

## TIGGE

(THORPEX Interactive Grand Global Ensemble)

**GEO Task WE-06-03**

**GEO UIC**

**September 2008**

**(prepared by Jim Caughey, WMO)**

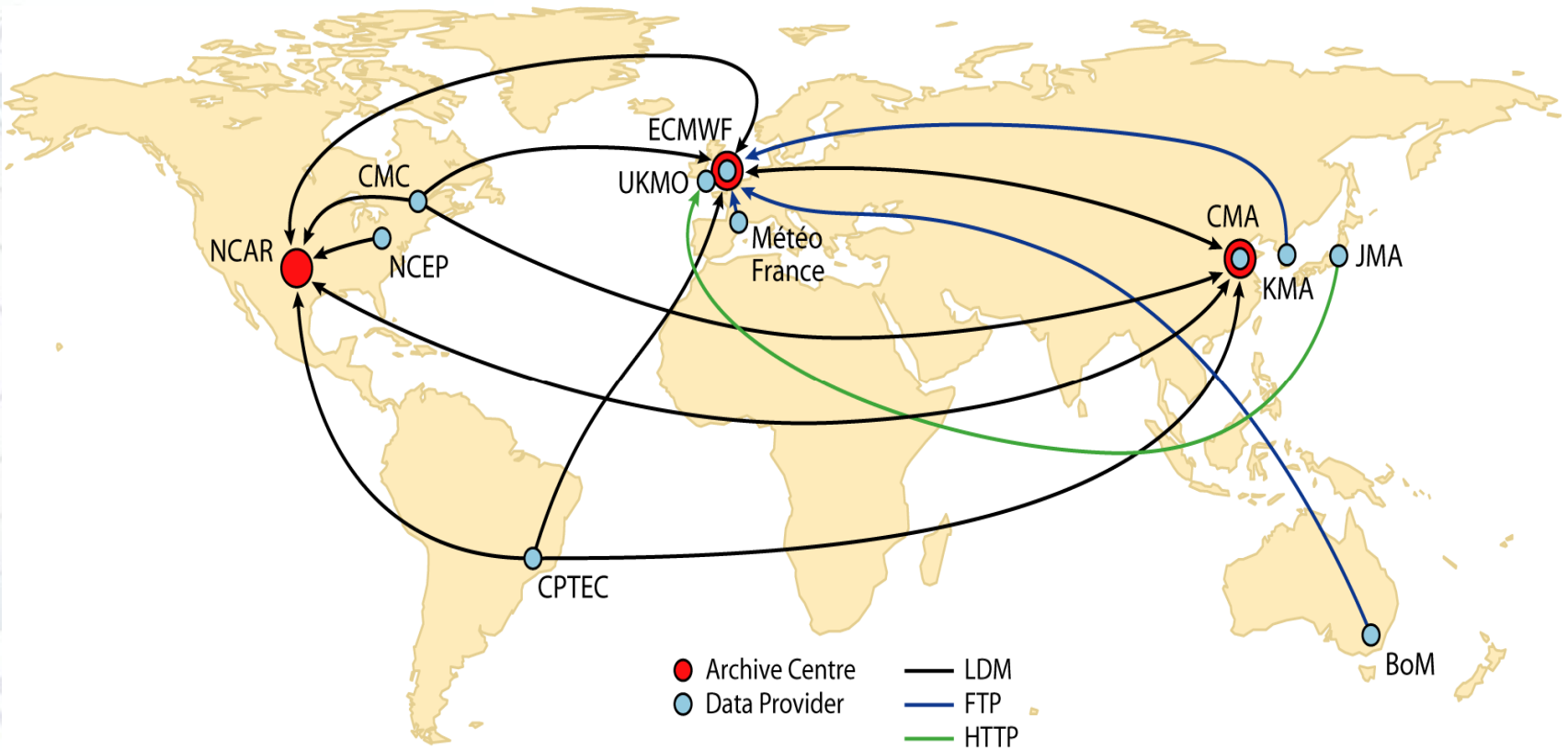
# “**T**he **O**bserving System **R**esearch and **P**redictability **E**xperiment”

- THORPEX was established in 2003 by the World Meteorological Congress as an international global atmospheric research and development programme. Subsequently, the international programme was implemented in 2005.
- THORPEX is a part of the WMO World Weather Research Programme (WWRP) and aims
  - To **reduce and mitigate the effects of natural disasters**;
  - To realise the **societal and economic benefits of improved weather forecast especially in developing and least developed countries.**

# TIGGE Concept

- TIGGE is an **international data archive** where numerical ensemble forecast providers share their data to advance scientific research related to **improving high impact weather forecasting**
- Initially, the archives are centralized and **fully duplicated** at three archive centres serving various parts of the world and acting as **mutual back-up** (Phase 1)
- Later, the archives will be distributed at a number of centres, and will **avoid duplication**, while maintaining a **single access portal for users** (Phase 2)
- Subject to results of Phase 1 and 2, the system will form the backbone of an **international system for early warning of severe weather events**

