

Title:

Title: User Involvement Document – Third Version

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Short Description:

The purpose of this Document is to describe and monitor the way end users are involved in HUMBOLDT. This is the second version. the User Involvement Document will be updated regularly (every 9 months) to monitor the amount and quality of end-user involvement into the project.

Keywords:

Users; User involvement; User@HUMBOLDT Platform

History:			
Version	Author(s)	Status	Comment
001	D. Kristóf	new	Overall structural updating; adjustments in strategy according to the project phase; population of the User Inventory; integration of more links to project-internal documents
002	D. Kristóf	rfc	Completing the list of users; additional structural changes; definition of HUMBOLDT products; more links to WP3, WP4 and WP9 documents; Privacy Statement information; Evaluation and outlook
003	Eva Klien	rfc	Comments, corrections of spelling, minor modifications, updating
004	Daniel Kristof	final	Incorporation of modifications proposed by Eva Klien

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1 Introduction

1.1 Aim of this document

This document aims to define a strategy to maximize the involvement of users in HUMBOLDT. User involvement is a key element and is therefore vital in the user-driven development of the framework itself as well as for its long-term sustainability.

This is the third version of the User Involvement Document, which will be updated every 9 months during the project period in order to incorporate the most up-to-date information outputs from the project and to refine the strategy as the project progresses.

1.2 Context

HUMBOLDT will contribute to the implementation of a European Spatial Data Infrastructure (ESDI) that integrates the diversity of spatial data available from the multitude of European organizations. It is the aim of this project to manage and advance the implementation process of this ESDI. To achieve this objective and to maximize the benefits gained from this integration, the requirements of INSPIRE, of GMES, of the environmental agencies and of other related activities in the EU will be met.

HUMBOLDT starts with an analysis to facilitate the re-use of existing concepts, processes, implementations and experiences. This also includes the analyses of harmonization processes in other application areas. Following this HUMBOLDT will extend the existing state of the art according to the needs of users and administrators especially in the area of GMES. As a cornerstone for future businesses, citizen security, risk management and many more fields of application, the ESDI has to be a lasting development, prepared for the steps that will inevitably follow with the continuing progression of globalisation.

To facilitate all of this, the HUMBOLDT project proposes an optimised, community-centred implementation process. New knowledge will thereby be gained and new processes will be developed from the combination of data that already exists, but which is currently highly scattered and heterogeneous. Besides a technological-focussed framework, which will be developed in HUMBOLDT, the project also will set up a number of scenarios which will use the developed framework components in real-world conditions, and which will be used as promoters for the target users of the project. Several user groups like industry, public authorities and research will be targeted and dissemination and training instruments used as early as possible within the project, coherent with the INSPIRE time plan, based on feedback from the project results to enhance the effectiveness of the dissemination activities.

The core philosophy of this project is that success comes from acceptance, use and continual improvement of the results of its work. Acceptance will be gained by offering concepts that make migration manageable without loss of data, time, or other resources. Therefore, lessons learned from the many prototypes in various application areas, and the groundwork provided by standardisation organisations and projects will be leveraged, to support more effective implementation. The cycle that is thereby created will lead to the development of products that are really required by the user groups in an iterative process. In this way, the implementation of INSPIRE will be supported at all levels, the development of GMES services will benefit, and the hurdles for the data harmonisation processes be lowered significantly.

A strategy will be described in this document concerning the means to involve a wide community of users, who are often data providers and users at the same time (institutions, local authorities). This strategy will be followed from the beginning of the project activity, identifying how the stakeholders will

be reached by the dissemination and training plans. All Public Relations activities will draw upon information generated by other work packages illustrating the technical capabilities of the concepts and the methodology of the components developed within the project. The HUMBOLDT dissemination partners consider activities such as training and exploitation of the results of the demonstrators as very effective instruments for demonstrating the potential and actual use of harmonised spatial data, GMES services, Web-GIS facilities, according to the INSPIRE principles.

The needs of the potential users of an ESDI will be integrated into the development process and will form a basis for the conception of business models. These needs will be identified by direct involvement of the user groups, such as public authorities including environmental agencies monitoring the state of natural resources, planning agencies, cadastral authorities and national mapping agencies, as well as developers implementing new software, replacing legacy software, and adding new interfaces to existing software.

Several user groups like industry, public authorities and research agencies will be targeted and dissemination and training instruments used as early as possible within the project to achieve a high coherence with the INSPIRE time plan, and also to achieve effective dissemination and feedback for the project results. A User Platform will address and build on existing user federations and user groups including those from previous GMES projects (e.g. GSE phase I, IP Geoland), current projects (e.g., IP BOSS4GMES) and future projects (e.g. GSE phase II, esdi.Net+). In the past these user groups have been mainly oriented to provide user needs within each specific project. The User Platform will be a major source of feedback for the user-driven development of the HUMBOLDT Framework. Moreover, it will reinforce the required collaboration across projects and contribute to the dissemination of project results.

2 Definition of HUMBOLDT products from a user's perspective

The output of the HUMBOLDT project should be analysed and the “products” are to be identified from the user perspective in order to identify the relevant products and the groups to be targeted.

2.1 Software products

Software products are of principal importance and constitute the main output of the HUMBOLDT project. They are essential in establishing bi-directional connections as making them available to the users is a true catalyser for user involvement and also boosts user feedback.

2.1.1 The HUMBOLDT Framework

The HUMBOLDT Framework is one of the main outcomes of the project. It is a set of software components that can be used by themselves or all together to create geodata harmonisation applications and that are re-useable in multiple toolset applications and scenario applications.

2.1.2 The HUMBOLDT Toolset

The HUMBOLDT Toolset is the collection of general-purpose data harmonisation tools with well-defined transformation capabilities. It is a set of applications that support data modelling experts with all activities surrounding data harmonisation processes.

2.1.3 HUMBOLDT Scenario Applications

HUMBOLDT Scenario Applications are concrete End-User applications using the framework components and (adopted) versions of toolset applications.

2.2 Documentation

Reports, deliverables and other documentary output of the project can be interesting and relevant for users and stakeholders. Another Important item is the HUMBOLDT Wiki, which is currently used internally as an efficient communication tool for the developers, but can be made available to the wide public in the future and serve as a basis for communication and reaching common sense.

2.3 Training products

The HUMBOLDT Training Platform and other specific training packages that will be developed during the project are of interest for all users. The overall training on data harmonization and the specific solutions provided by the HUMBOLDT project will be presented in the training packages at different levels according to the user categories defined in the present document.

3 Definition of HUMBOLDT User Roles

Although numerous user group definitions exist (see e.g. INSPIRE User Group segmentation, *303-environmental_thematic_user_needs-external-001-final*), this document will focus on specific user groups targeted by HUMBOLDT. Moreover, it is necessary to take into account the manifold connections between user groups from the perspective of the project. Therefore, it was decided to ~~define “user roles” from the HUMBOLDT point of view, applying a functional instead of organisational~~

grouping. This grouping is also in line with Deliverables A3.3 D1 and D2 (State of the Art in User Groups and Needs). HUMBOLDT does not distinguish between government, researchers, industry and other cross-domain roles at the very general level. Of course, each of the HUMBOLDT User Groups may contain interested organisations as mentioned above. The categorisation based on thematic domains instead of business roles will support the application-oriented approach of the HUMBOLDT R&D and will contribute to the long-term sustainability of the project results.

After several iterations within the User Involvement Group and taking into account the proposals of the HUMBOLDT Review and Advisory Board, the following HUMBOLDT user roles have been defined:

- **HUMBOLDT Developers,**
- **HUMBOLDT Data Custodians,**
- **HUMBOLDT Data Integrators,**
- **HUMBOLDT End-Users of Geo-Data,**
- **HUMBOLDT End-Users of Spatial Information.**

The definition of each user role can be found below.

