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This document describes the work done in the extension of the HUMBOLDT project in the context of EWP2 Training.
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1 Purpose of this document

The aim of the training work package (EWP2) is to support the dissemination of the HUMBOLDT results by training actions. The training actions include an update of the training material, based on feedback from user groups and new developments. The training actions also include the planning and execution of training sessions for specific target groups. In order to do this, an e-learning platform is required, which needs to be maintained and administered.

This document summarizes and offers information on all actions that have been carried out under the EWP2 during the period of extension of the HUMBOLDT Project.

The activities within the Extension Work Package 2 – “Training” are organised in the following tasks:

- Task EWP2.1 – Adoption and revision of training material
- Task EWP2.2 – Specific Training Actions
- Task EWP2.3 – Maintenance of the training platform

2 Extension of the HUMBOLDT Training Framework

The objective of the training in HUMBOLDT is to increase the impact and efficacy of the project outcomes by providing training tools and actions for the user communities of the HUMBOLDT Framework, its Services, as well as for the communities of GMES and INSPIRE.

The main input of training material related to important HUMBOLDT project results, both in terms of knowledge and software products, was provided by members of the consortium and prepared during the project and is mainly referred to:

- Data Harmonisation, Data Modelling and IT standards
- INSPIRE and GMES
- The use of the HUMBOLDT Framework
- Application of the HUMBOLDT tools in the HUMBOLDT Scenarios

The promotion and provision of training initiatives in the HUMBOLDT project is supported by the HUMBOLDT Training Framework. This Framework is structured around three distinct elements that are strictly linked and interdependent namely:

1. The Humboldt Training Package
2. The Training Modules
3. The Humboldt ICT-based training platform

All these three elements have been updated continuously during the Extension period.

1. The Humboldt Training Package

The Training Package is the main access point to the training content. It is structured as a web site accessible from the project's community web site (<http://community.esdi-humboldt.eu/>) and the project's website (www.esdi-humboldt.eu).

The Training Package describes the training offer and its related structure, organised in three different levels of training.

The Training Package also includes an Entrance Test and, for each level, the list of courses (training Modules) and for each of them information (Metadata) about their training contents. The Training Package site also offers information about how to access the training material supported by a subscription facility. It also offers to the users some information about the e-learning tools used.

As detailed in the section “Maintenance of the training platform” a number of update and maintenance actions have focused on the Training Package facility, improving and updating an online resource that represents the reference point for all the users interested in the HUMBOLDT training offer.

2. The Training Modules

The HUMBOLDT training material is structured in a modular and flexible way according to a net-based learning approach, mainly in form of lectures and interactive tutorials.

The training material available in the e-learning platform has been developed on a variety of formats appropriate to the nature of the lessons: Presentations with voice, tutorials, screen casts, plain text lectures, exercises, etc.

The homepage of the Training Package introduces the trainees to the structure and content of the training Modules that are being developed considering three content levels.

- Level 1, The HUMBOLDT Knowledge courses; includes training material related to background knowledge useful to understand the context and the reason to operate with the HUMBOLDT Framework
- Level 2, The HUMBOLDT Framework; aims at providing training on data harmonisation and on the operativeness of the HUMBOLDT Framework tools
- Level 3, The HUMBOLDT Scenarios; is addressed to sectorial users and to all people interested to use the HUMBOLDT Framework, tools and services in similar contexts.

As detailed in the section “Adoption and revision of training material in the HUMBOLDT Training Framework” several activities have focused on improving and updating the material for all the training levels.

3. The Training Platform

The HUMBOLDT Training Framework is based on a Training Platform that constitutes the infrastructure hosting the training modules, all course material available and the related e-Learning tools to deploy all them. This platform is established by widely used open source e-learning tools.

The section “Maintenance of the training platform” offers more information on the actions made to improve the infrastructure that supports the training material.

In the following sections these three components will be described in detail, focusing on the update and improving activities that were conducted during the extension period to the HUMBOLDT Training Framework

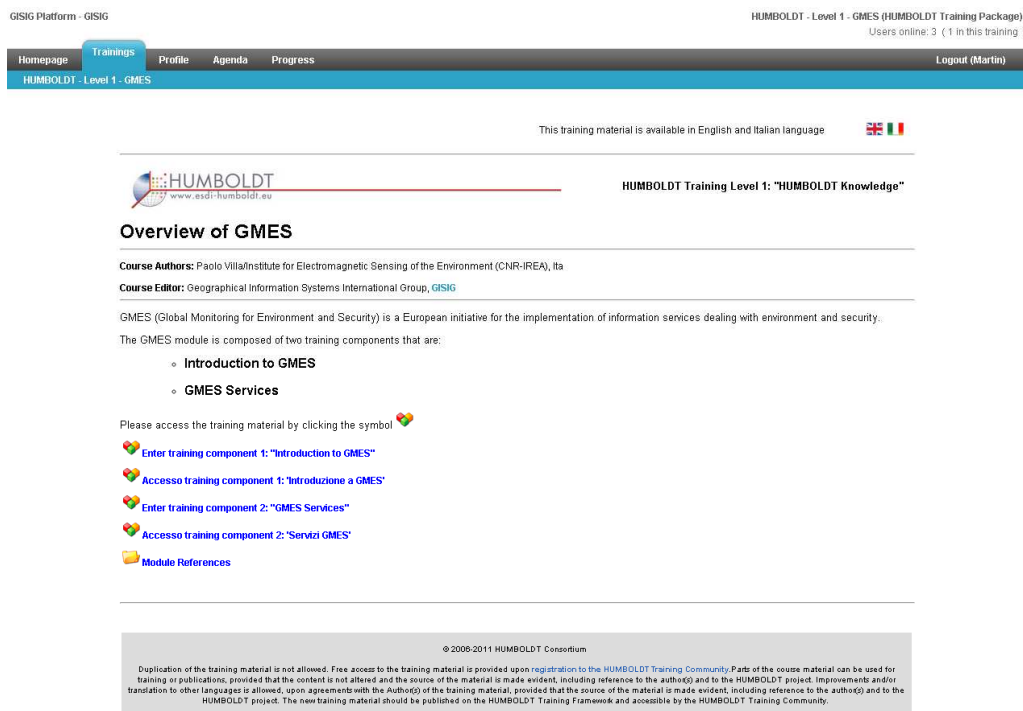
3 Adoption and revision of training material in the HUMBOLDT Training Framework (Ref. EWP2.1)

Training services are provided as courses, seminars or workshops, deploying the same content in a way tailored to the specific occasions and to the skill of the targeted audience. In a more detailed view, teaching and training is carried out through activities such as lectures, exercises, literature studies, seminars, project work, self tests and examination. After a final revision of the quality of the training material, the courses are released for delivering online or in training seminars/workshops.

One of the most relevant activities carried out in the EWP2 has been the assessment and update of existing training material based on feedback from project members, user groups and new developments of the HUMBOLDT framework.

In general it is important to highlight a number of issues that have received intervention for all Training Modules available in the e-learning platform:

- Inclusion of new or updated material to the training offer.
- A major effort on the final editing and quality check of the updated and extended training material.
- For all the Modules: A general update and improvement of the layout, navigability and structure.
- The translation of a selection of training materials to various European languages.
- For all Training Modules on the platform a disclaimer that specifies the conditions of use, exploitation and transfer of the training material has been included. This note provides the basis for a future use and improvements of the material, emphasizes the authorship of the material and establishes the specificity of the HUMBOLDT Training Community.



The screenshot shows the HUMBOLDT training platform interface. At the top, there is a navigation bar with 'Homepage', 'Trainings', 'Profile', 'Agenda', and 'Progress'. The current page is 'HUMBOLDT - Level 1 - GMES'. Below the navigation bar, there is a language selection option: 'This training material is available in English and Italian language' with flags for UK and IT. The main content area is titled 'Overview of GMES' and includes the following information:

- Course Authors:** Paolo Villa/Institute for Electromagnetic Sensing of the Environment (CNR-IREA), Ita
- Course Editor:** Geographical Information Systems International Group, GISIG

GMES (Global Monitoring for Environment and Security) is a European initiative for the implementation of information services dealing with environment and security. The GMES module is composed of two training components that are:

- Introduction to GMES
- GMES Services

Please access the training material by clicking the symbol

- Enter training component 1: "Introduction to GMES"
- Accesso training component 1: 'Introduzione a GMES'
- Enter training component 2: "GMES Services"
- Accesso training component 2: 'Servizi GMES'
- Module References

At the bottom, there is a disclaimer: © 2006-2011 HUMBOLDT Consortium. Duplication of the training material is not allowed. Free access to the training material is provided upon registration to the HUMBOLDT Training Community. Parts of the course material can be used for training or publications, provided that the content is not altered and the source of the material is made evident, including reference to the author(s) and to the HUMBOLDT project. Improvements and/or translation to other languages is allowed, upon agreement with the Author(s) of the training material, provided that the source of the material is made evident, including reference to the author(s) and to the HUMBOLDT project. The new training material should be published on the HUMBOLDT Training Framework and accessible by the HUMBOLDT Training Community.

