European Strategy Forum on Research Infrastructures ESFRI

european multidisciplinary seafloor observatory emso

http://www.emso-eu.org/

EMSO

European Multidisciplinary Seafloor Observatory

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EUDAT User Forum

Barcelona, 7-8 March 2012

EMSO is a Research Infrastructure of the ESFRI Roadmap, is the European network of fixed seafloor and water column observatories constituting a distributed infrastructure for long-term monitoring of environmental processes.

A large European users community has been gathered around ESONET-NoE (2007-2011, www.esonet-emso.org/) which has been providing many inputs to the shaping of EMSO

The legal organization

The ERIC is the legal form accepted by the funding agencies and the community

EMSO-ERIC statute has to be officially presented for final acceptance & signature

EMSO-ERIC will coordinate and facilitate access to open ocean fixed point observatory infrastructures according to selection criteria defined by the participating members.

EMSO-ERIC will also integrate research, training, and information dissemination activities on ocean observatories in Europe and to enable scientists and other stakeholders to make efficient use of a future network of ocean observatories around Europe.

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Scientific topics

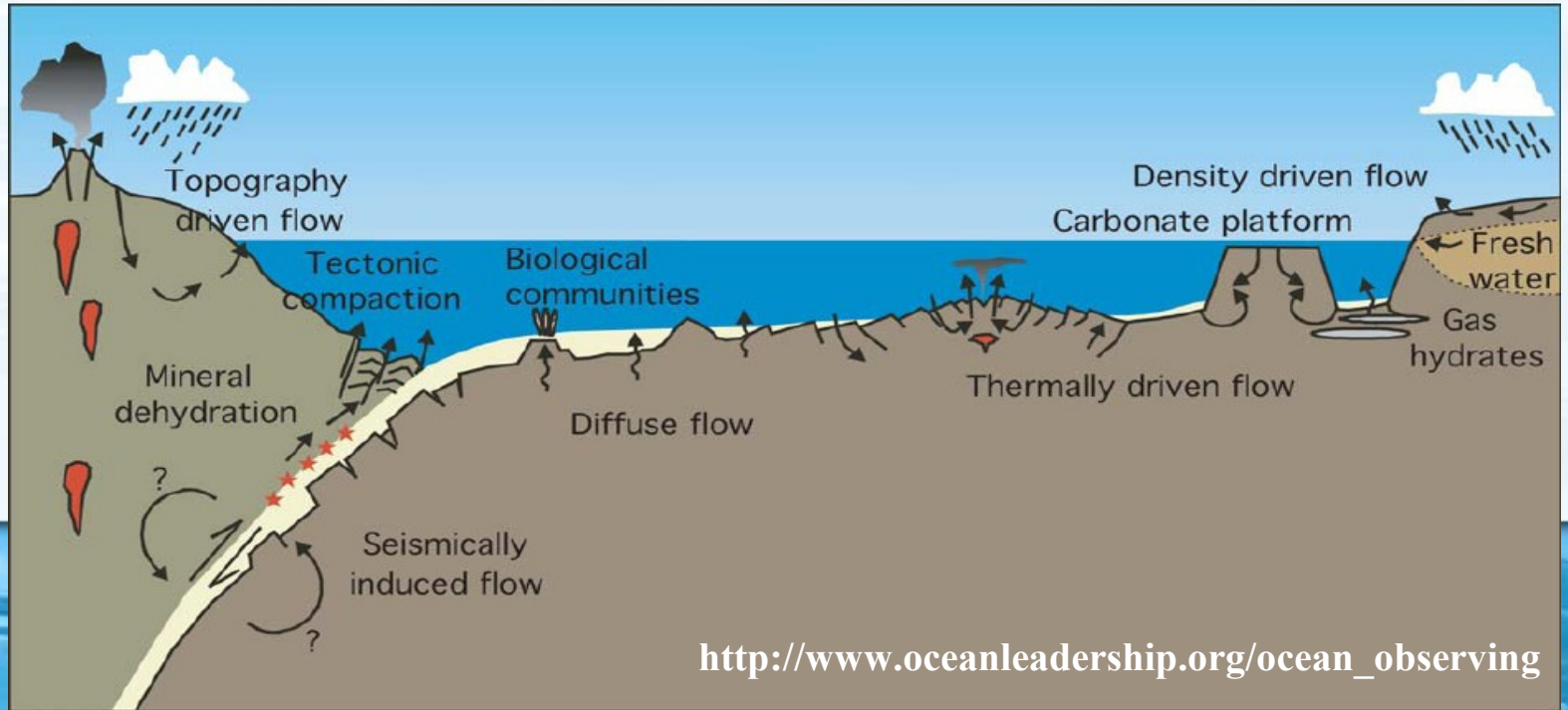
Role of the Ocean in Climate

Turbulent mixing and Biophysical interactions

Ecosystem dynamics and Biodiversity

Fluids and Life in the Ocean Crust

Dynamics of lithosphere and Imaging Earth's interior



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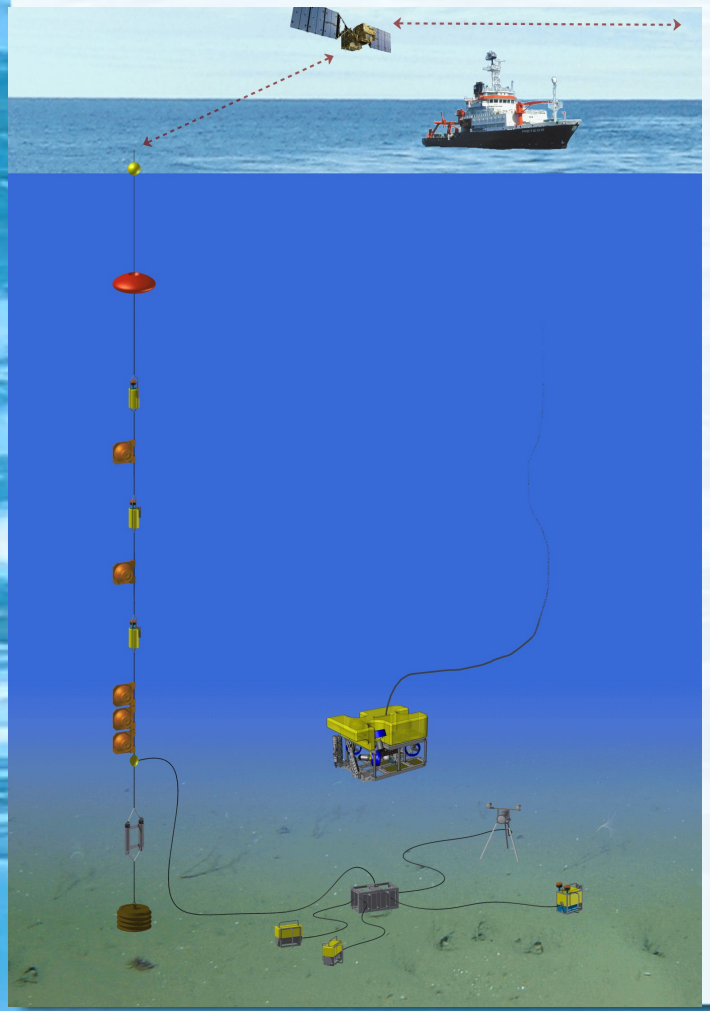
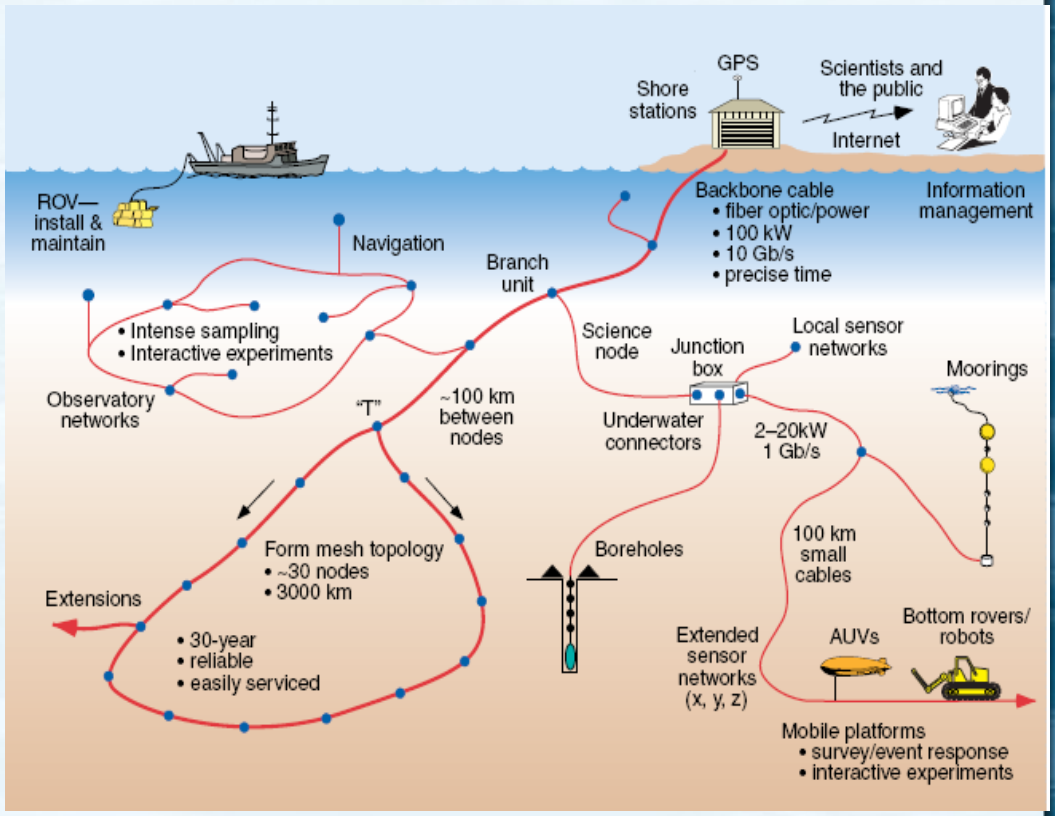
Mooring with satellite communications



