WORLD METEOROLOGICAL ORGANIZATION

Weather – Climate - Water

WMO Information System (WIS)

Managing & Moving
Weather, Water and Climate Information
in the 21st Century

Report to WG-PIW RA VI

15-19 September 2008

Presented by
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WG-PIW RA VI

Technical Conference on RA VI Action Plan

– typical questions:

- What is WIS and why is WMO going this way?

- What is happening to the GTS?

- How does WIS relate to WG-PIWs?

  – Isn't the European VGISC project looking after all this?

- Will WIS lead to changes in the WG-PIW plans and priorities?

- What is the time frame of WIS?

WMO Objectives

- To produce more accurate, timely and reliable forecasts and warnings of weather, climate, water and related environmental elements;

- To improve the delivery of weather, climate, water and related environmental information and services to the public, governments and other users;

- To provide scientific and technical expertise and advice in support of policy- and decision-making and implementation of the agreed international development goals and multilateral agreements.

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WMO Strategic Plan

3 Top-level Objectives

To produce more accurate, timely and reliable forecasts and warnings of weather, climate, water, and related environmental elements

To improve the delivery of weather, climate, water, and related environmental information and services to the public, governments and other users

To provide scientific and technical expertise and advice in support of policy and decision-making and implementation of the agreed international development goals and multilateral agreements
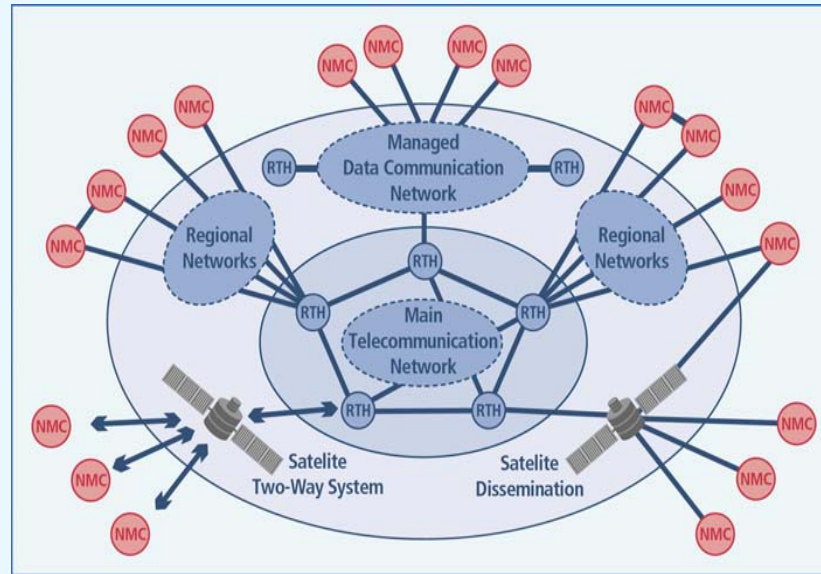
5 Strategic Thrusts

Science and Technology Development and Implementation

Service Delivery

Partnership

Capacity-building

Efficient Management and good Governance

11 ER

1. Enhanced capabilities of Members to produce better **weather** forecasts and warnings

2. Enhanced capabilities of Members to provide better **climate** predictions and assessments

3. Enhanced capabilities of Members to provide better **hydrological** forecasts and assessments

4. Integration of WMO **observing systems**

5. Development and implementation of the new WMO **Information System**

6. Enhanced capabilities of Members in multi-hazard **early warning and disaster prevention and preparedness**

7. Enhanced capabilities of Members to provide and use weather, climate, water and environmental applications and **services**

8. Broader use of weather, climate and water outputs for **decision-making** and implementation by Members and **partner** organizations

9. Enhanced capabilities of NMHSs in **developing countries, particularly least developed countries**, to fulfil their mandates

10. Effective and efficient functioning of constituent bodies

11. Effective and efficient management performance and oversight of the Organization

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Current situation: GTS

The GTS has evolved to continue to meet its primary role

Communications & connectivity based.

• Incorporates and takes advantage of new technologies

• Effective and efficient

• Has grown through bi-lateral links – many for satellite or NWP data

• All WMO members are better off because of it.

