Workshop on the feasibility study of a regional water observation mechanism in the Mediterranean

Madrid 3-4 July 2007

World Hydrological Cycle Observing System

(WHYCOS)

by

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Chief, Hydrology Division (WMO)

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WHYCOS
WORLD HYDROLOGICAL CYCLE OBSERVING SYSTEM

Presentation structure

- Introduction to WHYCOS
- Implementation Experiences
- Status of WHYCOS Components
  - Med-HYCOS

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THE MANAGEMENT CHALLENGE

1) Determining how much water is available on a decision making scale

2) Determining how much water is used (e.g., by ecosystems, humans)

3) Improving water supply predictions

4) Evaluating options (e.g. conservation) and implementing policies and programs to achieve regional objectives

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TO MEET THE CHALENGES

Need for Credible Data

- credible data is required for analysis
- common criteria should be adopted
- Data quality is an important aspect
- local expertise is required for screening

Need for Capacity Building

- Institutional (Net-work, Data Base,..)
- Human (Professionals, Technicians,…)

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WMO INITIATIVE

WMO developed the WHYCOS concept in 1993, in response to the recommendation of Agenda 21 chapter 18 and recommendations of UNDP/WB project on Hydrological Assessment for Sub-Saharan countries, and to meet the Management challenge.

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WHAT IS WHYCOS

- A system for capacity building in water resources management on a national, river basin, regional and global level

- Promotes regional cooperation and strengthens national and regional capacities in collection, transmission, processing, archiving and use of hydrological data and information

WHYCOS address the needs and requirements of the basins like integrated management of the water resources, flood forecasting, water quality monitoring, etc.

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OBJECTIVES

Short term

- Strengthen technical and institutional capabilities of hydrological services.
- Promote and facilitate dissemination and use of water-related information.

Long term

- Strengthen regional and international cooperation.
- Establish a global network of key national stations.

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WHYCOS CONTRIBUTES TOWARDS

- Better understanding of global hydrological cycle;
- Improved knowledge on the status and trends of the world's freshwater resources,
- Understanding hydrological variability, detect climate change, and predict impacts of such changes,
- Strengthen cooperation between NHS's and NMS's.
- Strengthen regional cooperation in water related issues

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WHYCOS STRUCTURE

WHYCOS consists of a number of different components, each independently implemented and responsive to national, regional and basin needs.

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WHYCOS and DATA EXCHANGE

Through Res. 25 (Cg-XIII), WMO promotes:

- Countries to be owners of their data
- NHSs to be responsible for quality check and validation
- Sharing of data and information within HYCOS project.
- Establishing protocols and agreements for data sharing
- Establishment of Hydrological Information Systems
- Access to data using Internet and other data transmission technologies
- Cooperation with international data centers and programmes (GRDC, GPCC)

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Project output

- Develop national and regional Water Information System
- Develop useful Hydrological Products and Information for users
- Use new technologies (Satellite data and Information)
- Focus on Capacity Building specially in training

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Project output
Information System

- Improving National and Regional data collection systems
- Establishing National and Regional Data Banks
- Preparation of information (products)
- Dissemination of Information

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Project output

Developing Products and Information

- Data Interpretation
- Data Storage Retrieval and Dissemination
- Water Resources Assessment
- Planning and Strategy Development
- Forecasting and Warning
- Hydrological Predictions and Forecasting
- Data and Information for IWRM

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Project output

Use of Satellite Data and Information

- GIS technology for assessment of water resources and flood risk assessment
- Satellite monitoring of Earth Observation Parameters
- Use of Numerical Weather Predictions in hydrological prediction

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WHYCOS & Capacity Building

FOCUS ON TRAINING

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Implementation Experiences

- The ownership of WHYCOS programme and its regional components should remain with WMO.
- Countries should have ownership of implemented projects.
- WHYCOS Guidelines and web page are essential
- HYCOS components should be demand driven addressing the needs of the basin/ region
- River/lake basin approach is recommended
- Capacity building should be a major element in the implementation of any HYCOS project

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Guidelines

Assist WHYCOS partners in developing and implementing the HYCOS components.

Ensure Each project remains consistent with the WHYCOS objectives while responding to local needs, realities, and changing situations.

Provide Guidance to partners on:

- ⇨ Main stages of project development
- ⇨ Roles of different partners
- ⇨ Governance, monitoring and evaluation of HYCOS projects.

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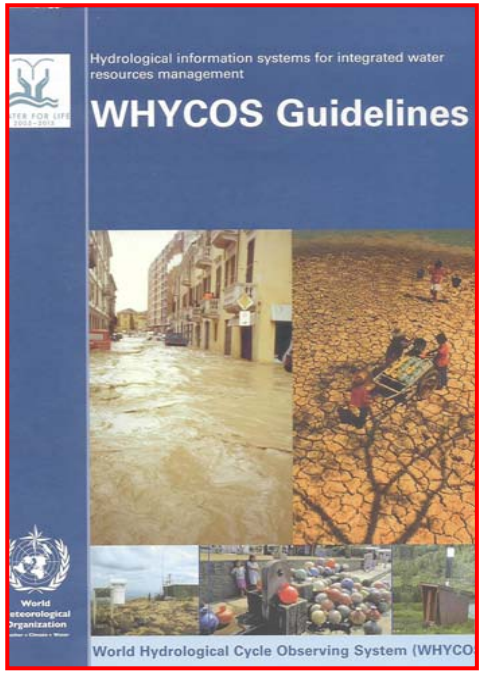
Guidelines

- Governance and Management
- Policy issues
- Sustainability
- Project Outputs



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WHYCOS Web Portal

Purpose

- To establish links between different WHYCOS components
- Exchange experience among various projects.
- Access Web based data and information systems of HYCOS components

Provides

- Overview of the WHYCOS programme
- Platform for quality management framework
- Capacity building network

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Current Status of the Programme