Cabled configuration



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EMSO sites

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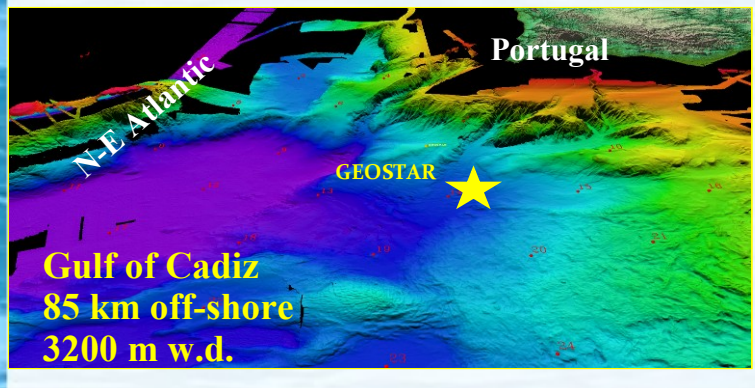
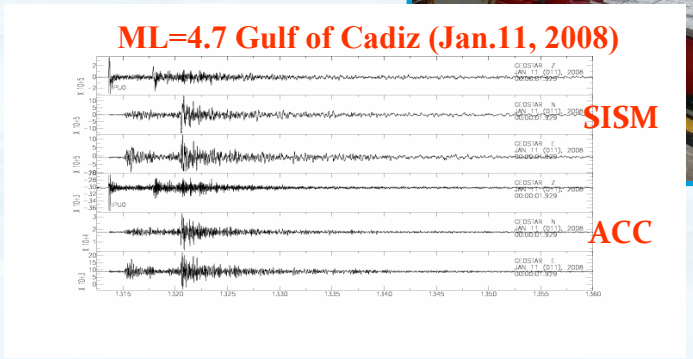
IBERIAN MARGIN
acoustically linked observatory



Main goals:
Geo-hazards
bio-acoustics



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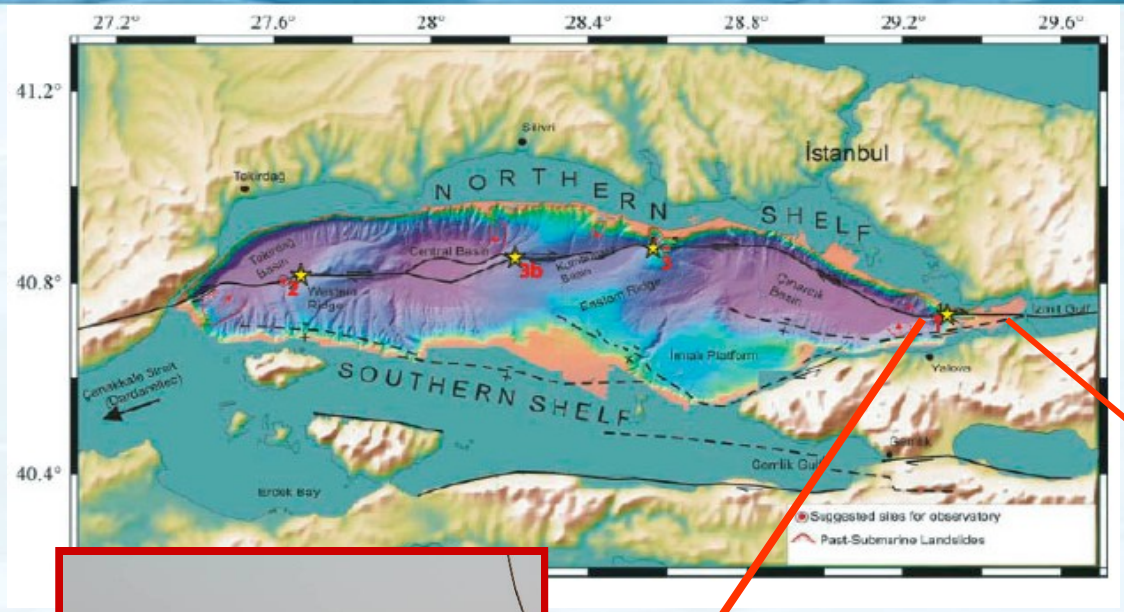
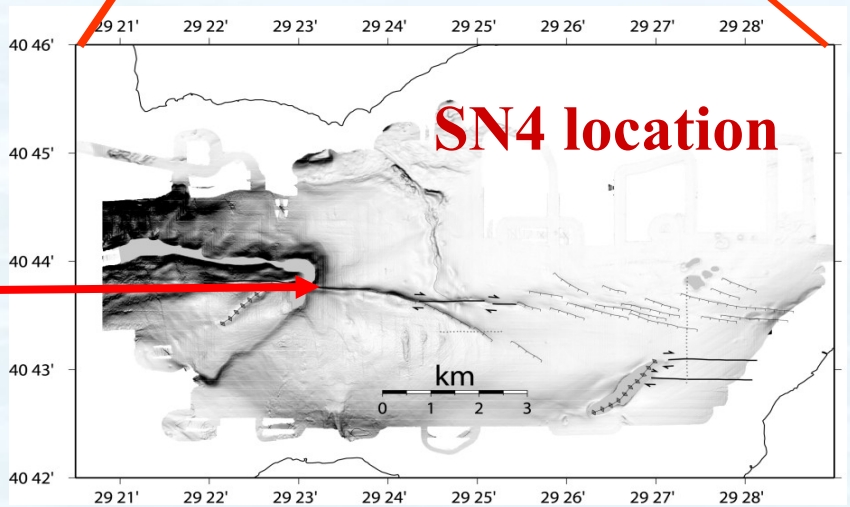
MARMARA SEA



eastern part of the sea at the western most end of the fault rupture caused by the 1999 Izmit earthquake.