• But it does not meet all needs of WMO members
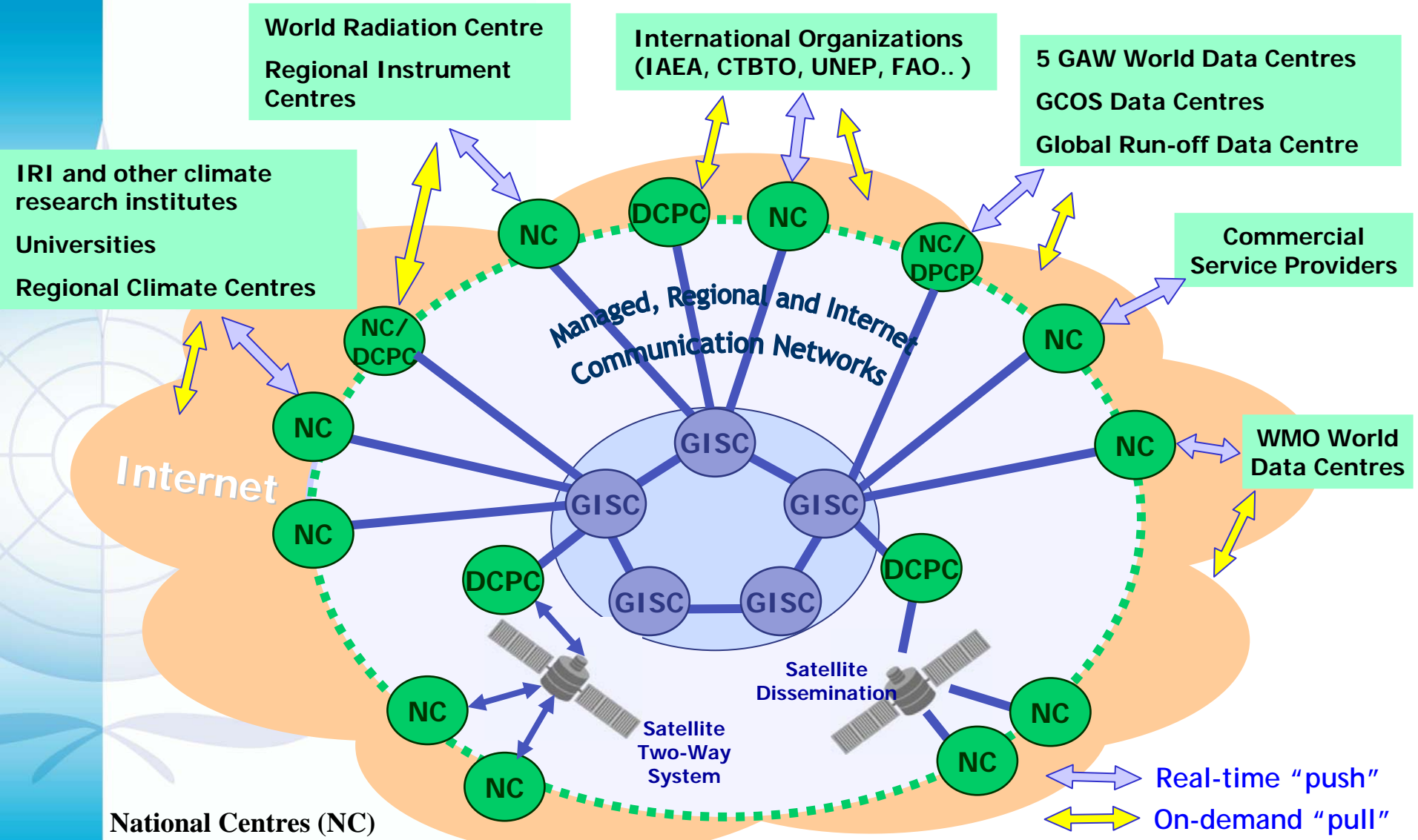
Private Met Svc's

WDC & Centres of Excellence

Internet

WDC & Centres of Excellence

Research, Uni & Private

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Goals of WIS

- GTS needs to be open to all WMO activities to provide time critical information exchange

- Internet should be a part of WIS to allow support of less critical requirements

- The continuous improvement and adaptation of new technologies in the GTS should be maintained.

- The WIS should be open to more than just WMO programs allowing partners to participate

