AMDAR measurements provided by EUCOS.

4.4 The Year Of Tropical Convection (YOTC)

The realistic representation of tropical convection in our global atmospheric models is a long-standing grand challenge for numerical weather prediction and climate projection. To address this challenge, WCRP and WWRP/THORPEX propose a Year of coordinated observing, modelling and forecasting of organized tropical convection and its influences on predictability as a contribution to the United Nations Year of Planet Earth to complement the International Polar Year (IPY).

This effort is intended to exploit the vast amounts of existing and emerging observations, the expanding computational resources and the development of new, high-resolution modelling frameworks, with the objective of advancing the characterization, diagnosis, modelling, parameterization and prediction of multi-scale convective/dynamic interactions, including the two-way interaction between tropical and extra-tropical weather/climate. This activity and its ultimate success will be based on the coordination of a wide range of ongoing and planned international programmatic activities (e.g., GEWEX/CEOP/GCSS, THORPEX/TIGGE, EOS, GOOS), strong collaboration among the operational prediction, research laboratory and academic communities, and the construction of a comprehensive data-base consisting of satellite data, in-situ data sets and global/high-resolution forecast and simulation model outputs relevant to tropical convection.

The proposed timing, focus year (beginning on 1 August 2008) approach and integrated framework of this effort is intended to leverage the most benefit from recent investments in Earth Science infrastructure as well as entrain a new generation of young scientists into tackling the outstanding problems in the field of weather and climate prediction.

The first steps to establish the global data-base comprise:

- High-resolution (T799/25km grid) ECMWF analysis and deterministic forecast data complete with all relevant quantities
- An analogous data set from NCEP
- Modest enhancement of the routine TIGGE archive
- Selected quantities from multi-sensor satellite platforms

On behalf of the planning group requests are being formulated to obtain the approval in principle that ECMWF, NCEP and the TIGGE working group will make the above data available to YOTC. Significant progress has been made in discussions with ECMWF and similar discussions are underway with NCEP and the TIGGE working group.

4.5 The IPY-THORPEX project cluster

The IPY-THORPEX project cluster currently includes 10 individual IPY projects from nine countries with the following main objectives:

- Explore the use of satellite data and optimized observations to improve high-impact weather forecasts (for Polar THORPEX Regional Campaigns (TReCs) and/or provide additional observations in real-time over the WMO Global Telecommunication System
- Better understand physical/ dynamical processes in Polar Regions
- Achieve a better understanding of small -scale weather phenomena
- Utilize improved forecasts to the benefit of society, the economy and the environment
- Utilize the THORPEX Interactive Grand Global Ensemble (TIGGE) of weather forecasts for polar prediction

A Research and Implementation Plan has been written to help coordinate overall activities. The projects span a number of scientific issues from climate research to weather prediction.

In brief they comprise:

The Greenland flow Distortion Experiment - The focus is upon Greenland tip jets, air-sea interactions, barrier winds and meso-scale cyclones; the field campaign took place in February 2007 (Ian Renfrew, University of East Anglia, United Kingdom).

Storm Studies of the Arctic - Includes enhanced observations in the eastern Canadian Arctic, gap flow, air-sea interactions, orographic precipitation, interaction of cyclones with topography etc. (John Hanesiak, University of Manitoba, and Ron Stewart, McGill University, Canada).

Concordiasi - Infrared Atmospheric Sounding Interferometer (IASI) assimilation in the Antarctic, assimilation of dropsondes launched from driftsondes, polar processes, the circumpolar vortex, using IASI data for climate monitoring, stable boundary layers, polar clouds and ozone, etc. (Florence Rabier, Météo-France).

Norwegian IPY-THORPEX - Optimization of new satellite data, improved modelling of the latent heat cycle, extreme weather, improved operational NWP, ensemble simulations. (Jon Egill Kristjansson, University of Oslo, Norway).

