

**Title:**

**D1.1 Summary Report (Methodology and Overview)**

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**Working Group:**

EWP 1 Coordination, CRM and Methodology

**References:**

HUMBOLDT Description of Work  
 HUMBOLDT Extension Work Plan  
 A11.1-D1 Dissemination & Exploitation Plan (final version)  
 A1.8-D7 User involvement Document – final version (1135)  
 User reports  
 Ines Michi, Master Thesis: Long-term Sustainability Concept for HUMBOLDT Project Results  
 D1.2 Outreach Materials and Workshops Summary Report  
 D4.3 Revised Business Plan  
 D4.4 Sustainability Summary Report  
 A2.4-D1 Software Distribution Strategies and Business Models  
 A3.3-D2 State of the Art in User Groups and Needs (final version)  
 A3.6-D4 Handbook of Standards (final version)  
 A4.3-D2 Process Specification Evaluation and Improvement (final version)  
 A5.2-D3 Specification introduction and overview  
 A7.0 Concept of Data Harmonisation Processes  
 A7.1 Concept of Application-Specific Harmonised Data Models  
 A7.2 – A7.8 Reports on Scenario Application Profiles  
 HUMBOLDT Public Website: <http://www.esdi-humboldt.eu>  
 HUMBOLDT Community Website: <http://community.esdi-humboldt.eu>  
 HUMBOLDT Training Platform: <http://www.gisig.it/humboldt/training/>

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**Short Description:**

The deliverable “D1.1 Summary Report (Methodology and Overview)” addresses the methodology and approach to systematically and consistently organise contacts to users and stakeholders. It considers the sustainability aspects as the overall goal of the HUMBOLDT dissemination and exploitation activities and user relation activities. It describes the methodology for a sustainable use and maintenance of contacts to the stakeholders and users of the project results, the “Valuable Assets” during the project extension phase and after its end.

**Keywords:**

Customer Relationship Management (CRM), target groups, users, stakeholders, exploitation, dissemination, sustainability, deliverable, EWP1

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## Table of Contents

<b>TABLE OF CONTENTS</b> .....	<b>3</b>
<b>INDEX OF TABLES</b> .....	<b>4</b>
<b>INDEX OF FIGURES</b> .....	<b>5</b>
<b>1 INTRODUCTION</b> .....	<b>6</b>
<b>2 OVERVIEW ON THE ACTIVITIES DURING THE EXTENSION PERIOD</b> .....	<b>8</b>
<b>3 COMMON USER INVOLVEMENT METHODOLOGY</b> .....	<b>11</b>
3.1 USER GROUPS AND TARGET MARKET.....	13
3.2 USER INVOLVEMENT MEASURES .....	16
<b>4 CUSTOMER RELATIONSHIP MANAGEMENT (CRM) SYSTEM</b> .....	<b>18</b>
4.1 BENEFITS OF THE HUMBOLDT CRM SYSTEM .....	19
4.2 FUNCTIONALITY OF THE HUMBOLDT CRM SYSTEM .....	20
<b>5 CONCLUSIONS AND LESSONS LEARNT</b> .....	<b>26</b>
<b>6 FUTURE PERSPECTIVE</b> .....	<b>29</b>

## Index of Tables

<i>Table 1: Deliverables in the extension period</i> .....	9
<i>Table 2: Partners taking part in the HUMBOLDT Extension</i> .....	10
<i>Table 3: HUMBOLDT user groups</i> .....	16
<i>Table 4: Dissemination instruments according to user groups</i> .....	17

## Index of Figures

<i>Figure 1: Added value for HUMBOLDT and its users .....</i>	11
<i>Figure 2: Activities of the extension period and their relation to user integration levels .....</i>	12
<i>Figure 3: Primary and Secondary HUMBOLDT Market .....</i>	14
<i>Figure 4: Example of contact details .....</i>	22
<i>Figure 5: Contact management in the HUMBOLDT CRM system.....</i>	23
<i>Figure 6: Contact Upload Wizard .....</i>	24
<i>Figure 7: Detailed information in the contact upload form.....</i>	25

## 1 Introduction

According to the project's timeline, the HUMBOLDT extension terminated in March 2010. While the activities of the first four project years focused on the development of the HUMBOLDT components, the six-month extension period concentrated on activities that built upon the project results. These activities were exploitation, dissemination, training and user-specific integration.

The dissemination and exploitation strategy applied in HUMBOLDT is the result of a continuous process of adapting and evolving it in accordance to the respective project stage. The overall goal of the HUMBOLDT dissemination and exploitation strategy is to assure the long-term sustainability of the project results and valuable assets. Identified valuable assets of the HUMBOLDT project are:

- HUMBOLDT Framework Software
- HUMBOLDT Scenario Applications
- HUMBOLDT Training Framework
- HUMBOLDT Documentation
- HUMBOLDT Expertise
- HUMBOLDT Infrastructure

In HUMBOLDT, user requirements have been identified in a continuous ongoing process from the very beginning of the project. At first this effort was mainly targeted at supporting the user-oriented development of the HUMBOLDT Software Framework whereas in a later stage dissemination and user involvement strategies moved to the center of focus. Specific dissemination materials and activities that have been accomplished include HUMBOLDT presentations, publications and articles, brochures and several thematic leaflets, newsletters, press conferences and press releases, annual reports as well as the much-noticed HUMBOLDT project, Community and Training websites.

Furthermore, a concept for further dissemination and awareness raising activities and suggested concrete steps for exploitation actions according to the progress of the project and outcomes of the three project phases has been developed. (see deliverable A11.1-D1 Dissemination and Exploitation Plan)

The determination of an appropriate exploitation and sustainability concept for HUMBOLDT project results was a very complex task since it embraces various aspects. With respect to the relevant markets for HUMBOLDT products and services, especially on data harmonisation, only very limited research had been done before. Therefore, HUMBOLDT conducted a detailed market survey specially designed to evaluate the potential data harmonisation target market. A sound knowledge of the market was considered as essential for the post-project continuation of activities. Furthermore, it provided valuable insight in additional service offerings or features and/or functionalities that could be of interest for the respective target groups.

The core motivation for the project extension was to exploit the following opportunities to strengthen the sustainability of the project results:

- Spreading the expertise and knowledge gained during the project
- Fostering a wider use of the HUMBOLDT Framework Components and reaching higher acceptance
- Generating success stories in dedicated user communities to increase the visibility and the exploitation opportunities

Exploiting these three opportunities helped to achieve these goals.

## D1.1 Summary Report (Methodology and Overview)

This deliverable “D1.1 Summary Report (Methodology and Overview)” is one of the two deliverables of the Extension Work Package 1. It addresses the methodology and approach to systematically and consistently organise contacts to users and stakeholders. It considers the sustainability aspects as the overall goal of the HUMBOLDT dissemination and exploitation activities and user relation activities.

The Chapter 2 of this document provides an overview on the activities during the extension period. The Chapter 3 describes the methodology for a sustainable use and maintenance of contacts to the stakeholders and users of the project results during the project extension phase and after its end. In particular, the integration of a comprehensive Customer Relationship Management (CRM) tool for improving the interactions between the HUMBOLDT project partners and the GI and data harmonisation interest communities is of great significance in this context. Its implementation and functionality are described in the chapter 4. The Chapter 5 summarises conclusions, lessons learnt and provides an outlook on future perspectives.

