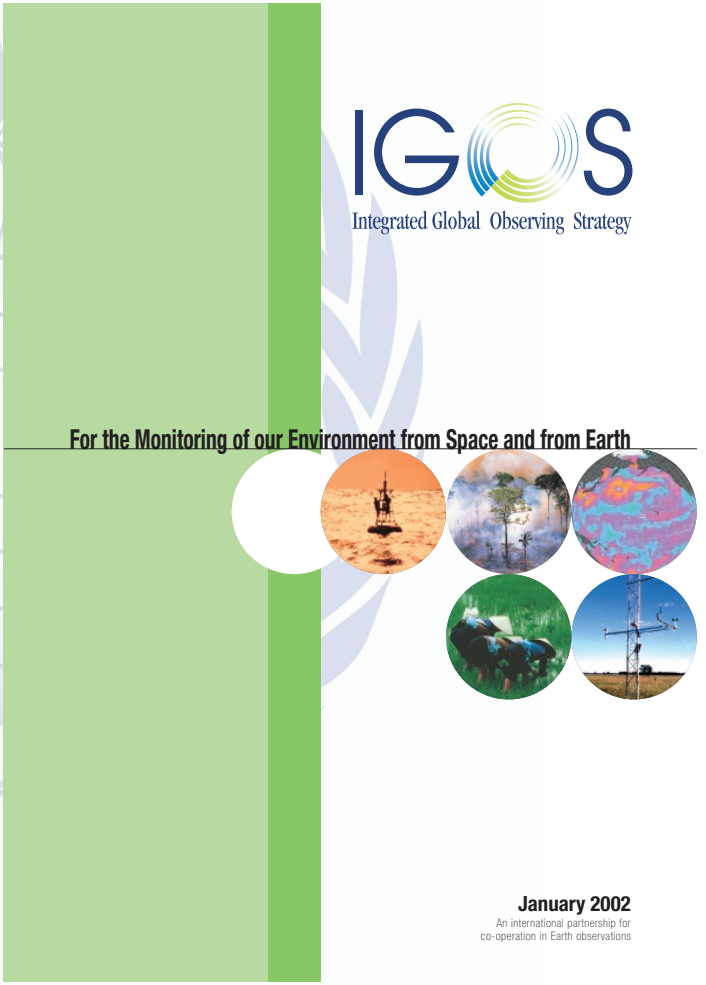
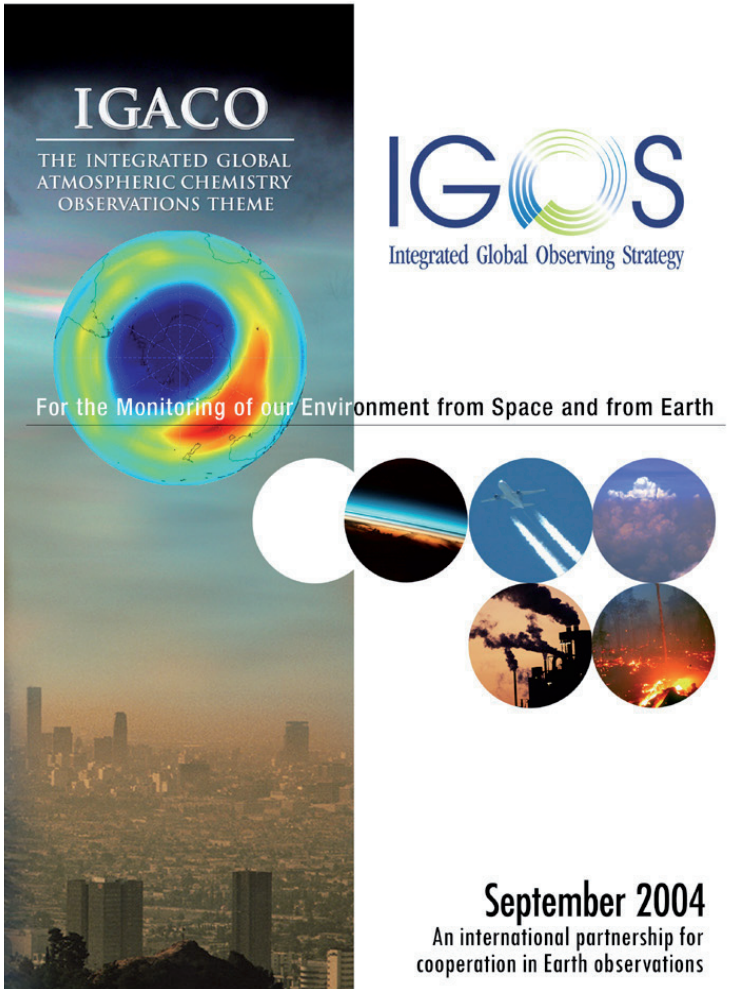
Update on IGACO-Ozone/UV