Main goals: Relationship between Seismicity & Gas seepage

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WESTERN IONIAN SEA

Main goals: Geo-hazards (e.g., tsunami detection) & Bio-acoustics (mammal tracking). Test site for Underwater Neutrino Telescope

Internet Radio Link @ 100 Mbps

Shore Station
Catania harbour

ROV (operative 4000 m)

20 km
6 e.c.
10 fibers

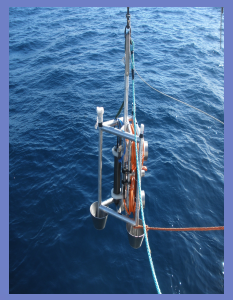
5 km

5 km

SN1

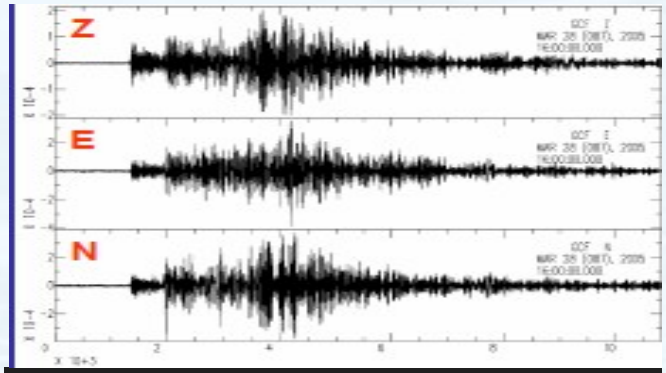