## 2 Overview on the Activities During the Extension Period

The focus of the activities during the extension period was on exploitation, dissemination, training and adoption of HUMBOLDT software for additional user communities. After finalising the technical development and the set up of the user scenarios, it was important to address a wider user community and to get strong user involvement. With respect to the user classification described later in the chapter 3 this included the framework users and developers, but also the end users with their real world use cases related to the scenario developments and additional use cases. The main activities in these areas included:

- **Exploitation**, in particular
  - Transition of the project website [www.esdi-humboldt.eu](http://www.esdi-humboldt.eu) and community website <http://community.esdi-humboldt.eu> for the long term sustainability
  - Implementation of the long term perspective via one of the options from the Business/Exploitation Plan
- **Dissemination**, in particular
  - Transfer of the results into the community networks of GMES and INSPIRE
  - Transfer of results to related projects and their user communities, specifically PLAN4All, NATURESDIplus, GIS4EU, VestaGIS and others. For more details see Activity Report or the project website at [http://www.esdi-humboldt.eu/home/related\\_projects.html](http://www.esdi-humboldt.eu/home/related_projects.html)
  - Presentation of the results and tools at further events (see Activity Report, Annex 1)
  - Provide experience reports from users of the HUMBOLDT Framework Components on the HUMBOLDT “existing” framework components and its updates based new requirements from additional user communities as well as on the HUMBOLDT scenario applications and new developed use cases (see User Reports published in the scenario section of the the project website at <http://www.esdi-humboldt.eu/scenarios.html>)
  - Edited Book and a Video on HUMBOLDT results
- **Training**, in particular
  - in-depth trainings for the now ready tools in different languages for different user groups
  - adaptation of existing on-line basic and advanced training courses for specific target audiences
- **Adoption of HUMBOLDT results**, in particular
  - updates to core software according to new requirements formulated by additional user communities
  - maintenance and support through the community website

A detailed description on the activities performed is delivered in the final Management and Activity Reports.

All these activities were organised in four Extension Work Packages (EWPs) with several sub-work packages:

- **EW1** – User involvement (methodology and process), Customer Relationship Management, Outreach Activities, Outreach Materials (such as the website and brochures), Dissemination Workshops and Presentations at Events and Conferences

## D1.1 Summary Report (Methodology and Overview)

- **EWP2** – Adoption and revision of training material, specific (in terms of the stakeholders to be addressed and the content of the training sessions) training actions, maintenance of the online training platform
- **EWP3** – Customisation of the HUMBOLDT Framework, specifically adoption and integration required by related projects and targeted Communities, e.g. new EU projects, the INSPIRE community and others, general maintenance and language translation
- **EWP4** – Transition of the HUMBOLDT Results for the long term sustainability, aiming to bring all results, such as the community website, the harmonisation procedures and scientific results in shape for exploitation by the project members and the larger community

The progress made in each work package is documented in the following deliverables, which are all due on March 31, 2011:

Deliverable	Deliverable Name	Responsible
EWP 1.1	Summary Report (Methodology and Overview)(-> CRM)	Fraunhofer IGD
EWP 1.2	Outreach Activities and Workshop Summary Report	FÖMI
EWP 2.1	Training workshop Summary Report	GISIG
EWP 3.1	Customisation and Maintenance Report	Fraunhofer IGD
EWP 4.1	Edited Book 1	Fraunhofer IGD
EWP 4.2	Edited Book 2	TUD
EWP 4.3/4.4	Revised Business Plan & Sustainability Summary Report	TU-DA Fraunhofer IGD

Table 1: Deliverables in the extension period

The following organisations actively contributed to the project during the extension period:

Fraunhofer	Fraunhofer Institute for Computer Graphics Research
ETRA	ETRA Investigation y Desarrollo SA
HSRS	Help Services Remote Sensing
IGN	Institute Geographique National
ETHZ	Eidgenössische Technische Hochschule Zürich
TUD	Delft University of Technology
UISoR	Sapienza University of Rome
FOMI	Institute of Geodesy, Cartography and Remote Sensing Hungary
MARIS	Marine Information Service B. V.
TUM	Technische Universität München
UWE	University of the West of England
GISIG	Geographical Information Systems International Group
HCMR	Hellenic Centre for Marine Research
TU-DA	Technical University Darmstadt

## D1.1 Summary Report (Methodology and Overview)

FMI	Forest Management Institute
CNR-IREA	Consiglio nazionale delle Ricerche - Istituto per il Rilevamento Elettromagnetico dell'Ambiente
CLS	Collecte Localisation Satellites

*Table 2: Partners taking part in the HUMBOLDT Extension*

### 3 Common User Involvement Methodology

In order to coordinate the multitude of user involvement measures and to follow up on contacts in a coherent way the consortium developed a common user involvement methodology. It includes the determination of the key user groups described in the chapter 4 and monitoring of the activities to reach these users. According to this methodology for all activities, e.g. workshops, a dedicated follow-up procedure has been established to ensure the continued involvement of users who have been contacted. Furthermore, a series of criteria and measures described in the final User Involvement Plan has been defined to ensure reaching the planned levels of user integration for the extension period. They were validated at the end of the extension period. The results of the validation are documented in the deliverables 1.2 and 2.1.

Developing the user involvement methodology it was important to keep in mind HUMBOLDT's main goals and principles. The core philosophy of the project is that success comes from acceptance, use and continuous improvement of the results and projects work. This can only be reached through intensive involvement of users by information exchange, motivation and provision of functional solutions.



Figure 1: Added value for HUMBOLDT and its users

In all extension activities, a special emphasis was laid on the user involvement. The dialogue with specific target audiences has been a crucial factor for the project's development, as not only the promotion of HUMBOLDT results contributed to the project's visibility, but also feedback on technical and functional requirements was significant.

The deliverable A11.1-D1 Dissemination and Exploitation Plan provided the basis for the user classification described below. It answers strategic questions on who are the target users and stakeholders and what are their interests and needs. This document defines and classifies the user and stakeholder groups, who are or might be interested in HUMBOLDT results and developments. Furthermore the deliverables A3.3 "State of the Art in User Groups and Needs" and the deliverable D1.8 User Involvement Document as well as the available documentation of scenarios have been considered for the planning and implementation of the dissemination and exploitation activities. The classification of users made in these documents provides the basis for the classification approach. In order to serve for dissemination and exploitation purposes, it has been extended by further dimensions.

In addition, Key Users have been identified by the project partner upon request of the User Involvement Group. These users are organisations 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. This network has proven its value within the specification and evaluation phases of the Framework Versions. More information can be found in the final User Involvement Document.

The classification of users is based on the levels of their interaction with HUMBOLDT. In general, stakeholders pass through three phases of interaction with the project:

- 1st level: Initial Contact – stakeholders get problem awareness and an introduction to HUMBOLDT methodological and technical aspects, while the project gets general feedback,

## D1.1 Summary Report (Methodology and Overview)

e.g. on the general applicability of the approach and the stakeholders demand for a solution or support;

- 2nd level: Understanding – stakeholders get problem understanding and methodological understanding as well as training that teaches how to apply solutions to an application issue. The project gets requirements and detailed feedback;
- 3rd level: Involvement – stakeholders continuously follow the project activities and support it by using solutions, documenting this, eventually contributing to the community knowledge base and to the technical solutions, either through source code contributions or through financing projects;

Figure 1 below illustrates the linkage between the project extension activities and these three levels. It is important that each new stakeholder coming into contact with HUMBOLDT in the first phase is registered and then followed upon appropriately.