All of this user groups are partly represented by members of the consortium, but to ensure the wide use and the sustainability of the results further users will be involved in the project.

3.1 Developers

HUMBOLDT Developers are software developers who work on the HUMBOLDT framework directly or implement software on the basis of the framework.

On the long term, HUMBOLDT's aim is to get as many organizations as possible to ensure the sustainability of the models, concepts and the software framework that are developed during the project. Therefore this group covers organisations that are mainly interested in the technical development and the usage of HUMBOLDT results, especially the Framework.

3.2 Data Custodians

HUMBOLDT Data Custodians are people or institutions who are offering data which have been adapted to given standards (harmonised) because of legal or market requirements. They provide data and have the responsibility to do so in a format that may be different from the one they normally use. They are mainly data providers. Examples for this group are the national INSPIRE-responsible bodies.

This group is basically interested in the HUMBOLDT toolset as it can serve their generic data harmonisation requirements and support the data processing they are responsible for. The framework is also of interest for them as it can serve as a basis for custom-made software serving their specific needs.

3.3 Data Integrators

HUMBOLDT Data Integrators are people who have to use heterogeneous geodata to meet the requirements of their daily job (e.g. integration of data for complex analysis). They need data themselves and access this from different facilities potentially in different formats. They have to combine various data sources, harmonise them to make use of them for their own purposes. They are mainly service providers.

They are also interested in the HUMBOLDT toolset as it can serve their generic data harmonisation requirements and support data processing, and possibly the framework as a basis for custom-made software serving their specific needs. Moreover, they may be interested in some of the scenario applications if they cover their activity area.

3.4 End-users

The HUMBOLDT End-users consist of a large group who want to solve a problem and decide to use geospatial data for their applications / purposes – they are not interested in the harmonization process itself but only in its results.

Initially GMES provides a framework for defining the end user community as described in Annex I. The User Involvement Document approach is to gain more insight into this user segment and their manifold requirements. This will be supplemented by analysis of the Scenarios user community. Although the most relevant thematic areas for HUMBOLDT are those tackled by the project and covered by the scenarios, more users will be included in the detailed analysis throughout the project as a result of the midterm scenario calls, connection made with the user community via the dissemination and training activities etc, and further evolution of GMES. HUMBOLDT will allow others to get information about the project and to being kept informed, but the strategic approach will focus on Scenario related user groups, and as soon as they are covered completely, further thematic areas will be approached. As a result a more detailed structuring can be achieved over time and included in the later versions of the User Involvement Document.

Two further subgroups can be distinguished within this user role:

3.4.1 End-users of geodata

End-users of geodata are users who are directly working geographical data itself. They either use geodata in an already harmonised form or geodata that doesn't need harmonisation or integration at all. They are interested in the toolset to support their generic data harmonization needs, or in some of the scenario applications depending on their activity.

3.4.2 End-users of spatial information

End-users of spatial information do not use geographical data directly, they only use information arising from it (indirect use of geodata). Most commonly they are users on laymen level, e.g. people using navigation systems, online routing services, etc.

4 Intentions and Expectations Towards Users

4.1 General Intentions and Expectations by User Role

4.1.1 Intentions and expectations towards Developers

At the beginning of the project, developers are HUMBOLDT Consortium members. However, by involving further users in HUMBOLDT, our aim is to generate network effects, which will contribute to a self-sustaining project result when a certain level of usage has been reached. Software developers should be involved as multipliers: a good marketing strategy would be to get them to use the HUMBOLDT framework. At the point when there is a sufficient critical mass of users, software manufacturers will find it commercially viable to produce plugins or applications extending the capabilities of HUMBOLDT, making it more attractive for organizations to switch over. These manufacturers can then become HUMBOLDT developers as well. This will most certainly include migration paths from current, non-ESDI-enabled applications to ESDI-enabled ones. In the longer term, a developer community should be created to ensure continuity in the development of the framework even after the end of the project itself. The ownership of the framework and the developer community may be organised within a “HUMBOLDT Developer Platform”.

Feedback from the developers will be used especially for usable software architecture, interfaces, documentation, FAQs, tutorials etc for the framework.

4.1.2 Intentions and expectations towards Data Custodians and Data Integrators

Data Custodians and Data Integrators have the deepest insight into data harmonization needs. Therefore, they should provide the essential inputs and feedback to developers for the user-driven development of the HUMBOLDT framework. They will be involved as test candidates into the evaluation work package of HUMBOLDT. Their feedback will mainly be used for ensuring efficient support for the harmonisation process

4.1.3 Intentions and expectations towards End-users

End-users are essential for obtaining feedback on the results (outputs) of the entire HUMBOLDT framework. The Scenario users will provide feedback for the development of each Scenario. The needs of the end-users will be indirectly focussed by the HUMBOLDT framework and will be directly focussed by the HUMBOLDT scenarios. Usually end-users will not be in direct contact with the HUMBOLDT framework, but by using the HUMBOLDT framework it should be easier for Data Custodians to deliver the required quality of data, with a reasonable effort, and it should be easier for the Developers to provide the best fitting applications for users needs. So, end-users are in general the motivator for each of the targeted groups. Therefore it is evident for HUMBOLDT to get feedback from this group and to distinguish between feedback relevant for the scenarios and feedback relevant for the framework.

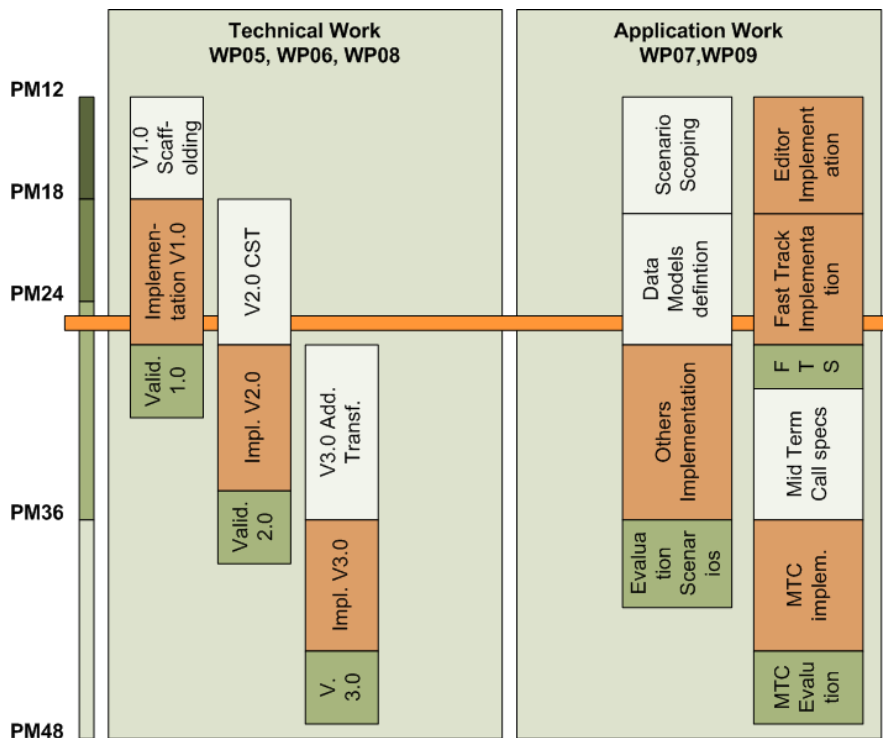


Figure 1. Project phases and activities between PM 12 and 48.

4.2 Intentions and Expectations by Project Phase

The integration of users has been a priority for the HUMBOLDT project from the beginning. User Integration is intended to provide WP5 with both functional and technical requirements and also with the verification of the proposed architecture. For this, different user groups are to be involved at different phases of the project.

