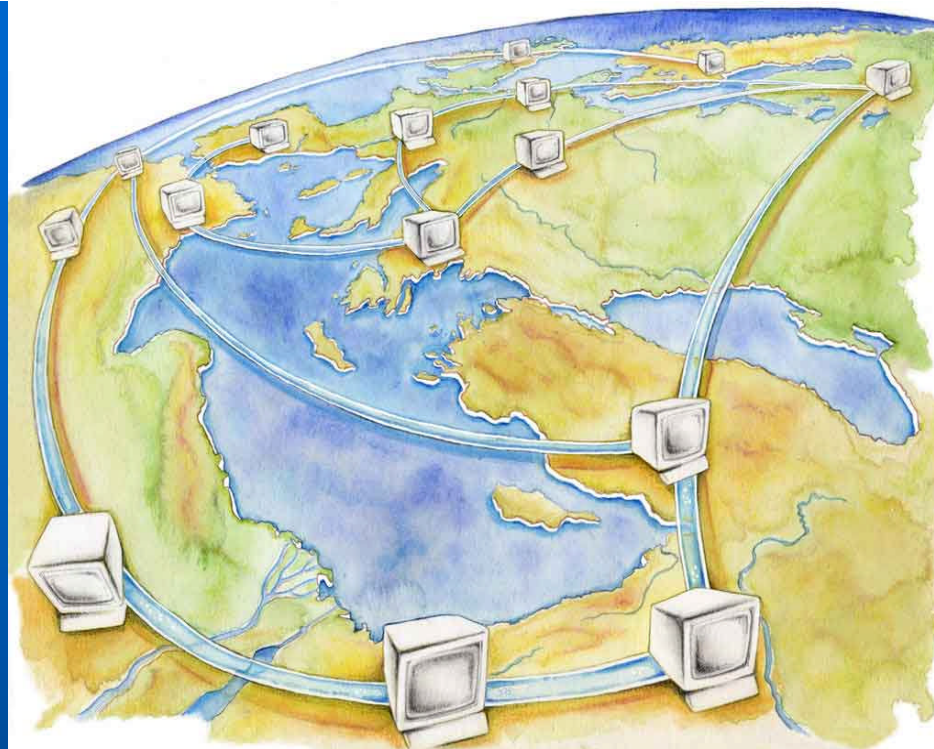# SEMIDE

www.semide.net

Système Euro-Méditerranéen d'information sur les savoir-faire dans le domaine de l'Eau