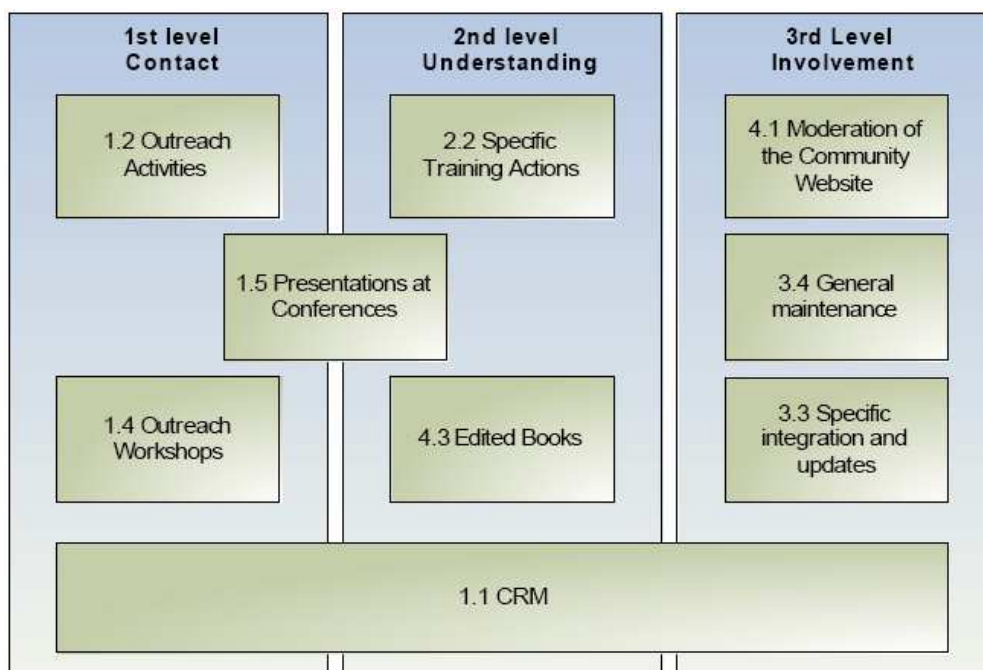


Figure 2: Activities of the extension period and their relation to user integration levels

As the main purpose of the project extension is the education of potential users about the results that the project has created and about potential benefits these can bring, the main process in the extension is focused on the user groups that are involved, and ensures that their requirements are collected and followed up on. The goal of this was to provide each contacted stakeholder with the right information and to involve them in an optimal way – both from their perspective and from the project's perspective. To summarize, there is no overall waterfall-like approach, but rather a user-specific process that leads through several activities, such as invitation to workshops and provision of materials, and which was triggered by the user's initial contact or expression of interest.

### 3.1 User Groups and Target Market

The innovative products and services derived from HUMBOLDT are covering new and challenging demands in the context of spatial data harmonisation. Especially such technology-driven and innovative developments are faced with market-related difficulties and specific market characteristics.

In general, HUMBOLDT is not facing a homogeneous target group as people and organisations interested in it come from various backgrounds. Due to this heterogeneity the potential interests of the various stakeholders for the HUMBOLDT project can differ tremendously as well. The main potential interests of research, for instance, are the development and validation of the framework. The main categories of target groups are: research, government, industry, multipliers, and international bodies.

Furthermore, the focus of the respective target groups strongly depends on the particular results that shall be exploited. As mentioned above, HUMBOLDT Valuable Assets embrace a broad spectrum of different exploitable results (see Dissemination and Exploitation Plan, Chapter 3).

In the context of the implementation of the INSPIRE Directive the public sector is probably one of the most important market segments for the HUMBOLDT Framework. Every public organisation in Europe dealing with geographic data is obliged to meet the implementation rules for spatial data and metadata set by INSPIRE. In INSPIRE registered LMOs (Legally Mandated Organisation) are all public authorities, institutions and bodies on the European member states who already have or will get a legal mandate to set up and run one or some of the components of national and regional SDIs. LMOs are thus among the national INSPIRE-responsible bodies. SDICs (Spatial Data Interest Communities) on the other hand are users, producers and transformers of spatial information, technical competence, financial resources and policies, with an interest to better use these resources for spatial data management and the development and operation of spatial information services.

The above mentioned categories of target groups can further be distinguished according to their user roles. From the very beginning the needs of potential users of an ESDI were integrated in the HUMBOLDT development process. These identified needs and user roles are perfectly suited to form the basis for prospective HUMBOLDT target groups (analysis of user roles as developed in deliverable A1.8-D7 User Involvement).

**Software developers** in the context of HUMBOLDT are software developers who work on the HUMBOLDT Framework directly or implement software on the basis of the framework. This group obviously covers organisations that are mainly interested in the technical development and the usage of the HUMBOLDT Framework. Developers are mainly targeted by the HUMBOLDT Community Website, scientific publications and documentation, as well as in technically related conference workshops and presentations. Furthermore, a detailed Factsheet on framework and components has been created to address developers in this context. The HUMBOLDT Training Platform also provides an adequate introduction to developers in respect to applying the framework components in different application areas.

**Data custodians** are people or institutions who are offering data which has to be adapted to given standards (harmonised) because of legal or market requirements. They are mainly data providers who are forced to offer this data in a format that may be different from the one they normally use. Data custodians are among the most important primary target groups for HUMBOLDT since they include the national INSPIRE-responsible bodies. They are mostly interested in the HUMBOLDT Tools as they can serve their generic data harmonisation requirements and support the data processing.

**Data integrators** are people or institutions that have to use heterogeneous geodata at work (e.g. integration of data for complex analysis). They are mainly service providers who have to combine various data in different formats and from different sources, harmonise them to make use of them for their own purposes. Just as the data custodians they are also mainly interested in the HUMBOLDT Tools since they can serve their generic data harmonisation requirements and support data processing. The HUMBOLDT Services may also be of interest for both user groups as they provide a basis for custom-made software serving their specific needs. These two HUMBOLDT target groups are mainly targeted by the HUMBOLDT Website (<http://www.esdi-humboldt.eu/home.html>), Community Website (<http://community.esdi-humboldt.eu/>) and Training Platform (<http://www.gisig.it/humboldt/training/>) – hereby especially showcases, scenario fact sheets, as well as user related

## D1.1 Summary Report (Methodology and Overview)

conference workshops and presentations. Direct marketing efforts to known institutions are also of major importance in this respect.

The final user groups are **End-users of HUMBOLDT tools** and **End-users of spatial information**. Generally, end users are not interested in the harmonisation process itself but rather in its results, helping them to use geospatial data for their applications/purposes/problems. End-users of geodata are geo-experts who are directly working with the spatial data itself. They may be interested in the HUMBOLDT Tools to support their generic data harmonisation needs, or in some of the Scenario Applications depending on their activity. End-users of spatial information on the other hand do not directly use spatial data; they only use information arising from it (indirect use of geodata). Most commonly they are private or work-related users on laymen level, e.g. people using navigation systems, online routing services, etc. End-users of spatial information are important in this context as they are capable of creating some kind of market pull for new products and services based on harmonised data, especially with the rising awareness of the huge possibilities and ongoing developments. As mentioned above, people worldwide more and more require and demand all kinds of qualified, up-to-date and quickly accessible information wherever they just might be. This trend will sooner or later spill over to areas of interest that can only be satisfied by combining geographic data from heterogeneous sources and application contexts.

Another potential user group for HUMBOLDT products or services are intermediary people or institutions that are not directly related to spatial data and/or interested in data harmonisation but are engaged in redistributing or developing products and services in a related GIS/geospatial area.<sup>1</sup>

As mentioned above, the national INSPIRE-responsible bodies, Data Custodians and Data Integrators form the primary target market for HUMBOLDT results. The further demands of the identified potential user groups outline the secondary market for HUMBOLDT. The following figure thus provides an overview of the primary and secondary market for HUMBOLDT products and services.