- Three (3) Projects implemented
- Five (6) Projects under implementation
  - Six (4) Projects in advanced stage of development
  - Two (3) Projects in the pipeline
  - WHYCOS Guidelines available
  - WHYCOS web-page online
  - Thirty seven (37) LDCs participated in the programme

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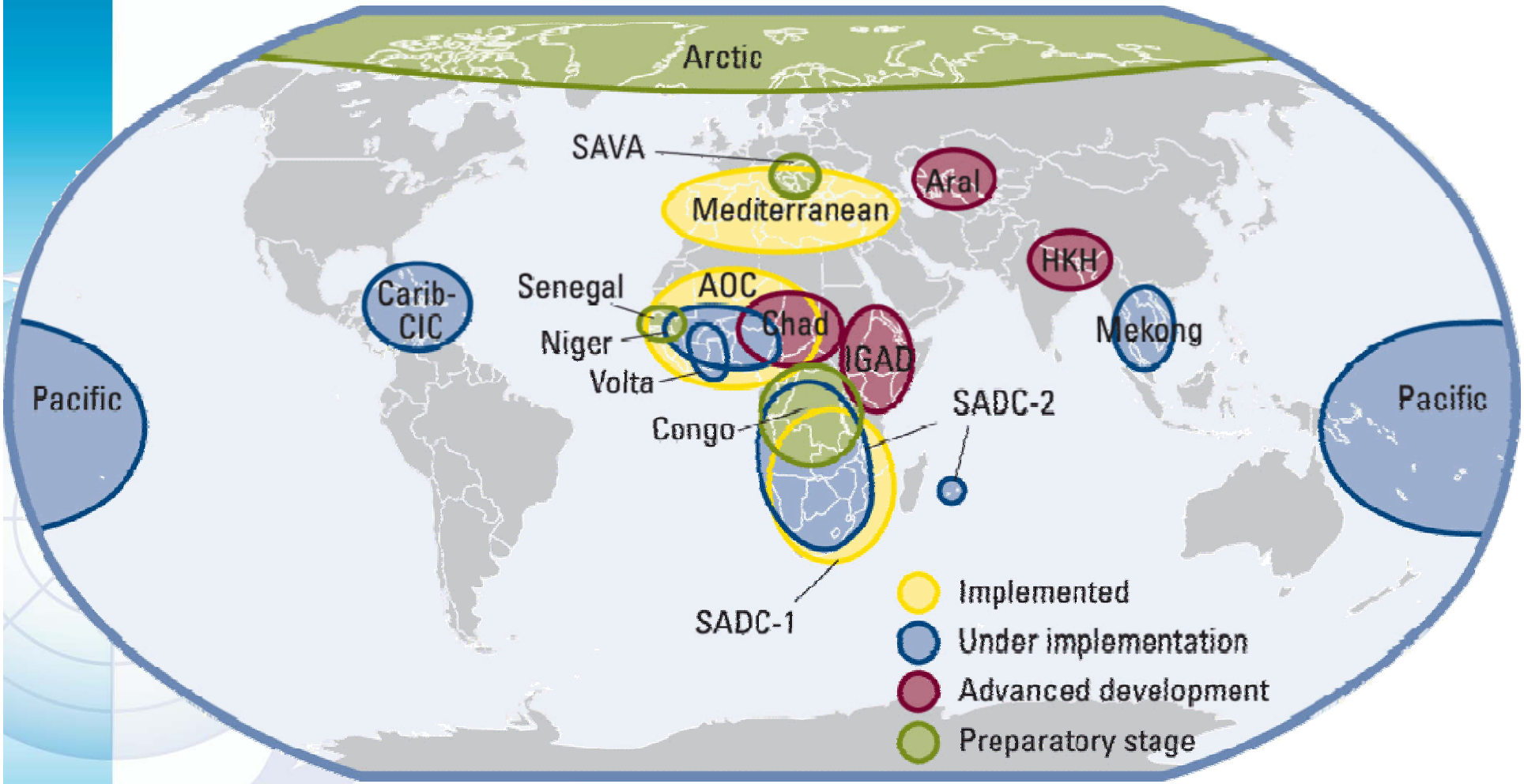