EMWIS

www.emwis.net

Euro-Mediterranean Information System on know how in the water sector

النظام المعلوماتي الأورومتوسطي للمعرفة في مجال المياه

Exploitation of Earth Observation for water management in the Mediterranean

EMWIS perspective

Eric MINO

EURO-MEDITERRANEAN PARTNERSHIP

Presentation outline

1. **Brief reminder on EMWIS**

2. **Activities on water information systems**

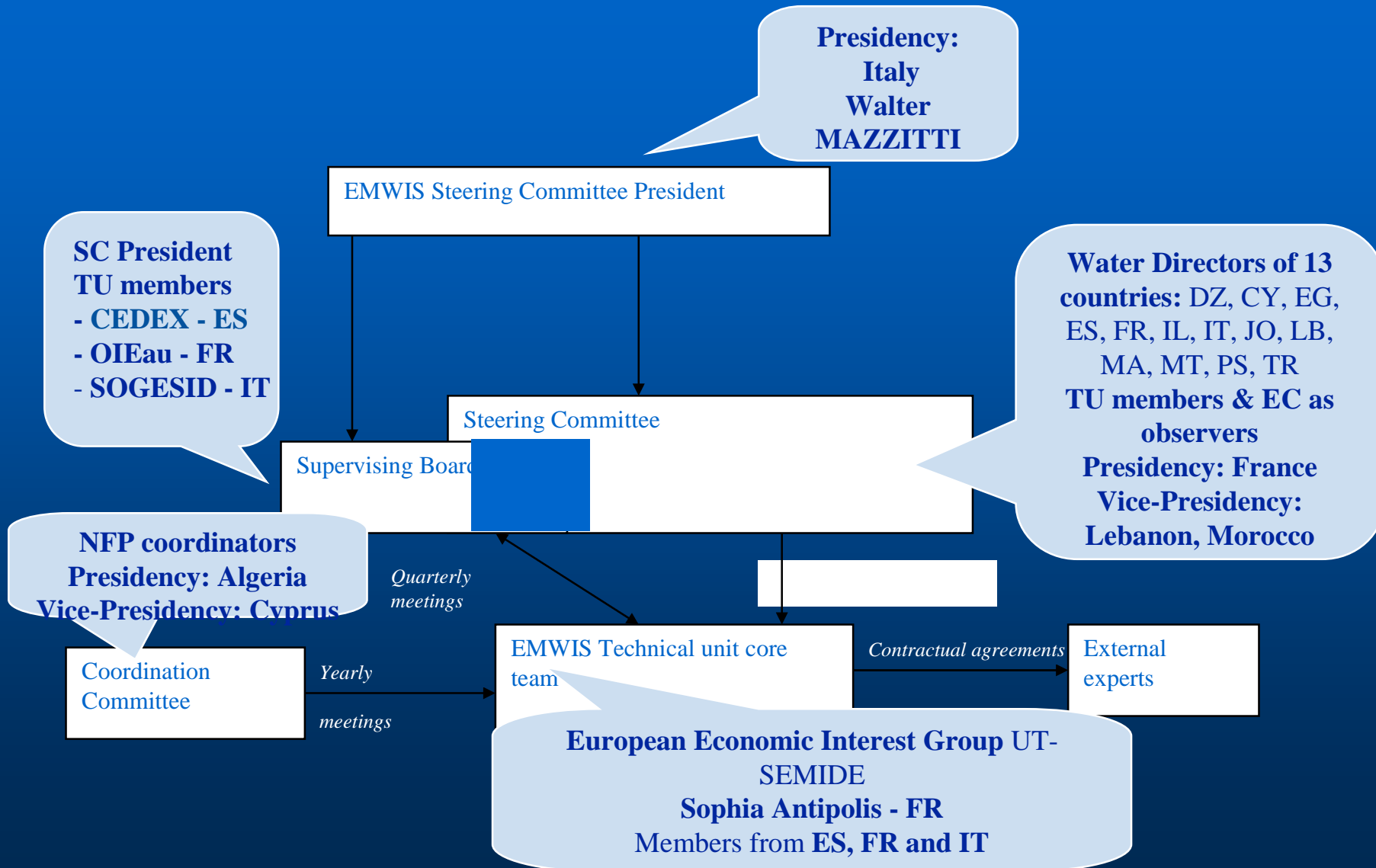3. **Workshop expectations (EMWIS perspective)**

OBJECTIVES OF EMWIS

To create a tool for cooperation between the European and Mediterranean countries whose aim is to:

- ❑ **Facilitate access to the existing information** on know-how**;**
- ❑ **Develop the sharing of information** to enable anyone to make known his activities, his topics of interest …;
- ❑ **Create common products and cooperation programmes** to develop available information and to promote the collection of the lacking information.
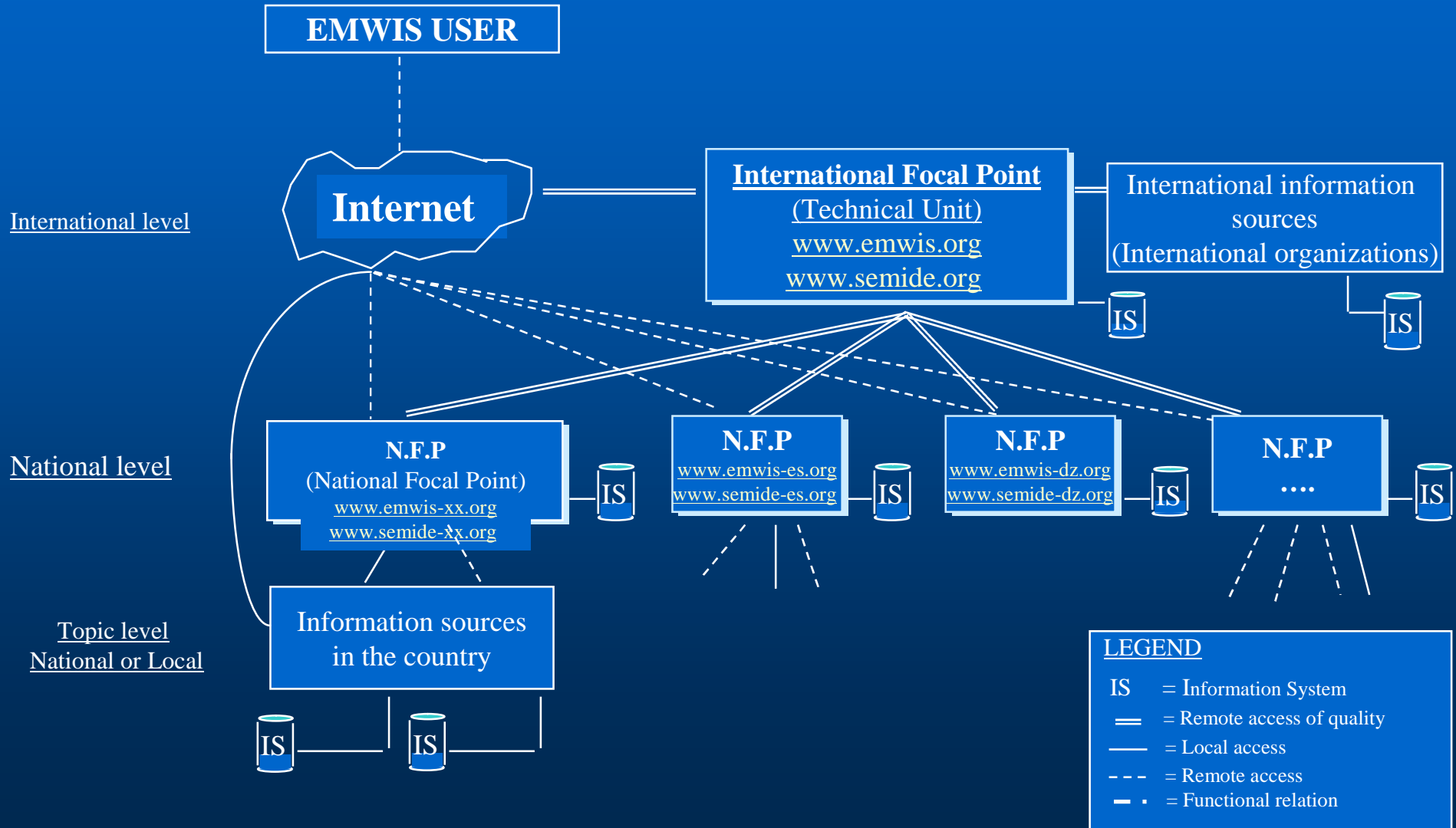
In the water sector

Organisational structure

**Presidency:
Italy
Walter
MAZZITTI**

EMWIS Steering Committee President

**SC President
TU members
- CEDEX - ES
- OIEau - FR
- SOGESID - IT**

**Water Directors of 13
countries:** DZ, CY, EG,
ES, FR, IL, IT, JO, LB,
MA, MT, PS, TR
**TU members & EC as
observers
Presidency: France
Vice-Presidency:
Lebanon, Morocco**

Steering Committee

Supervising Board

**NFP coordinators
Presidency: Algeria
Vice-Presidency: Cyprus**

*Quarterly
meetings*

Coordination
Committee

Yearly

meetings

EMWIS Technical unit core
team

Contractual agreements

External
experts

European Economic Interest Group UT-
SEMIDE
Sophia Antipolis - FR
Members from **ES, FR and IT**

EMWIS Architecture

EMWIS USER

Internet

International level

International Focal Point
(Technical Unit)
www.emwis.org
www.semide.org

International information
sources
(International organizations)

IS

IS

National level

N.F.P
(National Focal Point)
www.emwis-xx.org
www.semide-xx.org

IS

N.F.P
www.emwis-es.org
www.semide-es.org

IS

N.F.P
www.emwis-dz.org
www.semide-dz.org

IS

N.F.P
....

IS

Topic level
National or Local

Information sources
in the country

IS

IS

LEGEND

IS = Information System

== = Remote access of quality

— = Local access

--- = Remote access

– · = Functional relation

The National Focal Points

European Union: 25 countries

10 NFP created and 7 active websites

Austria, Belgium, **Cyprus, France**, **Greece**, **Italy**, Luxembourg, **Malta, Portugal**, **Spain**

Mediterranean partners: 10 countries

10 NFP created and 9 active websites

Algeria, **Egypt, Israel, Jordan, Lebanon, Morocco**, **Palestine**, Syria, **Tunisia**, **Turkey**

Other Union for the Mediterranean countries:

Mauritania, Monaco

Also opened to Balkan countries and Libya

Strengthening Water Information Background

1995	Euromed Partnership
1996	Euromed Ministers Initiate EMWIS
1999	EMWIS operational launch
2005	EMWIS first activities on data management
2008	UfM Water Ministerial conference Long Term Water Strategy initiated

Focus on know-how sharing
- **9 years of operation**
- **20 countries**
- **About 50 000 visitors per month**

➤ **Confidence between water authorities**

- **Feasibility studies of National Water Information Systems (**Algeria, Cyprus, Israel, Jordan, Lebanon, Malta, Morocco, Palestine, Tunisia, Turkey)
- **Preliminary analysis for a Mediterranean Water Observation Mechanism - 2006-2007**
  (7 national diagnostic studies, 25 international initiatives consulted)

Union for the Mediterranean: High level of expectations

Ministerial conference on Water, Dead Sea, Dec'2008

- **Civil Society:**
  - ❑ *"underline the need for reliable data and to enable the free flow of information and sharing of data"*
- **Ministerial declaration:**
  - ❑ *"reaffirm the importance of data, information and statistics on water, based on internationally agreed definitions and methods, structured within information system "*
  - ❑ *"call for strengthening the coordination of existing Euro-Mediterranean initiatives and networks on information and expertise, policy planning and monitoring "*
  - ❑ *"underline the importance of exchange of good practices, including through EU, Mediterranean, and other relevant programme "*
  - ❑ **+ soulignons le point 7 of the declaration**

Strengthening Water Information and monitoring in the Mediterranean

➢ **Improving National water data systems in coherence with international standards**

➢ **Coordinating data collection mechanisms**
  - ➢ **Harmonisation of definitions (interoperability)**
  - ➢ **Fostering NWIS as main source of reliable data**
 - ➢ **Exchange of experiences**

Definitions / Characterisation

- **"*An information system is a set of social stakeholders that records and transforms data representations via information technologies*"**

  => a National Water Information System should include all the stakeholders, directly or indirectly concerned by the water sector, who agree to exploit information technologies with common objectives.

  => Each stakeholder generally has its own Water Information System which includes only one organisation and its subsidiaries around common objectives