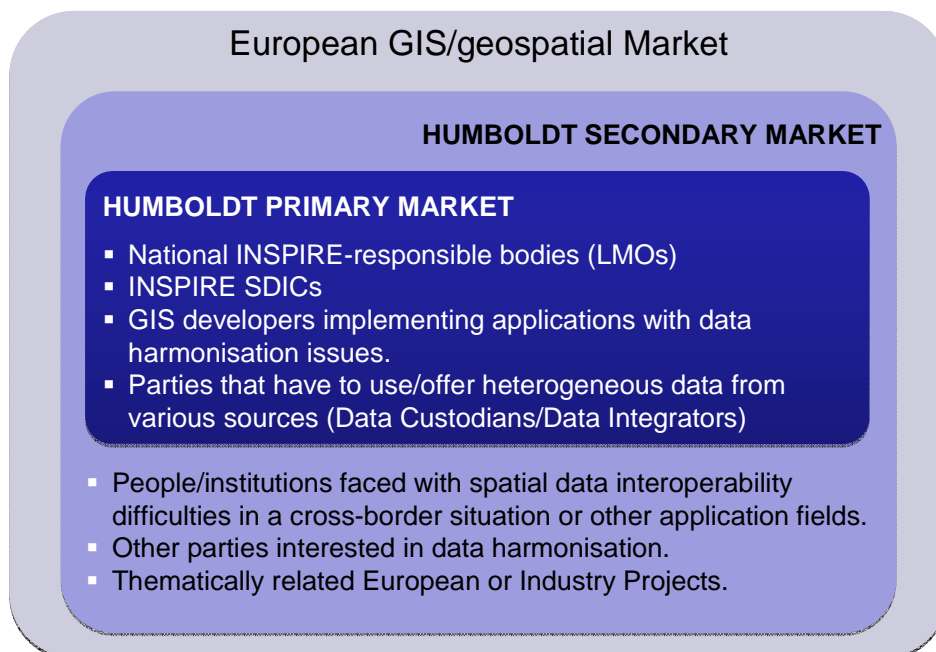


Figure 3: Primary and Secondary HUMBOLDT Market

<sup>1</sup> See Bender et al. (2009): "HUMBOLDT Project – Contribution to a Business Model," Paper, Advisory Business Operations Seminar, summer term 2009, University of Applied Sciences Aschaffenburg, pp. 39-40.

## D1.1 Summary Report (Methodology and Overview)

Furthermore the classification of users considers the affiliation to different application areas, as described in the Dissemination and Exploitation Plan, chapter 5. HUMBOLDT users come from following application areas, which have also been considered in the CRM system described below in the chapter 4:

- Security / Risk Management & Defence
- Disaster Management
- Land Information System (GIS for cadastral and land-use mapping)
- Urban Planning
- Transportation & Logistics
- Utilities Management (energy provision)
- Public Health
- Environmental Monitoring
- Natural Resource Management
- Agriculture
- Real Estate
- Marketing, Retail and Media
- Climate
- Weather Forecasting
- Human Resources
- Education
- Recreation (e.g. Hiking, Surfing, etc.)

As described in detail in the Chapter 5 of the Dissemination and Exploitation Plan, HUMBOLDT performed user mapping for systematic search within these user groups, e.g to monitor gaps in user representation or project planning.

## 3.2 User Involvement Measures

From the user involvement perspective and depending on the kind and degree of involvement in the project activities, HUMBOLDT users are grouped in the three main categories:

User group	Goals concerning user involvement	Quality and intensity of dissemination
<b>Initial contact</b>	The dissemination goal for this group of users is to reach awareness of the concept of the HUMBOLDT Framework and relevant results achieved, what is the motivation and reasoning behind the project objectives. So to make them aware of existence of results and what they are about.	High quantity of penetration, higher proportion of use of printed material than personal contact (e.g. distribution of newsletters, brochures)
<b>Understanding</b>	<p>These stakeholders and users have to know how they can solve their specific problems by using HUMBOLDT and its specific Valuable Assets.</p> <p>Additionally to awareness this goal describes the status where the target group addressed understands the concepts and results in order to assess if the results i.e. can be applied to a certain technical environment, need to be implemented in a given system, offer business opportunities, etc.</p>	Scenario leaflets, brochure accompanied by individual applications and discussions are appropriate instruments to involve this target group. Contact establishment might be made at conferences and meetings, via phone and email.
<b>Contributors</b>	This user group requires all information about HUMBOLDT described under Awareness and Understanding. Moreover, they must be able to provide active feedback towards the project in form of validation of results, alternative proposals or concrete feature requests. Action can also be understood as the need for an actively supported promotion of HUMBOLDT (i.e. by multipliers) or as further exploitation activities (business/industry).	High quality personal contact and consulting, individual person in charge out of the consortium. Training and a user hotline and forum are applicable instruments to involve this target group.

Table 3: HUMBOLDT user groups

This classification was used consistently throughout all communication channels and media and all dissemination and exploitation activities. It was also applied in the installed Customer Relationship Management system described in the chapter 4.

## D1.1 Summary Report (Methodology and Overview)

The following table lists dissemination and user involvement measures applied for each target group. The main measures are marked in bold.

	Scientific Publications and Articles	White Papers	Brochure	Project Leaflet	Framework and Scenario Leaflets	Website(s)	Newsletter	Conferences	Bilateral Meetings	Training	Press Conferences and Press Releases	Interaction with related projects	Workshops	Projekt video	Showcases
<b>Initial contact</b>	x		x	<b>X</b>	<b>X</b>	<b>X</b>	x	<b>X</b>		<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>	<b>X</b>
<b>Understanding</b>	<b>X</b>	x	<b>X</b>	x	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>
<b>Contributors</b>	<b>X</b>	<b>X</b>	x	x	<b>X</b>	<b>X</b>	<b>X</b>	x	<b>X</b>	x		<b>X</b>	<b>X</b>	<b>X</b>	<b>X</b>

Table 4: Dissemination instruments according to user groups

Especially during the extension period, emphasis was placed on the organisation of workshops. 26 HUMBOLDT workshops were organised in the extension period, focusing on the dissemination of the knowledge gained during the whole project runtime. The experiences made during the workshops, as well as their outcomes and evaluation results, are documented in the deliverable D1.2 Outreach activities and workshops summary report. This report summarizes all dissemination activities performed during the extension period, such as printed materials, website updates, publications and presentations at conferences. It also provides an overview of organised and planned events.

Furthermore, showcases have been used to demonstrate that the effort spent in establishing SDIs and harmonising data has a significant impact on the quality of work conducted by end users in a given scenario. Within the extension, the HUMBOLDT scenarios with active end user involvement have been developed into showcases by creating User Reports, by extending the existing training materials and by creating new or improved outreach materials. A summary of the activities related to showcases is also provided in the report D1.2.

## 4 Customer Relationship Management (CRM) System

Based on the common user involvement methodology described above a Customer Relationship Management (CRM) system was installed by the consortium with assistance of the Project Office in order to manage the multitude of information gathered from and about the HUMBOLDT users and stakeholders.

According to the general definition, **Customer relationship management (CRM)** is a widely-implemented strategy for managing a company's interactions with customers, clients and sales prospects. It involves using technology to organize, automate, and synchronize business processes—principally sales activities, but also those for marketing, customer service, and technical support. The overall goals are to find, attract, and win new clients, nurture and retain those the company already has, entice former clients back into the fold, and reduce the costs of marketing and client service.[1] Customer relationship management describes a company-wide business strategy including customer-interface departments as well as other departments.<sup>2</sup>

While CRM is a business strategy that seeks to optimize profitability, revenue and customer access, performance-driven CRM is more. It is an ongoing mechanism, based on continuous improvement, that allows organizations to sustain lasting relationships and gives them the ability to understand, anticipate, manage and personalise the experience with their current and potential customers and employees.<sup>3</sup>

It starts with a clear understanding of:

- Customers and their needs
- The organization and its competencies
- The organization's commitment to quality service - from both an internal and external customer perspective

The three phases in which CRM supports the relationship between the project and its stakeholders/customers are to:

- **Acquire:** CRM helps acquire new customers (users and stakeholders) through contact management.
- **Enhance:** web-enabled CRM and the contact history help to enhance the relationship to each specific user or user group.
- **Retain:** CRM software and databases enable an organisation or a project to identify and reward its loyal customers and stakeholders and to further develop appropriate dissemination initiatives and to monitor and plan targeted measures to retain the relationship.

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<sup>2</sup> Wikipedia

<sup>3</sup> Excerpted with permission from "Performance Driven CRM: How to Make Your Customer Relationship Management Vision a Reality," by Stanley A. Brown and Moosha Gulycz, Copyright 2002. Published by John Wiley & Sons, April 2002, <http://searchcrm.techtarget.com/feature/Creating-a-CRM-vision-Tips-to-optimize-CRM-performance>

## 4.1 Benefits of the HUMBOLDT CRM System

The use of the CRM system confers several advantages to the project:

- Quality and efficiency
- Decreased costs
- Decision support
- Enterprise/project agility

The system is much more efficient than fragmented data records, because it saves time in tracking communications and transactions with a particular client.

