



User Requirements on data harmonisation

preliminary findings from desk top study

Bonn

November 8, 2005



Objectives

- Provide a preliminary description of user requirements on elements related to data harmonisation within the hydrology and elevation sphere based on
 - the reports from the thematic GMES projects,
 - the ongoing work within WFD and INSPIRE
 - other relevant EC initiatives and EC/ESA funded projects.
- Draw conclusions on further steps concerning the further development, in particular on the selection of use cases.

GMES Call	EC INSPIRE proposal Annex 1	EC INSPIRE proposal Annex II	EC INSPIRE proposal Annex III	Water Framework Directive Applicability
4. Elevation		Elevation		Mandatory to meet reporting requirements Background
5. Geo-physical environment			Soil Geology	Groundwater bodies
6. Land surface / land cover		Ortho-imagery Land cover		Background
12. Water / Hydrography	Hydrography			Surface Water Body categories and types
13. Ocean and seas			Sea regions Oceanic geographical features	Coastal waters Transitional waters

Method



- Desk top study based on:
 - Water Framework Directive reporting
 - EC proposal for INSPIRE
 - Thematic GMES projects (basis: updated Programme Office data base of 96 projects)
 - 17 projects preliminary relevant to RISE
 - 10 projects of particular importance (preliminary)
 - Other relevant ESA/EC funded projects (currently 9 projects)

Project	Need for Integration/Harmonisation
ARMONIA	... need of an integrated approach among different hazards: different data, different information, different output can be better managed if harmonised in terms of metadata as well as procedures and results
EFAS	Due to a lack of standardization often even within the same country, different data formats and different reference systems need to be considered and much manual work is involved in the data conversion.
EDEN-IW	Integrating distributing heterogeneous inland water database resource challenging because of the number of possible heterogeneous schema and the difficulty in normalising numerous syntactical mappings between heterogeneous database schemas.
GEOLAND	Users request that to a certain extent the thematic content of the land cover classes is consistent with the CLC nomenclature, the only European standard on EO based Land Cover data bases.
HALO	HALO will seek to achieve common data standards for the traffic between the IPs; the volume of data traffic will require the adoption of common standards between these elements of the GMES Backbone and the satellite data producers. Internationally agreed data representation standards will be adopted wherever possible.

Project	Need for a “Common language” / standard implementation
OASIS	The definition of a "common language" which describes a tactical situation is needed. This is what is called the "emergency Tactical Situation Object" (TSO).
PREVIEW	...will have to define some data exchange standards, such as the ALMA data exchange convention. The project must also take account for hydrological models, this is will be done reengineering the ALMA norm of the WMO and developing a “universal” coupler for the exchange of data between the computation modules.
SAGE	Core users have agreed on a harmonised approach adapted to their individual requirements. The concept can easily be adapted to a wide range of environmental and planning applications. SAGE partners have committed themselves to follow European standards and recommendations on harmonisation of data formats and thematic contents to assure comparability of information over national borders

Project	Objective	Relevance to RISE
SDIGER	A pilot project on the implementation of the Infrastructure for Spatial Information in Europe (INSPIRE)	Develop two use cases, “Water Abstraction Application” & “WFD Reporting Application”. A possible RISE-SDIGER use case?
EUROHARP	To provide end-users with evaluation of quantification tools for estimation of diffuse nutrient (N, P) losses. To develop an electronic tool-box.	The toolbox useful when implementing the use cases?
HARMONI-CA	To create a forum for unambiguous communication, information exchange and harmonisation of the use and development of ICT-tools relevant to integrated river basin management, and the implementation of the WFD.	The reports and guidelines from Harmon-CA useful when implementing use cases?

Project	Objective	Relevance to RISE
HarmoniQuA	To provide a Quality Assurance framework for use in model based river management, consisting of a knowledge database linked to a toolbox called MoST.	The knowledge database and the MoST toolbox useful when implementing use cases?
HarmoniRiB	<ul style="list-style-type: none"> • a practical methodology/tools for assessing and describing uncertainty originating from data and models. • a conceptual model for data management that can handle uncertain data. • well documented datasets for studying the influence of uncertainty on management decisions. 	RISE to follow HarmoniRiB's progress on the practical methodology and tools for describing uncertainty and the implementation of the conceptual model that handles uncertain data?
BMW	To establish a set of criteria to assess the appropriateness of integrated models for the use in the implementation of WFD. Creation of a toolbox assisting model users in the selection of appropriate tools.	The Toolbox is completed and open to anyone. Possibly useful when implementing one of the use cases?