Shared Water information Systems

➤ Data access right defined by data owners

➤ Data exchanges can be restricted to a close group of stakeholders

NWIS Management

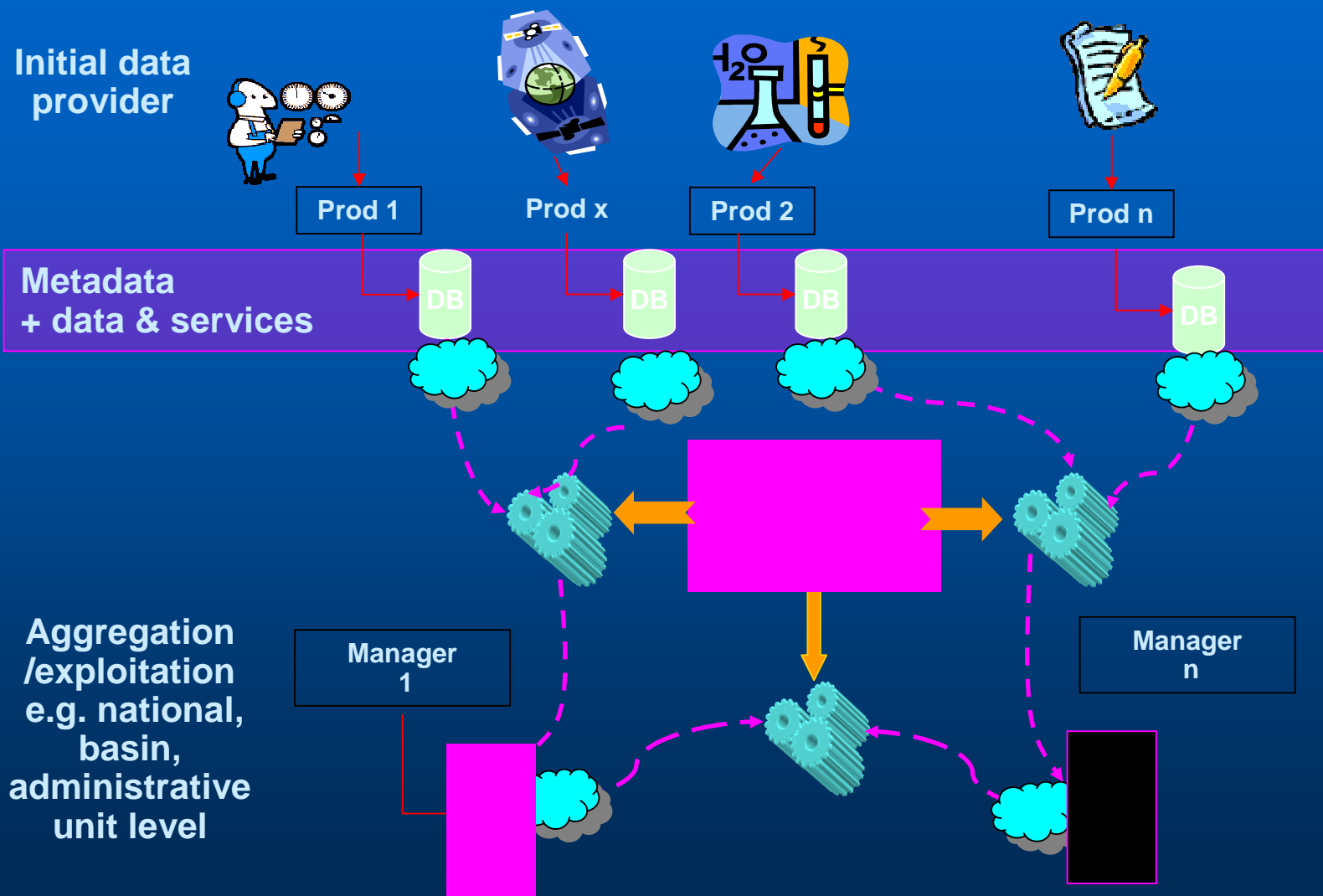Web navigator

NWIS

NWIS Public site

NWIS secure site
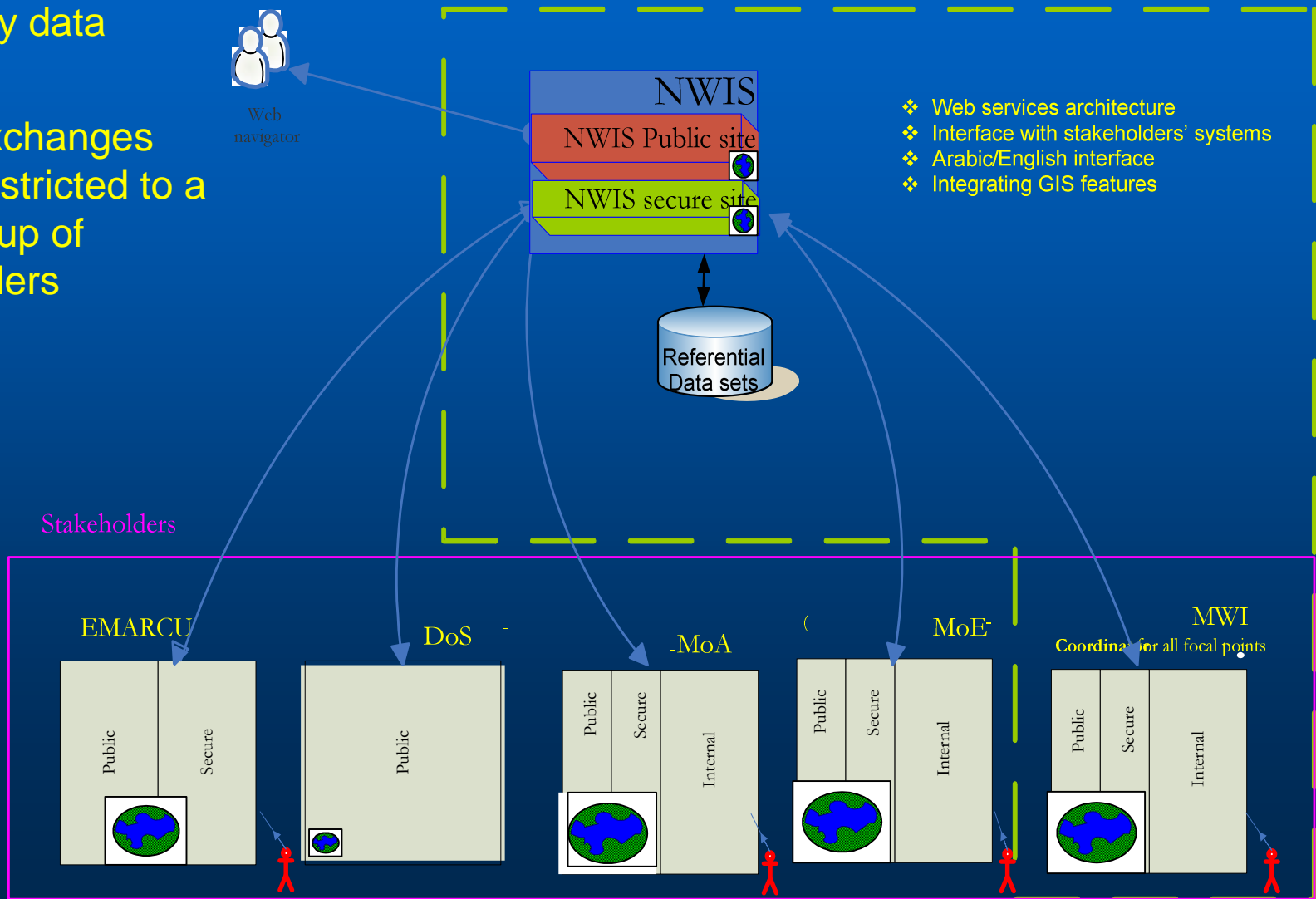
❖ Web services architecture
❖ Interface with stakeholders' systems
❖ Arabic/English interface
❖ Integrating GIS features