The consortium decided to implement the CRM system with the assistance of the current Project Office, performed by the company Zeitform in Darmstadt and not to acquire a system from an external system provider. In particular, the benefits of the HUMBOLDT CRM system implemented by the HUMBOLDT Project Office are:

- long-years relationship and positive experiences with the system provider (HUMBOLDT Project Office)
- better adaptation of system functionality to project needs, since the system provider has been involved in the project from the very beginning and understands the project needs
- therefore also smooth communication of system requirements (proximity)
- fast implementation
- easy transition of already available users' and partners' contacts and other information
- system provider is geographically close to the project coordinator, which shortens the communication ways and allows faster decision making
- embodied in the intranet, therefore user-friendly interface, which partners are already familiar with
- costs efficiency since the CRM database is embodied in already available environment, which allows the transition of already available users' and partners' data with much less efforts that it would be in the case of an external system provider
- system is easily extendible upon request at any time
- data security, data are in the hands of the consortium, no data are given to third parties which were not involved in the project

## 4.2 Functionality of the HUMBOLDT CRM System

The HUMBOLDT CRM system helps identify and target existing and potential users and stakeholders and generate leads for the user involvement team and local project representatives/partners. A key user involvement capability is tracking and measuring multichannel campaigns, including dissemination materials, presence at events, contact history and other aspects. The HUMBOLDT CRM system offers Business Intelligence features which help obtain filtered information about specific users and stakeholders, user groups or users in a specific country.

The decision about the functionality and design of the implemented system was based on the current and future project processes and resources as well as on technological aspects. The following aspects have been considered:

1. **Processes:** Though the system has many technological components, project workflows and processes lie at its core. It can be seen as a more client- or user-centric way of doing business, enabled by technology that consolidates and intelligently distributes pertinent information about users, effectiveness of outreach activities, persons in charge within the consortium, and user requirements. With the changes regarding the project processes in the future the system will likely need continuous re-engineering to better serve the overall goal of winning and satisfying users. Before implementation of the system it was also necessary to determine the types of user information that is most relevant, and how best to employ it. The concept behind the CRM system is based on the common user involvement methodology described above.
2. **People:** To ensure a continuous and consistent use of the system, it was the task of the coordinator to convince the consortium about the efficiency of the system and to encourage the partners to fill in their user contact data.
3. **Technology:** In evaluating technology and solutions available on the market, the consortium decided that it was most appropriate to develop a HUMBOLDT specific system instead of purchasing one. The key factors included alignment with the project's existing IT infrastructure, processes, strategy and goals, including the ability to deliver the right data to the right persons and sufficient ease of adoption and use. Furthermore, licensing models and deployment options of commercial software were not optimal to the project's needs. To manage the relationships with the customers HUMBOLDT uses a database to keep track of customers.

Following options have been considered for the HUMBOLDT CRM:

- *Licensing:* Open source solutions available, but usually limited ("Community Editions" of commercial products or prototypical software)
- *Data management:* Majority of SaaS solutions mean giving personal, sensitive data to a service provider;
- *Cost:* Systems are available at any cost point; from free to 5K€/Month; We looked for a solution with a one-time license fee;
- *Functionality:* Many CRMs focus on mass mailings, automated email contact tracing and other communication functions, we mostly need a documentation and analysis tool

## D1.1 Summary Report (Methodology and Overview)

Based on these three aspects, the initial requirements on the system were:

- Easy use, e.g. as a tool for organisation of workshops.
- Integration in the HUMBOLDT intranet
- Contact management including organisational and person-related data
- Links to events, documents and requirements
- Contact history
- Possibility to add comments and notes
- Search functions (such as key words, events, involvement, project partner in charge)
- Simple analysis functions

The following information on each contact is available in the current version of the system:

- Title / Forename / Surname
- Organisation / Department /Role
- Country / City / ZIP / Address
- Phone / Mobile / Fax / Email / Skype
- Categories
- Application areas
- Involvement
- Market category

Following user categories described above have been considered in the CRM system:

- Information End User
- Tools End User
- Data Integrator
- Data Custodian
- Software Developer
- HUMBOLDT Partner

The CRM system considers also following user involvement groups:

- Initial Contact
- Understanding
- Contributor

The majority of the HUMBOLDT users belongs to the following market groups

- Solutions market
- GIS market
- Market for geo-data

D1.1 Summary Report (Methodology and Overview)

The figure below illustrates an example on such contact information in the CRM system:

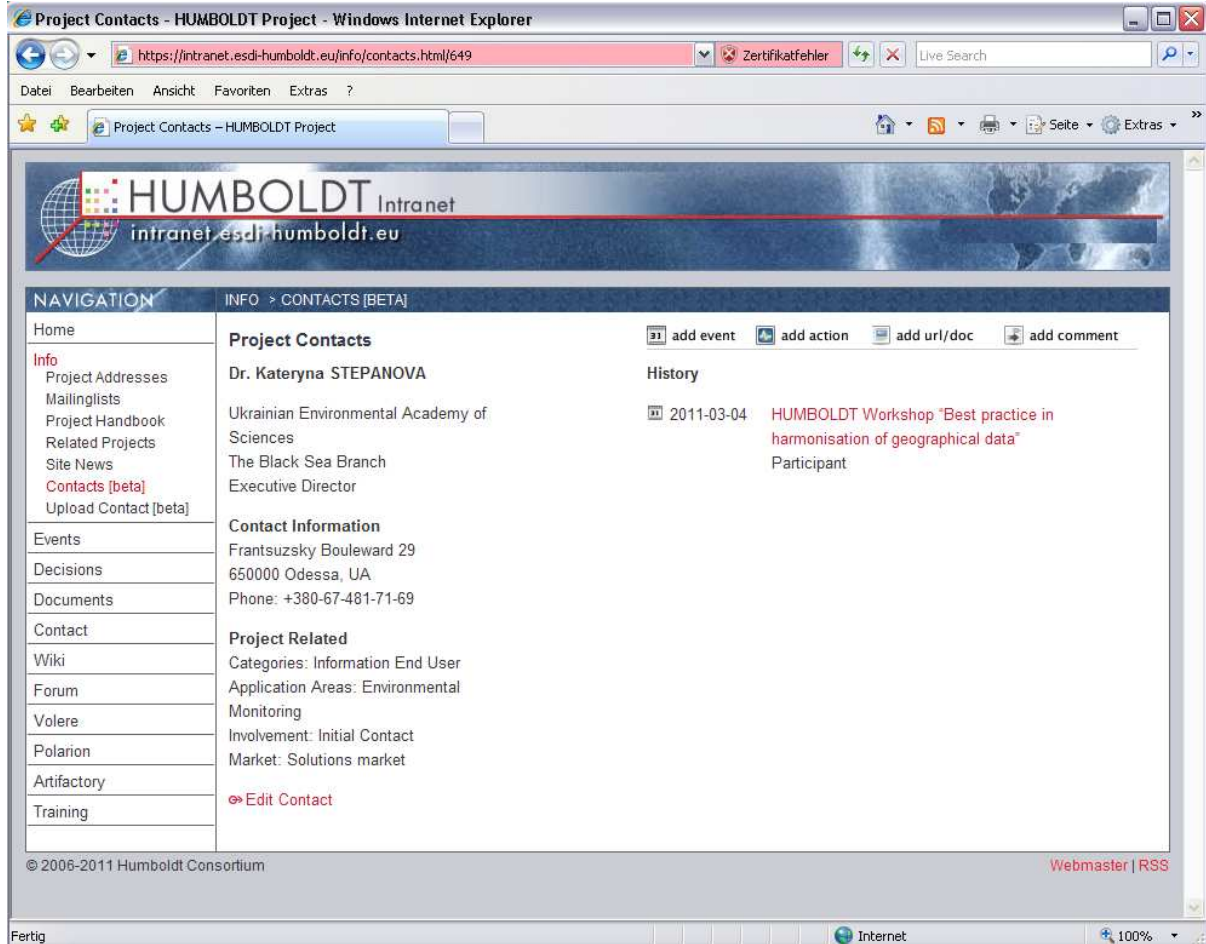
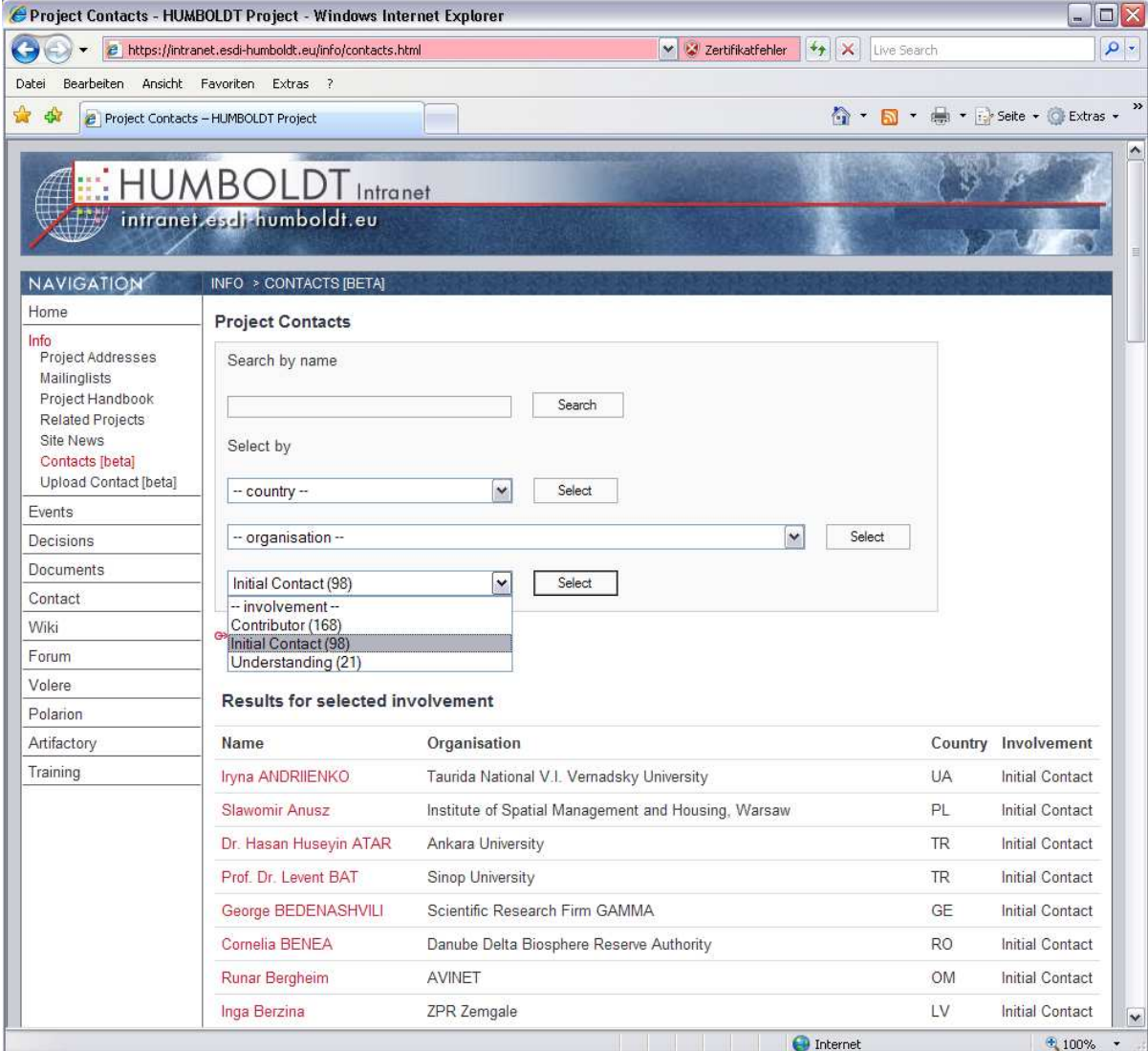


Figure 4: Example of contact details

## D1.1 Summary Report (Methodology and Overview)

The CRM database contains currently 288 contacts from 30 countries worldwide, consisting of 98 initial contacts, 168 contributors and 22 contacts with the status “understanding”.



The screenshot shows the 'Project Contacts' page in the HUMBOLDT Intranet. The page includes a navigation menu on the left and a main content area with search and filter options. The 'Results for selected involvement' table is as follows:

Name	Organisation	Country	Involvement
Iryna ANDRIIENKO	Taurida National V.I. Vernadsky University	UA	Initial Contact
Slawomir Anusz	Institute of Spatial Management and Housing, Warsaw	PL	Initial Contact
Dr. Hasan Huseyin ATAR	Ankara University	TR	Initial Contact
Prof. Dr. Levent BAT	Sinop University	TR	Initial Contact
George BEDENASHVILI	Scientific Research Firm GAMMA	GE	Initial Contact
Cornelia BENEÄ	Danube Delta Biosphere Reserve Authority	RO	Initial Contact
Runar Bergheim	AVINET	OM	Initial Contact
Inga Berzina	ZPR Zemgale	LV	Initial Contact

Figure 5: Contact management in the HUMBOLDT CRM system

## D1.1 Summary Report (Methodology and Overview)

The CRM system offers the possibility to upload new contacts or to edit existing ones with the assistance of the Contact Upload Wizard (see figure below).