4.2.1 Prototype Phase (*finished*)

In this phase, the development is mainly technology-driven. The purpose of the prototype is mainly to test key technologies that are to be re-used for the framework, and to see whether these can be integrated. The selection of these technologies is based on inputs from developers and researchers in the project itself that has been gathered in WP3.

However, there is also a checking step that involves the project partners developing the HUMBOLDT scenarios. For this, all scenarios were provided with a dossier of questionnaires to complete that aims at determining both the current system landscape, and the new elements that could be introduced based on HUMBOLDT. Furthermore, these questionnaires address both business aspects and technological aspects, but targeted at determining technological consequences and are thus aimed at developers.

Based on the results of these dossiers, a set of technological requirements were extracted and used to test whether the system design fits within the different environments, and if it is also able to cover the Use Cases presented.

4.2.2 Framework Version I (*specification finished in PM18, implementation due in PM26*)

The development of this phase aims to create a robust framework based on the lessons learnt in the prototype phase. At this stage, the capabilities of user interfaces are still low. Further, only limited capabilities for the harmonisation module are available. Obviously, the development for Framework V1 is still mainly technology-driven.

For this phase, a series of requirements can be extracted from the A3.3-D1 and A3.3-D2 reports. Here, secondary literature was analysed which consists mainly of third-party user surveys. The items collected from these studies and surveys are used to prioritise developments within Phase I and II.

Further, inputs of external users will become more important in this phase. These external users are for this phase developers and researchers from the related projects, and also from INSPIRE. Since this phase also sees the commencement of the harmonization activities in WP7, the domain knowledge and modelling capabilities of the Data Custodians and Data Integrators are also important to integrate.

In addition, the processes for the integration of requirements and for specification suggestions will be available both for the limited external users and for all project-internal users. This will involve means to directly propose specification changes and addendums, as well as additional information on existing requirements and on new ones.

At the end of this phase, the software will be released to the public, therefore ending the phase of limited external access.

4.2.3 Framework Version II (*specification ongoing and is due in PM26, implementation due in PM34*)

In this phase, the rather empty frame will need to be filled, and the harmonization capabilities will need to be significantly advanced.. Therefore, the development of the scenarios starts and is conducted in this phase. A great deal of feedback will be provided from the usage of the framework and it's extension by the developers working in the scenarios, addressing items such as developer usability of the APIs, but also the verification of the scenario requirements collected during the prototype phase through the involvement of utilisers, as described in the next paragraph.

The people actually using the scenarios will play another role in this phase, since they define the functionalities they need, which in turn will be evaluated for integration into the main framework. Even though these people are asked for their requirements in Phases P and I as well, it is expected that many requirements will come up during the actual formation of the scenarios.

The call for additional scenario concepts will also occur in this period. The call will invite industry and research to examine the specification and implementation, and to identify both technical and functional gaps that can then be addressed within their proposal.

4.2.4 Framework Version III (*specification starts in PM 27, implementation and validation due in PM47*)

This second phase of filling the framework will end with a HUMBOLDT framework that is functionally complete, ie all necessary modules have been implemented. There will be some open points and certainly improvable characteristics such as performance and resource consumption, but the essential developments especially in processing and data harmonization need to be completed now. Here,

inputs from data providers will be as important as from users in the scenario and external applications, to see if their quality expectations on the harmonisation are reached.

5 Expectations and Intentions of Users

5.1 Developers

During the 4 years of the HUMBOLDT project, the Consortium members are obviously motivated in framework development. However, it can be reasonably expected that they will be deeply involved in the further development of the framework, an issue that will be further detailed in the Exploitation Plan.

The HUMBOLDT framework can also be appealing for “external” software developers if a large number of users are involved. They can then develop, for example, specific interfaces for each user group tailored to their needs, which provide the basis for business development. In the INSPIRE Internet Consultation Report (http://inspire.jrc.it/reports/analysis_consultation_01092003.pdf), a key comments states that the IT and geographical information industries should be involved in the development of the ESDI standards. HUMBOLDT can become a testbed for this. As HUMBOLDT will be provided as an open source framework under LGPL, so even business models of particular actors can be based in part on the Software. Therefore the quality of implementation and implementation relevant information, as well as an efficient and reliable structure for ownership and decision making will be the evaluation criteria for this group.

The HUMBOLDT products of interest for Developers:

- Framework and its documentation,
- (possibly) the Toolset and some Scenario Applications if ready-made solutions exist to their specific goals,
- Training material on developer level (HUMBOLDT components & architecture).

5.2 Data custodians and data integrators

Public-sector data providers possess a vast amount of diverse data that needs to be harmonized in a common framework eg public authorities who have to react to the implementation of the INSPIRE or the WFD Directives. What HUMBOLDT can offer to the data providers is therefore a reduction of their efforts by offering a complete framework for data harmonization.

According to the INSPIRE Internet Consultation Report, numerous users, acting as “harmonisers” from the HUMBOLDT point of view, stated that information for spatial infrastructure should be built upon the existing elements available in the Member States. In many cases, they take part in these initiatives and therefore can avoid duplication of effort.

On the other hand, private companies offering cross-border services may also benefit from the HUMBOLDT framework as it enables them to obtain seamless data for their specific field eg fleet management or navigation including live traffic information, etc.

HUMBOLDT can also help in increasing the number of possible consumers of both data and services. Currently, spatial data is often acquired and used in a single context. An aim of this project is therefore to make it possible to reuse data in various application contexts. This will be accomplished by laying the groundwork for a semantic interoperability of the data, as well as by providing modules for the automatic reclassification of data by a user's demands, and by the creation of data views that ‘remodel’ the raw data for use in other applications. In this way, organizations from raw data providers

to value added service providers can offer their products for new applications and so address a wider audience.

Logically, both subgroups are motivated in applying the framework and giving feedback to the Developers as this increases its usefulness and so their benefits.

Important criteria for this group to use HUMBOLDT results or not, are the efficiency and quality of the harmonisation, and the sustainability concept of the framework.

The following HUMBOLDT products are of particular interest for data custodians/integrators:

- HUMBOLDT Framework (depending on the availability of developers within the organisation),
- HUMBOLDT Toolset (for general-purpose data harmonization),
- HUMBOLDT Scenario Applications (especially for Data Integrators, depending on activity area),
- HUMBOLDT Documentation,
- HUMBOLDT Training Package / Data custodian & integrator level.

5.3 End-users

It is evident that all end-users would like to have specific data for their activity area. If this activity requires cross-border or cross-disciplinary harmonization of the data, then the framework developed in HUMBOLDT should be of interest for these users. Much effort has been expended in INSPIRE and GMES to develop a picture of user needs and requirements. During the Internet consultation on INSPIRE, most users agreed with the basic principle that *“It must be possible to combine seamlessly spatial data from different sources across the EU and share it between many users and applications”*. The HUMBOLDT Framework will be able to solve the technical part of this. Moreover, three of the five main obstacles listed in the study, namely: lack of documentation, incompatible spatial data sets, and incompatible geographic information systems, are within the scope of the project.

End-users will therefore be motivated in using HUMBOLDT and providing feedback, provided they are aware of its importance and practical use in their particular field of activity.

The following HUMBOLDT products are of particular interest for end-users:

- HUMBOLDT Toolset,
- HUMBOLDT Scenario Applications (depending on the user’s activity area),
- HUMBOLDT Documentation,
- HUMBOLDT Training Package / End-user level.

6 Instruments for User Involvement and Feedback Management

6.1 Project environment: Processes to influence developments

Deliverable A4.3-D1 (788-process_especification_evaluation_and_improvement-etra-001-final) contains all relevant information on the processes and tools at the disposal of users to influence

developments. Currently, most these possibilities are available for project-internal users, but most of them will be made available gradually as the project becomes open to the public.