Geo-hazard and bio-acoustic module

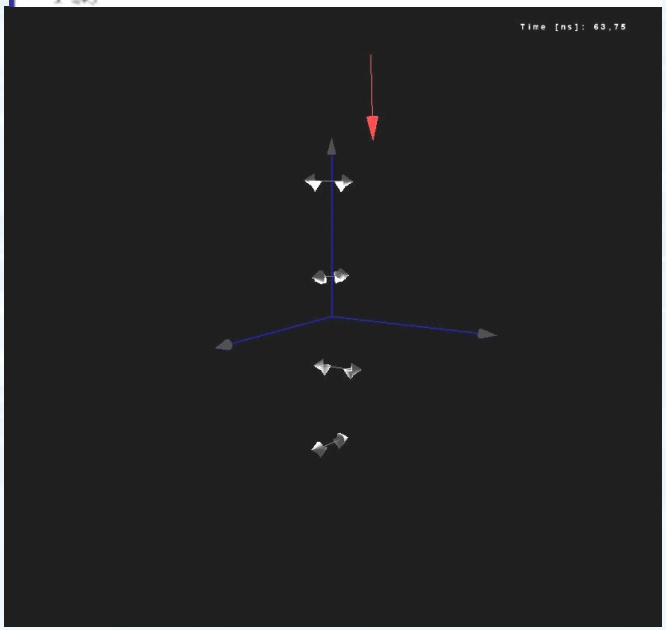
NEMO JB



Bio-acoustic module

NEUTRINOS EARTHQUAKES AND WHALES



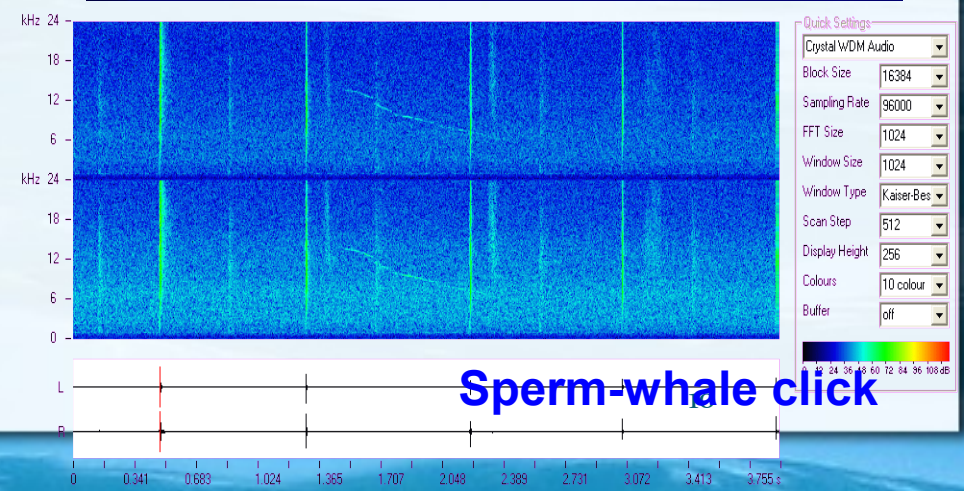


NEWS FEATURE

The neutrino and the whale

N. Nosengo, G. Pavan, G. Riccobene

NATURE Vol 462 - 3 December 2009



Sperm-whale click

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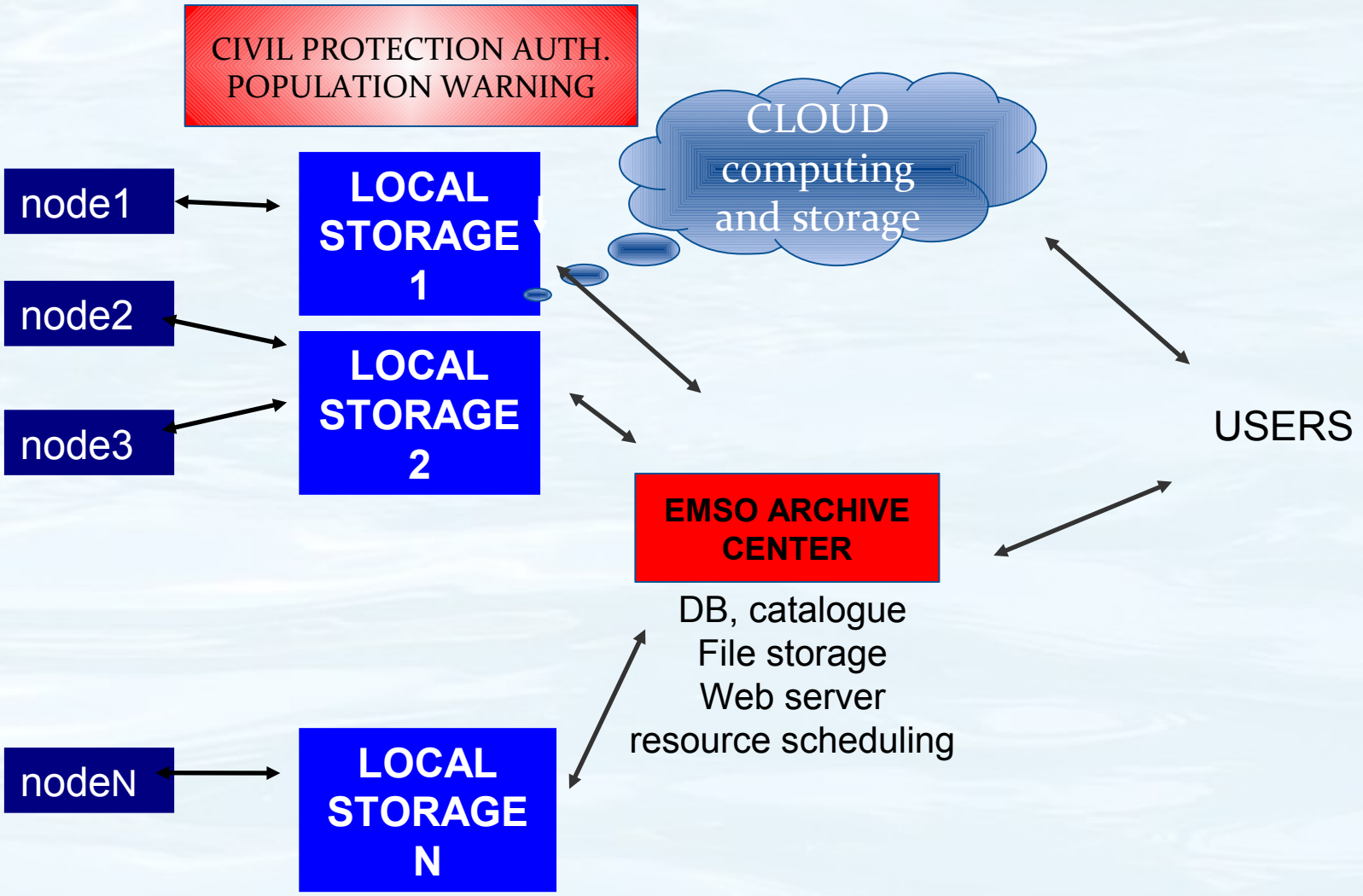
EMSO e-infrastructure