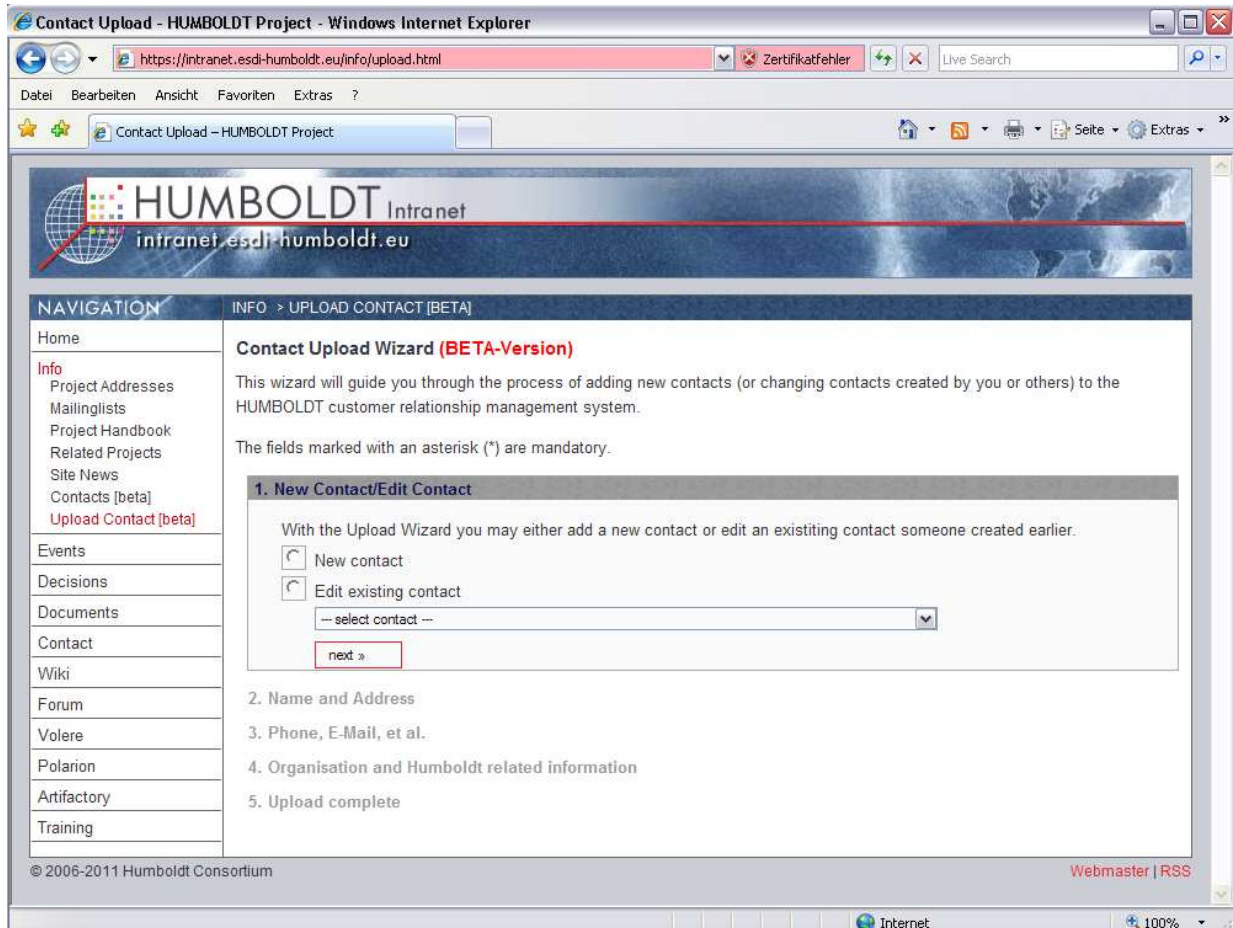


Figure 6: Contact Upload Wizard

D1.1 Summary Report (Methodology and Overview)

The Contact Upload Wizard guides through the uploading process.

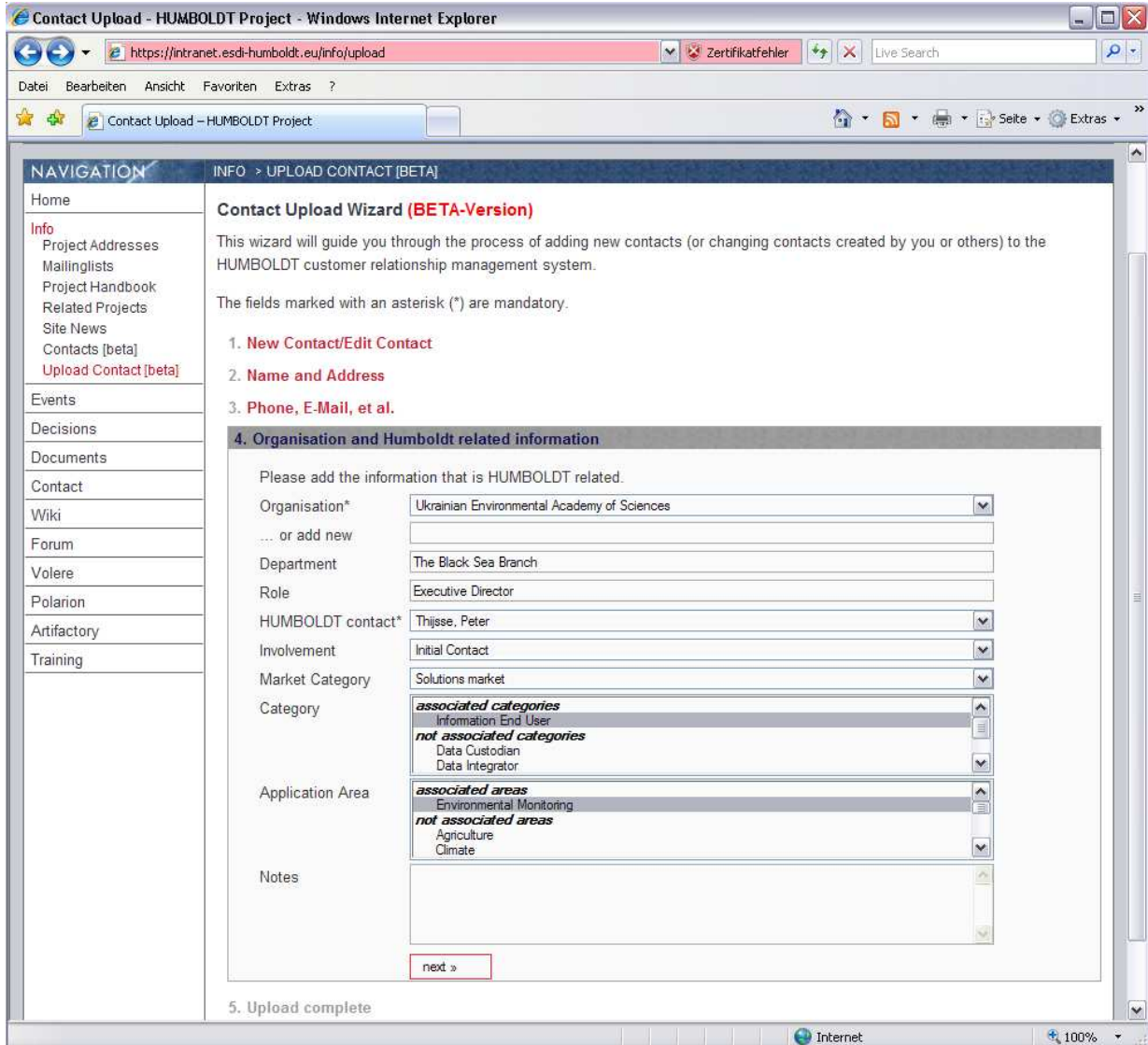


Figure 7: Detailed information in the contact upload form

## 5 Conclusions and Lessons Learnt

The lessons learnt within the project are two-fold:

- a) Regarding the technological aspects and experiences made working with the community and
- b) the overall project management related aspects.

The lessons learnt were presented at the 4th and at the final review meeting. The aspects arisen in the context of the project development and of interest for the user community are furthermore reflected in detail within the HUMBOLDT books. The overall project related lessons learnt are described below and stated within the Final Report.

The lessons learnt regarding the HUMBOLDT approach (see figure below), the technical drivers were stronger throughout the first half of the project. Application drivers often felt detached from development work.