Figure 1: The new layout for the Modules, with a clearer reference to the content, the authors and the language of the available material. The access to the learning components has been also improved and for each module is included the legal disclaimer.

Below is a detailed description of the available training material and the improvements made for each of the Modules. Remember that you can also access the description of each of these modules by visiting the “Catalogue of Training Modules” section on the Training Package site.

3.1 Training Level 1 “Preliminary Knowledge”

Level 1, includes training modules related to knowledge useful to work with the HUMBOLDT Framework. Here below find the list of these Modules with information on the improvements and updates carried out.

Overview of GMES:

This Module gives an overview of the concepts, status and development of Global Monitoring for Environment and Security (GMES) EC-ESA initiative.

The Module is composed of two learning components: Component 1: "Introduction to GMES" and Component 2: "GMES Services". Both components are structured with one presentation with sound, giving a brief overview of the topic, and also pdf documents.



Training home

38%

HUMBOLDT
www.esdi-humboldt.eu

2

Cos'è GMES?

- GMES (**G**lobal **M**onitoring for **E**nvironment and **S**ecurity) è un'iniziativa **europea** per l'implementazione di servizi di informazione in ambito di ambiente e sicurezza.
- GMES si baserà sui dati ricevuti da satelliti per l'osservazione della Terra e su informazioni a terra. Questi dati saranno coordinati, analizzati e preparati per gli utenti finali.
- GMES è un set di **servizi** destinati ai cittadini dell'UE
- Dal settembre 2010, GMES è diventato un regolamento della Comunità Europea, il che significa che ha personalità giuridica e che è patrimonio ufficiale dell'Europa del futuro.

Accesso training component 1:
"Introduzione a GMES"

Introduzione ✓

Presentazione Introduzione GMES ✓

1.1 Introduzione a GMES ✓

1.2 Il Contesto di GMES

1.3 Storia e sviluppi di GMES

1.4 Progetti e Contributi per GMES

1.5 GMES: forum degli utenti

Riferimenti

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Figure 2: The updated “Introduction to GMES” presentation available in Italian in the e-learning platform

Adoption and revision of the Module material:

- For this module a strong effort on updating the content to the last developments and activities that support the implementation of the GMES programme has been carried out.
- A “References” section is now also available including 28 resources (in form of pdf documents) to complement the Module Lectures.
- On the other hand the available material has been translated into Italian.

Web Services:

This Module introduces the basic concepts of web service technology and how it is applied in the OGC specifications. Special attention is given to the WMS, WFS and WPS services. The module consists of five shorter lectures (based on presentations with sound), reading instructions and a self test. The Course length is around 8 hours.

Adoption and revision of the Module material:

- This module has been revised and some parts of the content have been updated by the author.
- This material has been translated into Italian.

Metadata concepts and standards:

The basic concepts of metadata and how they apply to GI are introduced in this module. Special attention is given to metadata standards and to the INSPIRE Metadata Implementing Rules. The module consists of three components, each organised in one or more short lectures. A bibliography with links to reading material can be downloaded from the document folder.

Adoption and revision of the Module material:

- This module's content and structure has been revised.
- This material has been translated into Italian.

Metadati, concetti e standard

Autore: Pasquale Di Donato

Editore: Geographical Information Systems International Group, [GISIG](#)

L'obiettivo di questo modulo formativo è spiegare i concetti di base dei metadati e come essi possono essere applicati alla IG (Informazione Geografica). Particolare attenzione viene data agli standard dei metadati e alle regole di implementazione di INSPIRE (INSPIRE Metadata Implementing Rules).

Struttura corso:

Il modulo è diviso in tre componenti, ognuno organizzato in brevi lezioni. È presente una cartella una bibliografia con dei link da cui scaricare del materiale di lettura. Nella stessa cartella è presente una breve introduzione all'UML (Unified Modelling Language) e un glossario.

- Componente 1: Concetti di metadati
- Componente 2: ISO TC 211 Standard per i metadati
- Componente 3: Regole di Implementazione dei Metadati di INSPIRE (INSPIRE Metadata Implementing Rules)

 [Documenti](#)

 [Componente 1: Concetti di metadati](#)

 [Componente 2: ISO TC 211 Standard per i metadati](#)

 [Componente 3: Regole di Implementazione dei Metadati di INSPIRE](#)

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Duplication of the training material is not allowed. Free access to the training material is provided upon [registration to the HUMBOLDT Training Community](#). Parts of the course material can be used for training or publications, provided that the content is not altered and the source of the material is made evident, including reference to the author(s) and to the HUMBOLDT project. Improvements and/or translation to other languages is allowed, upon agreements with the Author(s) of the training material, provided that the source of the material is made evident, including reference to the author(s) and to the HUMBOLDT project. The new training material should be published on the HUMBOLDT Training Framework and accessible by the HUMBOLDT Training Community.

Figure 3: The updated Metadata Module available in Italian in the e-learning platform

INSPIRE:

The learning objective of this module is to give basic information about the INSPIRE context. At the end of the module the trainees are provided with theoretical knowledge about INSPIRE directive, its context, objective, structure, implementation process and expected impact.

This module is divided in a seminar, a presentation and a text based short course with similar content. The main piece of this Module is a three presentations seminar (including one one-hour presentation with voice) that has been developed in the context of the a collaboration between HUMBOLDT and the VESTA-GIS project <http://www.vesta-gis.eu/>

Adoption and revision of the Module material:

- This module’s content and structure has been created and completed during the Extension Period.

Data Harmonisation:

The aim of this course is to explain the basic concepts of harmonization of data in general and in particular the concepts of "schema translation. Course length is around 6 hours.

The module consists of three longer lectures: “Data Harmonisation Concepts–Introduction”, “Data Harmonisation Concepts–Basic Operations” and “Data Harmonisation Concepts–Schema matching and mapping”. The Module also includes reading instructions, exercises and a self test.

Adoption and revision of the Module material:

- This module’s content and structure has been deeply revised and updated during the Extension Period. The structure of the material has been improved for a more efficient follow or the lessons.
- This material has been translated into Italian.

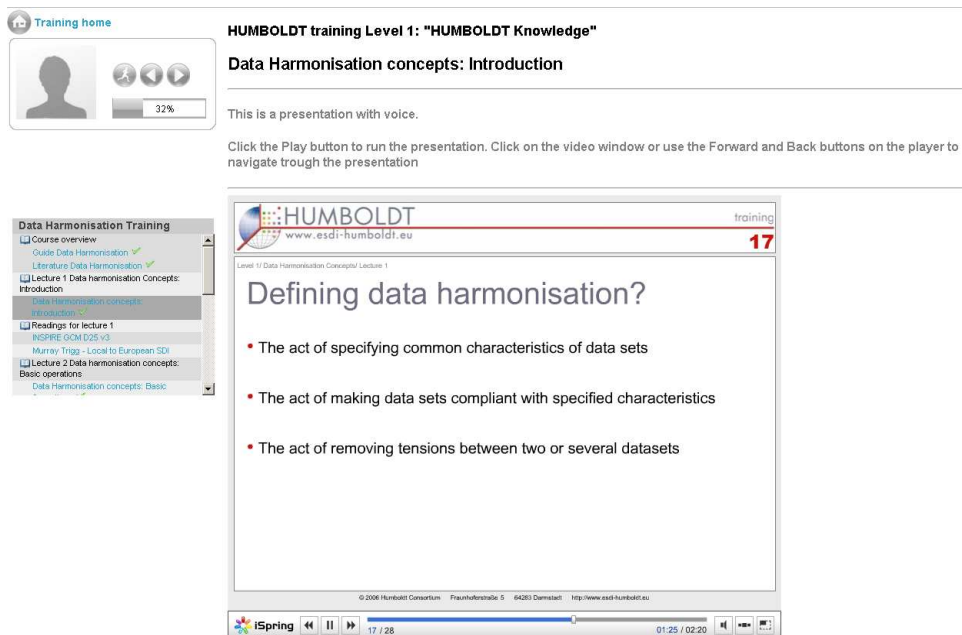


Figure4: The updated “Data Harmonisation introduction” Presentation with voice in the e-learning platform

Data Modelling:

The learning objective of this short module is to give basic explanations about data modelling, with focus on conceptual data models. First part presents the concepts used in general data modelling, such as classes, attributes, relations, inheritance and gives simple examples to illustrate these concepts. Second part explains the specialisation of modelling concepts for the specific case of geographic information, as adopted by ISO standards and by INSPIRE. The last part explains very shortly the other levels of data modelling, from conceptual data model to encoding.