This section summarizes the means of how from the application side specification and development can be influenced or even driven. It gives people working in the scenarios direct guidance on whom to contact, by what means, for which purpose. However the intended audience also includes all user groups defined in the User Involvement Group, everyone within the HUMBOLDT, the related and associated projects and also from the wider environment, especially INSPIRE. As people with different background can influence the developments, different tools and templates are provided depending on their needs and capabilities.

Therefore, they are recommendations and facilities which should encourage the communication between technical work packages and users/scenarios. The goal is not to have a *cold* relationship using a huge amount of templates and formalisms but to provide the means for the understanding, using a common and understandable language for that.

Generally, the role of specification in HUMBOLDT is one of collecting and filtering requirements and other input from all the different groups in the project and outside it in such a way that a working software system can be built and enables its users to cope with their tasks. The two groups mainly influencing specification work are technicians and researchers on the one hand and users (mainly addressed through the scenarios) on the other hand. Both groups have the same means of influencing specification and therefore the project results.

Also, for a project's long-term success as an open source project, an open process is essential. Open process does not only mean to be able to retrace what happens in the process, it also means to be able to influence the input and processing in the specification process. Finally, it means any group aforementioned can change the process itself. If they have any suggestions for modifying one of the processes below or adding a new instrument, they should contact the WP4 lead with their suggestion.

The following sections describe in details what options and tools are available for influencing or driving specification. Each of these means can be used any time after PM18 (i.e. after V1.0 of the specification has been released). However, the most of requests are applied to the next working version of the specification and are not reflected in the specifications immediately. This is necessary since the validation process, where the entire set of requirements will be analysed looking for dependencies and conflicts, is necessary in order to gather the correct and consistent requirements. This is the VOLERE approach¹. Also efficient development is hardly possible when requirements change all the time.

6.1.1 Management of user requests and feedback

The specific procedures to be followed according to the purpose of the request are explained here. For each kind of request, a specific procedure and a specific tool is used. The following table will guide finding the right procedure for the modification wished to introduce in the specifications:

If you expect...	Then you can follow the procedure for...	Tool to be used...	Requester...
...expertise on how application-specific needs can be implemented.	<i>Architecture Request (AR)</i>	<i>HUMBOLDT Forum</i> (http://forum.esdi-humboldt.eu)	Scenarios within HUMBOLDT

¹ <http://www.volere.co.uk>

...integration of concrete (functional or technical) solutions into the framework.	<i>Requirement Request (RR)</i>	<i>VOLERE Tool (http://humboldt.etra.es)</i>	Anyone within HUMBOLDT, related projects and initiatives
...that your possibly revised needs for concrete solutions be taken into account before the solutions are implemented.	<i>Requirement Change Request (RCR)</i>	<i>VOLERE Tool (http://humboldt.etra.es)</i>	Anyone within HUMBOLDT, related projects and initiatives
...integration of a whole new service into the framework.	<i>Specification Request (SR)</i>	<i>HUMBOLDT Forum (http://forum.esdi-humboldt.eu)</i>	Scenarios, WP6, WP7, WP8 within HUMBOLDT
...modification of an existing solution.	<i>Change Request (CR)</i>	<i>Polarion (http://polarion.esdi-humboldt.eu/)</i>	Anyone within HUMBOLDT, related projects and initiatives, preferably with a technical background

Table 1: Matrix of procedures and tools for managing requests in specification process.

POLARION system is a rather complex application that is mainly centred on technology experts. It allows to specify the requests in great detail, but can be confusing to people not doing software engineering or implementation regularly. It is therefore recommended only for Change Requests (CR, see A4.3-D1 for more details), when it is known in detail what is expected.

VOLERE system is easier to use and gives additional guidance on how to formulate requirements; it is therefore recommended for the submission of requirements (RR, see A4.3-D1 for more details) and changes to requirements (RCR, see A4.3-D1 for more details).

The **HUMBOLDT Forum** is a good public working space for the management of requests from users dealing with the Framework implementation. It is recommended for requests regarding specific needs of the users; they are Architecture Requests and Specification Requests. These requests should be managed using a specific Microsoft Word Template (see A4.3-D1 for more details).

A project-internal **HUMBOLDT Wiki** is also used and proved to be a very powerful information exchange tool not only in collaborative software development but also in all kinds of distributed work. On the long term, this could serve as a basis for more efficient open-source development, and it can contain all kinds of HUMBOLDT-related information in a well-structured documentation system and thus can also be regarded as a “product” containing the result of common efforts.

6.2 Raising Awareness

6.2.1 Building on existing networks: Creation of the Key User Group

In order to raise awareness on the project and construct a solid Key User Group, it was decided to make use of the pre-existing networks of the Consortium Members and build on their well-established connections. Therefore, all Partners were asked to identify and contact possible Key Users in their respective environment (country / application area), inform them about the potential benefits and requirements of the HUMBOLDT project, and ONLY if they agree and are motivated to join, to forward their contact information to the Project Office. (It is, again, very important to underline that the user must be contacted and has to agree before the contact information is submitted to the PO.) The Project Office manages an online database of user contact information, which is – according to the

regulations – intended to the purposes of the HUMBOLDT project only and is not in any case provided to third parties. The list of the users is handled confidentially, but some information is provided in the User Inventory section (8.1.2.1).

On the other hand, GI-related professional organisations (associations, consortiums, etc.) on national and international levels are intended to be used as multipliers. All Partners have been asked to identify and target these organisations in their respective countries and areas, as most of them are members of such bodies. This can lead to an important increase in the number of possible users.

6.2.2 HUMBOLDT Main Dissemination Instruments

The HUMBOLDT dissemination instruments are described in detail in the Dissemination and Exploitation Plan (A11.1-D1). However, dissemination is vital in raising awareness, and is thus crucial from the point of view of efficient user involvement. Therefore, user involvement activities have to use dissemination instruments, namely:

- HUMBOLDT Scientific Publications and Articles
- HUMBOLDT White Papers
- HUMBOLDT Brochure
- HUMBOLDT Leaflet
- HUMBOLDT Scenario Leaflet
- HUMBOLDT Web page
- HUMBOLDT Newsletter
- HUMBOLDT Conference
- Press Conferences and Press Releases.
- Attendance at National and International Workshops, Fairs and Conferences
- Publication in GI-related newsletters

6.2.3 Motivating users to join the HUMBOLDT User Community

6.2.3.1 Public deliverables, summaries

HUMBOLDT users will have the right to browse all the public deliverables created during the project. Besides this, it is foreseen to provide public summaries of the achieved results (non-public deliverables, etc.) created within each WP. It is up to the WP leaders to formulate a proposal of the contents to be included in such summary documents, and it requires the approval of the Partners.

6.2.3.2 Software tools

During the development of Framework versions 1.0 and 2.0, the Toolset and Scenario Applications, numerous software pieces of possible user interest will be developed. As long as the first public version of the Framework is not available, it is still possible to motivate users by providing some software tools created by the Consortium in the frame of the HUMBOLDT project, which will either be the part of the Framework or are used for other purposes within the project.

One example is the HUMBOLDT Editor developed in Activity A7.0 (Concept of Data Harmonisation Process) of WP7 (Harmonised Data Profiles) to support the development of a harmonised data model

for a given application. In HUMBOLDT the tool is used to specify a common data model (in INSPIRE documents called "application schema") for each HUMBOLDT Scenario. The tool includes a concrete application/implementation of the INSPIRE documents D2.5 (Generic Conceptual Model) and D2.6 (Methodology for data specification). The tool is based on a framework applying the OMG model-driven approach and architecture, on which also UML is based. It consists of a graphical user interface providing functionality comparable to a UML editor, which is restricted to the requirements and recommendations of the INSPIRE documents. The tool is able to provide the specified data models not only in the graphical form but also as textual representations (XML, GML, XMI, Java, INTERLIS) to be used in further processing steps. The tool is regarded as part of an appendix to the document A7.0-D1. The appendix will also include a "data modelling cookbook" summarising the steps to undertake in order to produce a harmonised data model for a scenario by applying the HUMBOLDT data modelling tool.