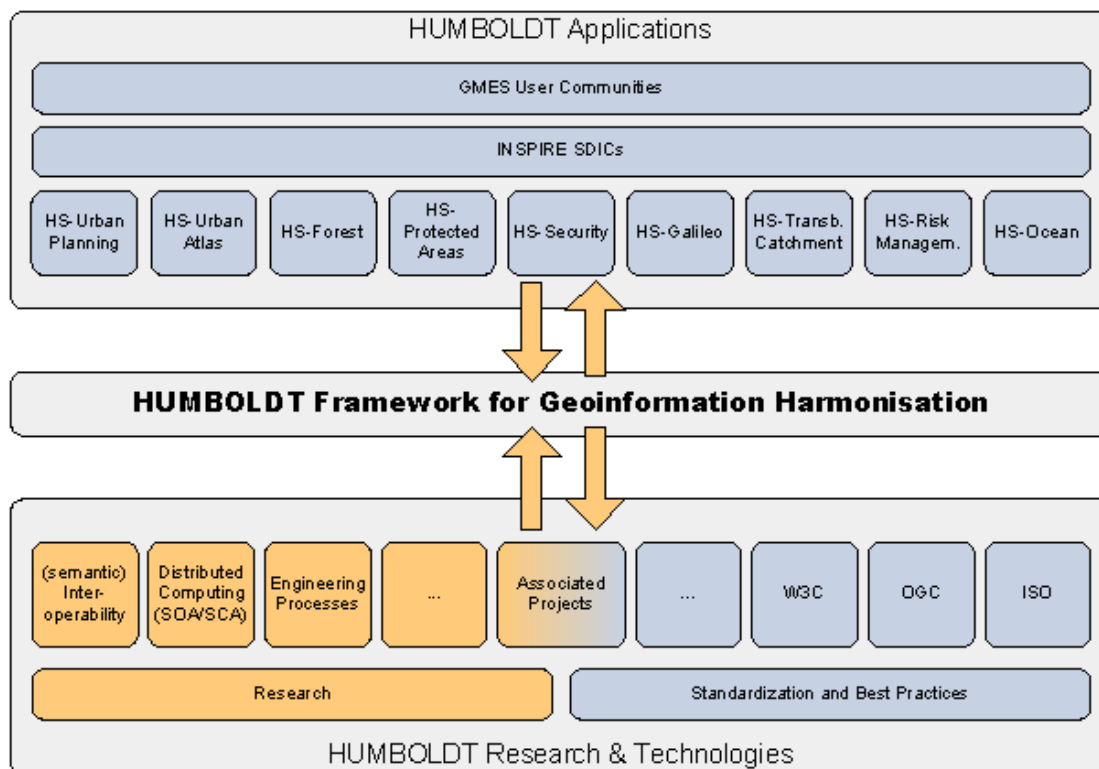


Figure 7: HUMBOLDT framework development approach

Regarding the time schedule and work plan, there were some iterations in specifications and development. Originally, an agile development approach was foreseen, but could not be adopted to the different partner cultures and skills – this risk was not identified early enough. The resulting fallback to “big” Framework versions with intervals of six to nine months led to detachment from end user requirements and working too much on “invisible” parts. In the end, component-centered agile release plans were adopted within the third project year, which worked reasonably well.

The establishment of the Developer Community should have happened earlier. At least for project-internal purposes, community-like structures could have been established after six to twelve months. Decoupling of development has reduced the communication efforts to some extent.

## D1.1 Summary Report (Methodology and Overview)

Regarding the communication with the community, two categories of lessons learnt can be differentiated: Developer-2-User communication and Developer-2-Developer communication. Regarding the Developer-2-User communication we recommend rapid prototyping with specific, small sub-scenarios as prototypes for the demonstrators, even smaller than the Fast Track Scenario. We also recommend focusing on implementation of a single use case with well-known harmonisation issue. This type of communication requires clear identification of critical harmonisation issues.

Regarding the Developer-2-Developer we learned that there are different development cultures in each organisation with highly distributed teams, often with isolated single developers per organisation. There was insufficient co-ordination so that all developers are available in the same time slots ("sprints"). Winter of Code workshops contributed to improvement of the communication quality in this category.

Another significant issue which we experienced during the project was that it was very important to earn trust from the users' side and from developers' side. To earn trust from users' side it is important to ensure transparency in specification processes and even more in development work. Besides this we recommend to start with high-visibility items that are relatively cheap to solve and not with "back office" parts that take long to implement. To earn trust from the developers' side clearer commitment of users to evaluation and testing is required as well as the willingness to try to understand the specifications and the documentation.

Following conclusions can be made after the finalisation of the extension period:

- Several open issues could be resolved in the extension
  - ➔ Reimplementation of GML I/O will be reused for other components
- Interest by end users in research and SDICs is substantial
- Knowledge base on the community website was built up substantially
- Number of users has increased substantially
- Users need to be activated stronger, contributions from the community in terms of source code are still rare

Following recommendations regarding the development of tools and standards can be made:

- Be (much) more restrictive than the ISO  
The international standards as provided by the International Organization for Standardization (ISO) as they leave too much space for variations which will ultimately result in incompatible, unambiguous and/or inconsistent solutions respectively geo-data.
- Do not expect people to read, understand, fully keep in mind and respect more than 4000 (!) pages of standards and guidance documents, especially when you are not able to do any automated conformity checks, especially when you know that not all of the involved standards are unambiguous and/or consistent with each other
- Do not use tools, which were designed for different purposes and do not support a full workflow.  
To redeploy tools as well as to support the full workflow will inevitably result in a huge and complex construct of software which is very much prone to errors and furthermore hard to fix and to supplement with additional (missing) features and functionalities. Therefore, the modular programming has managed to cut its way into today's IT world.
- Do not rely on standards which are not supported by the majority of the providers in your domain (there might be a reason)
- Rather provide free (not even F/OSS would be necessary) tools, which are designed to
  - ensure the respecting of your own standard or other legal/formal requirements.

## D1.1 Summary Report (Methodology and Overview)

- only provide functionality which is really needed in your domain.

Regarding the skills and tasks, it can be summarized that harmonisation projects require a set of skills from the parties involved.

Required skills on the user side are:

- Basic Data Modeling (e.g. UML) and analysis,
- (Geospecific) standards,
- Writing/editing user stories, use cases and requirements,
- Ideally users with a cross-discipline background

Required skills on the developer side are:

- Project infrastructure (especially build and CI systems),
- (Geospecific) standards and concepts,
- Libraries

Required skills on the project management side, but also at WP leader and even task leader side are:

- to ensure continuous communication between users and developers, but also among developers and among users
- to install a well-performing conflict management procedure

## 6 Future Perspective

The knowledge and expertise gained during the project is the most important exploitable result. The superior knowledge of the data harmonisation and integration processes is of major interest not only in the INSPIRE context but also for the majority of the GI community. This expertise is mainly inextricably coupled with persons, having worked on the HUMBOLDT project subjects. Therefore, the sustainability of HUMBOLDT strongly depends on the ability of the project to maintain the motivation as well as to prepare the ground for the organisation of a competent “HUMBOLDT Team” in Europe after the project termination.

In this context the consortium envisages creation of an organisation in form of a forum, which will continue project activities in the future. A detailed description of this forum is available in the merged deliverable D4.3/4 Revised Business Plan and Sustainability Summary Report.

The intent of the creation of such a forum is to ensure the continued development of the HUMBOLDT Framework and data harmonisation tools. It is crucial to quickly and effectively incorporate all Implementing Rules imposed by INSPIRE, even after the project termination. Only then, it is possible to become competitive in the data harmonisation market. Furthermore, the continued support and maintenance of the HUMBOLDT Training platform and material is another important aspect that is necessary for the successful post-project exploitation of HUMBOLDT: The exploitation plans and efforts described in D4.3/4 Revised Business Plan and Sustainability Summary Report provide a solid groundwork for the post-project success of HUMBOLDT results.

The HUMBOLDT results are intended to sustain the project end, but the consortium is well aware that manifold challenges which arise with the termination of the funding period had to be faced by defining concrete goals and strategies. The deliverable D4.3 Revised Business Plan focuses specifically on these topics, but the dissemination activities can provide certain input which is briefly summarised below:

- The project developed strategies for dissemination and user involvement activities which can be used as a starting point for the future HUMBOLDT forum activities as well.
- The established user-related infrastructure as well as the key user group and the registered users have been taken into account for the planning of further activities. The established CRM system contributes to this goal.
- To show that the HUMBOLDT results continue to exist and that the enhancement of the software proceeds, it will be very important to participate in conferences and events beyond the official project runtime. Activities which are planned in this respect already can be found in the deliverable 1.2.
- Some of the terms used within HUMBOLDT should be redefined, on the one hand to meet the requirements of customer-orientation, on the other hand to adjust them to the still to be defined goals of the post-project activities. This has already been done regarding the terms “HUMBOLDT Toolset” and “HUMBOLDT Service Integration Framework” which are now referred to as “HUMBOLDT Tools” and “HUMBOLDT Services”, but may also be an issue for the Scenario Application names. For further information on this subject please refer to D4.3 Revised Business Plan.

The extension period has strengthened these activities and helped to communicate the HUMBOLDT results further to the developer and user communities. Experiences and lessons learnt during the project are summarised and will be published in two HUMBOLDT books (see deliverables 4.1 and 4.2).

In the future the HUMBOLDT Data Harmonisation Panel will manage the continuation of the main achievement of the project.