THORPEX Arctic Weather and Environmental Prediction Initiative (TAWEPI) - Study of various aspects of Arctic weather and the Arctic climate system (snow processes, polar clouds, sea-ice and ozone layer); develop and validate a regional weather prediction model and the use of satellite observations over the Arctic. The research will be done in various Canadian provinces, through collaboration between government, universities and northern communities. The research will also improve science's understanding of the Arctic and its influence on world weather (Ayrton Zadra, Environment Canada).

Greenland jets - Will consider meso-scale flows, including orographic disturbances, meso-cyclones and surface fluxes. (Andreas Dornbrack, German Aerospace Centre).

GREENEX - Considers forecasting of small-scale weather phenomena, including extremes. Meso- and fine-scale flows in the vicinity of orography and sea ice and downstream weather development as well as scale interactions (Haraldur Olafsson, Iceland, in cooperation with the German Aerospace Centre).

Arctic Regional Climate Model Intercomparison Project - Targeted observations from the North Pole station over the Arctic Ocean; feedback between the planetary boundary layer and meso-cyclones; climate processes and feedbacks within the coupled Arctic climate system (Klaus Dethloff, Alfred-Wegener Institute, Germany).

Impacts of surface fluxes on severe Arctic storms, climate change and Arctic coastal orographic processes - Includes studies of storm activity in the western Arctic in the context of surface fluxes from changing ice, ocean and land-surface conditions. Studies of coastal ocean processes and assessment of severe weather and climate factors that can impact human communities (Will Perrie, Bedford Institute of Oceanography, Canada).

THORPEX Pacific Asian Regional Campaign (TPARC) - Includes studies of extra-tropical transition) and links between tropical/ mid-latitude and polar weather (David Parsons, National Centre for Atmospheric Research, USA).

IPY-THORPEX is supported by EUCOS and ECMWF, which will provide targeted runs and assimilate observations from field campaigns.

As can be seen, these activities are mainly focused on the Arctic region. CONCORDIASI however, has its focus on the Antarctic and one of its aims is to validate and improve the assimilation of Atmospheric Infrared Sounder/IASI satellite data in numerical models with emphasis on polar latitudes. Other important issues that will be investigated in IPYTHORPEX are the role of Greenland in terms of flow distortion and its effect on local and middle-latitude weather prediction, as well as the thermohaline circulation in the ocean; comparison of Arctic regional climate models; exploration of the use of satellite data and optimized observations to improve high-impact weather forecasts and improved understanding of physical/dynamical processes in polar regions with emphasis on small-scale weather phenomena.

5. Collaboration with GEOSS

The two main Tasks supported within the GEO framework are CL-07-01 and WE-06-03. These relate to *Seamless weather and Climate Prediction*, a major collaboration with the WCRP, and *TIGGE/TIGGE-LAM* respectively.

CL-07-01

A paper entitled *The Socio-economic Benefits of a Revolution in Weather, Climate and Earth System Prediction* was presented at the GEO Plenary IV in Cape Town. It was well received and will now be prepared for publication. Paper A entitled *Towards a seamless process for the prediction of Weather and Climate* is being finalised and will be reviewed by the WCRP JSC, the WWRP JSC and the WWRP-THORPEX ICSC. It is intended that a summary version of this paper will be prepared for publication in BAMS.

Two important activities associated with this initiative are currently underway.

The Year of Tropical Convection (YOTC) – reported in section 4.4 above

A World Modelling Summit for Climate Prediction (including aspects of Weather Prediction

The Summit will be hosted by the ECMWF during 6-9 May 2008 and will be sponsored by a wide range of international organisations. The Summit will review societal drivers, the current status of modelling and prospects for next generation prediction systems. It will also consider likely developments in high end computing, model evaluation and strategies for enhancing human and computing resources.

WE-06-03

A paper entitled *The THORPEX Interactive Grand Global Ensemble (TIGGE): Concept and Current Status* was written for the recent Summit publication. *The Full Picture*. A short article entitled *Ensembles of Global Weather Forecasts (TIGGE)* was prepared for the Annex of Early Achievements to the Report of Progress for the GEO IV Plenary. Again a full report of progress with the TIGGE project is given above (in section 4.1).