This module is based on a short interactive presentation.

Adoption and revision of the Module material:

- This module's content and structure has been created and completed during the Extension Period.

3.2 Training Level 2 „The HUMBOLDT Framework“

The Level 2 of the HUMBOLDT Framework is based on training on the results coming from the HUMBOLDT Framework. It includes courses on data harmonisation using the HUMBOLDT Tools.

Here below find the list of this Level Modules with information on the improvements and updates carried out during the extension period.

The Data harmonisation within HUMBOLDT:

This module is intended to transfer the knowledge of results coming from WP7. The components of this module are related to different aspects of data sets but the material is concerned mostly with the harmonisation of data models:

- Harmonisation of the general characteristics of datasets: the data model of the datasets, terms and concepts used, classifications used, etc.
- Harmonisation of (individual) data instances: solving conflicts in case of spatially overlapping datasets (conflation issue), cross-border situations: merging the geometry of (the same) spatial objects at both sides of a border so that the merged object's geometry is correct (edge matching), and detecting and possibly solving gaps in the spatial coverage, and other data quality and consistency aspects.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension Period.

The HUMBOLDT Framework tools:

For this Module, a tutorial for the use of the HUMBOLDT Alignment Editor is available. The aim of this tutorial is that you get to know better and try the main possibilities and functionalities of HALE by using a real-world example. You will gain hands-on experience by going through the whole process of harmonising a dataset to a given target data model.

Level 3 courses have been developed by the scenarios in parallel with the creation of demonstrative examples of the use of tools by HUMBOLDT scenarios.

All scenarios managed to document their experiences in an understandable manner and we believe that their examples will be of great help and value to the respective user communities. The scenario training material provide a comprehensive and clear step-by-step approach on how the HUMBOLDT Tools and Services can be used to deal with data harmonisation aspects in different application domains.

The training material for each scenario is organized in two components:

- Component 1 “Scenario general overview”: provides a general background about the scenario domain and learning objectives, the relation to INSPIRE, the general harmonisation needs, the specific use cases and data used.
- Component 2 “Scenario interaction with the HUMBOLDT Framework”: is structured according to different application cases of scenarios and provides implementation examples using one or various tools of the Framework. This component offers training material in the form of tutored step-by-step data harmonisation processes or screen cast videos of the key steps of the process. For some scenarios, sample data is available for download, so the trainees can reproduce the tests at home.

Find below the list of the Scenario Modules with information on the improvements and updates carried out during the extension period.

The Transboundary Catchments scenario:

The Component 1 of this scenario training material give to the audience a general frame about the catchment domain, targets the link with INSPIRE, points out the general harmonisation needs, and provides introduction to the specific cases used.

The component 2 gives access to the “demonstrator” documentation describing the work with the HUMBOLDT Framework Tools through an application case called ‘Catchment Modelling: Harmonisation of Datasets Required for Rainfall-Runoff Modelling’. The case focuses on pointing out different data harmonization problems, mechanism and techniques taken to solve the transboundary datasets problem while developing a transboundary rainfall-runoff (RR) model, as an example on Roya/Roia catchment (Italy and France) and the Olse/Olza river (Czech Republic and Poland). Additionally to the application case, there are three extensions representing post-harmonisation stories.

Adoption and revision of the Module material:

- This module’s content and structure has been revised and updated during the extension period.
- The main effort in this scenario has been the creation of a new Application Case for another transboundary catchment: The Olse/Olza river, located between Czech Republic and Poland. Data from the catchment area from both countries had been analysed and the harmonisation process (specially using HALE) has been documented. This task involved the creation of new training material and resulting documentations explains in a detailed way the data harmonisation process.

- o Level 3 “Transboundary Catchments” Component 2 (The scenario Application Cases) has been translated into French

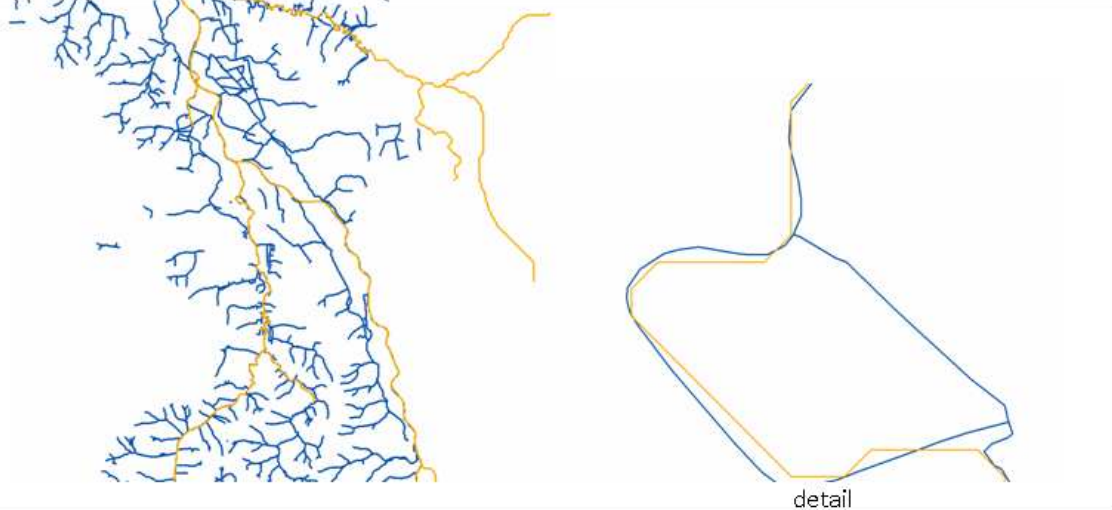
Water Course		
Czech Rep.		Poland
EPSG: 102067	CTS	EPSG: 4326
Type: line	Retype Feature (HALE)	Type: line
Attributes: NAZ_TOK [string] TOK_ID [double]	Rename attribute	Attributes: NAME [string] RIV_ID [double]
		

Figure 6: An image from the new Olse/Olza river Application Case training material, showing the harmonisation need in terms of data structure between the Czech and Polish river datasets

The Protected Areas scenario

The aim of this module is to introduce best-practice examples of how to achieve data and service harmonisation in the Protected Areas domain demonstrating the advantages of the HUMBOLDT Framework and its strong relation to INSPIRE principles.

The module consists of two components:

Component 1: Protected Areas Scenario general overview. A general frame about the scenario domain, the relation with INSPIRE, the general harmonisation needs of the scenario and the specific cases used.

Component 2: Scenario interaction with the HUMBOLDT Framework. Examples on how to use the HUMBOLDT Framework tools with Protected Areas data. This component includes tutored exercises with the HUMBOLDT Alignment Editor and the HUMBOLDT Edge Matching Service with download links to samples of real Protected Areas datasets.

Adoption and revision of the Module material:

- o This module’s content and structure has been revised during the extension period. Some update of the material was made based on the use of new versions of the HUMBOLDT Framework Tools, specially the HUMBOLDT Alignment Editor.

- o Level 3 “Protected Areas” has been translated into Spanish

The ERiskA scenario:

The European Risk Atlas (ERiskA) Scenario aims at facilitating cross-border cooperation between the agencies responsible for disaster management in the Lake Constance region by enabling the exchange of information on potentially flooded areas and inundation of infrastructure like roads and railways.

Accordingly, this module introduces best-practice examples for data harmonisation and service integration in the natural risk management domain. It shows how the HUMBOLDT Framework tools and services can be used in order to facilitate the data harmonisation process within the ERiskA Scenario. Exercises include creating a data model based on INSPIRE Data Specifications, mapping between the source and target data models, creating workflows as well as using the ERiskA application – a cross-border flood information system.

Adoption and revision of the Module material:

- o This module’s content and structure has been revised during the extension period.
- o Some update of the material was made to include the results from the tests using the last version of the HUMBOLDT Alignment Editor, including information on the tool’s new integrated transformation and GML export features.
- o Level 3 “ERiskA scenario” Component 2 (The scenario Application Cases) has been translated into German



The screenshot shows a user interface for the HUMBOLDT training platform. At the top left, there is a 'Training home' button and a user profile icon with a 100% progress indicator. The main content area is titled 'EUROPEAN RISK ATLAS (ERISKA)' and 'Anwendungsfall 4'. The main heading is 'Die ERiskA Anwendung: grenzüberschreitende Hochwasserinformationen'. Below this is an 'Überblick' section with a text block in German describing the ERiskA scenario and its goals. To the right of the text is a map of the Lake Constance region. Below the text is an 'Inhalt' section with a list of topics: 'Geographische Lage und Inhalt des ERISKA Szenarios', 'Notwendige Daten für ERISKA', 'Funktionalitäten der ERISKA Anwendung', and 'Prozess des Informationsaustausches'. At the bottom left, there are navigation buttons for 'Build', 'Organize', and 'Display', and a 'Component 2: Anwendungsbeispiele des HUMBOLDT Framework unter Verwendung von ERISKA Daten.' section.