37 LDCs in RA I, RA II, RA IV and RAV are Participating in HYCOSs

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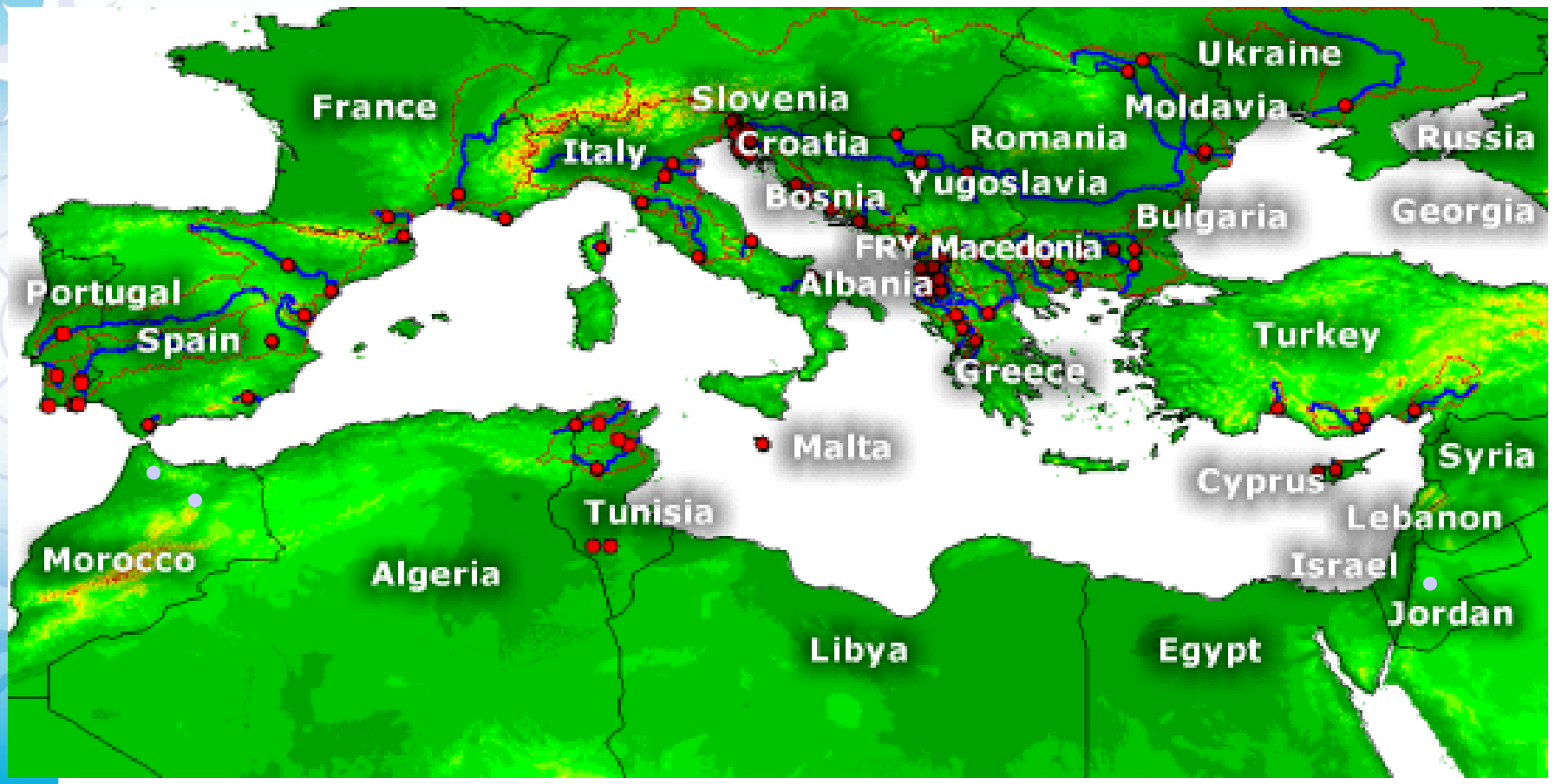
Med-HYCOS
Mediterranean rim



http : // medhycos . com

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Regional Co-operating Group

Morocco	Algeria	Tunisia	Palestinian Aut.	
Jordan	Lebanon	Turkey	Cyprus	Georgia
Ukraine	Moldova	Romania	Bulgaria	Greece
FYR Macedonia	Bosnia	Slovenia	Croatia	
Yugoslavia	Albania	Malta	Spain	Portugal
Italy	France			

Eligible Countries 25

Initial Co-ordinating Group 9 countries

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Main Objectives

Objective 1 : Network of METEOSAT DCPs

Objective 2 : MED-HYCOS Information System

Objective 3 : Support to NHSs

Objective 4 : Co-operation infrastructure

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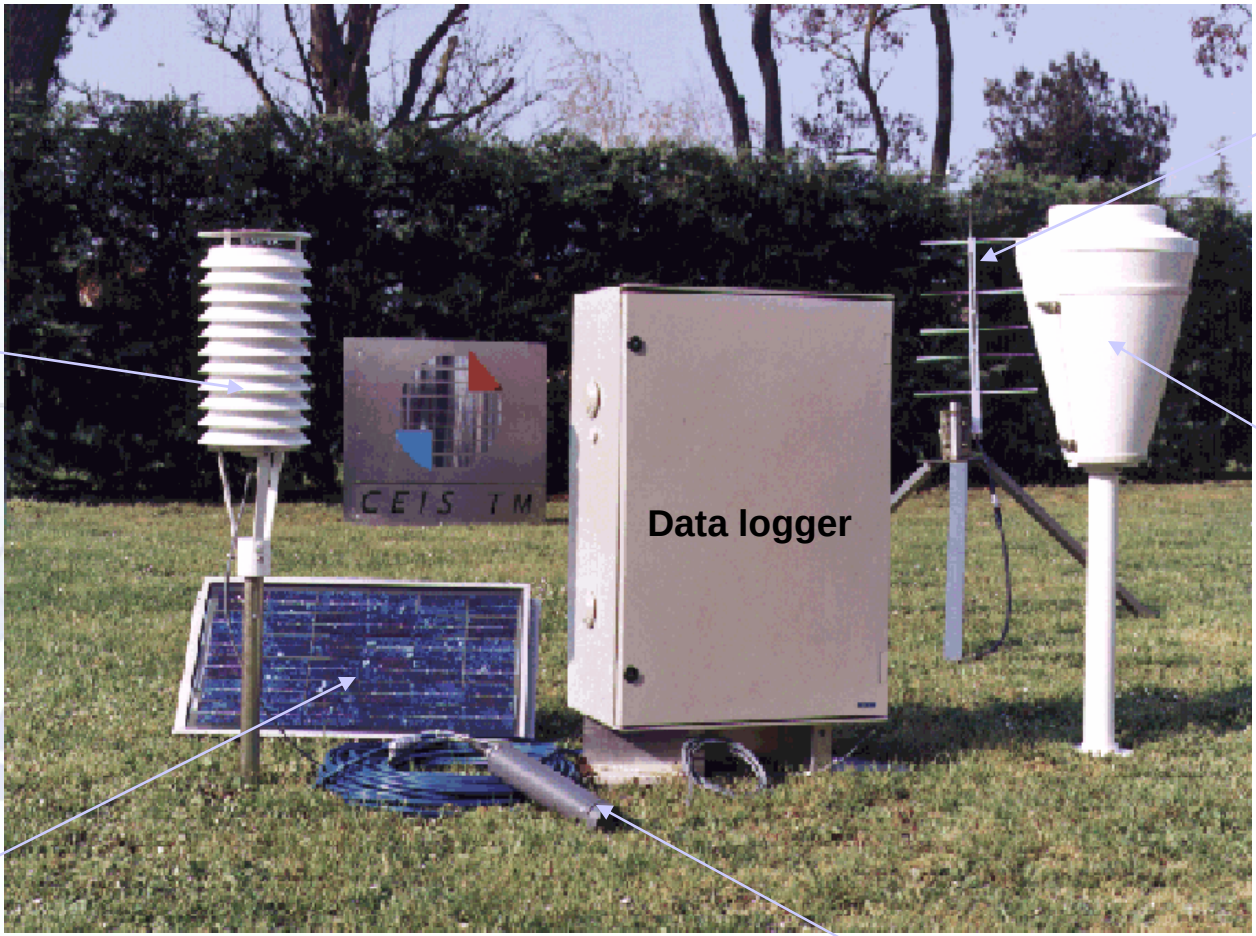
MED-HYCOS Data Collecting Platforms