6. Future meetings

6.1 Mini Workshop and parallel meetings of the THORPEX Working Groups

A mini-Workshop followed by parallel meetings of the Working Groups is proposed for the week of the 22 to 26 September 2008 in the WMO Headquarters in Geneva.

The Working Groups will be invited to participate in a mini-workshop. Meetings of each working group would be an integral part of the workshop. In addition, all the Regional Committees will be invited to send representatives to the workshop and to participate in working group sessions. The Working Group co-chairs will be asked to comment and to provide input to the workshop and to prepare agendas for their working group sessions

The sketch plan and timetable for the workshop and the working group meetings is set out below.

Sketch for the Workshop/meeting week – 22 to 26 September 2008

22 September 2008	Plenary Session with invited speakers covering the following topics Overview of the THORPEX programme including Regional Plans TIGGE TPARC YOTC GEO IPY Cooperation with other programmes
23 September 2008 AM	Overview continued
23 September 2008 PM	Plenary Session for Presentations by the Working Group co-chairs
24 September 2008	Working Group Meetings and EC Meeting (as required)
25 September 2008AM	Working Group Meetings and EC Meeting (as required)
25 September 2008PM	Plenary Session for the Working Groups to present their plans to the THORPEX EC
26 September 2008 AM	Plenary Session for the Working Groups to present their plans to the THORPEX EC

6.2 The seventh meeting of the ICSC

The Executive Committee suggested that the seventh meeting of the THORPEX International Core Steering Committee (ICSC 7) should be held in Geneva in the autumn and subsequently it was proposed that it be held during the period 18 to 20 November 2008.

6.3 The Third THORPEX International Science Symposium

The possibility of holding the third THORPEX International Science Symposium in March 2009 in California is under investigation.

**ANNEX I
MEMBERSHIP OF THORPEX WORKING GROUPS
FOR INFORMATION**

Observing Systems Working Group (OS WG)

Members	Affiliation
Jim Purdom (Co-chair)	University of Colorado State
Walter Dabberdt (Co-chair)	Vaisala
Roger Saunders	UKMO
Tom Keenan	BoM
Wenjian Zhang	CMA
Martii Heikinheino	FMI
Tetsuo Nakazawa	JMA
Lance Bosart	-

**Data Assimilation & Observing Strategies Working Group
(DAOS WG)**

Members	Affiliation
Florence Rabier (Co-chair)	Meteo France
Pierre Gauthier (Co-chair)	CMC
Rolf Langland	NRL
Peter Steinle	Australia
Michael Tsyroulnikov	Russia
Carla Cardinale	ECMWF
Andrew Lorenc	UKMO
Ko Koizumi	JMA
Ron Gelaro	NASA

Predictability and Dynamical Processes Working Group (PDP WG)

Members	Affiliation
Heini Wernli (Co-chair)	University of Mainz
Istvan Szunyogh (Co-chair)	University of Maryland, College Park
Sarah Jones	University of Karlsruhe
Craig Bishop	NRL
Thomas Jung	ECMWF
Shuhuei Maeda	JMA
Olivier Talagrand	LMD

Global Interactive Forecasting System (GIFS) – THORPEX Interactive Grand Global Ensemble Working Group (GIFS- TIGGE WG)

Members	Affiliation
Philippe Bougeault (Co-chair)	ECMWF
Zoltan Toth (Co-chair)	NCEP USA
Barbara Brown	NCAR USA
Chen Den Hui	CMA China
Beth Ebert	BOM Australia
Tom Hamill	CDC USA
Young-Youn Park	KMA Korea
Pedro Silva Dias	CPTEC USA
Laurie Wilson	Laurie Wilson
Yoshi Takeuchi	JMA Japan
Warren Tennant	South African weather Service
Richard Swinbank	UKMO UK
Steve Worley	NCAR
Jean Nicolau	Météo France
Representatives from SERA, PDP, DAOS WGs	

Data Policy and Management Working Group (DPM WG)