6.2.3.3 The Framework and the Toolset as motivation

Starting from the first public version of the Framework, registered HUMBOLDT users will be enabled to use and test the successive versions of the Framework and the Toolset for their own use cases, and to provide feedback to the Project. This is in itself a motivation for the users, especially for Developers and Data Custodians, to join the User@HUMBOLDT Platform.

6.2.3.4 User Involvement by means of Training

Training and awareness are two of the most important issues in capacity building, both the basic rationale and the final target of any action carried out. Training impacts on the capacity of the stakeholders in developing an understanding of innovative technologies and processes and in exploiting them.

Awareness in SDI, standards, metadata, web technology, as well as training in the use of the HUMBOLDT framework as a base for developing harmonised applications contribute to the creation of the "Humboldt Community" compliant with INSPIRE principles, at the cutting edge of the GI technology, with proper skills concerning technical features including OGC standards, interoperability etc.

A HUMBOLDT training package assisted by a well-organised training framework is then able to support the HUMBOLDT dissemination and exploitation policy, and the effective involvement of the users. The training package will be available for download through the project website for the registered HUMBOLDT users.

Many different training actions can be then planned by the partners to assist the involvement of the users in the development.

It will be useful and effective to involve users throughout a training schema that leads them to build-up their own use cases with their own datasets within one or more of the Humboldt scenarios, according to the following schema:

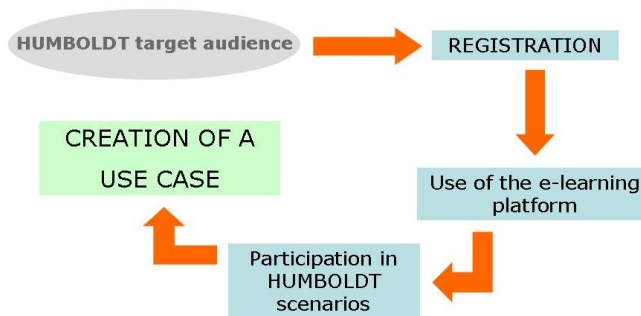


Figure 2. The e-learning platform as a tool for user involvement.

6.3 Establishing Bi-directional Connections

6.3.1 Creation of the User@HUMBOLDT Platform

The User Platform could address and build on existing user federations and user groups including those from previous GMES projects (GSE phase I), current projects (under FP6 – e.g. IP BOSS4GMES) and future projects (GSE phase II). In the past these user groups have been mainly oriented to support user needs within each specific project. Collaboration across projects has rarely taken place. While the on-going activities are mainly addressing the technical level of collaboration, it is fundamentally necessary to also address decision-makers promoting collaboration and discussion between user communities. To address the decision-making level collaboration user networks could be proposed including Eionet, the European Environmental Information and Observation Network of the European Environment Agency (EEA), and city networking organisations including UBC, EUROCITIES, Med Cities, METREX etc.

An inner circle of User Platform members around the core HUMBOLDT partners will consist of representatives of the user federations and networks identified above, with a second circle formed of service providers invited to participate in different meetings and to be involved in the multi-lateral dissemination approaches of the project. Critically, this network should be led by user organisations. Only a user network that is led and run by users will in the long term be considered credible by user organisations and articulate overall European user opinions.

The HUMBOLDT Intranet offers a good basis for this with its mailing lists (including archives), contact information and document exchange facilities. Skype conference calls are effective in real-time information exchange among the Consortium members involved.

Consortium members involved in previous or other ongoing INSPIRE- GMES- or other ESDI-related projects should use their contacts to involve key users.

Users external to the project but identified as “key users” including representatives of the user federations, should receive restricted access to the intranet eg to the “final” and external documents and some mailing list archives. They can also be invited to certain meetings where relevant issues are to be addressed.

6.3.1.1 User Platform scope and objectives

- Provide a common platform and competent partner for discussion of key issues
- Provide a **platform** for user organisations and country interests
- Provide a home for an independent interest group representing the user point of view
- Report the discussions results and achievements to the above mentioned stakeholders

- Achieve continuous user involvement to support the common objective of setting-up sustainable services beyond the bi-lateral supplier-user relationship
- Build a network user organisation at all administrative levels (from European to local) and across nations sharing a common interest and mandate
- Create visibility and impact in the "official" working groups and decision making process by communicating these statements through user organisations that are pro-active opinion makers engaged in European or national working groups and processes
- Convince and motivate new user organisation to join the process

This should be achieved by

- **Consensus** – by teaming user organisations with a common mandate and interest
- **Continuity** – going beyond the scope and lifetime of individual projects
- Making an **impact** in the decision making process.

The user group should provide the platform to discuss the scope and content of user involvement within and outside of the various projects.

6.3.1.2 User Registration Service

An online user registration service is installed on the public Internet server of the Project. The registration allows the users to enrol themselves by filling out a short questionnaire including:

- Name (except for corporate users)
- Affiliation/Corporate name
- User category (Developer, Data Custodian, Data Integrator, End-user of geodata, End-user of spatial information – with the help of a short definition for each category)
- Language
- Contact information
- Subscription to Newsletters (yes/no)

The registered users will then be enabled to:

- Receive Newsletters (if they subscribe for them),
- Access the public software elements and tools made available on the website,
- Access the HUMBOLDT Framework testing environment (depending on their status),
- Download the HUMBOLDT Training Package,
- Submit comments to the Feedback Management System.

A specific set of rules for each user role is being elaborated and be included in the next version of this Document.

6.4 Managing User Feedback

6.4.1 Requirement and Feedback Management System

The appropriate management and distribution of user requirements and feedback is of primary importance: information should in all cases reach the right person or consortium member. In the current phase, when the number of users and hence the requirements/feedback is limited, the standard project environment tools described in 6.1.1 and Deliverable A4.3-D1 (788-*process_especification_evaluation_and_improvement-etra-001-final*) are used.

When the number of users reach a critical mass (probably in the phase Framework version II), an online User Feedback Management system should be installed on the project server, which makes it possible for the registered users to provide feedback or request information.

Based on the user registration system, this feedback system should:

- Have input interfaces on the Internet server and provide feedback to the project intranet.
- Provide specific interfaces for registered users according to their user category.
- Should classify feedback according to provider, relevance and criticality. Inner circle key users and critical issues should have larger priority in the feedback management system.
- Forward general feedbacks to the representatives of the relevant work package.
- Forward software-related feedbacks including requirements, error reports etc to the Architecture Team for further analysis.
- Enable Consortium Members to submit user feedback collected during events or via personal contacts

6.4.2 Other ways for gathering feedback

6.4.2.1 Questionnaires

Besides the online feedback management system, user feedback should be gathered via questionnaires (in line with A3.3 D1 State of the Art in User Groups and Needs) to enable users to consider whether the current version of the framework meets their requirements, and formulate specific requests.

An online version of the WP3 Short Questionnaire is already installed on the public internet site under the “Get Involved” section. It is also being considered to install the WP3 Long Questionnaire in order to gather more information online for WP3 activities focussing on user groups and needs (A3.3-D2 State of the art in user groups and needs final version).