- Need seamless discovery, access and retrieval (DAR) across all WMO systems, including collaborators and partners.
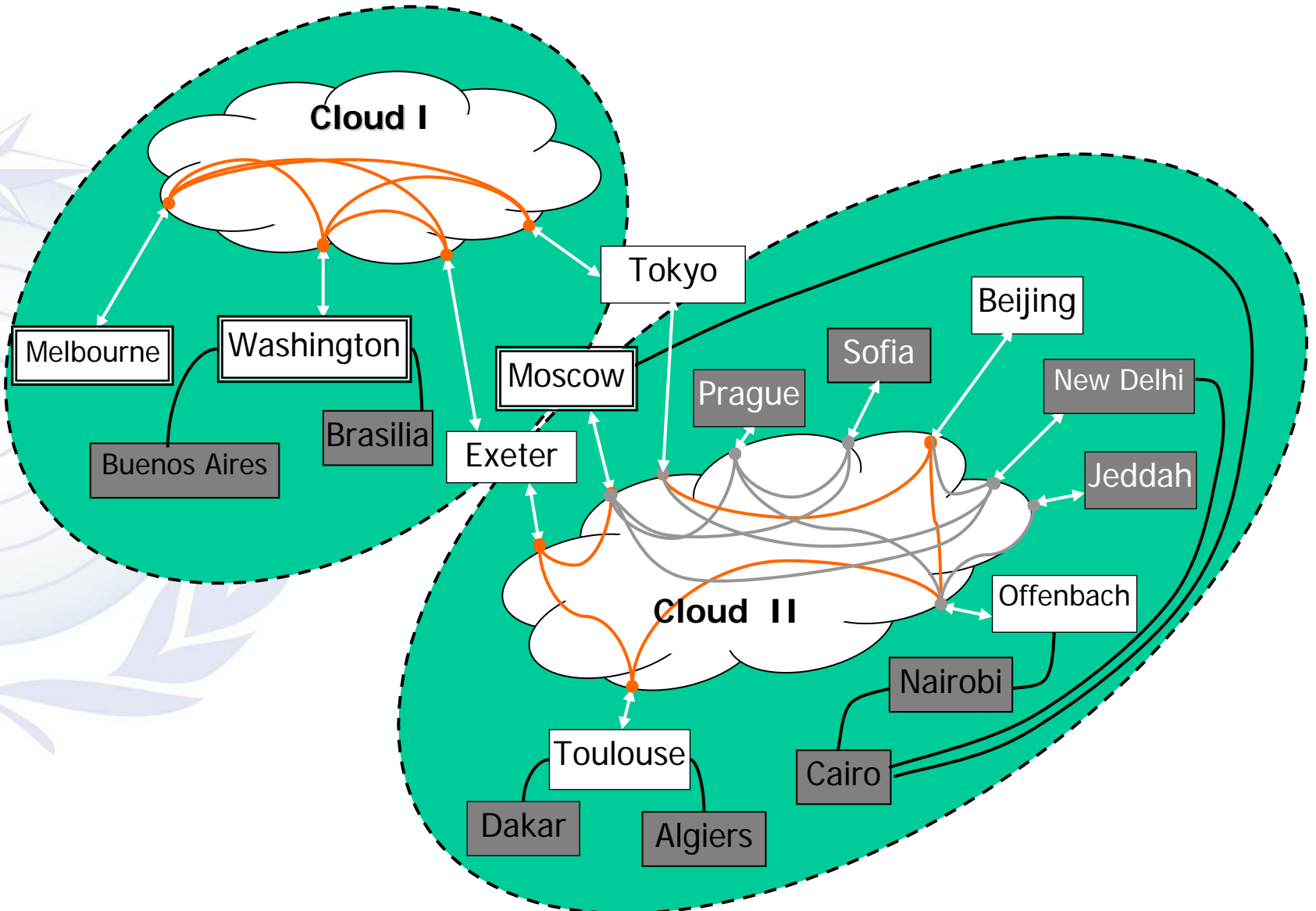
WMO Information System (WIS)

World Radiation Centre

Regional Instrument Centres

International Organizations (IAEA, CTBTO, UNEP, FAO..)

5 GAW World Data Centres

GCOS Data Centres

Global Run-off Data Centre

IRI and other climate research institutes

Universities

Regional Climate Centres

Commercial Service Providers

WMO World Data Centres

Managed, Regional and Internet Communication Networks

Internet

GISC

Satellite Two-Way System

Satellite Dissemination

Real-time "push"

On-demand "pull"

National Centres (NC)

Global Information System Centres (GISC)

Data Collection and Production Centres (DCPC)

Data communication network

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Current MTN configuration

Cloud I

Cloud II

Melbourne
Washington
Buenos Aires
Brasilia
Exeter
Tokyo
Moscow
Prague
Sofia
Beijing
New Delhi
Jeddah
Offenbach
Nairobi
Cairo
Toulouse
Dakar
Algiers