PM 46 CEIS-TM



Antenna

Air temperature

Rainfall Recorder

Solar Panel

Water level sensor

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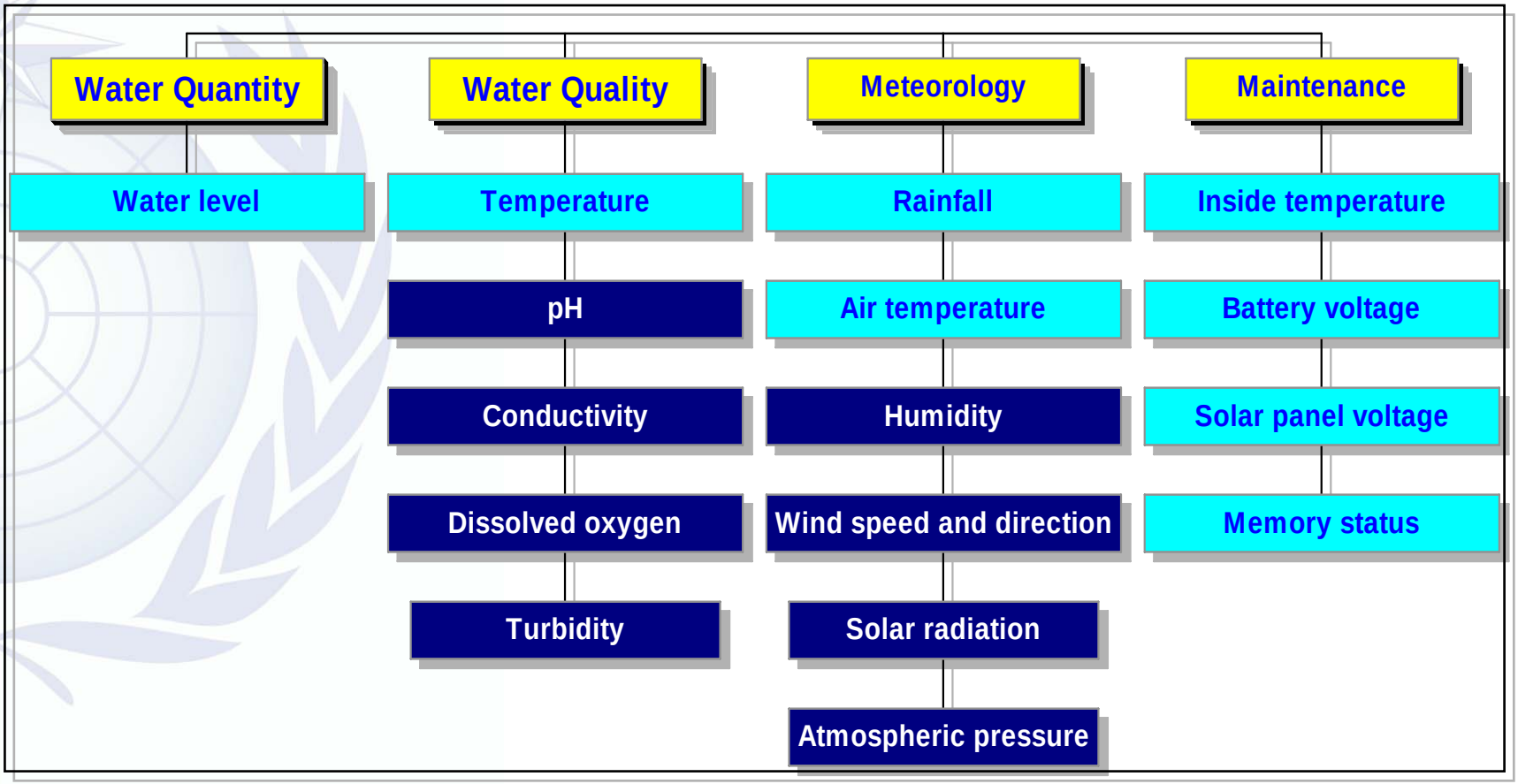
DCPs Basic Measurements



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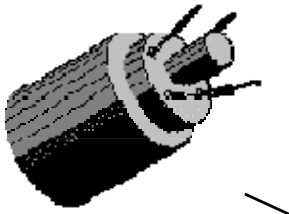
Teletransmission System & Data Flow