WMO OMM

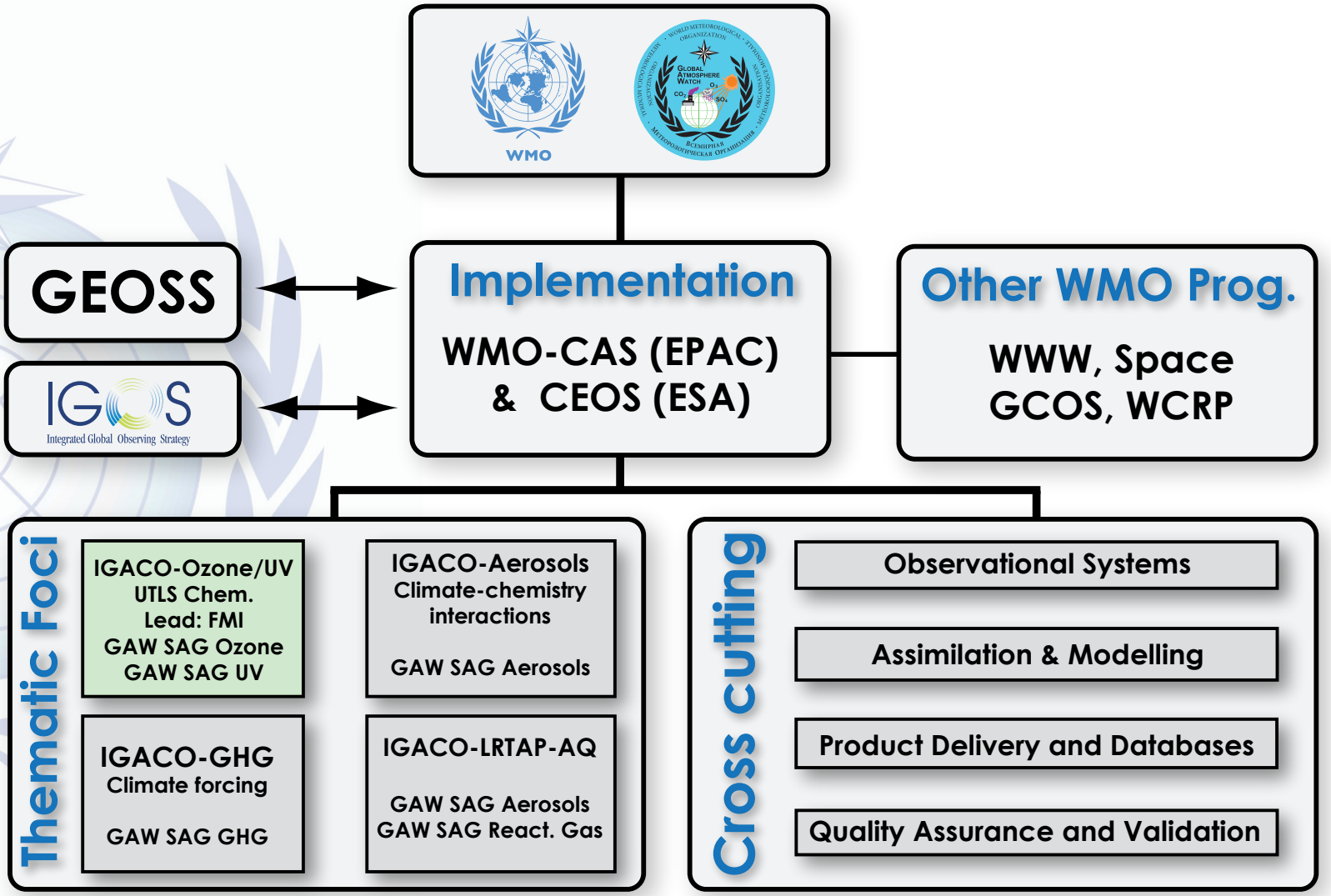
7th ORM, 19 May 2008

The IGACO report





The IGACO structure



IGACO-Ozone

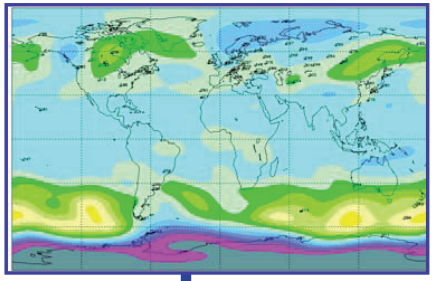
in operation by end of 2006

GAW Calibration & Quality Assurance

World Integrated Data Archive System: Includes WOUDC

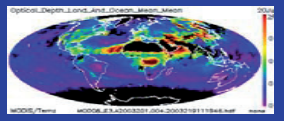
Reanalysis

Global Products



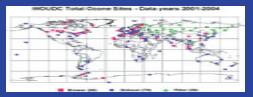
WMO Real-Time Data Distribution: WMO Information System (WIS)

Satellite: WMO Space Programme



Aircraft: GAW & MOZAIC

Surface-based: GAW



Assimilation of Real-Time Data By Forecast Models

Data Uses/Applications

1. Public UV Warnings
2. Public Ozone Bulletins
3. Research
4. Scientific Assessments
5. Forecasts of Ozone Depletion
6. Improved Weather Forecast

Secretariat at Finnish Met Institute

Leaders WMO/GAW & IO_3C

http://www.igaco-o3.fi

Some IGACO-related events

- *M*OU between FMI and WMO: Autumn 2005
- *M*eeting of IGACO-Ozone International Science Advisory Panel in Helsinki, FI: February 2006
- *I*GACO-Ozone/UV workshop in Anavyssos, GR: May 2006
- *I*GACO-Ozone/UV workshop in Dübendorf, CH: March 2007
- *I*GACO-Ozone/UV workshop on difficult ozone time series: Tenerife, April 2007
- *G*AW - IGACO - NDACC workshop on ozone measurement techniques: Geneva, April 2008

Outcome of workshops

Topics discussed in Anavyssos, May 2006

- Overview of where we are
- What are the gaps?
- How to fill the gaps?

Twelve activities were agreed upon in Anavyssos

- Some have been completed
- Some have started
- Some have not started yet

Topics discussed in Dübendorf, March 2007

- Improving access to data
- Simplifying submission
- Harmonising data quality and metadata

Outcome of workshops

Workshop on difficult time series

- Total ozone time series with difficulties were identified through comparison to satellite data.
- A letter has been sent to the responsible principal investigators where the problem is described and help is offered.
- The aim is to improve data quality so that they can be used for trend studies.

Workshop on ozone measurement techniques

- Both total ozone and profile ozone measurements were covered.
- Various measurement techniques were discussed: Dobson, Brewer, UV-Vis DOAS, FT-IR, lidars, microwave spectroscopy, Umkehr, ozonesondes and aircraft.
- Investigators representing various techniques became aware of observations made by other techniques and that ought to be compared.
- Ozone absorption cross sections disagree in various spectral regions. Need for more laboratory measurements.