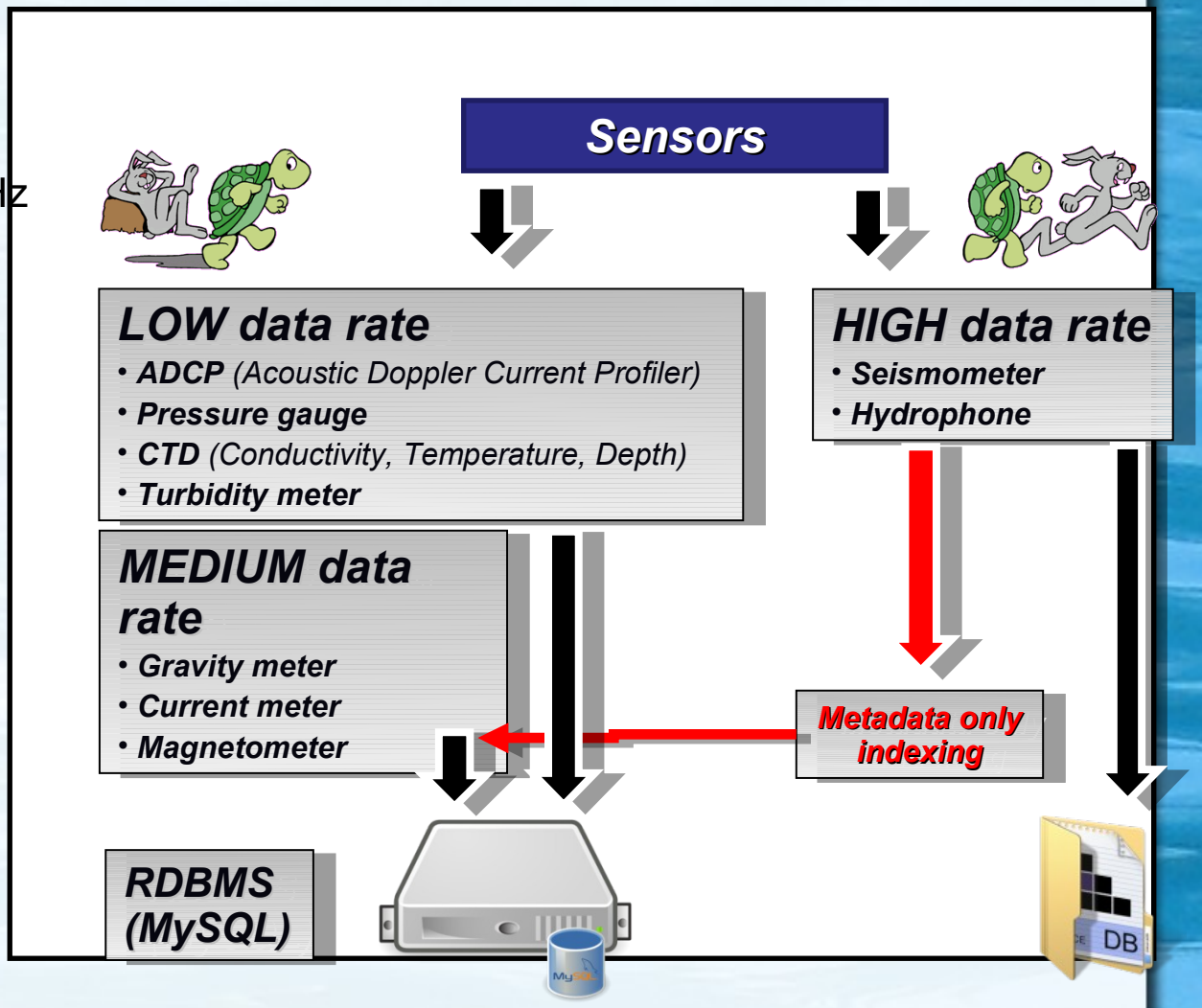
EMSO e-infrastructure overview

Data rate:

- **LOW**
  sampling < 1 Hz
- **MEDIUM**
  1 Hz < *sampling* < 10/100 Hz
- **HIGH**
  sampling > 196 kHz

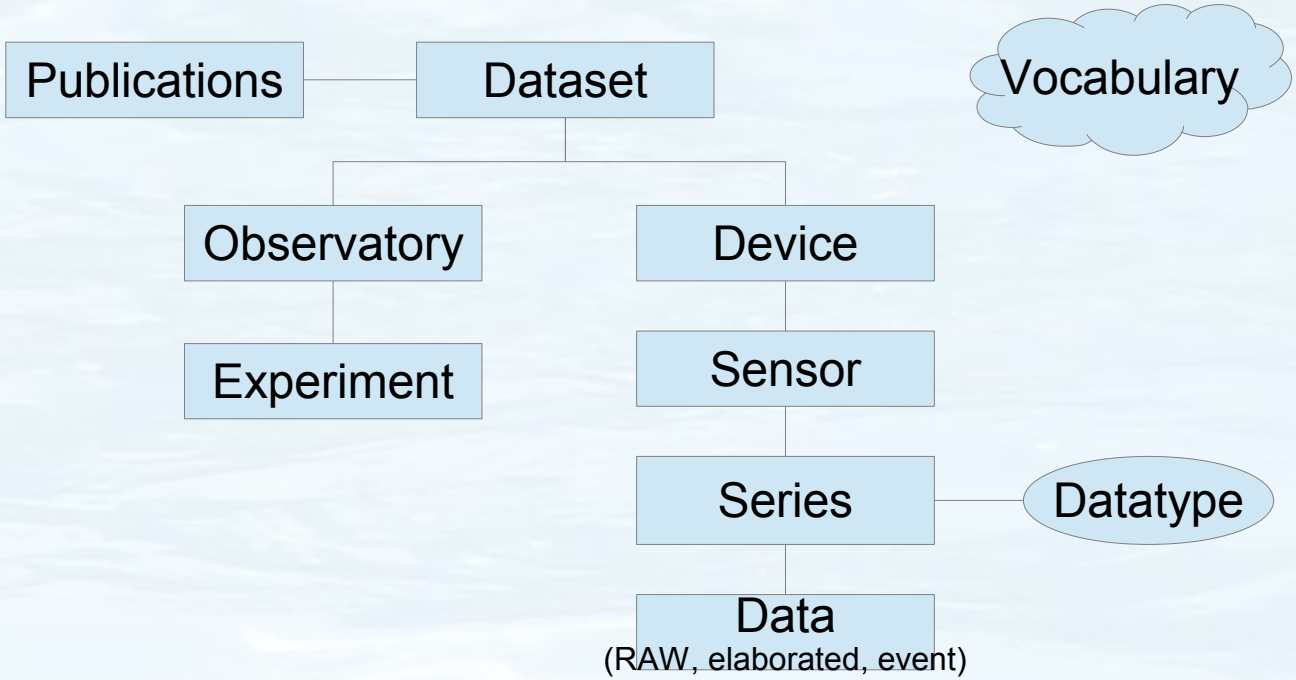
Both low & medium data rate records are stored in DB

High data rate records are compressed binary files that are indexed in DB and stored and distributed directly from file-system repository via web browser.