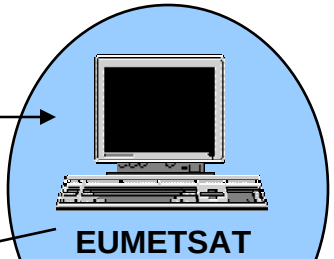


METEOSAT Satellite

Direct Reception Meteosat Station

Data Collection Platform

Ground Processing



EUMETSAT WEB SITE

Warning Monitoring

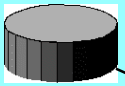
National Hydrological Service

National Database

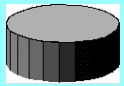
Data

Tools

MED-HYCOS Pilot Regional Centre



Operational Database



Row Database

Dissemination on INTERNET and CD-ROM

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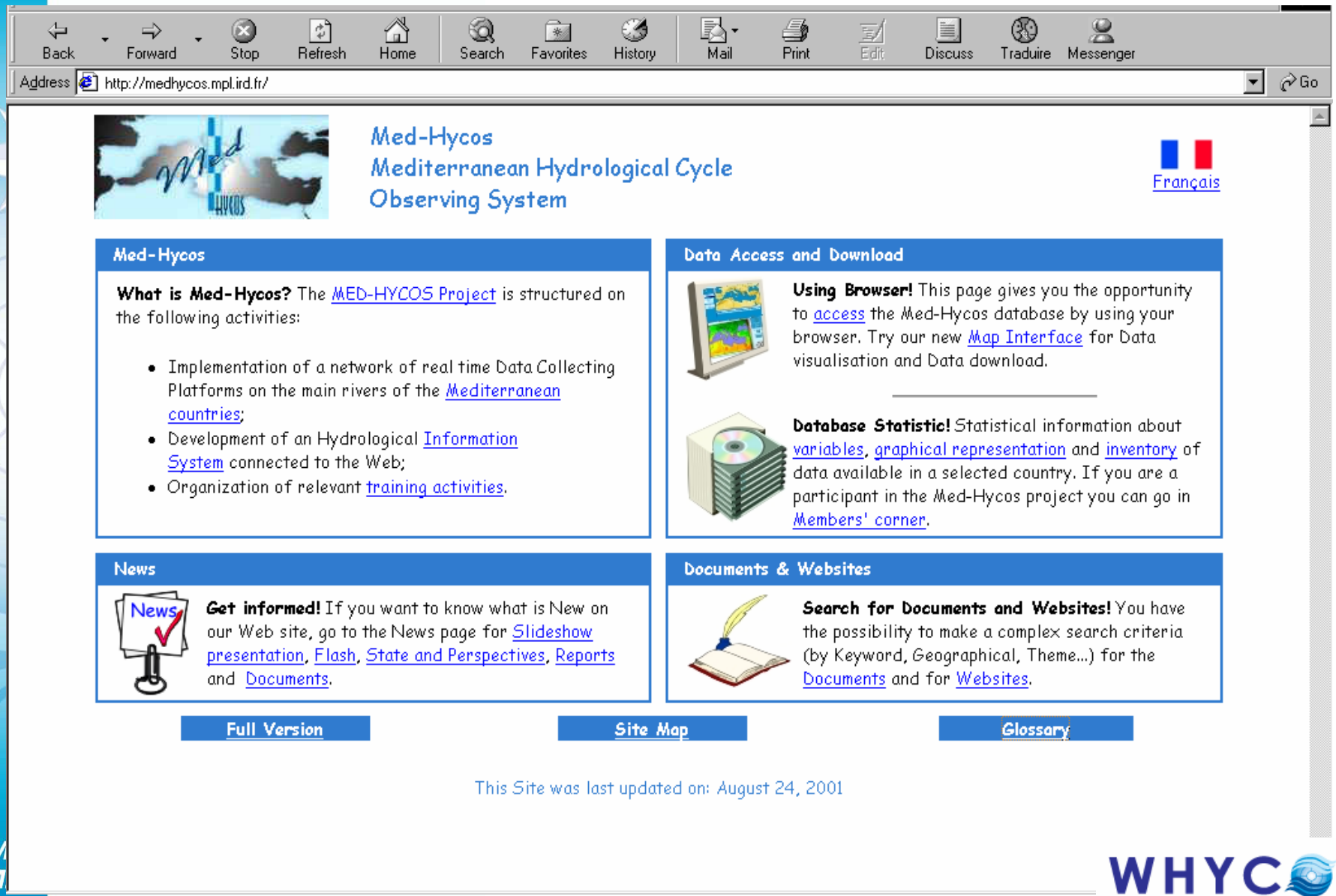
Med-HYCOS Home Page



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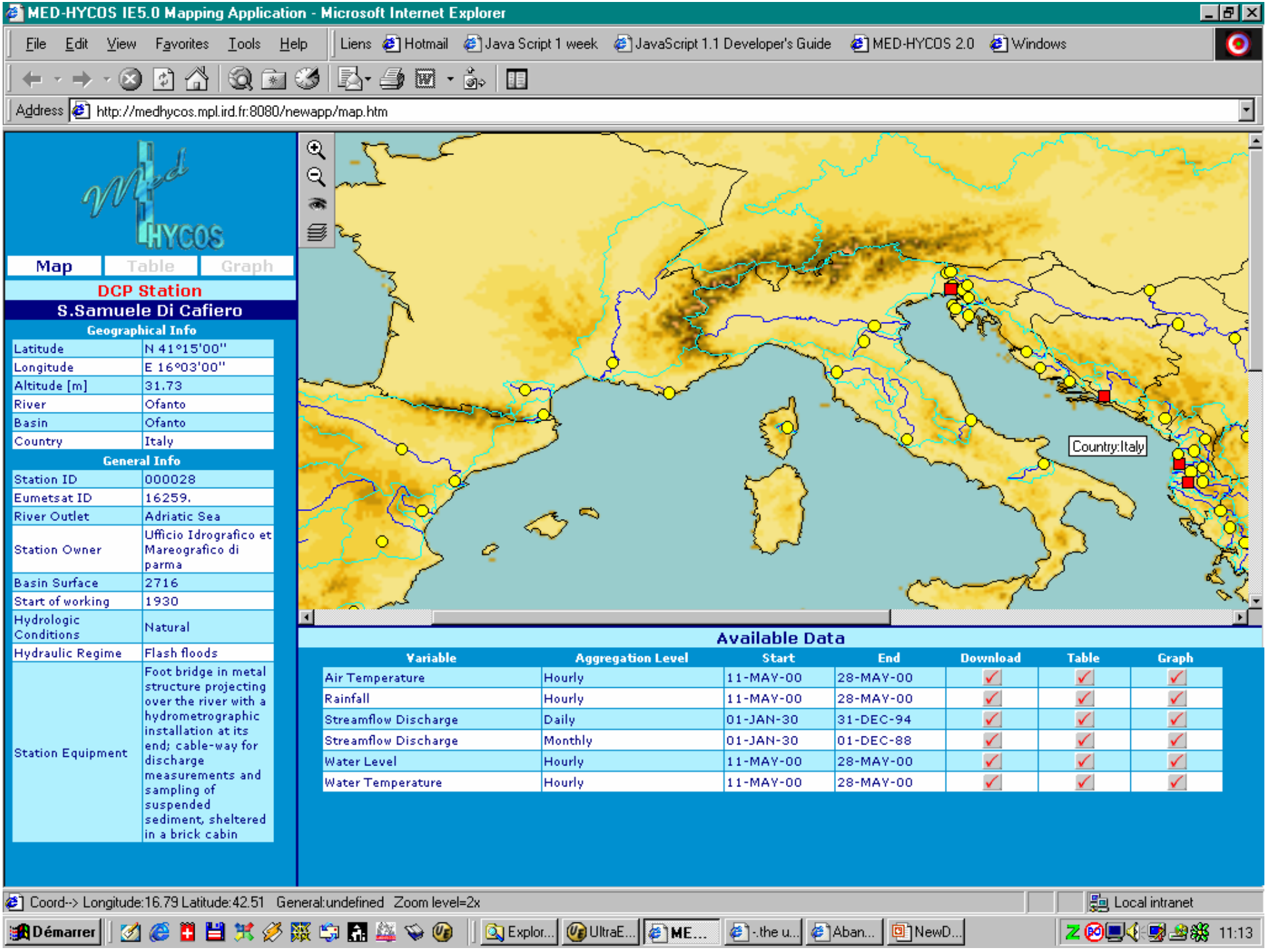