Figure 7: The ERiskA Application Case number 4 “The ERiskA application: cross-border flood information” translated to German in the e-learning platform

The Urban Atlas scenario:

The existing environmental information system (SI@M) of the city of Vitoria-Gasteiz faces new challenges to deepen effective integration in the decision-making and participatory processes, to adapt to the new technological and legal scenarios arising from the INSPIRE Directive, and to go beyond the environmental aspects and thereby contribute to the local implementation of the EU Urban Thematic Strategy.

In this Urban Atlas Scenario we focus on two major aspects to illustrate the usage and benefits of HUMBOLDT Framework components. The first aspect is to provide metadata on environmental geodata in SI@M according to national and international standards. The second aspect concerns the usage of different locally available data sets for the generation of indicators for monitoring and evaluation of the Sustainable Mobility and Public Space Plan of Vitoria-Gasteiz.

The scenario offers a set of very common problems before the usage of Humboldt components (e.g. HALE) is possible, for example, data is poorly documented, data structure is incomplete, data delivered as non-XML data, etc. Therefore, the main goals of this training unit are not the demonstration of using HALE for mappings (as it can be referred to other scenario mappings – ERiskA, Forest, etc.) but the preparatory steps to allow to use typical available data.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension period.
- The main effort in this scenario has been the update and extension of the training material by creating a new Application Case "Procedures for calculation of sustainable mobility indicators".

This new application case presents the procedure for the calculation and the publication of selected indicators on sustainable mobility of the Vitoria-Gasteiz city in the HUMBOLDT Urban Atlas scenario using Web Processing Service.

The Ocean scenario:

The ocean scenario aims to answer common queries and provide information to policy makers and scientists such as where oil and chemical spills have occurred and what is the potential threat of an oil spill impacting on a protected area of the marine environment. Therefore the ocean scenario considers many aspects of oil spills including model trajectory predictions, pollution reports and sensitive area information.

The primary objective of the Ocean scenario (undertaken by the partners BODC (UK), CLS (FR), HCMR (GR), IFREMER (FR) and MARIS (NL) is to test the HUMBOLDT framework for its ability to solve data harmonisation issues in applications for assessing and managing marine and ocean oil/contaminants spill crises.

The scenario training material consists of multiple regional demonstrators. These ocean demonstrators are being based on two components:

- Data integration solving harmonisation issues using the framework components
- Visualisation of harmonised datasets using defined standards and components and thus proving the solution works.

This training module and demonstrators aim to supply you the following information:

- An introduction in important data for oil spill applications
- Illustration of the possibilities for HUMBOLDT software (HALE, CST, Mediator Service) to use harmonised distributed data
- Illustration of the added value of combining this information from various sources.

The development and implementation of this training material is produced in the form of a step-by-step guidance.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension period.
- Additions/Revisions to ocean scenario material and platform due to further testing of HUMBOLDT components had been carried out.
- New version of the scenario Training Component 1 module and revision of the Component 2.
- Translation of the Ocean Training Material for the Mediterranean Use Case into Greek

The Forest scenario

The Forest Scenario is aimed at the main theme of forest management in the Czech Republic - support data source harmonisation in the field of natural resource monitoring and land cover. Solutions are described in respect of metadata harmonisation, geometric and semantic harmonisation of multiple representations and different sources of geodata are the aims.

The aim of this training module is to present practical usage of data sources coming from data collection for forest management planning and as a basic data of the Regional Plans of Forest Development (RPF). The RPF could be used as source data for updating the Corine Land Cover 2006 (CLC 2006) data set. Services for data harmonisation are applied according to developed HUMBOLDT Framework tools.

The specific example in the Component 2: "Forest Scenario interaction with the HUMBOLDT Framework" is based on the use of the Humboldt Alignment Editor and presents harmonization processes of the selected objects in frame of CLC 2006 using source data (RPF) covering the Czech Republic and one area in western Bohemia – Carlsbad region.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension period.
- Translation of HS-Forest related materials to Czech
- Extension, adoption and revision of existing materials for the purposes of using the Training material for PLAN4All project (Spatial Planners).

The Atmosphere HUMBOLDT scenario

The Atmosphere scenario illustrates integration and provision of air quality data through a Location-based Service (LBS). LBS offers possibilities to provide the users with information especially adapted to their needs in a mobile environment. Within the scenario, the purpose of such a service is to offer, comprehensive personalized information on air quality depending on their actual location and profile.

The overall objectives of the scenario are:

- Integration and harmonisation of atmospheric data
- Support initiatives for informing the public on ambient air quality by enabling ubiquitous access to air quality information.
- Add value to other LBS services and thus promote use of atmospheric data.

Because of inherent heterogeneities in such datasets, harmonization is required. The scenario uses the HUMBOLDT Framework tools achieve harmonization and processing of air quality data before being served to the users. Datasets from the data different providers, i.e. communities, states, and countries are considered in the scenario use cases in order to show not only the harmonization issues, but how these issues can be dealt with using the HUMBOLDT Framework.

The scenario training material is aimed at achieving the following learning objectives:

- To integrate atmospheric information to support initiatives for informing the public on ambient air quality and assisting experts in collecting or accessing this data.
- To enable users realize the added value to other LBS services and thus promote use of atmospheric data.
- Illustrate integration of sensor data using standards
- Show harmonization of atmospheric data

In the Component 2 of training material additional resources such as live demonstrator can be accessed. The HUMBOLDT Framework experience during the scenario development and implementation is produced in the form of a step-by-step guidance and uploaded on the Humboldt training platform.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension period.

The Urban Planning HUMBOLDT scenario

The Urban Planning scenario module is divided in two components:

Component 1: "Urban Planning Humboldt Scenario General Overview": The intention of this component is to give to the audience a general frame about the background data for spatial planning in the Czech Republic, its relation to international standard (CORINE land cover – CLC), possibilities of updating, and general and specific harmonisation needs.

Component 2: "Example of spatial data harmonisation in spatial planning: From CLC to SAB". The component gives access to the "demonstrator" of the Urban Planning Humboldt Scenario. This "demonstrator" documents the work with the HUMBOLDT Framework Tools – coding harmonisation rules for data models to the OML mapping language. The second part of the "demonstrator" is focused on harmonisation realized by Spatial Data Integrator – transformation of CLC data model to SAB data model.

Adoption and revision of the Module material:

- This module's content and structure has been revised during the extension period.

- o Extension, adoption and revision of existing materials for the purposes of using the Training material for PLAN4All project (Spatial Planners).

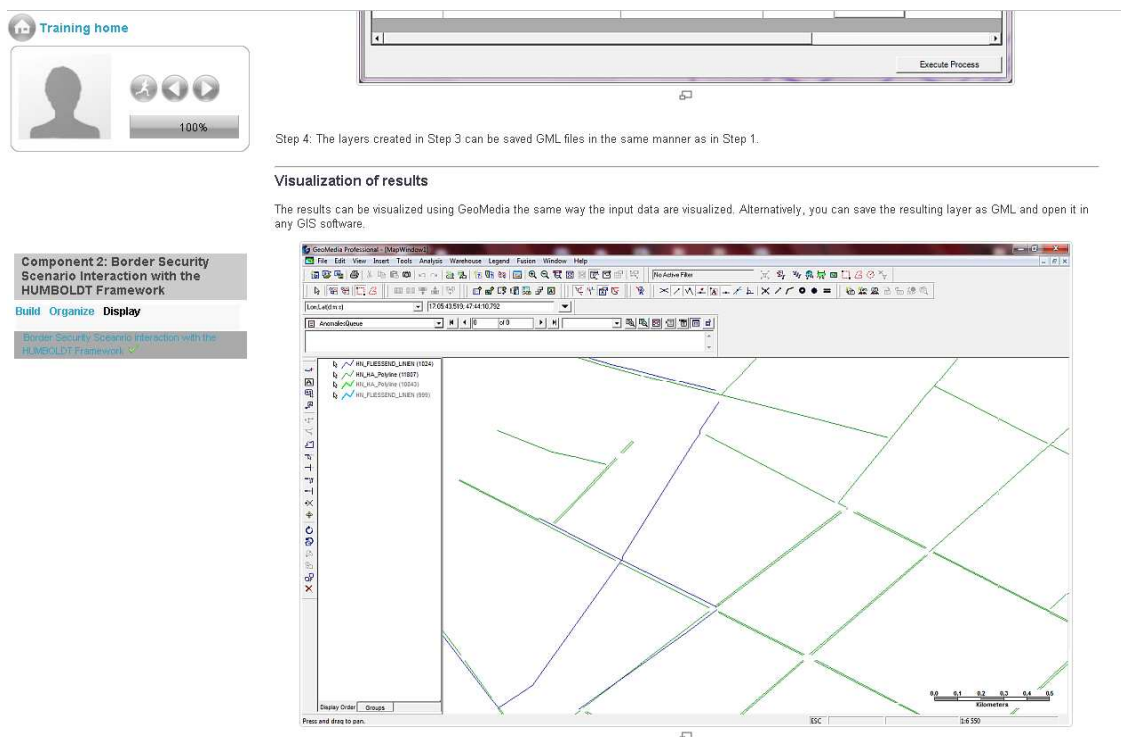
The Border Security HUMBOLDT scenario

In this Scenario, which revolves around supporting border police on the outer border of Europe, the focus is on the use of highly sensitive data, real-time sensor input and high availability of geodata from trans-border source.