# TIGGE partners and data flow

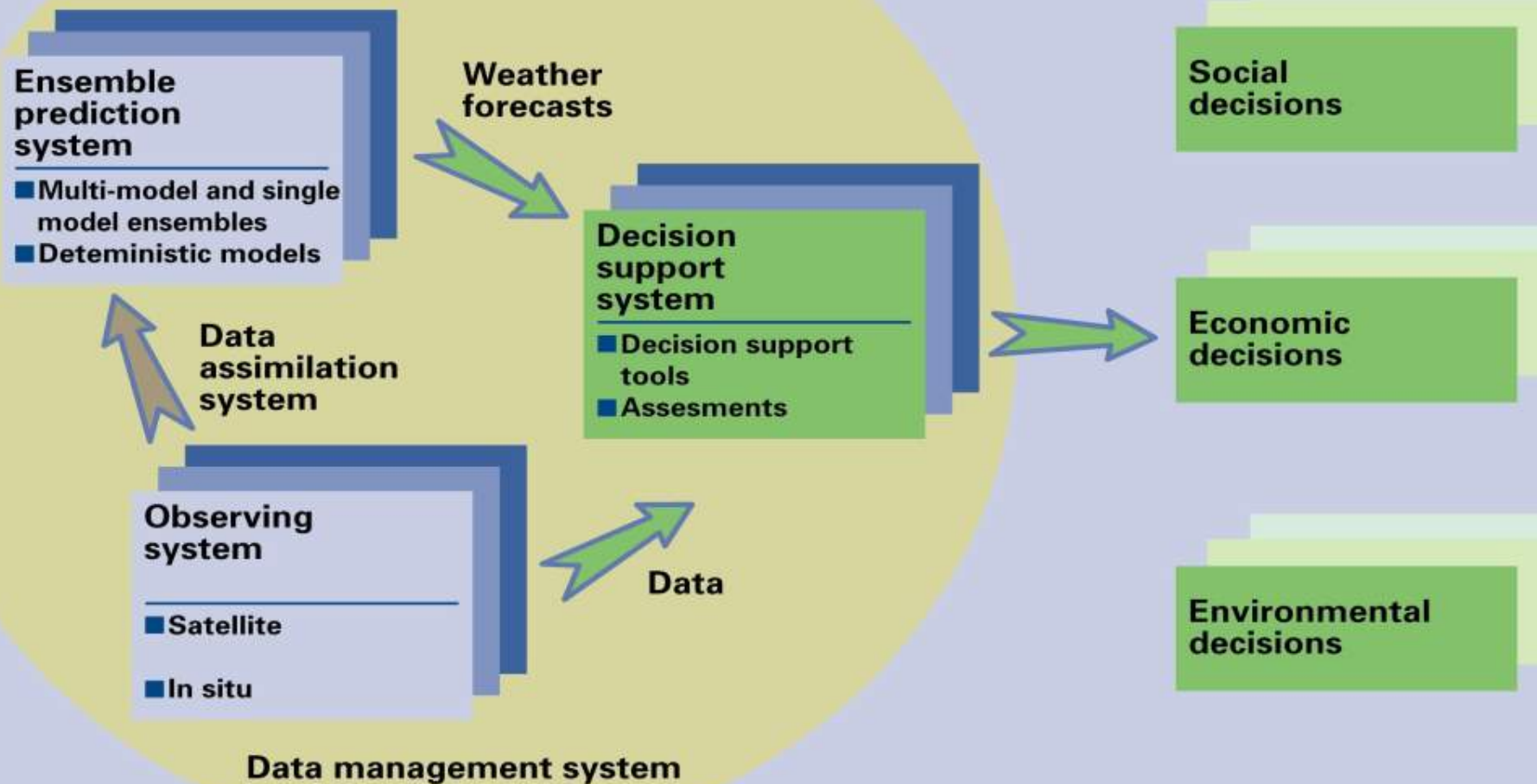


- Archive Centre
- Data Provider
- LDM
- FTP
- HTTP

# Work in progress

- Assess the use of multi-model systems to drive **flood forecasting systems** (e.g. HEPEX) and other applications
- Assess value of the multi-model system for **early warning of severe weather events** (needs longer time series for statistical significance)
- Develop **products** which are **easy to interpret** by forecasters and **users**
- Develop **verifications** against observations (e.g. rainfall, wind gusts, temperatures at surface level)

# TIGGE-Based Global Interactive End-to-End Forecast System (GIFS)



## WE-06-03 - TIGGE Objectives

- Enhance **international collaboration** on ensemble **prediction for high impact weather**
  - Collaboration between operational centres and universities
- Develop theory and practice of multi-model ensembles
- Examine the feasibility of interactive ensembles responding dynamically to changing uncertainty
- Develop the concept of a **Global Interactive Forecasting System** (GIFS)

# TIGGE in the GEO 2009-2011 Workplan (continues as WE-06-03)

## ■ Towards TIGGE-Phase 2 and the GIFS

- Phase 2 is subject to obtaining new resources since new software must be developed to distribute the archive
- **GIFS** could be an **operational continuation** of TIGGE and similar efforts (e.g. the North American Ensemble Forecasting System)
- Research on TIGGE data will allow concepts of interactivity for the GIFS to be refined

## ■ TIGGE-LAM (**Limited Area Models**)

- This will be an important component of the GIFS
- A panel of experts is defining the concept
- Initially same archive centres as Global component

# Developing the User Community

- Developing the **link with users**
  - Achieved through **GEO**, SERA, WWRP-THORPEX FDPs, etc..
  - A **TIGGE Users' Workshop** is planned for **2009**

## Support from GEO

- Continue the current support for TIGGE particularly **co-sponsor the 2009 user meeting**
- Encourage related research and operational communities to:
  - Carry out research on the TIGGE archives
  - Develop new applications and products
  - Provide feedback to TIGGE project teams