Referential Data sets

Stakeholders

EMARCU

Public | Secure

DoS

Public

-MoA

Public | Secure | Internal

MoE

Public | Secure | Internal

MWI

Coordina for all focal points

Public | Secure | Internal

Mediterranean vision
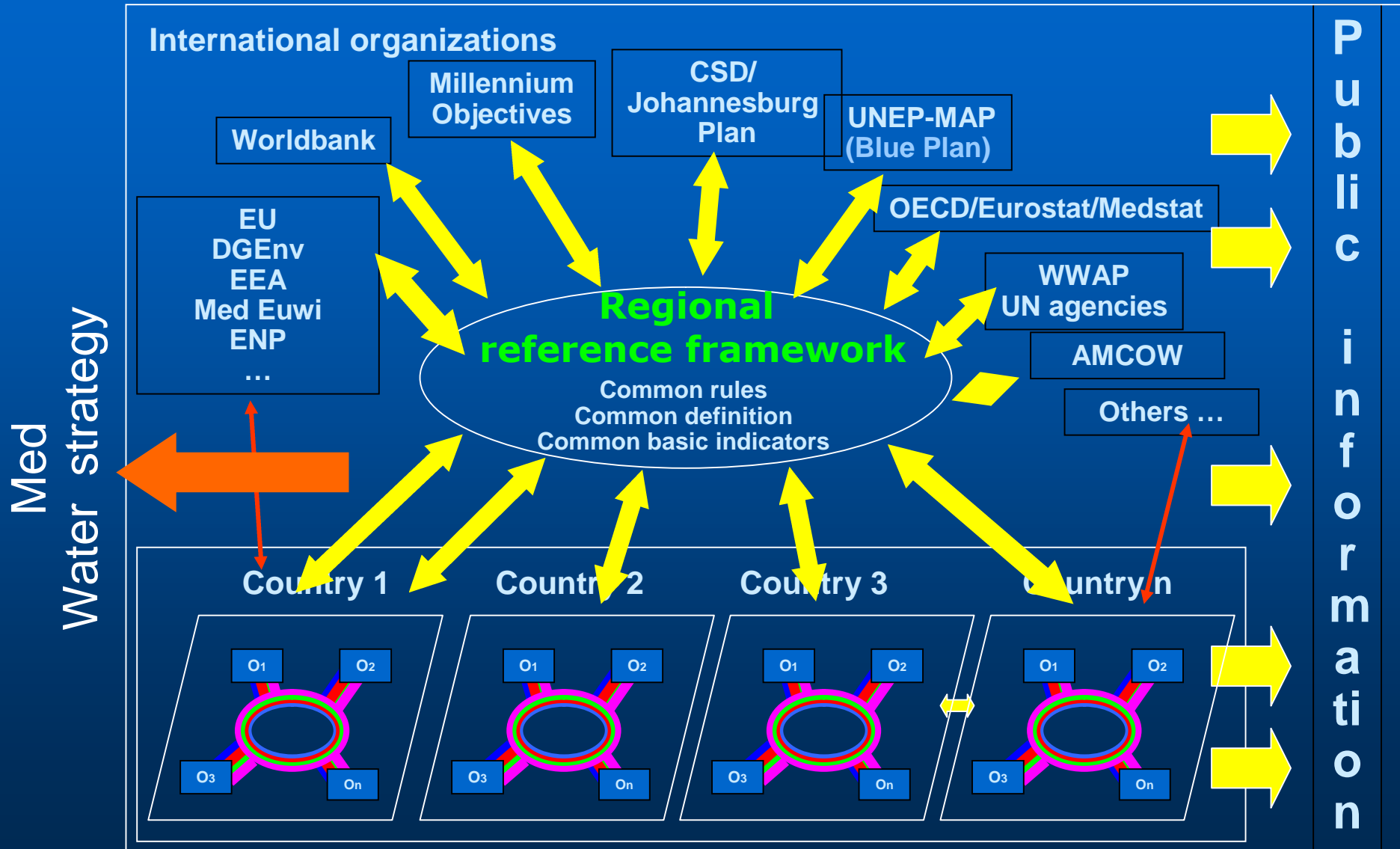
Organising data exchanges