The Border Security scenario aims to show spatial data harmonisation using WPS services in desktop GIS application, GeoMedia. Spatial data are used as background data in Public Safety&Security applications. Due to cross border situations, where two or more countries need to cooperate and exchange data in a very short time, the preparation of background data has to be quick and easy for the end users. Some problems proper to the use of large-scale data and high accuracy needs make this example interesting.

Adoption and revision of the Module material:

- o This module content and structure has been revised during the extension period.
- o The Component 2: “Border Security Scenario Interaction with the HUMBOLDT Framework” has been published in the e-learning platform. The newly created Application Case “Harmonizing Border Security data sets using the HUMBOLDT Edge Matching Service” aims to show the possibilities of Web Processing Service (WPS) to facilitate the work with Geodata with respect to Border Security.



The screenshot shows the e-learning platform interface. On the left, there is a 'Training home' section with a user profile icon and a '100%' progress indicator. Below it, there is a 'Component 2: Border Security Scenario Interaction with the HUMBOLDT Framework' section with 'Build Organize Display' buttons. The main content area shows a step-by-step guide. Step 4 states: 'The layers created in Step 3 can be saved GML files in the same manner as in Step 1.' Below this, there is a 'Visualization of results' section with the text: 'The results can be visualized using GeoMedia the same way the input data are visualized. Alternatively, you can save the resulting layer as GML and open it in any GIS software.' The main part of the screenshot is a screenshot of the GeoMedia Professional software window. The window title is 'GeoMedia Professional - MapWindow'. The interface shows a map with several green lines representing border security data. The map is overlaid on a grid. The software interface includes a menu bar (File, Edit, View, Insert, Tools, Analysis, Warehouse, Legend, Fusion, Window, Help), a toolbar, and a legend on the left side. The legend lists several layers: 'm_FU_ESS000_LINES (1924)', 'm_FU_PA_P0000 (1927)', 'm_FU_PA_P0000 (1924)', and 'm_FU_ESS000_LINES (1929)'. A scale bar at the bottom right indicates distances from 0.0 to 0.5 kilometers. The map is titled 'Anaschitzsee' and shows a network of green lines representing border security data.

Figure 8: The new Border Security Application Case “Harmonizing Border Security data sets using the HUMBOLDT Edge Matching Service” in the e-learning platform

4 Specific Training Actions (Ref. EWP2.2)

In order to support the dissemination of the HUMBOLDT results by sessions aimed for specific user groups, a considerable number of Training Actions were carried out from September 2010 to March 2011.

Besides specific dissemination activities to reach current and further target groups and stakeholders, the coordination and execution of workshops and presentations at international conferences and events is of major importance.

In this context, the dissemination of the HUMBOLDT Training Framework results and available material is an important issue to increase awareness about HUMBOLDT and the specific issues that the project has been addressing.

The objective of this task was to plan, market and execute training actions aimed for specific user groups.

The targeted participants for these actions were partners of other related European Projects and users dealing with heterogeneous geodata. In particular the sessions were addressed towards end users, data providers and persons concerned with data integration and harmonisation who are involved in the INSPIRE and GMES initiatives. More generally, the target audience were SDI stakeholders related with INSPIRE implementation at local, national, regional level and also thematic level. In particular INSPIRE Data Specifications Experts, Public Administrations, Basic Education, Higher Education & Research, Research, Commercial Users, GI Experts and Technicians concerned with data harmonisation aspects in the INSPIRE context.

4.1 Report on Training Actions within Project Workshops during the Extension Period

These actions were based on the exposition of the HUMBOLDT Training Framework as the main resource (along with the project's Community Website) to access the technical and scientific results of the project.

Training actions within project workshops offered presentations and live demos on the content, access and peculiarities of the training available by the project. Attendees were trained on the structure and resources of the Training Framework, the details of each of the modules and the way to access them. These actions have served as the main platform for attracting new users of the HUMBOLDT training material during the extension period.

Is important to highlight that the training offered in project workshops and conference workshops didn't only focus on the training framework and its usage itself but also on data harmonization and the use of the HUMBOLDT tools.

Below you can find more details for each of the actions taken:

Workshop and training session at the ASITA 2010 Conference

Brescia, Italy 9-12 Nov 2010 <http://www.asita.it/>

The ASITA workshop was an opportunity to introduce the HUMBOLDT methodological aspects and present the operational tools developed to SDI Stakeholders, Italian Regions and more generally

Italian users dealing with geodata harmonisation. Special relevance was given to the use of the online platform for training and the Modules in the e-learning platform.

All of the participants were external to the HUMBOLDT consortium and almost all participants were linked to the field of education or public administration.

Workshop results:

Number of participants: 20

The main results were the dissemination of the project results to the communities of interest. The workshop also generated interest in the HUMBOLDT Training Platform.

Based on the audience reaction, a follow-up workshop should focus on specific training based on Italian data.

Symposium GIS Ostrava 2011: Workshop “Harmonisation and Integration tools supporting INSPIRE implementation”

Ostrava, Czech Republic 26 Jan 2011 <http://gis.vsb.cz/gisostrava/>

The workshop was focused on presentations of different issues of data harmonisation and a detail introduction of selected tools intended for modification of spatial data and its model to be compliant with requirements of the INSPIRE directive.

The workshop demonstrated the selected results of the HUMBOLDT project and attracted end users to test and utilize demonstrated tools. The targeted participants for this workshop were stakeholders and more generally users dealing with data harmonisation.

The workshop was not only focused on the instruction of the use of the HUMBOLDT tools but also on the presentation of the main aspects (access and contents) of the HUMBOLDT Training Framework.

Workshop results:

Number of participants: 36

The main results were the explanation and demonstration of HUMBOLDT tools, discussing issues of the feasibility and advantages of spatial data infrastructure based on software tools and processes for data harmonisation.

The practical exercises of data harmonisation were especially well received by the audience.

The audience showed special interest on getting more information about specific harmonization tools and receive more information about existing Humboldt practical courses.

Based on the reaction of the audience, a follow-up workshop must focus on the provision of more training on the harmonisation tools and to make a presentation of Humboldt project for university students.

Workshop in data harmonisation for planning and urban management data for stakeholders of Regional and Provincial Authority of Piedmont and Liguria in view of an e-learning training action

Turin, Italy Feb 14, 2011 / Genova, Italy Feb 15, 2011

http://www.gisig.it/humboldt/corso_data_harmonisation

Both for the Genoa and Turin workshops, the initiative was undertaken as an action of transfer of the HUMBOLDT project results but the main aim was the presentation of a series of training modules for the harmonization of regional / local data in the context of the INSPIRE directive, also in reference to scenarios applications. The workshop was also devoted to explain the use of the training infrastructure.

Workshop results:

Number of participants: 42

The workshop was followed by a distance learning action (based on the eLearning tools) on the proposed themes. This action is explained with more details in the next section. GISIG provided access to e-learning modules and assistance to persons who were registered for the course.

The HUMBOLDT approach for data harmonisation for BRISEIDE project

Lisbon, Portugal Feb 23, 2011 <http://www.briseide.eu/>

This workshop aimed to spread the project conclusions, its tools and services that may be helpful for the community of interest, such as BRISEIDE project partners.

The workshop aim was to demonstrate the project results and benefits, find a synergy between the two projects and the potentiality of the use of the HALE and The HUMBOLDT Workflow Design and Construction Service in the BRISEIDE project.

Workshop results:

Number of participants: 20

The main result was the presentation of the HUMBOLDT Training Framework with special interest on the training modules that might be of interest to the BRISEIDE project partners.

AGISEE Data Harmonisation Workshop "Methods and Tools for the implementation of the European Directive INSPIRE"

Sofia, Bulgaria March 16, 2011 <http://www.agisee.org/>

This workshop was addressed to demonstrate the feasibility and advantages of spatial data infrastructures based on software tools and processes for data harmonisation.

The Open Source Tools and Services developed in HUMBOLDT were presented in the application context of selected scenarios. In addition to these showcase presentations, the participants had the opportunity to get acquainted with the training courses available on the HUMBOLDT training platform.