MED-HYCOS IE5.0 Mapping Application - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Liens Hotmail Java Script 1 week JavaScript 1.1 Developer's Guide MED-HYCOS 2.0 Windows
Address http://medhycos.mpl.ird.fr:8080/newapp/map.htm
Map
Table
Graph
DCP Station
S.Samuele Di Cafiero
Geographical Info
Latitude N 41°15'00''
Longitude E 16°03'00''
Altitude [m] 31.73
River Ofanto
Basin Ofanto
Country Italy
General Info
Station ID 000028
Eumetsat ID 16259.
River Outlet Adriatic Sea
Station Owner Ufficio Idrografico et Mareografico di parma
Basin Surface 2716
Start of working 1930
Hydrologic Conditions Natural
Hydraulic Regime Flash floods
Station Equipment Foot bridge in metal structure projecting over the river with a hydrometrographic installation at its end; cable-way for discharge measurements and sampling of suspended sediment, sheltered in a brick cabin
Country:Italy
Available Data
Variable Aggregation Level Start End Download Table Graph
Air Temperature Hourly 11-MAY-00 28-MAY-00
Rainfall Hourly 11-MAY-00 28-MAY-00
Streamflow Discharge Daily 01-JAN-30 31-DEC-94
Streamflow Discharge Monthly 01-JAN-30 01-DEC-88
Water Level Hourly 11-MAY-00 28-MAY-00
Water Temperature Hourly 11-MAY-00 28-MAY-00
Coord--> Longitude:16.79 Latitude:42.51 General:undefined Zoom level=2x
Local intranet
Démarrer
11:13