Initial data provider

Prod 1   Prod x   Prod 2   Prod n

Metadata + data & services

DB   DB   DB   DB

Aggregation /exploitation e.g. national, basin, administrative unit level

Manager 1

Manager n

Content of a reference data framework

- **Referencial datasets**

  - ❑ **Hydrological networks (e.g. rivers, watersheds, lake, aquifers)**

  - ❑ **Water management areas (e.g. protected areas, administrative units)**

  - ❑ **….**

- **Data dictionaries (data models, reference lists)**

  => Generic conceptual data model developed

- **Definition of indicators, data collection methods**

  => Pilot activity on going on water quantities

- **Geo-catalogue of data sets and data services + map viewer**

  - ⇒ **Discovery and view services**

  - ⇒ **Prototype available with a Mediterranean profile**

- **Interoperability specifications (exchange formats/ service protocols)**

  => Recommendations on standards to be used (for SEIS/WISE/INSPIRE interoperability)

Implementation process
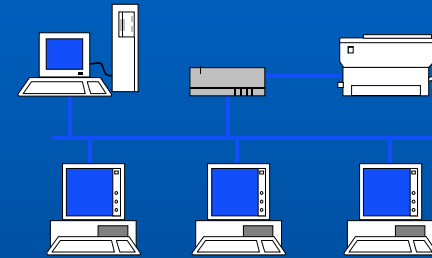
Policy Framework Agreement (main objectives, priorities)

Common language

Specific need definition / agreements on procedures

System development (incl. capacity building)
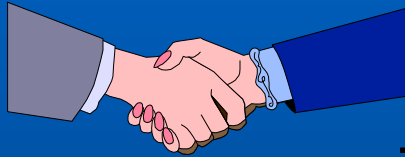
A specific legislation, MoU or partnership agreements

NWIS basic principles

- **Information should be managed as close as possible to its source**
  - ❑ **Multiple partners/providers**

- **Information collected once and shared with others for many purposes**
  - ❑ **Different aims / user categories**
  - ❑ **Interoperability requirements (incl. semantic)**
  - ❑ **geographical scales, aggregation**

- **Provision of aggregated data to the public**

- **Unique provider for each data type**

- **Gouvernance**
  - ❑ **Strategic -> needs, cooperation agreement, assessment**
  - ❑ **Technical -> referential data sets, data exchange**
  - ❑ **Basins (or management units), remote sensing -> data collection**

Major technical constraints in developing countries

- **Lack of harmonised reference datasets**
  - ❑ **Land cover**
  - ❑ **Land elevation models**
  - ❑ **Hydrological networks**
- **Limited level of water quantity and quality monitoring neworks**
  - ❑ **High cost of monitoring networks**
  - ❑ **Lack of temporal series**
- **Information for the citizens**