The goal of the event was to demonstrate the main outcomes and achievements of the project and the dissemination the use of the Training Framework.

Workshop results:

Number of participants: 101

The main result of the workshop was the presentation of the outcomes and achievements of the project and the dissemination of the use of the Training Framework.

Aroused special interest in the training modules of the Level 1.

Free e-learning courses on Harmonization of spatial data for INSPIRE Provided by the Humboldt Project for GI engineers at European mapping agencies

Introductory teleconference workshop: 2011-03-14 <http://www.inspire-x.eu/training/>

The initiative started with an introductory workshop, provided through an internet-based conference tool. In this seminar, the e-learning platform and the training modules for data harmonisation were presented and discussed. The workshop was followed by distance learning courses on data harmonisation (This action is explained with more details in the next section).

The introductory workshop aimed to demonstrate the project results in terms of feasibility and benefits for spatial data infrastructures. The basis of software tools and processes for harmonization of data were also covered as well as suitable training paths (selection of courses) for various types of attendees.

The workshop was aimed at GI engineers at data providers, or more generally, people who deal with diverse types of geographic data. In particular, the training activity is directed to data providers and technicians interested in the integration and harmonisation of data regulated by INSPIRE.

After the introductory workshop, interested parties had access to training modules, available in the HUMBOLDT e-learning platform.

Workshop results:

Number of participants: 25

The workshop was followed by a distance learning action (based on the eLearning tools) on the proposed themes. This action is explained with more details in the next section. GISIG provided access to e-learning modules and assistance to persons who were registered for the course.

Presentation of Humboldt training package and training workshop at the EuroSDR scientific meeting

Zagreb, October 27-29 2010.

Workshop results:

Number of participants: 35

HUMBOLDT Workshop “Best practice in harmonisation of geographical data” (organised for marine data managers from the Black Sea countries)

Oostende, Belgium 4 March 2011 <http://www.iode.org>

The main result of the workshop was the dissemination of INSPIRE, the HUMBOLDT project and Framework software, as well as awareness of the potential benefits for the data managers working in the marine and ocean domain, including the training modules.

Workshop results:

Number of participants: 58 data managers from Black Sea bordering countries

The training modules and the extensive information in them were especially well received by the audience. Due to the responses (and questions raised) we can see that it is necessary to really start at the basics in training and software development.

Based on the reaction of the audience, a possible follow-up should focus on what benefits the software would have when working with Oceanographic/Marine data.

Training workshop: „Datenharmonisierung im Kontext von INSPIRE“

Munich, Germany 22.03.2011 <http://www.rtg.bv.tum.de>

With the adoption of spatial data infrastructure laws in all states, the INSPIRE implementation phase has already begun in Germany. In addition, requirements for the harmonisation of spatial data are emerging with the publication of first INSPIRE data specifications. In this one-day course, the attendants will learn about the basic principles of INSPIRE and different data harmonisation challenges. Practical experience and results gained in the HUMBOLDT project will be used, focusing on the European Risk Atlas (ERiskA) application scenario in the field of flood information systems. Using data from the Lake Constance cross-border region, participants will investigate different data harmonisation tasks and learn about solutions provided by the HUMBOLDT framework tools.

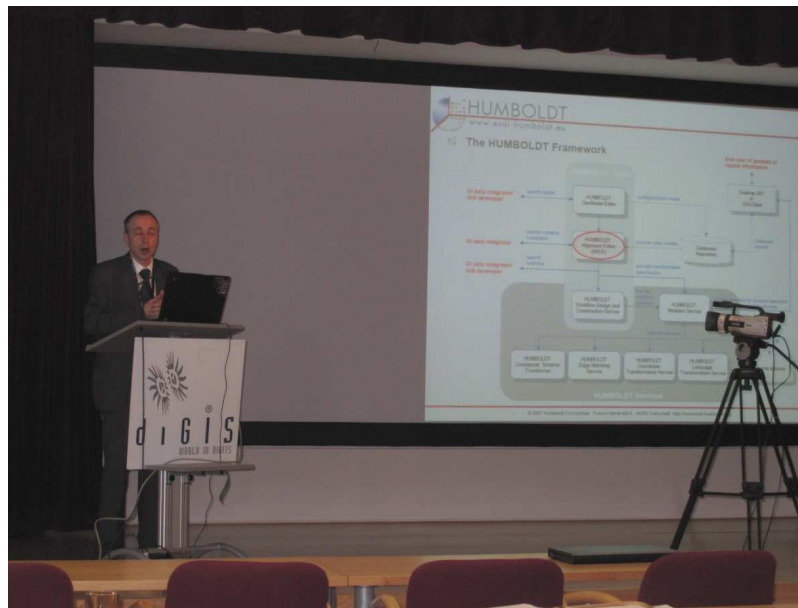


Figure 9: The HUMBOLDT workshop „Harmonization and Integration Tools supporting INSPIRE implementation“ (26th January 2011 in Ostrava, Czech Republic) where the HUMBOLDT Training Framework was presented.

4.2 On-line Training Actions

Much of the material proposed in the online training actions has been developed as part of the HUMBOLDT Training Framework. The HUMBOLDT material that was selected for these specific actions was mainly based on the methodologies and project tools for the harmonisation and practical demonstrations in real use cases.

The workshop sessions before the online actions served to openly discuss with participants the convenience and interest in the various training modules offered and explained the aspects related to

the access and interaction with the material. The intention was to better organize the online action and align it to the real needs of the attendees.

This actions are supported by a reference webpage where participants have all the information related to the courses and direct links to the platform to access them.

The principle behind these actions was the "self-learning": The subscribers to the courses have a limited time access to the courses and total freedom to schedule their follow-up of the lessons in their best interest. People subscribed to the material receive personalized access to the e-learning platform, this allows them to follow their own development and be monitored by the organizer of the online courses. The main instruments of support available to the participants are, on one hand, the availability of receiving assistance by a tutor or the original author of the course and, on the other side, the opportunity to answer questions or interact with other people subscribed to the courses in a discussion forum created specifically for the occasion.

After the introductory workshop, interested parties have access to training modules, available in the HUMBOLDT e-learning platform. Here below there's a description of the Modules offered in the online training actions:

Structured e-learning training session addressed to Regione Liguria and Piedmont stakeholders

Courses open: March – April 2011 http://www.gisig.it/humboldt/corso_data_harmonisation

Number of registered participants: 42

Courses offered in the Training Sessions:

INSPIRE: An introduction

This course aims to introduce the INSPIRE Directive and its implementation process. The course offers an overview of the background of the INSPIRE Directive and the content of the Implementing Rules.

Data Harmonisation: Basic concepts

The aim of this course is to explain the basic concepts of harmonisation of data in general and in particular the concepts of "schema translation"

Data Harmonisation Within The Framework and the HUMBOLDT scenarios

The course includes lectures on the approach followed for harmonisation in the HUMBOLDT project (especially in reference to data modelling) and tutorials for harmonising the data using the tools of the Humboldt Project. The course also introduces the use cases in real 'harmonisation of data protected areas with the tools of HUMBOLDT.

Tools for Data Harmonisation

The module explains the various options available SW tools for processing data with its features and benefits.

Background knowledge (optional training modules)

Web Services: basic concepts of technology "web service" and how it is applied in the OGC.

Metadata concepts and standards: basic concepts of metadata and how they apply to geographic information. Particular attention is given to metadata standards and metadata

INSPIRE Implementing Rules.
Nature Conservation in INSPIRE

Free e-learning courses on Harmonisation of spatial data for INSPIRE Provided by the Humboldt Project

Courses open: 2011-03-14 – 2011-04-08 <http://www.inspire-x.eu/training/>

Number of registered participants: 35

Courses offered in the Training Sessions:

Data Harmonisation: Basic concepts.

The aim of this course is to explain the basic concepts of harmonisation of data in general and in particular the concepts of "schema translation". Course length is around 6 hours

Data Harmonisation within the HUMBOLDT framework.

The course includes lectures on the data harmonisation applied in the HUMBOLDT project (especially in reference to data modelling) and tutorials for harmonising the data using the tools of the HUMBOLDT Project. The course also introduces the use cases of data harmonisation for the management of protected areas. Course length is around 10 hours.

Tools for data harmonisation.

The module demonstrates various alternative software tools for data harmonisation. Course length is around 5 hours.

Web Services.

Basic concepts of web service technology and how they are applied in the OGC context. Course length is around 8 hours.

Metadata, concepts and standards.

Basic concepts of metadata and how they are applied to geographic information. Particular attention is given to metadata standards and metadata INSPIRE Implementing Rules. Course length is around 8 hours.