Members

Affiliation

Shi Peiliang (Chair)	CMA
Christian Blondin	Meteo France
Atsushi Shimazaki	JMA
Thomas Keenan	BMRC
Mohan K. Ramamurthy	NCAR
Victor Dmitriev	Russia
ECMWF member/observer	ECMWF

ANNEX II

WORLD METEOROLOGICAL ORGANIZATION

COMMISSION FOR ATMOSPHERIC SCIENCES
ICSC EXECUTIVE COMMITTEE FOR THORPEX

Informal Session
 Geneva, Switzerland
 7 February 2008

ICSC/EC-0/DOC .1.2(1)_rev1

(27.I.2008)

Item: 1.2

Original: ENGLISH

PROVISIONAL AGENDA

	Paper/report
1. ORGANIZATION OF THE MEETING	
2. DEVELOPMENTS SINCE ICSC 6	
2.1. Management and Working Group Structure	✓
2.2. TPARC	✓
2.3. Year of Tropical Convection (YOTC)	✓
2.4. WWRP-THORPEX African initiative (including AMMA)	✓
2.5. GEO	✓
2.6. Update on Working Group and Regional plans	
2.6.1. Second meeting of the OSWG	✓
2.6.2. TIGGE	✓
2.6.3. DAOS Activities	✓
2.6.4. PDP Activities	✓
2.6.5. Report from ARC	✓
2.6.6. Report from SHRC	✓
2.6.7. Report from ERC	✓
2.6.8. Report from NARC	✓
2.7. Modelling Summit	✓
3. STATUS OF WWRP STRATEGIC PLAN	✓
4. PLANS FOR 2008	
4.1. THORPEX Working Group meetings and “a Reading style” Workshop	✓ Verbal
4.2. Outreach (Website and Newsletter)	
5. ICSC 7	✓
6. CHAIR OF ICSC AND ICSC/EC	Verbal
6.1. Composition of the ICSC/EC	
7. THIRD INTERNATIONAL SYMPOSIUM (2009)	Verbal
8. IPO BUDGET (past expenditure and plans)	To be tabled
9. ANY OTHER BUSINESS	
10. DECISIONS AND ACTIONS	During meeting
11. DATE AND PLACE OF NEXT MEETING	
12. CLOSURE OF THE MEETING	

ANNEX III

Actions and Decisions arising from the informal meeting of the WWRP-THORPEX ICSC Executive Committee meeting (ICSC/EC0) – held at WMO, 7th February 2008

Ref. #	Action/Decision	Responsible	Status/ Due
EC0 1	<p>Re-work the paper ICSC/EC-0/ Doc 2.1 to reflect the decisions of the meeting. In particular the following.</p> <p>The ICSC includes</p> <ul style="list-style-type: none"> • Representatives of nations - who have voting rights • International organisations and committees who have observer status • One representative from each WG and RC • A secretariat <p>The EC comprises essentially members from the ICSC</p> <ul style="list-style-type: none"> • Chair - the ICSC chair • A Trust Fund Representative • One person to represent all the WGs • One person to represent all the RCs • Invited experts as required • A secretariat <p>The revised paper will be circulated for endorsement by the EC out of committee before ICSC -7</p>	IPO	Revise, agree and distribute the paper before ICSC-7
EC0 2	Canvass the views of the Co-Chairs of the OS and DAOS WGs with a view to merging these groups.	IPO	ASAP
EC0 3	Canvass the views of the Co-Chairs of the DPM WG with a view to disbanding this group	IPO	ASAP
EC0 4	Facilitate the moves of some members between WGs	IPO	May 08
EC0 5	The revised membership of the GIFS-TIGGE WG was endorsed. The Co-Chairs will be informed.	IPO	ASAP
EC0 6	The links and method of working between the THORPEX WGs and RCs and the WWRP SERA group need to be clarified and agreed.	IPO, Chair of the WWRP JSC and Co-Chairs of the SERA WG	ASAP
EC0 7	The THORPEX community should be advised of the changes to management structures and groups as soon as possible	IPO	ASAP
EC0 8	Assist resolution of the request by DLR to access Russian airspace during the TPARC campaign	IPO/WMO	May 08
EC0 9	Assist resolution of the Chinese funding problem for TPARC	IPO/WMO	ASAP
EC0 10	Help ensure the provision of 6-hourly radiosonde profiles from selected West Pacific Oceans sites to support TPARC experiments	IPO/TPARC Planning Team (Pat Harr)	March 08