Implementation plan

- **Implementation Plan for IGACO-Ozone/UV is near completion and will be pubslished as a GAW report within the next couple of months.**

- **Plan is divided into four sections:**
  - **Observations of ozone**
  - **Observations of UV radiation**
  - **Modelling and data assimilation**
  - **Data archiving and data dissemination**

- **Activities that were discussed and recommended at the Anavyssos workshop in 2006 constitute a large part of the Implementation Plan.**

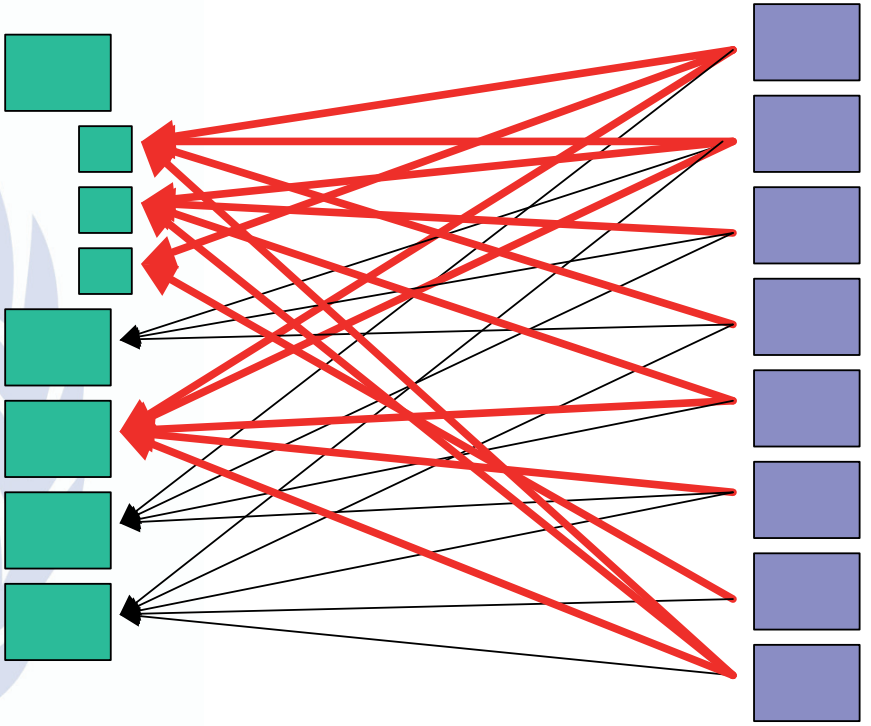
- **Time frame: First phase: next 5 years (2006 -2011). Second phase: 2011-2016.**

Data exchange
Multitude of data bases

- **A new data base is created every time there is a need for new functionality**
  - World ozone and UV data centre (WOUDC, Toronto) has existed since the 1960s
  - In early 1990s the need arose for access to data in near-real time, which led to the creation of NILU's NADIR data base and FMI's UV data base
- **Time consuming to submit data to many data bases**
- **Difficult to find data since they are stored in many different places**

Current situation

data providers
(e.g. ESA, NASA, NASDA, ECMWF, NCEP, station networks, ndividual stations, field campaign data centers, ...)