6.4.2.2 Personal contact, events

Personal contacts are very important from the feedback point of view. National and international events offer important opportunities for gathering direct feedback. Therefore, an Event Calendar was created on the Intranet server. In this calendar, Consortium Members are able to:

- Browse events
- Enter events relevant to the Project for dissemination and feedback collection
- Indicate if they will take part in that event, add comments

- Request dissemination material for particular events

The Event Calendar is also published on the public web server of the project, so that external users can browse the events and can also see where HUMBOLDT will be represented.

Consortium Members presenting HUMBOLDT related work at those events should gather feedback if possible, and share their observations with the relevant HUMBOLDT partners.

6.5 Use of Dissemination Instruments in the Project Phases

The concern here is with the adoption of various dissemination instruments in order to meet the described goals of User Involvement. All actions will be accompanied by the general dissemination work with the aim of general awareness, higher visibility and so the sustainability of HUMBOLDT. General dissemination includes the planned events throughout the project duration, PR, workshops, training, off and online marketing, Web PR, Point Of Interest presence with posters i.e. in academic, governmental and research environments etc.

6.5.1 Prototype Phase (*finished*)

Within the prototype phase, internal communication between project partners is primarily needed for the development of the core technology. The intranet performs a key role in dissemination supported by personalized contacts, phone, Skype and e-mail. The intranet serves as an archive and as a distributional tool for the exchange of deliverables.

6.5.2 Framework Version I (*specification finished in PM18, implementation due in PM26*)

This phase requires active dissemination towards external users, and access to specific sections of the Intranet has to be provided for the contributing external parties, including that derived from related projects. Besides this, data custodians and data integrators have to be addressed, ie by personal contact via the scenario teams, to encourage them to join the HUMBOLDT User Platform, USER@HUMBOLDT. The basic fundamentals on which USER@HUMBOLDT can grow and develop dynamically, involve comprehensive print material, such as brochures, leaflets, technology descriptions, that have to be provided to users for further distribution among interest groups. Confirmed contacts have to be stored and categorized, and a functional address data management will be necessary. Personalised newsletters via special interest mailing lists (by scenario, by country, by field of application) and a frequently updated public website will convey the data custodians' and data integrators' commitment to HUMBOLDT related challenges and perspectives. Currently, the possibilities to have an independently moderated web forum are being evaluated for creation in the last third of this phase. All actions have to be accompanied by press relations on the individual partner side towards relevant print media.

6.5.3 Framework Version II (*specification ongoing and is due in PM26, implementation due in PM34*)

Following the action items of the FV I, in this phase additional dissemination instruments come to use in order to provide deeper knowledge of the HUMBOLDT framework, and secure feedback from scenario related developers about their requirements concerning HUMBOLDT functionalities. Besides the use of the above mentioned dissemination instruments, the web based feedback system will also be implemented. Further customisation of the web forum will also take place in order to meet the varying needs and expectations of the USER@HUMBOLDT target groups. Additional training activities may also be necessary to distribute further knowledge and skills. External workshops will be

accompanied by the distribution of basic dissemination material supplemented by personalised direct mailings.

6.5.4 Framework Version III (*specification starts in PM 27, implementation and validation due in PM47*)

All featured dissemination instruments have to be further aligned with individual goals.

6.6 Correct handling of collected information

Due to the fact that the HUMBOLDT project regularly collects data and information (including personal information) to carry out some parts of the work, and also because HUMBOLDT is establishing close connection to users and user groups via e.g. the online registration system, a detailed HUMBOLDT Privacy Statement covering all relevant aspects of information handling was elaborated and is available at the following address: <http://www.esdi-humboldt.eu/contact/privacy.html>.

7 Current status of user involvement and future perspectives

The main objectives set in the previous version of User Involvement Document for the past period were: to **raise awareness** and **start establishing bi-directional connections** to users. It can be stated that they were mostly successfully achieved. The awareness about the

7.1 Achievements in the last period

7.1.1 Project environment

- The project environment is created and all the instruments are available for the user-driven development (see section 6.1).

7.1.2 Networking

- Over 30 Key Users have been identified by the project partners upon request of the User Involvement Group (see below). These users are organizations or individuals with a strong interest in the outcome of the HUMBOLDT project and are also willing to influence the development, therefore volunteered to become a member of the HUMBOLDT Key User Network. The advantage of such a network is its visibility to the consortium and also the reliability of the users, as it consists of project-external users with close connections to at least one HUMBOLDT partner. General information can be found in 8.1.2.1.
- Connections to numerous other international and national SDI- and GI-related projects were established, and collaboration started to ensure more efficient and effective work and an optimal use of (joint) resources. The list of projects can be found below, in 8.1.2.3.
- Besides the pre-existing links to our “sister” projects, the recently established links towards newly started projects (e.g. ESDIN and NatureSDI+) are very promising from a user involvement viewpoint. Through these projects, experienced and reliable domain user communities with awareness of the HUMBOLDT project can be reached, who are willing to use the results and provide expert feedback. Further cooperation is therefore essential.

7.1.3 Dissemination

- The HUMBOLDT Newsletter was created and disseminated towards all registered HUMBOLDT Users (including Key Users).
- The HUMBOLDT project was represented at several conferences, workshops and joint project meetings (see the Activity Report for the complete list). The successful organisation of the HUMBOLDT Data Harmonization Workshop at the 2008 INSPIRE Conference (Maribor, Slovenia) was one of the major achievements in dissemination and user involvement in this period.
- A large number of GI- and ESDI-relevant newsletters, journals and other dissemination media were identified by the Project partners upon the request from WP11. The list is managed centrally by WP11 and is used for dissemination activities.

7.1.4 Development

- The Protected Areas scenario was selected to become a Fast Track Scenario, which means that scenario users directly collaborated with WP05 and WP08 developers to design, specify and implement scenario-specific HUMBOLDT software applications. This can serve as a basis for the development of the Scenarios, and resulted in fast delivery of concrete software products that can catalyse further user involvement by demonstration.
- The Conceptual Schema Translation Task Force was created and carried out the development of user-required transformation components, which can then serve as a basis for the toolset, scenario applications and the framework itself. Here as well, concrete software products were created that demonstrate the HUMBOLDT advantages to the public.
- More active involvement of project-internal users represented within the Scenarios was carried out during the second project year. This was especially reinforced during the specification work of Framework version 2.0, where application contacts (“sparring partners”) were assigned to each component. The specification and development work is thus carried out by development teams consisting of WP05, WP08 and scenario/application members.

7.2 Deviations from the initial user involvement strategy

The involvement of project-internal users in the development process required more effort than expected. More active involvement of project-internal users represented within the Scenarios was carried out during the second project year. This was especially reinforced during the specification work of Framework version 2.0, where application contacts (“sparring partners”) were assigned to each component. The specification and development work is thus carried out by development teams consisting of WP05, WP08 and scenario/application members. Furthermore, as it was already described in the User Involvement Document v2, it is evident that user involvement and communication with users can be catalysed by releasing project results for discussion and feedback. These results should not only include documents, but also real pieces of software and real examples/use cases. Therefore, it was decided to create two Task Forces in order to speed up the process of obtaining more concrete results. The Protected Areas scenario was put on a “fast track” meaning that we concentrated development efforts on this scenario, which resulted in a quick development of widely usable and understandable pieces of software including transformation components. The other task force concentrated on the widely-known problems of data harmonization and identified which ones of them can be solved by well-established solutions and which require further scientific investigation. This also resulted in transformation components that will be directly used within the HUMBOLDT Toolset. Important results were achieved in the active research area of conceptual schema translation as well.

7.3 Strategy for the next period and outlook

7.3.1 Catalysing user feedback by development

In Framework v 2.0, the specifications built upon the results achieved by the Fast Track Scenario and the Conceptual Schema Translation Task Forces will be implemented. This will result in a number of functional components and services visible not only to Developers, but also to the other user categories. In the previous periods awareness was widely raised about the project, therefore in the next period the aim is to satisfy expectations and catalyse bi-directional connections by making available software elements (Framework, Toolset, Scenario applications) and share them with the public.