EC0 11	Ensure the SERA element of TPARC properly addresses the large numbers of deaths at sea experienced annually by Vietnam and the Philippines.	IPO/TPARC Planning Team	May 08
EC0 12	Continue to encourage/support implementation of the YOTC initiative	IPO with the YOTC Team	On-going
EC0 13	Publish the final African THORPEX Science and Implementation Plans and assist with publicity and resource mobilisation. Liaise closely with the Co-Chairs of the African RC. Support a meeting of the African RC in 2008 and a meeting to be convened by ICTP to further PDP Tasks in Africa.	IPO	On-going
EC0 14	Encourage the publication of Paper 2 as described in GEO Task CI-07-01 in BAMS.	Authorship of Paper 2 and the IPO	ASAP
EC0 15	Check that the link with WCRP (Kevin Trenberth) to co-help ordinate weather /climate observational provision is being pursued	IPO	May 08
EC0 16	Help co-ordinate publicity for TIGGE with WMO PRs, NMHSs. Reach the science community more generally through an article in EOS.	TIGGE WG Co-Chairs with the IPO	April 08
EC0 17	Organise a TIGGE user meeting in conjunction with the Third THORPEX Science Symposium. Encourage attendance of SERA users of TIGGE data at the Symposium. Liaise with the GEO UIC to promote knowledge and use of TIGGE data bases.	IPO and TIGGE WG Co-Chairs	Nov 08
EC0 18	Establish whether TIGGE, as a WIS demonstrator project, is part of the submission to access WMO "surplus" funds by the WIS project Team.	IPO	ASAP
EC0 19	Ensure that an item on PR is added to the Agenda for the next TIGGE WG meeting in S. Africa	IPO/TIGGE WG Co-Chairs	ASAP
EC0 20	Establish the extent to which the DAOS WG community will be actively involved in evaluating TPARC data sets e.g. to conduct impact assessments, assess the value of different types of observational data, etc.	IPO	April 08
EC0 21	Support publication of the proposed PDP BAMS article and fund the page charges	IPO	April 08
EC0 22	Identify the individuals from the DAOS WG community who will be actively involved with the forthcoming 4-D VAR workshop in Buenos Aires.	IPO	ASAP
EC0 23	Push for rapid publication of the final Science and Implementation Plans for Europe and formation of an ERC	IPO	ASAP
EC0 24	Consider financial assistance to enable other developing countries to attend the NARC meetings.	IPO/NARC Co-Chairs	July 08
EC0 25	Took note of the Climate Modelling Summit planned for May 2008 at ECMWF. Expressed dismay that it did not have as its main emphasis Modelling for the Seamless Prediction of Weather and Climate. Invited the "Summit" to publish its "outcome" alongside "Paper 2" in Bams.	IPO	March/April 08
EC0 26	Supported the need for meetings of the THORPEX Working Groups and a "Reading 2006 Style" Workshop in the Autumn of 2008	IPO	March 08
EC0 27	Agreed that ICSC 7 should be held in Geneva in Autumn 2008	IPO	March 08

EC0 28	Supported the line being taken to find a new Chair for the ICSC	IPO	ASAP
EC0 29	Encouraged the continuing development of the Website and supported the short-term employment of a Web expert; recommended that THORPEX contribute to a WWRP Newsletters	IPO	March/April 08
EC0 30	Agreed that the Third THORPEX International Symposium should be held in February/March 2009	IPO	March/April 08
EC0 31	Supported the IPO Budget as proposed and recommended that more support should be given to TIGGE-related activities	IPO	Ongoing
EC0 32	Suggested that the next meeting of the EXCOM should be held in conjunction with the Autumn meetings planned for the Working Groups	IPO	March 08