



Global(ly) Integrated Polar Prediction System (GIPPS)

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**Concept Paper by EC-PORS Research Task Team:
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World Meteorological Congress Resolution 11.9/3 in favour of GIPPS

IPY Legacy, a decadal endeavour benefiting the global community

Service-driven (i.e. is operational in focus)

Includes “Third Pole”

**Current progress to be considered by EC-PORS – 3 in Sodankyla in
February 2011**



GIPPS: Motivation

- Amplification of anthropogenic climate change at higher latitudes
- Increasing interest of many governments in Polar Regions
- Increased economic and transportation activities in Polar Regions
- Long-term requirement for sustained integrated observational and predictive weather, climate and water information to support decision making
- Gaps in:
 - Scientific understanding of processes and interactions in Polar Regions, including stable boundary layers, polar clouds and precipitation, sea ice/ocean dynamics, hydrology, permafrost and ice sheet dynamics
 - Sustaining in-situ and satellite observations in Polar Regions, including reference observations
 - Products and services for Polar Regions



GIPPS: Main Benefits

- Enabling service delivery
- Implementation of observing strategies in Polar Regions
- Addressing key uncertainties in weather, climate, water and related environmental variability and change, thereby improving global prediction, contributing to all WMO high priorities, in particular Disaster Risk Reduction, and to the Global Framework for Climate Services

Time scales

- Short-term prediction (hours to seasons)
- Medium-term predictability (years to decades)
- Long-term projection of ice mass balance and sea level (centuries)



Partnerships for (in) GIPPS

- WWRP/THORPEX
- WCRP
- WMO Programmes, technical commissions and regional associations
- GCOS
- International Council for Science (ICSU)
- Scientific Committee on Antarctic Research (SCAR)
- UNESCO's Intergovernmental Oceanographic Commission (IOC)
- International Arctic Science Committee (IASC)
- International Association of Cryospheric Sciences (IACS) and other relevant associations of IUGG
- WMO Members
- national research programmes
- Research institutes: Alfred Wegener Institute, British Antarctic Survey, Byrd Polar Institute, Bjerknes Centre,...
- ECMWF, NCEP, etc.



Emerging GIPPS Components & Contributors

- **WWRP Polar Weather Prediction Project (Polar Thorpex) – to be presented by Nakazawa – San**
- **WCRP Polar Climate Predictability Initiative – with some communities such as IASC WG on Atmosphere**
- **Atmospheric Investigations on a Drifting observatory in the Arctic sea and Regional and global Climate Model simulations AIDA - RCM**
- **Attempts to start surveys of some Arctic data (AOSB)**
- **More to link...**



GIPPS: Next Steps

- Development of a scalable, detailed strategic Plan for GIPPS, laying out a path that WMO will take to identify and address gaps in our scientific understanding of polar processes, improve data and service delivery, and promote or establish national research programmes;
- Establishment of the initial governance mechanism by providing broad oversight, guidance and monitoring of progress;
- Broad consultation and participation from other international organizations and agencies that wish to contribute to the development of GIPPS;
- Comprehensive report on GIPPS to the Seventeenth Congress

Actions for PSTG :

- Be in touch
- Provide expertise (need effective entry point)
- Participate in the Plan preparation