7.3.2 Sharing project results with the broader public

Software elements developed within the project and considered as final should be made available to the public. Furthermore, active dissemination is needed to make people aware of the newest results. Download via the project homepage is a good solution, but the project status achievement of at least major milestones should be published in (both HUMBOLDT and external) newsletters, conference presentations and workshops, just as was done in the last project year.

All public deliverables should be available on the project website. Besides them, a number of project-internal documents can be made available (at least in summary) for the registered users who are interested in them. Therefore, all deliverables are reviewed and the ones that are not public but can be relevant from the user perspective will be made available in summary to the public. If a user is specifically interested in one of the restricted documents, a decision of making it available to the user can be taken on a by-case basis.

7.3.3 Asking concrete questions from the users

The most important user requirements, e.g. the general “Top 5” requirements defined by the users during the interviews and described in A3.3-D2 “State of the art in user groups and needs final version” should be broken down into atomic requirements, and checked against the concrete functionalities. Then, users can be asked directly to share their opinion on the importance and relevance of the atomic requirements, which can serve as a basis for the prioritisation of developments in a more user-driven way, according to the processes described within WP 04.

7.3.4 Going open-source

The project will go open-source in March 2009. The necessary steps and preparations are made within WPs 4, 5 and 8 to ensure a smooth start. Basic considerations are written in A4.1-D1 “State of the art in collaborative software development and definition processes”.

8 Annex I: User Inventory

8.1 Inventory of current users

8.1.1 Users in HUMBOLDT Scenarios

The leader of WP9 and the Scenario leaders completed the compilation of all relevant information on users currently involved in the HUMBOLDT Scenarios. The results are incorporated in the Scenario System Specification deliverables, and are summarized below.

The list of users already represented in the Scenarios is provided below.

- HS Urban Planning (extended during the
 - Indra Espacio (Spain)
- HS Forest:
 - Forest Management Institute (Czech Republic),
 - Regional Government Liberec Environment Protection and Forestry department,

- Regional Government Usti nad Labem Environment Protection and Forestry department,
- Regional Government Karlovy Vary Environment Protection and Forestry department,
- CENIA,
- Grauba, Saxonian regional government,
- Forest owners,
- State Czech Forests,
- State Saxonische Forest,
- Forest schools (secondary, Universities)
- HS ProtectedAreas:
 - Regione Liguria (Italy)
- HS EriskA:
 - Bodenseekreis (Lake Constance district office, Germany)
 - Konstanz district office (Germany)
 - Water management agency of Kempten (Germany)
 - Office for warning affairs of the state Vorarlberg (Austria)
 - Office for military and civil protection of St. Gallen (Switzerland)
 - Office for environmental affairs of Thurgau (Switzerland)
 - National mapping agency of province Vorarlberg (Austria)
- HS Water (*Now integrated into the new Transboundary Catchment Scenario, see below*)
- HS Ocean:
 - Aegean region:
 - General Secretariat of Civil Protection,
 - Ministry of Mercantile Marine/ its Marine Environment Protection Division
 - Baltic region:
 - Seatrack Web users – Helsinki Commission (Baltic Marine Environment Protection) members
 - UK region:
 - The Maritime and Coastguard Agency,
 - French region:
 - CEDRE, the French Marine Pollution Organisation
- HS Galileo:

- Individual Users that are dependent on location-based air quality information (e.g. [allergic persons](#))
- Emergency respondent
- HS Transboundary Catchment (Midterm Scenario):
 - Conseil Général des Alpes Maritimes - Technical services (France)
 - PACA Region - Technical services (France)
 - Mercantour - Argentera Natural Parc (France)
 - Regione Liguria (Italy)
 - Province of Imperia (Italy)
 - Catchment management Authority (Italy)
 - Regional Parks (Liguria, Piedmont – Italy)

8.1.2 Project-external users

8.1.2.1 Key Users

Due to privacy reasons, only the corporate users and the respective countries are shown in the below table.

Organisation	Country
Research Institute of Geodesy and Cartography in Bratislava	Slovak Republic
Nitra self-governing region	Slovak Republic
Landeswarnzentrale Vorarlberg	Austria
Ministry of Mercantile Marine / Marine Environment Protection Directorate / Informatics and New Technology Directorate	GREECE
General Secretariat for Civil Protection	GREECE
Hungarian Ministry of Environment and Water / Dept. of Environment and Nature Protection / Dept. of Nature Protection Informatics	Hungary
Instituto de Meteorologia	Portugal
Instituto Hidrográfico	Portugal
Instituto Nacional de Estatística	Portugal
Office fédéral de topographie	Switzerland
NATURE-GIS (SDIC)	Italy
GI-CLAN (SDIC)	Italy
Fondazione Graphitech	Italy

Regione Piemonte	Italy
Regione Liguria	Italy
Provincia di Savona	Italy
Provincia di Genova	Italy
ICCOPS	Italy
Centre d'études techniques de l'équipement du sud ouest	France
Conseil Régional Nord Pas de Calais	France
Oil Spill Response and East Asia Response Limited	UK

8.1.2.2 Self-registered users

Due to privacy reasons, only the corporate users and the respective countries are shown in the below table.

Organisation	Country
Surveying and Mapping Authority	Slovenia
Arpa Piemonte - Centro Regionale per le Ricerche Territoriali e Geologiche - Sistema Informativo Geografico	Italy
Environment agency (UK)	United Kingdom
Sparx Systems Pty Ltd	Australia
Amt für Stadtentwicklung und Statistik	Germany
Environmental Studies Centre (Vitoria-Gasteiz City Council)	Spain
Monte Pino Met Research Observatory, GTOS/TEMS Database (FAO, UN)	Italy
University P. Comillas, Department of Sociology and Social Work	Spain
TeleGIS LAb - Dep. of Earth Science - Cagliari University	Italy
Space Research Center PAS	Poland
Deputación a Coruna	Spain
AMDE	Portugal
CMLisboa / DAEV	Portugal
EuroGeoSurveys	Belgium
Redcar and Cleveland Council	United Kingdom
Bundesamt für Kartographie und Geodaesie	Germany
SIGRID S.L.	Spain
Institute of Spatial and Cadastral Systems (ISPIK)	Poland

Name	Contact on Project side	Contacts on HUMBOLDT side	Status
	(IFREMER)	(IFREMER)	MyOcean will implement a standard catalogue for operation oceanography purposes, and standard networking services on the data (access, viewing).
NaturNet Redime	Jiri Hiess	Karel Charvat	Working exchange with HS Forest and HS Urban Planning Scenario
c@r	Petr Horak	Karel Charvat	Working exchange with HS Urban Planning Scenario
AMI4ffor	Petr Horak	Karel Charvat	Working exchange with HS Forest Scenario
InterRisk	François Parthiot (Cèdre – France)	Gilbert Maudire	Ocean partners ensure a working exchange
GI-INDEED	Anders Östman (University of Gävle)	Giorgio Saio (GISIG)	ICT-based Training Platform, cross-check
eSDI-Net+	Joachim Rix (Coordinator)	Eva Klien (IGD)	Thematic Network; Information exchange

Related Projects interaction

Project	Date + Location	Topics
C@R, Naturnet Redime	Chotebor 17.5	Common End user involvement meeting
CASCADOSS	Via Mail 15 th -18 th June 2008, Warsaw	<ul style="list-style-type: none"> Confidentiality Agreement in Preparation A2.4-D1 Report on Software Distribution Strategies A3.3-D1 State of the Art in User Groups and Needs A3.6-D1 Handbook of Standards Participation in the CASCADOSS workshop in Poland in June 2008: keynote presentation, information exchange and discussion
BOSS4GMES	22nd-23rd May 2008 Paris	Discussion of GMES – INSPIRE interactions in the context of the development of the top-down and bottom-up perspectives on service evolution.
BOSS4GMES	25th-26th June 2008 Toulouse	Discussion of GMES – INSPIRE interactions in the context of the development of the top-down and bottom-up perspectives on service evolution.