Data classification & destination

DATABASE simplified structure



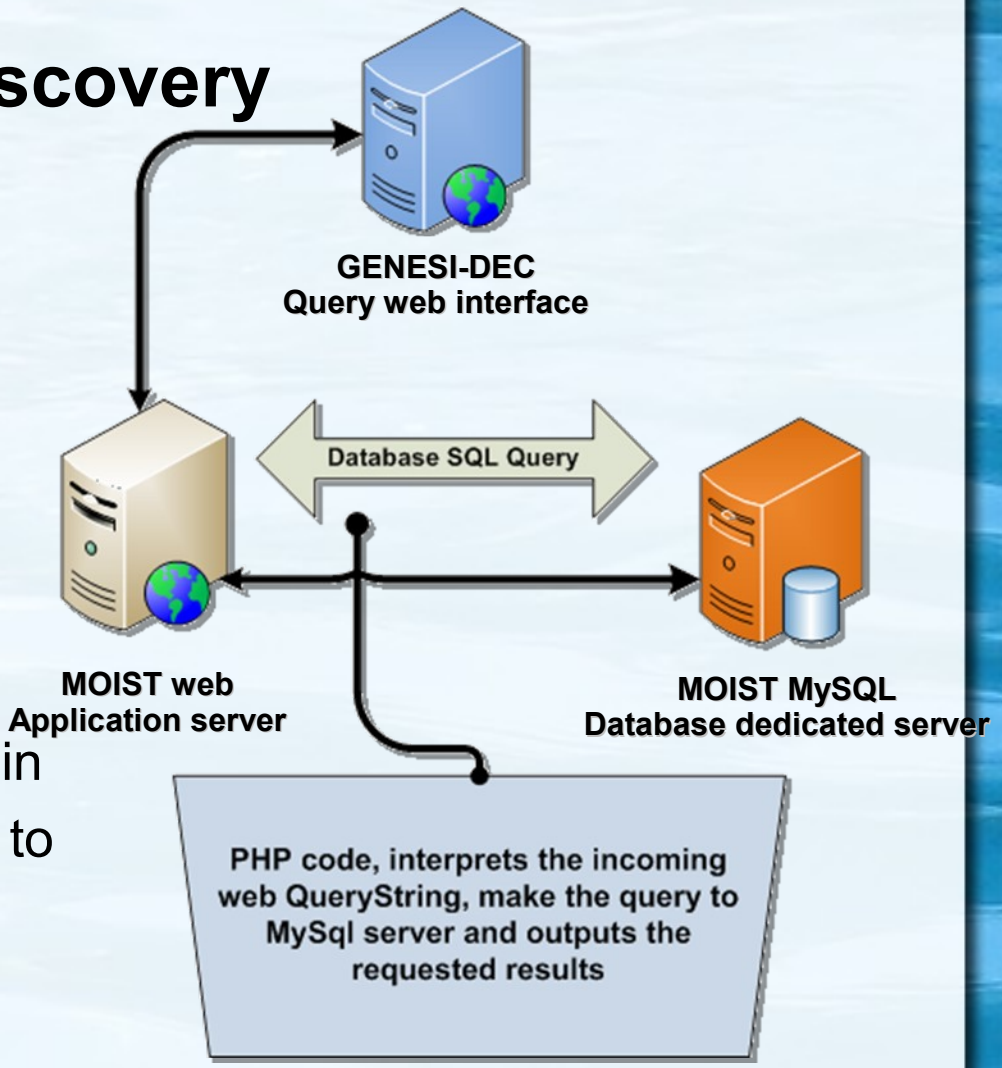
All components of the structure are object to standardize: Datasets, Instruments, Experiments...
Metadata standards presently used by EMSO/ESONET community:
NASA DIF and **OGC SensorML** with their Identifiers.

Other standards planned to use: DublinCore, ISO19115

Interoperability and discovery

EMSO has adopted OpenSearch harvesting protocol enabling interoperability with GENESI-DEC.

EMSO metadata relevant for data discovery and access are codified in **XML RDF** interchange information to satisfy the **OpenSearch** requests.



www.genesi-dec.eu/search/?q=EMSO&start=2002-01-01

Ground European Network for Earth Science Interoperations

Digital Earth Communities

BETA

Examples

Search EMSO Search

From 1 Jan, 2002 to Mar 6, 2012

Found 39 results in 2 digital repositories

Latest | Search | My Data

GI-cat OpenSearch Catalog service
[Found 6 results]

Multidisciplinary Oceanic Information SysTem (MOIST)
[Found 33 results]

[Showing from 21 to 30]
first prev next last

EMSO Western Ionian Sea: GNDT 2 - Seismometer
EMSO Western Ionian Sea: GNDT 2 - Current meter
EMSO Western Ionian Sea: GNDT 2 - Hydrophone
EMSO Western Ionian Sea: GNDT 2 - Magnetometer
EMSO Western Ionian Sea: GNDT 2 - Gravimeter
EMSO Iberian Margin: NEAREST 1 - Pressure gauge
EMSO Western Ionian Sea: GNDT 2 - CTD
EMSO Western Ionian Sea: GNDT 1 - CTD
EMSO Western Ionian Sea: GNDT 1 - Current meter
EMSO Western Ionian Sea: GNDT 1 - Gravimeter

EMSO Western Ionian Sea: GNDT 2 - CTD

Start Time 2005-07-01T23:01:00+00:00

End Time 2005-10-11T18:41:00+00:00

Download Link
Add to My Data
Zoom to Feature

The dataset contains sea bottom Conductivity, Temperature and Pressure data (about 1 m above the bottom) acquired through a SBE 37-SM installed on SN-1 station. The collection period ranges from January 2005 through April 2008. CTD has been used in order to monitoring possible variations of bottom sea water masses in the area.