Project	Full name	Objective	Relevance to RISE
ORCHESTRA	Open Architecture and Spatial Data Infrastructure for Risk Management	To design and implement an open service oriented software architecture that will improve the interoperability among actors involved in Multi-Risk Management.	Follow ORCHESTRAs work for getting Multi-Risk Management systems to interoperate and share information.
SSE	Service Support Environment	<ul style="list-style-type: none"> ●facilitate access to EO data from ESA and other missions, ●increase sustainability of EO data provision, by widening the range of offered data sources, ●make the operations of EO missions more efficient. 	Follow SSE’s work in the set up of open operational services for Earth Observation in Europe.

Suggested Use Cases + Interdependencies

Guidelines for Reference Data Implementation Specifications (Coordinated with INSPIRE DT)

River Basin
Thematic GMES
Use Cases ?

Nutrient leakage into rivers: GSE Land ?/...

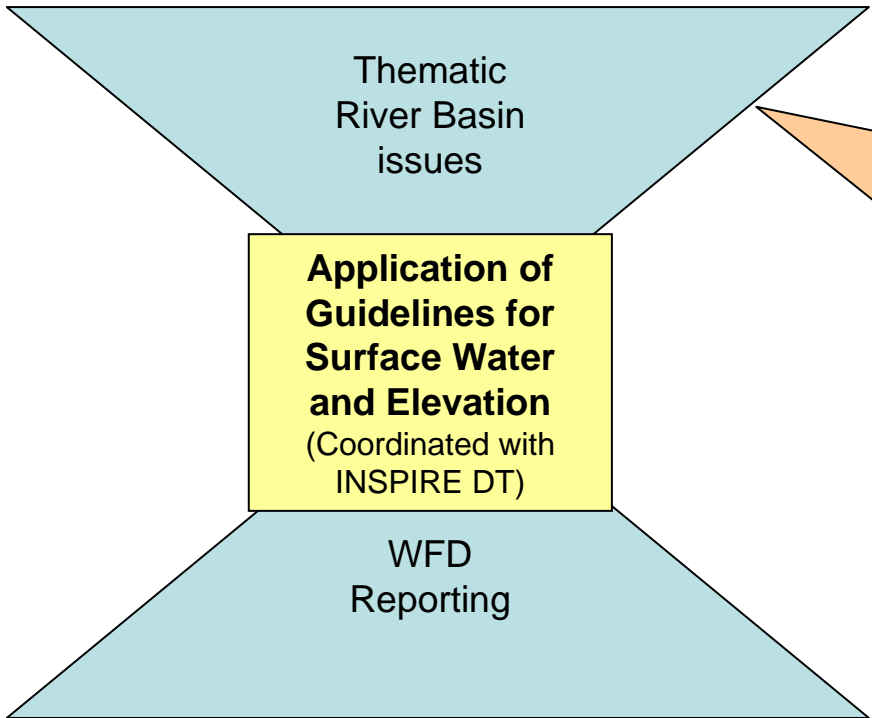
Flooding: Risk- EOS/EFAS ?/...

Coastal issues: MARCOAST ?...

Together with MOTIIVE

Output from RISE

Suggestions



Other relevant projects:
-EUROHARP ?
-HARMONI-CA ?
-HARMONQUA ?
-BMW ?
-ORCHESTRA ?
-WIN ?
-SSE ?
-HMA ?

River Basin
WFD Use Cases ?

National
Improved hydrological information ? (Sweden)

Regional
SDIGER ? (Spain/France)

Pan-European (EC-level)
WISE?



Next steps

- Contact relevant projects to confirm findings & obtain complementary information
- Interested organisations to get involved in development of implementation specifications for the use cases (using and testing the guidelines)