MedMap - MED-HYCOS Mapping Tool with Local Access Database Connection

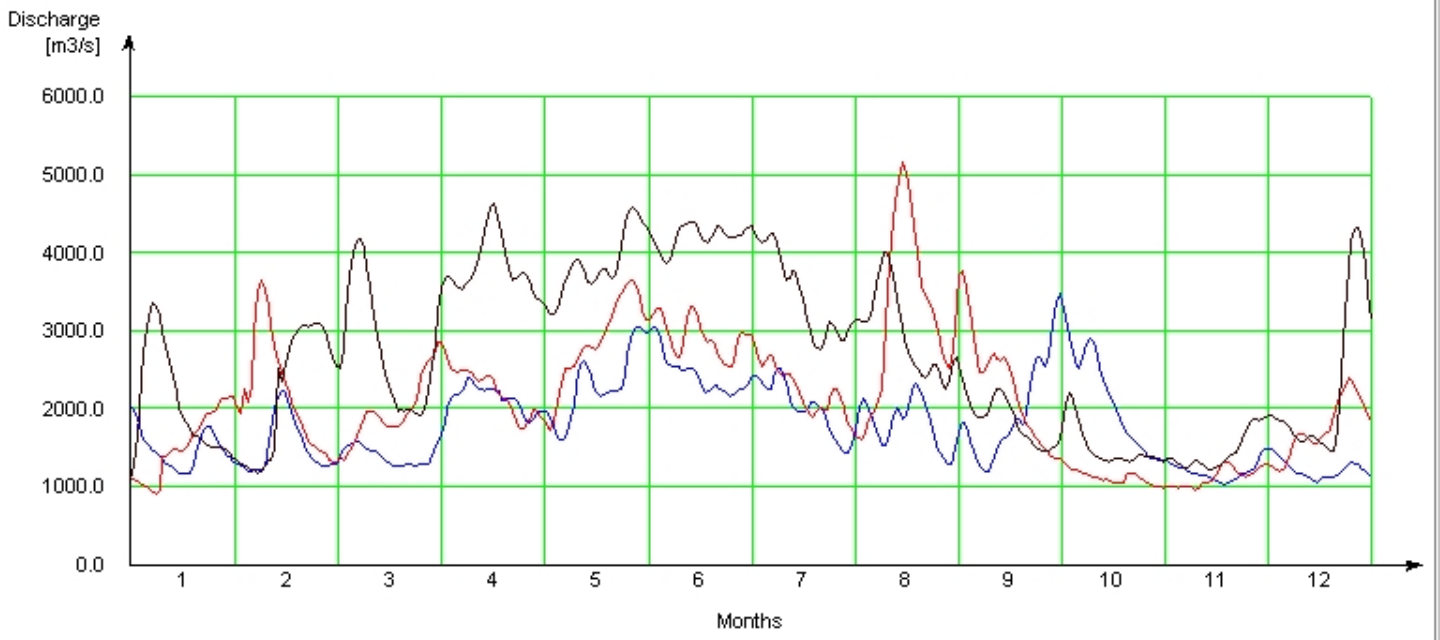
File Edit Connection Custom Maps Help

All Variables | All Aggregations | 1:1 | Selectable: Stations

Database Tree

- Basins
- Countries
- Rivers
- Stations
  - Abrantes
  - Alcala del Jucar
  - Arminou
  - Avlako
  - Bachkovo
  - Beaucaire
  - Bezdan
    - Streamflow Dischar
      - Daily
  - Boboshevo
  - Bodega
  - Cantoria
  - Carcassonne
  - Casalecchio
  - Cerkvenikov mlin
  - Dolenje
  - El Feija
  - Elhovo
  - Galabovo
  - Germagoseia
  - Ghardimaou
  - Gozo
  - Hyeres Sainte Eulalie
  - Il Arion
  - Izmail
  - Jankovica buk
  - Jarash
  - Kanguet Zazia
  - Karahacili
  - Karakaya
  - Kef El Abiodh
  - Kirishane

Map | Year Graph | Month Graph | Table



Station name	Var. & Agr.	Year	Visible	Active
Bezdan	Streamflow Di. / Daily	1984	☑	☐
Bezdan	Streamflow Di. / Daily	1985	☑	☐
Bezdan	Streamflow Di. / Daily	1987	☑	☑

Démarrer | Explori... | UltraEd... | Napste... | Napiga... | Med... | 13:37

Main Achievements

Objective 1 :

- ☑ Network of 36 METEOSAT DCPs

Objective 2 :

- ☑ Establishment of Regional Data base
- ☑ Creation of Regional web site
- ☑ Water Observation and Information System for Decision Support (WOIS)

Objective 3 :

- ☑ Computers and software
- ☑ Training material and sessions
- ☑ Development of tools for data and information management

Objective 4 :

- ☑ International Meetings (BALWOIS)
- ☑ Exchange of expertise
- ☑ Follow up projects (WOISYDES & SAVA-HYCOS)

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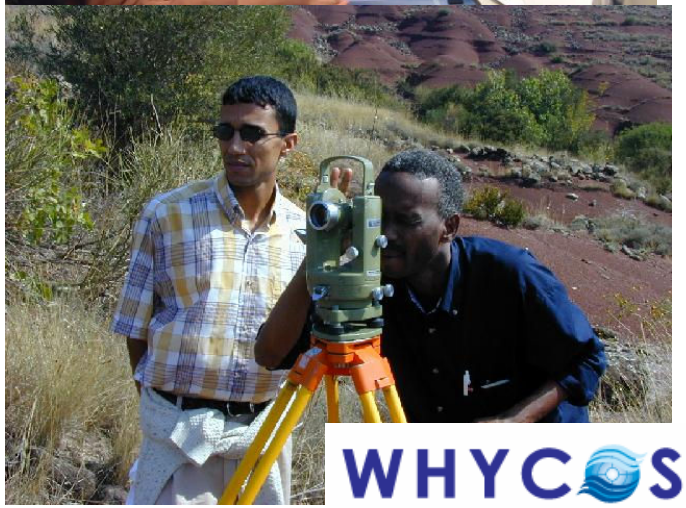
TRAINING



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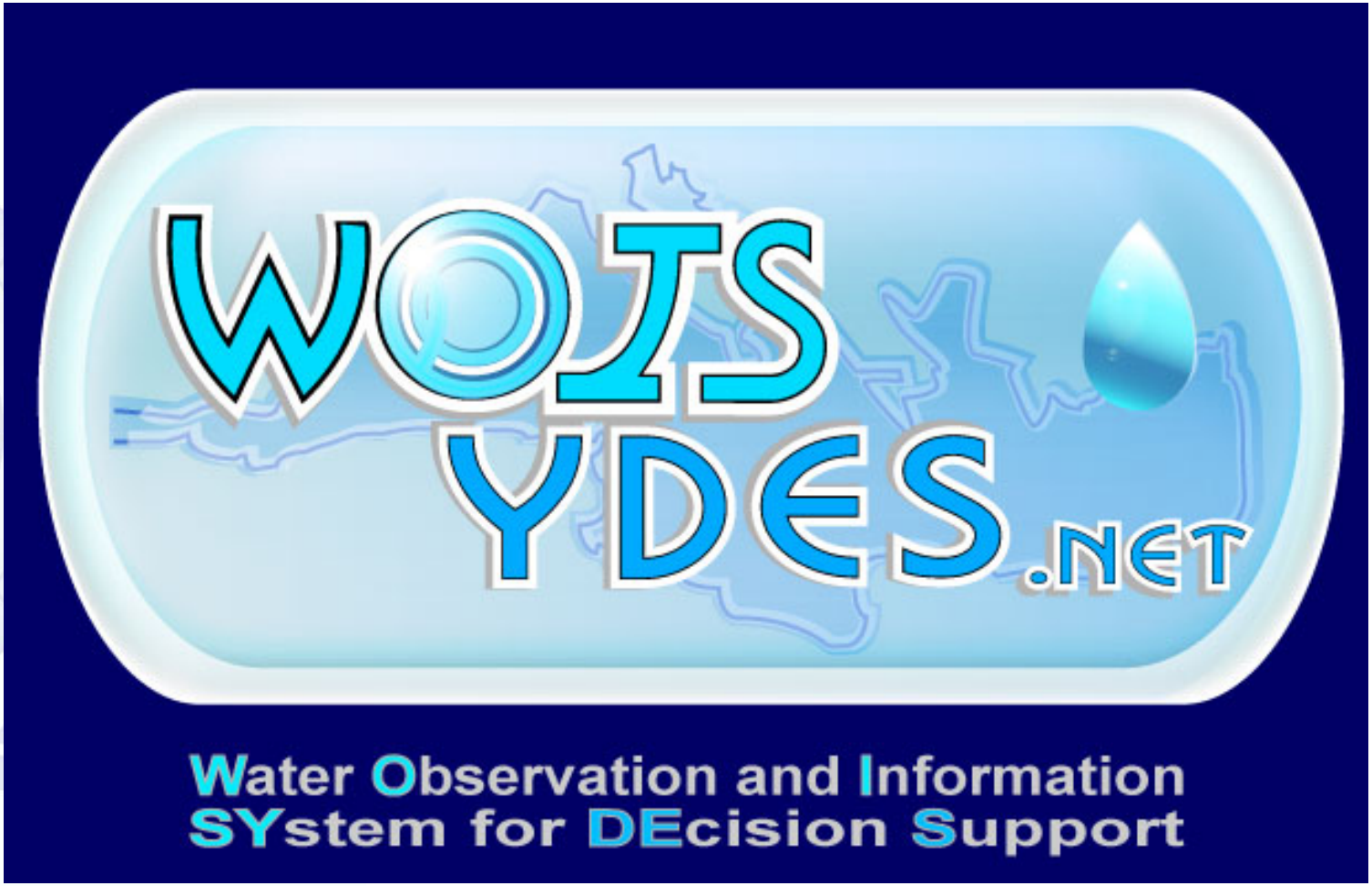