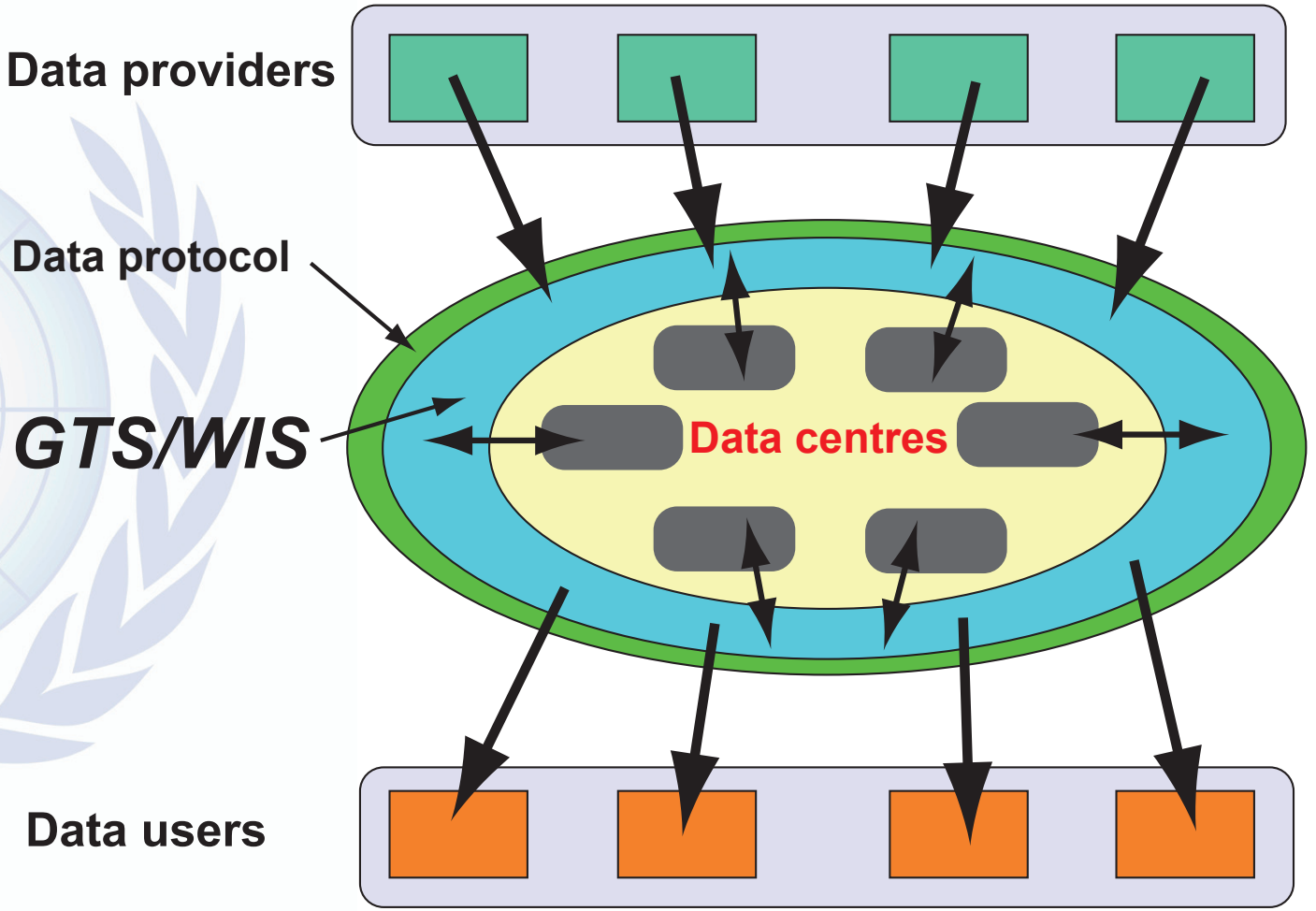


data users
individual research groups

bureaucratic procedure, i.e., submission of proposal, annual reports, final report, etc.