HUMBOLDT Training Action:
Harmonization of spatial data for INSPIRE
Aimed at Geographic Information Engineers

General information

Resources

- Access to e-learning platform <http://www.gisig.it/platform>
- Access to Discussion Forum <http://www.gisig.it/forum>
- HUMBOLDT Project Community Website <http://community.esdi-humboldt.eu/>

Last date of registration: 2011-03-11

Introductory workshop: 2011-03-14 at 09:00 . 12:00 CET

Courses open: 2011-03-14 . 2011-04-08

More information

[Click here](#) for detailed information about the Humboldt Training action

How to register

To register, please send an email with your name, email address, affiliation and the courses you wish to apply for to: finhek@hiq.se

Courses offered in the Training Sessions

Note: To use the direct access to courses you must first log on to the platform.

Data Harmonisation: Basic concepts

Figure 10: The On-line Training Action webpage

4.3 Other Training Actions

Linkage and use of HUMBOLDT Training modules within the NATURE-SDIplus and BRISEIDE Training Frameworks

The training material of the HUMBOLDT Training Package has been made available for NATURE-SDIplus www.nature-sdi.eu and BRISEIDE www.briseide.eu because of the similarities in the issues faced by these European projects and the need for training in their consortium in technical and theoretical aspects related to the harmonisation of data.

This action allows not only the dissemination of the project results in the field of other European initiatives but also get the most out of the material created in HUMBOLDT where there is a real need for background knowledge on topics as the ones covered in Level 1 of training.

Liaison with VESTA-GIS project:

GISIG (www.gisig.it) is developing an activity line seeking to integrate different training experiences and contents in order to provide the SDI Community and also the domain communities with a variety of opportunities, according to a flexible and “interoperable” schema. The approach is to let available in different situations, structured training courses into eLearning platforms, including both training content and the technical tools for its efficient use.

That is done throughout a catalogue of training courses in GI and applications domains, developed by the VESTA-GIS thematic network (www.vesta-gis.eu), of the Leonardo da Vinci Thematic Lifelong Learning Programme (LLP). VESTA-GIS is aimed to set up a context for enhancing professional skills in the changing labour market consequent to the always increasing importance of GI. VESTA-GIS is a network operating as a comprehensive “clearing house” devoted to combine access to training courses and mobility opportunities.

The “Humboldt Training Framework” material has been made available in the VESTA-GIS network courses catalogue and this partnership constitutes a clear effort to disseminate the project results as training material to a larger audience.

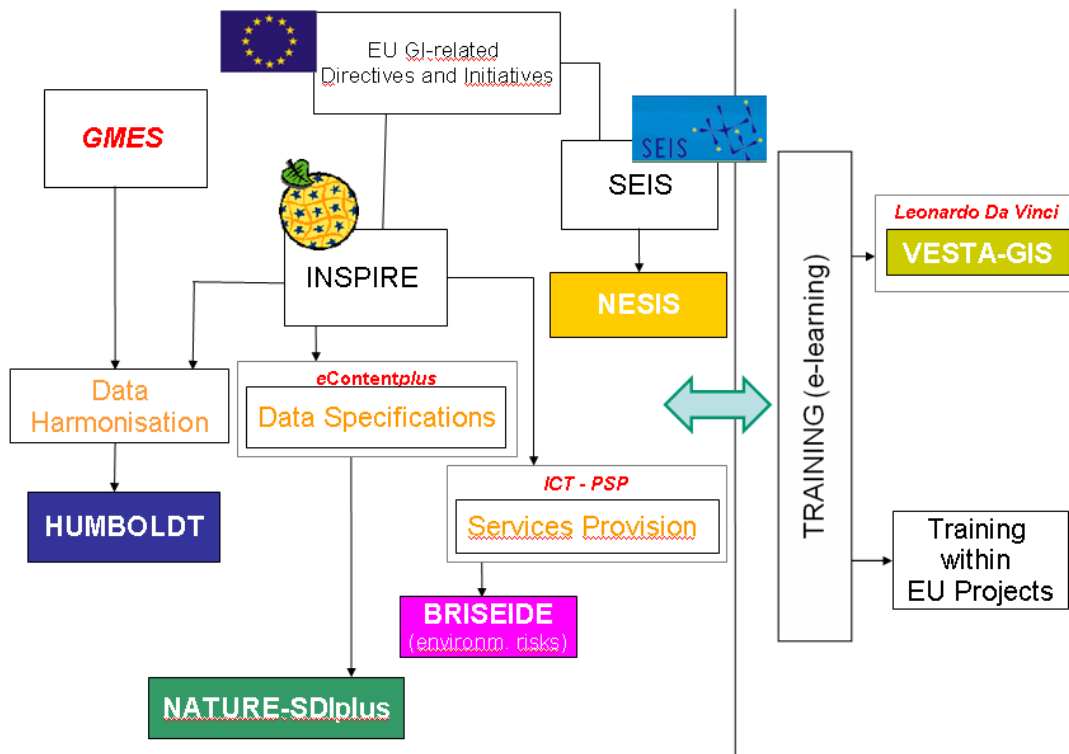


Figure 11: Training needs for GI European Projects

5 Maintenance of the Training Framework (Ref. EWP2.3)

The objective of this work package was to update and maintain the HUMBOLDT training facilities. This included also the administration of users (instructors and trainees) in the e-learning platform.

The following subsections detail the improvements and actions taken during the extension period.

5.1 The Training Package site

The Training Package describes the training offer and its related structure including, for each training level, the list of courses (training Modules) and for each of them information (Metadata) about their training contents. The Training Package site also offers information about how to access the training material and is the entry point from which users can request access to the various modules.

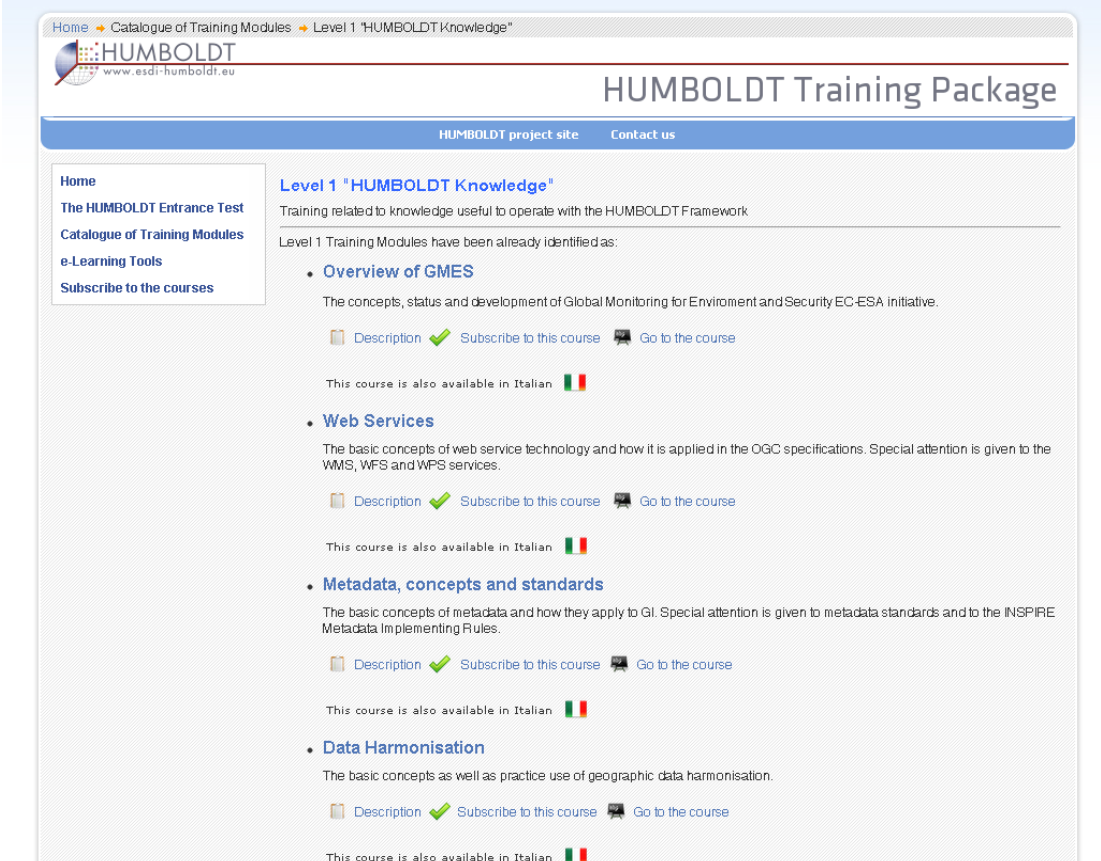
To access the training material, users have to follow these simple steps:

1. Visit the HUMBOLDT community or project website
2. Access the HUMBOLDT Training Package site
3. Subscribe to the training modules of their interest
4. Enter the courses they are interested in

The Training Package Website is the starting point from which users can request for subscription to the various modules. These requests are processed by an administrator who creates and manages a personalized access to the modules available on the e-learning platform. Subscription is free but requested to keep track of accesses and to ensure a link with the users.