eSDI-Net+	<p>Regular bilateral meeting between the Coordinators of both projects in Darmstadt</p> <p>Regular communication between work package leaders in dissemination and awareness of both projects.</p>	<p>Discussion on strategic partnership</p> <p>Promoting synergies to achieve sustainability for both projects, e.g. complementary dissemination and awareness raising activities.</p> <p>Exchange of information about implementation of INSPIRE and ESDI at national and regional level.</p> <p>GISIG, also involved in both projects communicates user requirements and stakeholder needs among the participants of both projects.</p>
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8.2 Users to be Targeted

8.2.1 GMES User Community

The Global Monitoring for Environment and Security programme provides geospatial information services to support European policy needs. GMES is targeted at:

- Europe's environmental commitments, within EU territory and globally;
- other EU policy areas such as agriculture, regional development, fisheries, transport, maritime policy, external relations with respect to the integration of the environmental dimension in the respective domains and their specific requirements;
- Common Foreign and Security Policy, including the European Security and Defence Policy;
- other policies relevant to European citizens' security at Community and national levels, eg policies related to Justice and Home Affairs activities of the European Union, such as border surveillance.

8.2.1.1 Marine Core Service

The underlying objective of the Marine Core Service (MCS) is to improve EU capacities for monitoring and predicting the marine environment relating to the global oceans and the European regional seas (e.g. the Arctic and North Atlantic Oceans and the Baltic, Black and Mediterranean Seas).

The MCS will deliver information on three-dimensional ocean state, ocean dynamics, ecosystems and sea-ice with the spatial resolutions and timeliness of delivery chosen to meet downstream service requirements. Nowcasts, forecasts and analyses, covering a period of 20-50 years, will be produced and used to monitor and understand the changes in the state of the ocean.

The main components of the MCS will be in-situ and satellite thematic assembly centres, global and regional modelling and data assimilation centres, and systems to deliver the core information services.

Specific attention is being given to:

- Over the open ocean and shelf seas, to the characterization and modelling of the ecosystems and of their links and couplings with the ocean dynamics
- In coastal zones, to the forcing of open ocean on coastal circulation and ecosystems, the development of data assimilation in coastal regions
- The characterisation of river discharges and their link with sediment transports.
- The links between the MCS and downstream services (e.g. storm surge forecasting, maritime safety and fisheries management), as well as with Integrated Coastal Zone Management, coastal engineering and other maritime activities (eg security of maritime traffic).

8.2.1.2 Land Monitoring Core Service

The objective of the Land Monitoring Core Service (LMCS) is to improve the timely monitoring of land state, land use and land cover state and changes at regional, European and global levels. At the European level, the LMCS will deliver EU27 land use and land cover state and changes with a frequency and spatial resolution adequate for serving the monitoring and implementation of the environmental acquis and other community and Member States' policies related to the environment (cohesion, agriculture & forestry, water management soil protection, sustainable urban development, transport, etc.). The LMCS implementation requires the involvement of organisations legally mandated to collect Land Information in the Member States.

The LMCS will link to “downstream services” by developing for specific themes and areas, ranging from EU27 to 'hot spots' (e.g. urban zones, nature sites, areas subject to rapid changes or high environmental risks such as landslides, erosion etc.) land specific geophysical and biophysical information as a “core service”. The LMCS will, as part of its “core service” will contribute to the delivery of a pan European digital elevation model.

At the global level, the LMCS will deliver bio – and geophysical parameters derived predominantly from space based observations in support to Community development and collaboration initiatives and the implementation and monitoring of international conventions.

8.2.1.3 Emergency Response Support Service

The objective of the Emergency Response Support Service (ERSS) is to reinforce the European capacity to respond to emergency situations associated with meteorological-driven hazards (e.g. storms, fires, floods), geophysical hazards (e.g. earthquakes, tsunamis, volcanic eruptions, landslides and subsidence), deliberate and accidental man-made disasters (e.g. urban fires, chemical incidents on industrial sites) and humanitarian disasters.

In the long run, the proposed service will guarantee that Europe can provide adequate information capabilities to support early warning, urgent assistance, relief operations, humanitarian aid, reconstruction activities.

In the short- to medium-term, the Emergency Response Service will be focused on strengthening preparedness and response capabilities of a range of institutions at national, EU and international levels. This requires in particular a rapid mapping capability after disastrous events occur and preparatory services to collect and map spatial and socioeconomic data in areas at risk. To this end, the Emergency Response Support Service will be focused on methodological, functional and organisational issues linked to the provision and delivery of reference maps and damage maps required for management and ground intervention in emergency situations.

Service evolution should also require:

- Better documentation of the risk vulnerabilities
- Design and streamlining of early warning and preparedness systems and methodologies for the various types of hazards, taking into account their specificities and especially their location (inside or outside Europe).

8.2.1.4 Information Services for Security

The context of GMES developments for security is the European Security Strategy endorsed by the European Council in Brussels on 12 December 2003 which has defined the main threats as follows:

- The terrorist threat, and its linkages with international organised crime
- The proliferation of Weapons of Mass Destruction (WMDs), addressed inter alia through verification of the provisions of the Treaties
- The regional conflicts and their consequences.

Continuously updated information on proliferation activities, movements of population including illegal immigration, all kinds of trafficking, the status of critical infrastructures, and many other elements which constitute the warning factors of major threats, can be essential for conflict prevention and fight against all less visible threats to European security such as terrorism and organised crime.

Environmental based crisis indicators (related to e.g. status and use of water resources, large scale pollution) are also of high relevance. Moreover, the EU needs to achieve an adequate level of operational capabilities and readiness to conduct Crisis Management Operations.

In this context, timely Earth Observation data (rapid mapping and tailored geo-information products) combined with ground information, secure and reliable communications as well as navigation systems are relevant. Reliable and complete reference data (asset mapping) of potential target areas and hotspots will also be a crucial ingredient in achieving an efficient service. The GMES products in the security area (eg asset mapping, rapid mapping, humanitarian aid) share many characteristics with those outlined above for emergency response.

8.2.1.5 Atmospheric Composition and Dynamics Monitoring

Activities in FP7 are targeted at:

- **European air quality**, with the objective to provide:
 - Improved routine real-time forecasts of air quality
 - Historical information from which trend analysis and impact of the implementation of directives and protocols could be assessed
 - A modelling platform enabling the analysis of future scenarios
 - Inverse modelling to improve emission estimates
- **Regional sources and sinks of CO₂, CH₄ and related tracers**, especially through integration of operational collection of in-situ and satellite based concentration measurements and use of atmospheric transport models.
- **Availability of renewable energy sources**, in order to provide services for the selection of optimal sites for renewable energy power plants and the optimisation of production and management thereof.

Developments envisaged should provide standard European data on which further downstream service development (such as provision of local integrated air quality index, local air-quality related alerts, personalized skin-type specific UV information) can be based.

At global scale, an operational capacity is required to monitor (for climate purposes) and to forecast (for regional air quality purposes) the emissions, presence and hemispheric/global transport of atmospheric trace gases including reactive gases (e.g. stratospheric and tropospheric ozone, nitrogen dioxide, carbon monoxide, sulphur dioxide, formaldehyde), man-made and natural aerosols, clouds, and long-lived greenhouse gases. In particular, it should monitor the long term recovery of stratospheric ozone, including its day-to-day fluctuations and related ozone depleting components, and will forecast UV radiation at ground.