simple registration or free access

Ideal situation



Data formats

Many formats

- HDF, NetCDF, NASA Ames, ISO, CSV, GRIB, CREX, BUFR, XML…

Difficult to persuade everybody to use one format

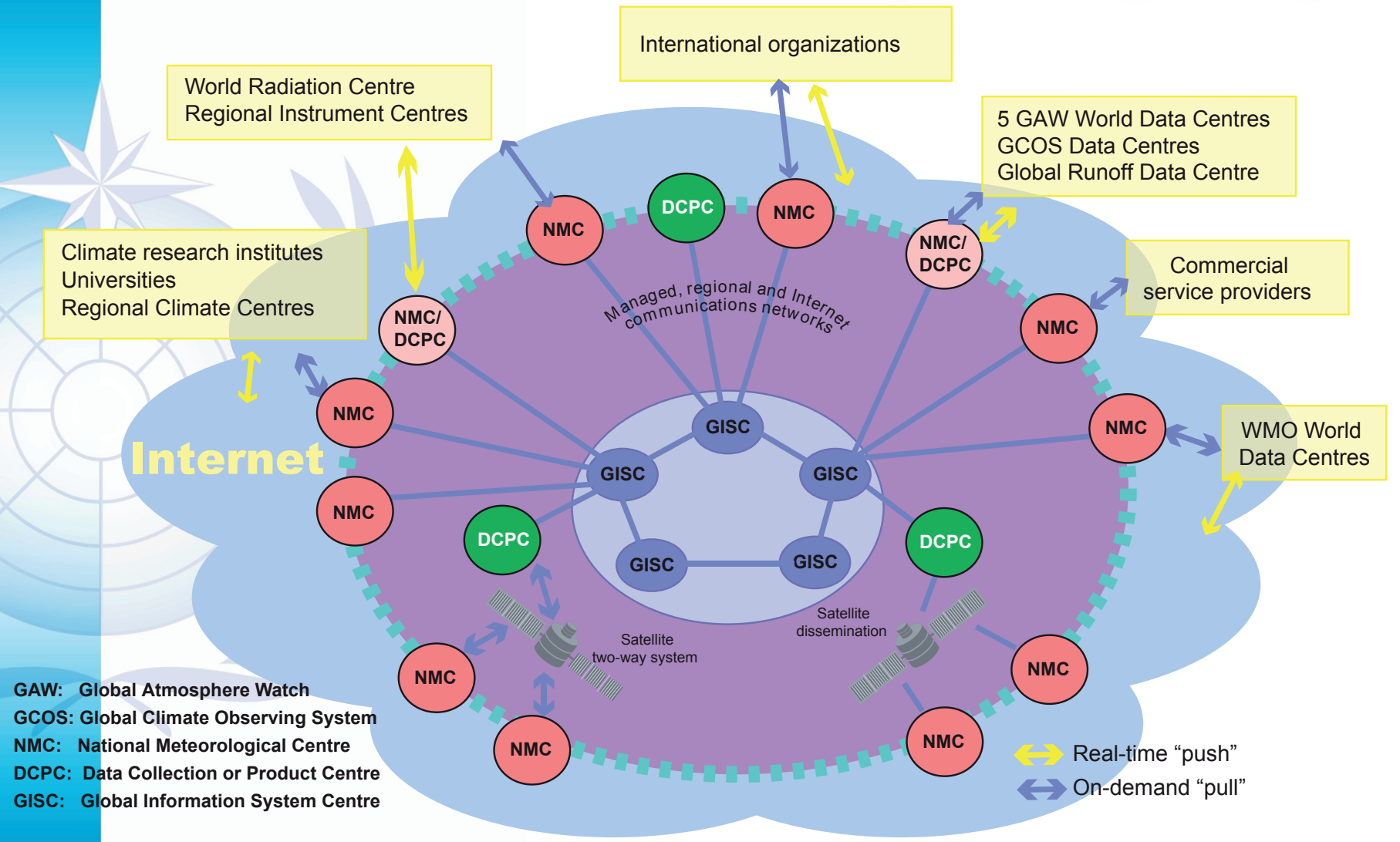
- Converters can translate between the various formats

One-stop shops and data mining

http://wdc.dlr.de/

http://ozonewatch.gsfc.nasa.gov

WMO Information System (WIS)



GAW: Global Atmosphere Watch
GCOS: Global Climate Observing System
NMC: National Meteorological Centre
DCPC: Data Collection or Product Centre
GISC: Global Information System Centre

More info

http://www.wmo.int

http://www.wmo.int/pages/prog/arep/gaw/gaw_home_en.html

http://www.igospartners.org/Atmosphere.htm

http://www.igaco-o3.fi