Download links

http://moist.rm.ingv.it/sites/western_ionian_sea/2/GNDT2/ctd/8/dataset/plot?start=2002-01-01&end=2012-03-06

GENESI-DEC is a European Commission Seventh Framework Programme co-funded project.

scidip-es

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Addressing call INFRA-2011-1.2.2 - Data infrastructures for e-Science.

Project objectives

1. Deliver services for long-term preservation and usability as part of the data infrastructure for e-Science.
   - Test and deploy them in the Earth Science and other domains.

2. Consolidate data preservation and management approach in the **Earth Science** domain through definition of common policies, semantics/ontologies, metadata and architectures.

scidip-es

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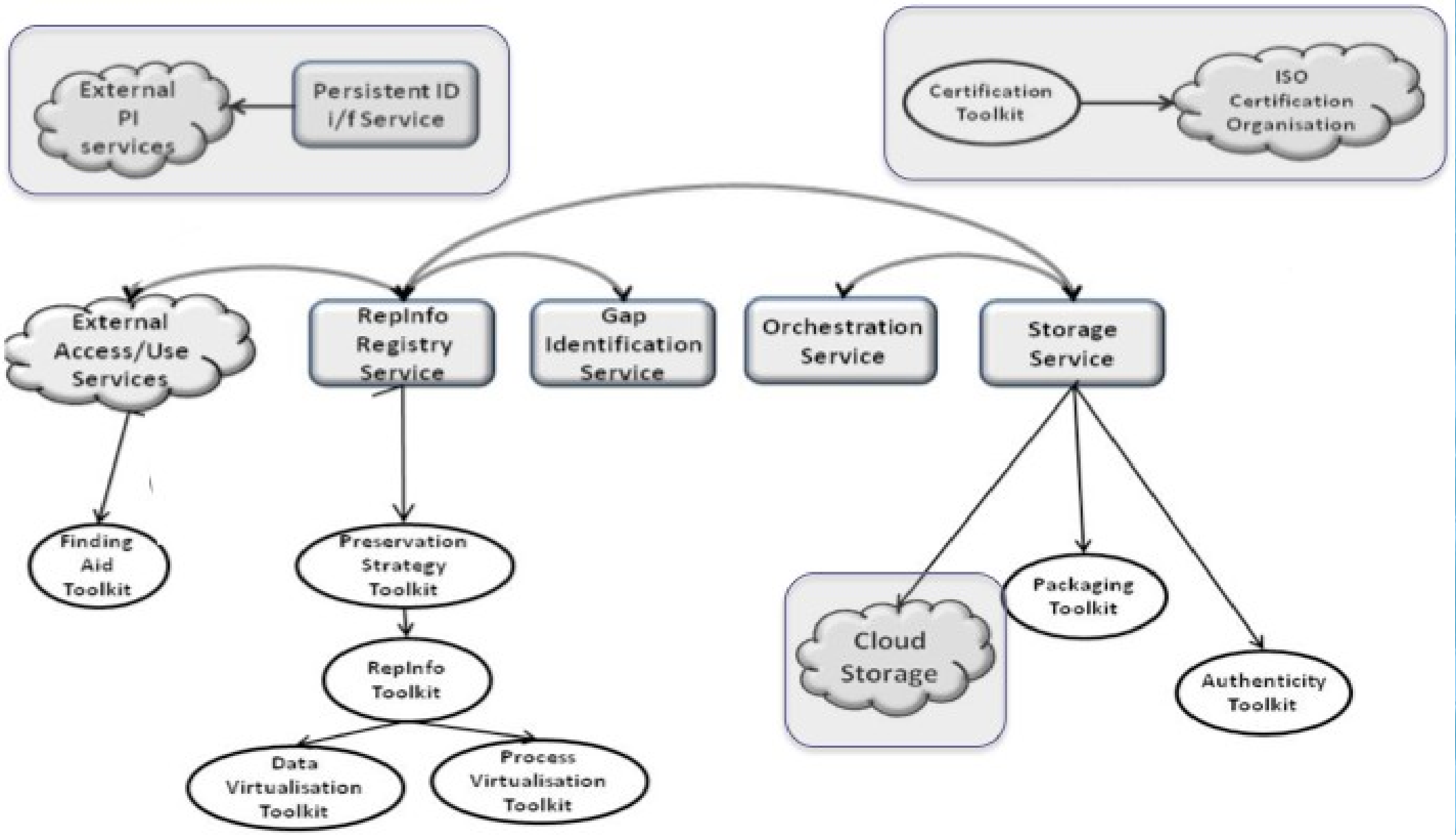
Services



Thank you!

emsopp@ingv.it