The following list details the improvements and actions taken during the extension period:

- General update of the Modules' description layout
- Update of the Modules metadata (detailed descriptions of the structure and contents of the available training material)
- The scenarios section has been extended and now includes detailed descriptions and links to the training material of each scenario.
- A legal disclaimer on the use of the training material has been added for all the training Levels description pages.
- A new search form has been implemented to allow a better filter of the content based on keywords.



The screenshot shows the 'HUMBOLDT Training Package' website. The breadcrumb trail is 'Home > Catalogue of Training Modules > Level 1 "HUMBOLDT Knowledge"'. The page title is 'HUMBOLDT Training Package'. A navigation menu on the left includes 'Home', 'The HUMBOLDT Entrance Test', 'Catalogue of Training Modules', 'e-Learning Tools', and 'Subscribe to the courses'. The main content area is titled 'Level 1 "HUMBOLDT Knowledge"' and describes training related to knowledge useful to operate with the HUMBOLDT Framework. It lists four modules:

- Overview of GMES**: The concepts, status and development of Global Monitoring for Environment and Security EC-ESA initiative. Includes links for 'Description', 'Subscribe to this course', and 'Go to the course'. Note: 'This course is also available in Italian' with the Italian flag.
- Web Services**: The basic concepts of web service technology and how it is applied in the OGC specifications. Special attention is given to the WMS, WFS and WPS services. Includes links for 'Description', 'Subscribe to this course', and 'Go to the course'. Note: 'This course is also available in Italian' with the Italian flag.
- Metadata, concepts and standards**: The basic concepts of metadata and how they apply to GI. Special attention is given to metadata standards and to the INSPIRE Metadata Implementing Rules. Includes links for 'Description', 'Subscribe to this course', and 'Go to the course'. Note: 'This course is also available in Italian' with the Italian flag.
- Data Harmonisation**: The basic concepts as well as practice use of geographic data harmonisation. Includes links for 'Description', 'Subscribe to this course', and 'Go to the course'. Note: 'This course is also available in Italian' with the Italian flag.

Figure 12: The updated Level 1 Scenario Modules list including the available content language, links to the modules information, subscription and direct link to the course in the platform.

5.2 The Training Platform

In the HUMBOLDT project, there is a need to use modern technology and teaching methods since the project focuses on providing training to trainees around Europe. The project has decided to use an e-learning platform and a Learning Management System (LMS) to broaden the potential target audience of the HUMBOLDT framework.

The e-learning platform is intended to be used by the "trainees" (technicians and operators into user organisations) to access the training material. The platform, based on the Open Source learning software Dokeos, allows monitoring the user progress (latest access, time spent in the platform, lessons visited, etc) and the students/teachers interaction.

Once subscribed to the Module (or Modules), the administrator sends to the user personalized access to the platform that hosts the courses.

The front-end of the platform is the interface with the users. The users are here divided into different roles, namely students or teachers. The trainee views are focussing on the needs of a trainee attending one or several courses. These views contains access to training resources (library, lectures, etc) as well as administrative tools (monitoring own performance etc). The teacher views contain tools for allocating resources to the trainees as well as administrative tasks (monitoring, reporting, etc)

During the Extension period the platform worked in a production state even if the majority of courses were being updated and reviewed at the time that external audience had access to the material. The following list details the improvements and actions taken during the extension period:

Maintenance and update of the training platform:

The main actions were based on the revision of the layout of the courses and improving the organizational structure of the lessons within the platform. Another action was based on tests on the platform functionality prior to fully opening the modules to the external audience.

A more efficient access to the training material:

For some of the training material the delivery format has been changed to permit a quicker access to the lectures.

Migration of the service infrastructure:

The overall HUMBOLDT Training Framework infrastructure has been moved to another server with better performance. The Framework is now managed and maintained by GISIG, also in view of the HUMBOLDT follow-up.

Management and monitoring of e-learning Platform users:

By the 10/03/2011, 203 users are registered in the platform with a total of 759 logins. The vast majority of this logins occurred during the extension period, especially during the online training actions. Mostly all external users had asked for access to the platform after being invited to during project workshops where the HUMBOLDT Training Framework has been presented.

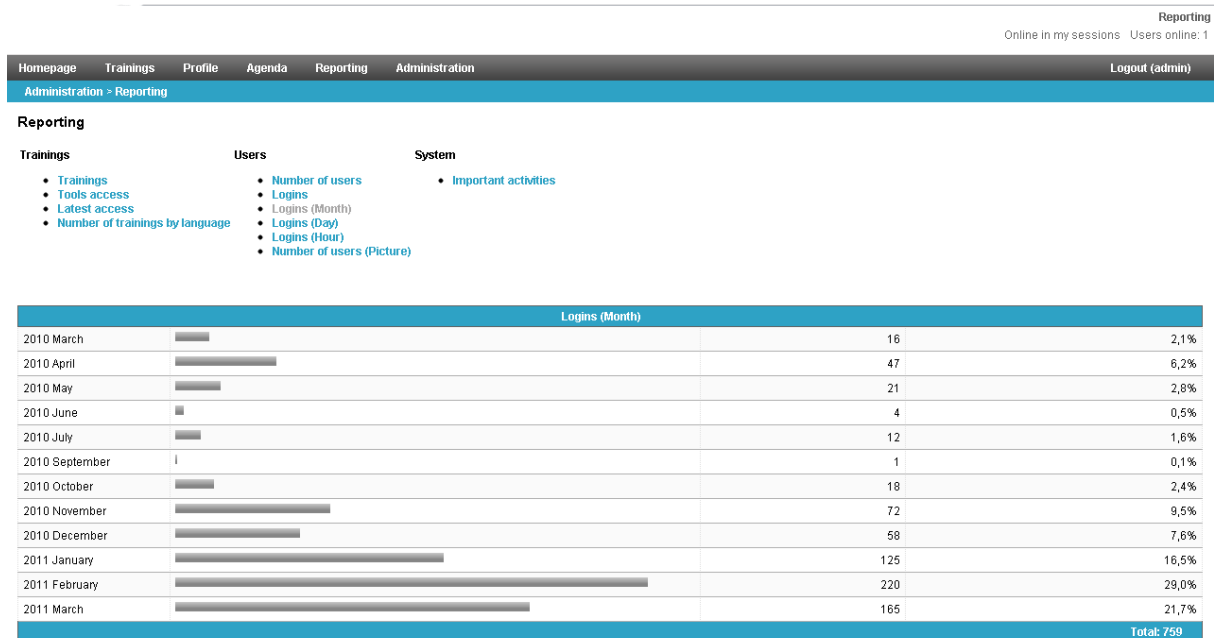


Figure 13: Logins by month to the e-learning Platform. The majority of user accesses are concentrated in February and March 2011, coinciding with the distance learning actions

5.3 The Training Users Forum

During the period of extension it has been created a user's discussion forum specifically dedicated to support the online training actions has been created. This forum's objective is to promote contact between the different users of the training platform and facilitate the interaction between users and teachers. On the other hand this resource is aimed at creating a community of HUMBOLDT training users.



The screenshot shows the ISIG Forum interface. At the top, there is a search bar and a navigation menu. The main content area displays a forum thread titled "HUMBOLDT Training Action: Armonizzazione dei dati spaziali in INSPIRE". The thread includes an announcement and two topics. The announcement is "Messaggio inizio corso" by admin, posted on Thu Feb 17, 2011 3:15 pm, with 1 reply and 14 views. The first topic is "Formazione a distanza: Piattaforma" by admin, posted on Thu Feb 17, 2011 1:44 pm, with 0 replies and 26 views. The second topic is "Formazione a distanza: Moduli proposti" by admin, posted on Thu Feb 17, 2011 1:40 pm, with 0 replies and 32 views. The interface also includes a "NEWTOPIC" button, a search bar for the forum, and a "Jump to:" dropdown menu.

ANNOUNCEMENTS	REPLIES	VIEWS	LAST POST
Messaggio inizio corso by admin » Thu Feb 17, 2011 3:15 pm	1	14	by admin » Thu Feb 17, 2011 3:17 pm

TOPICS	REPLIES	VIEWS	LAST POST
Formazione a distanza: Piattaforma by admin » Thu Feb 17, 2011 1:44 pm	0	26	by admin » Thu Feb 17, 2011 1:44 pm
Formazione a distanza: Moduli proposti by admin » Thu Feb 17, 2011 1:40 pm	0	32	by admin » Thu Feb 17, 2011 1:40 pm

Display topics from previous: Sort by

NEWTOPIC* 2 topics • Page 1 of 1

< Return to Board index Jump to:

Figure 14: The user's forum section for the training session addressed to Regione Liguria and Piedmont stakeholders