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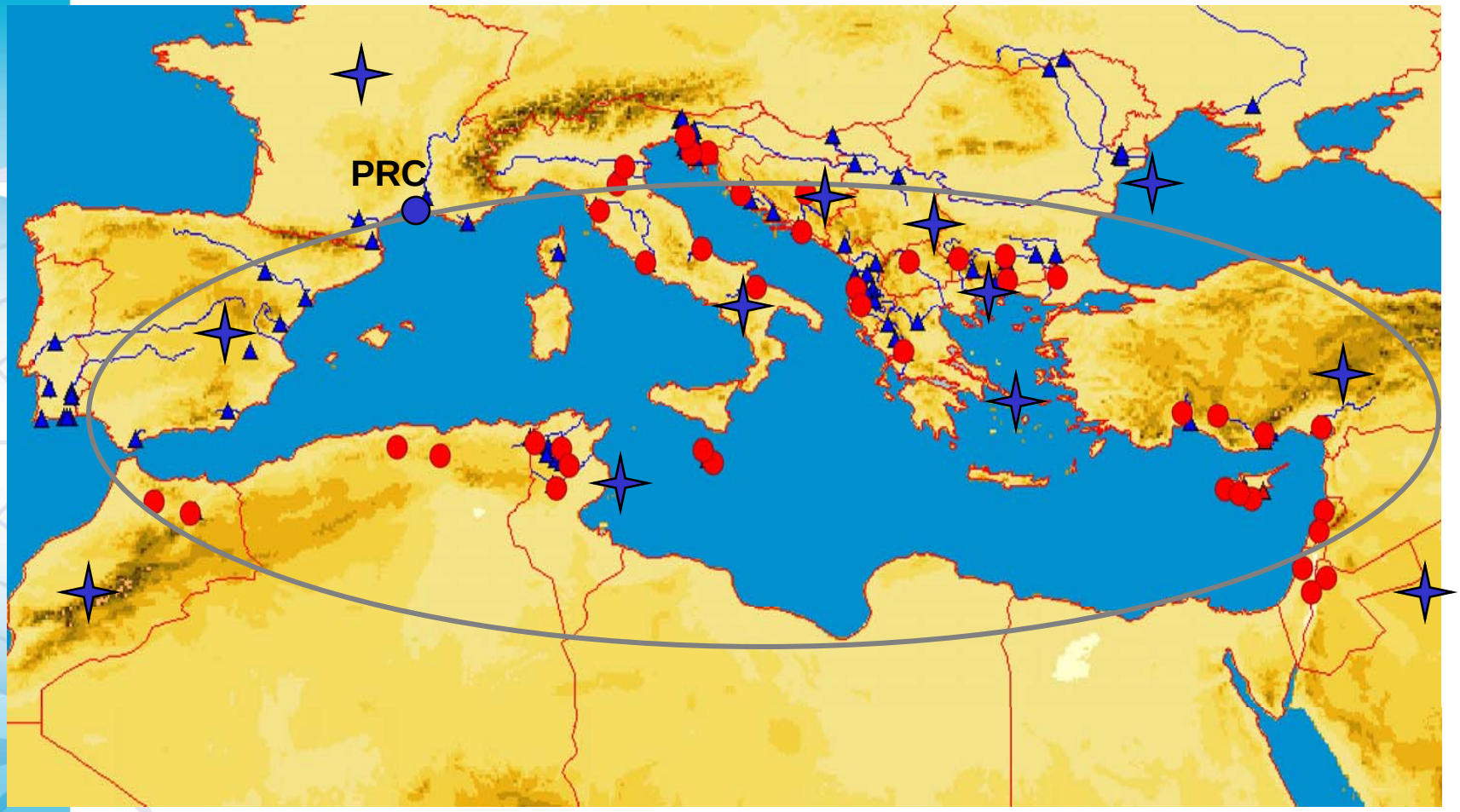
MED-HYCOS Network



Data Collecting Platforms

National Hydrological Services

PRC : Pilot Regional Center

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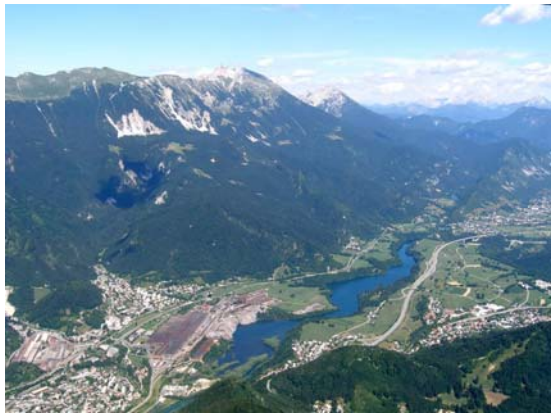
BALWOIS

International Scientific Conference

Ohrid, Republic of Macedonia,

2004, 2006, 2008,



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Thank You

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