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GISC – DAR service
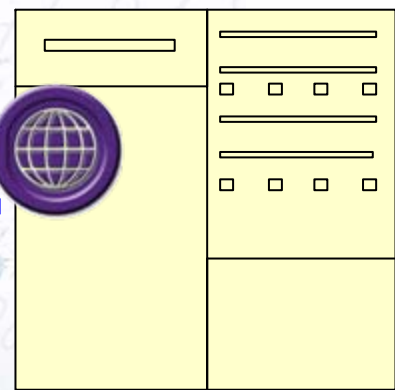
Search Request

marine warnings in area bounded by 40W to 10W and 45N to 70N

Search Results

User searches for metadata then retrieves information from data custodian
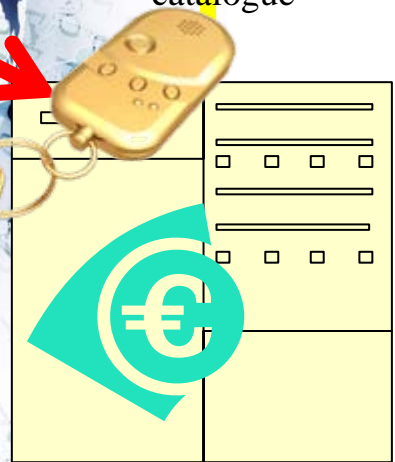
Information request to custodian

http://weather.gmdss.org/1.html

Centre publishes metadata to GISC DAR catalogue

Retrieve information

Security/authentication/authorization and even charging is managed by each service provider

NC/DCPC information access service

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Key activity milestones (Part A)

- **Consolidate WIS plans**: up to 2008
- **Develop regulatory documents**: up to 2008
  - WIS technical compliance standards (drafted)
    - Interfaces compliant with GEOSS 10 year plan
    - Ditto, for INSPIRE & GMES
  - User requirements being documented (drafted)
  - Functional architecture documented (drafted)
- **WIS guidelines and manuals**: up to 2011 and beyond
  - Outline under draft with Guidelines on WIS due 2009
  - Other manuals to follow (coordinated with WIGOS) => 2015
- **Cont Improvement of GTS capability**: Ongoing

Key activity milestones (Part B)

- **Development of metadata standard**: up to 2008
  - WMO profile of ISO19115
  - Basically an implementers guide
- **Implement first operational GISC**: 2009
  - European VGISC started tender process (Germany, France & UK)
    - DCPC partners are ECMWF, EUMETSAT, Norway
    - NCAR and Russia NODC remain active participants
  - Russia GISC in early development
  - China/Japan collaborating on RA II GISC
  - USA WIS catalogue online soon (Staged GISC implementation)
- **Implement other operational GISCs**: 2009 - 2011
  - Australia before 2011
  - India and Saudi Arabia both planning for major WIS centres
- **Implement DCPCs**: 2008-2011
  - Commissions beginning to identify DCPCs
  - WIGOS Pilot Projects assisting in moving DCPCs forward

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Essential Reading

- WIS Project & Implementation Plan (WPIP)
- WIS Functional Architecture
- WIS Compliance specifications for GISC, DCPC & NC

Under development

- WIS Rolling Review of requirements (WPIP)
- Guidelines on WIS

WG-PIW (1)

- ## What is WIS and why is WMO going this way?
  - WIS is necessary to ensure all WMO information is available to all WMO users and to ensure long term sustainability of all WMO information systems.

- ## What is happening to the GTS?
  - The GTS remains as an integral part of WIS and will continue to be improved as well as being made available to all WMO programs for the sharing of operational and time critical information.

- ## How does WIS relate to WG-PIW?
  - Isn't the European VGISC project looking after all this?
  - The VGISC project is a key component of the implementation of WIS. As well as providing the first GISC functionality, especially the WIS catalogues, it also helping to write all the specifications and documentation on WIS.
  - However, the WG-PIW is the group that will be implementing WIS components that will allow each country to participate and benefit from WIS.
  - Remember that WIS "is" Members systems, not something someone else is doing
  - Also note that EC-LX stressed that the support and involvement of regional associations and technical commissions in WIS development was a crucial factor for ensuring a successful implementation and a shared ownership of the system.

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WG-PIW (2)

- Will WIS lead to changes in the WG-PIW plans and priorities?
  - WIS will be implemented with no detriment to existing services however, to get the benefits of WIS, WG-PIW will need to ensure the systems they manage are compliant with WIS.
  - The biggest change is the need to describe products and services utilizing ISO19115 to meet the metadata compliance. Meteo France is doing much of this for the GTS traffic, but WG-PIW will need to create metadata for additional products and its services
  - The WG-PIW will also need to take a lead role in understanding the functionality of WIS and in showing others how to make the most of its new features.

- What is the time frame?
  - WIS is now in its implementation stage and we expect the first GISC online next year. Once a WIS catalogue is up and running, WG-PIW can start to register products and services. Most time critical operations and many countries should be fully WIS compliant by 2011. Remaining countries and less critical components by 2015.

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Further information

- Visit the WIS reference documents site from

http://www.wmo.int/pages/prog/www/WIS-Web/home.html