- ➤ **Use of Earth Observation technologies could help solving these data gaps**

Policy drivers

- **UfM Mediterranean Water Strategy**
  - ❑ **Governance**
  - ❑ **Climate Change adaptation / drought and flood management**
  - ❑ **Water financing / Tarifs**
  - ❑ **water demand management / non-conventional water resources / quality of water and biodiversity**
- **EU - Horizon 2020 – Depolution of Mediterranean sea**
  - ❑ **Urban waste water**
  - ❑ **Industrial emission**
  - ❑ **(Urban solid waste)**
- **UNEP - Mediterranean Strategy for Sustainable Development**
  - ❑ **Resources and Demand indicators**
- **UN – Water => World Water Assessment Programme**
  - ❑ **Total freshwater renewable resources**
  - ❑ **Access to drinking water / sanitation**
  - ❑ **Water abstration per sector**

Technical Drivers

- **<u>GMES – Global Monitoring for Environment and Security</u>**

- **<u>SEIS – Shared Environmental Information System</u>**
  - ❑ **Distributed approach based on specialized nodes**
  - ❑ **Strong EU support for Neighborhood countries (bilateral agreements)**

Seminar expectations

- Review some experiences of EO for water management in the region

- Identify topics where EO can add value to water management

- Prepare a concept paper for a regional project focusing on the use of EO applications for water management with pilot countries
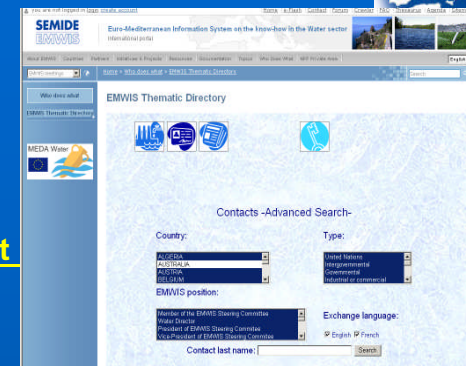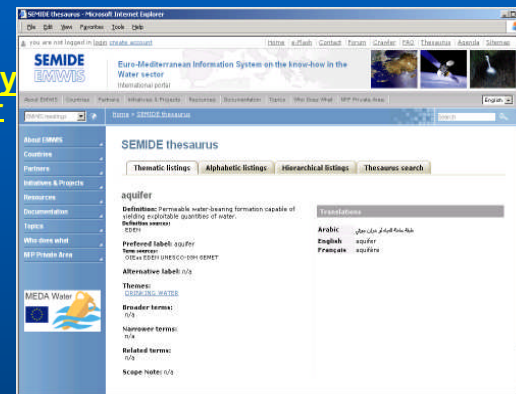
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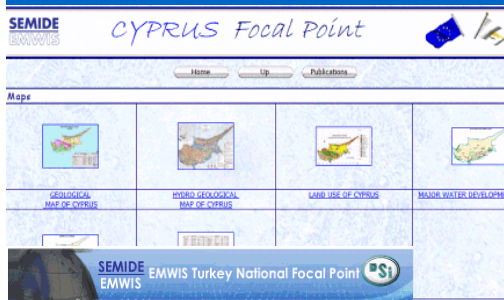
National portals

« who does what

Common taxonomy
(multilingual water
thesaurus)

www.semide.net

Clearing house for EU programs
and initiatives

Regional water projects

Thematic forums/folders
Ground water, water scarcity
Water glossaries, satellite images,
etc.
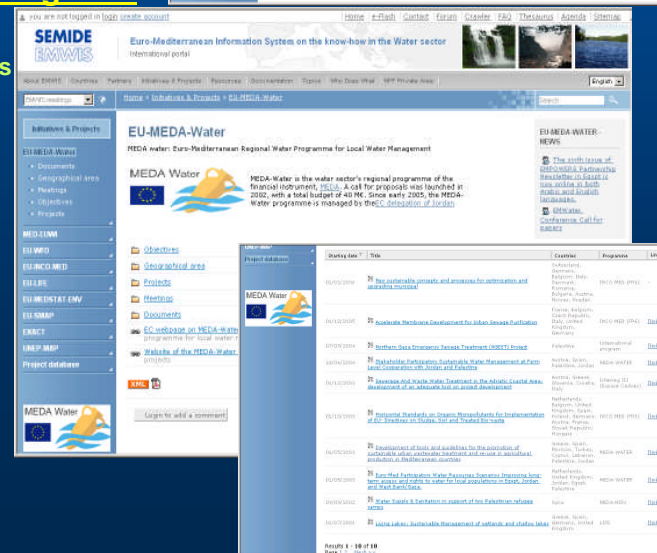
Monthly eNews Flash in Arabic,
English and French