

The HUMBOLDT Training Platform

- Overview and access

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Why training?

To **increase the impact and efficacy of the project outcomes** by providing training tools and actions

Training for who?

For the user communities of the HUMBOLDT tools, as well as for the communities of GMES and INSPIRE.
Addressed both to **users and system integrators** as target audiences.

Training by who?

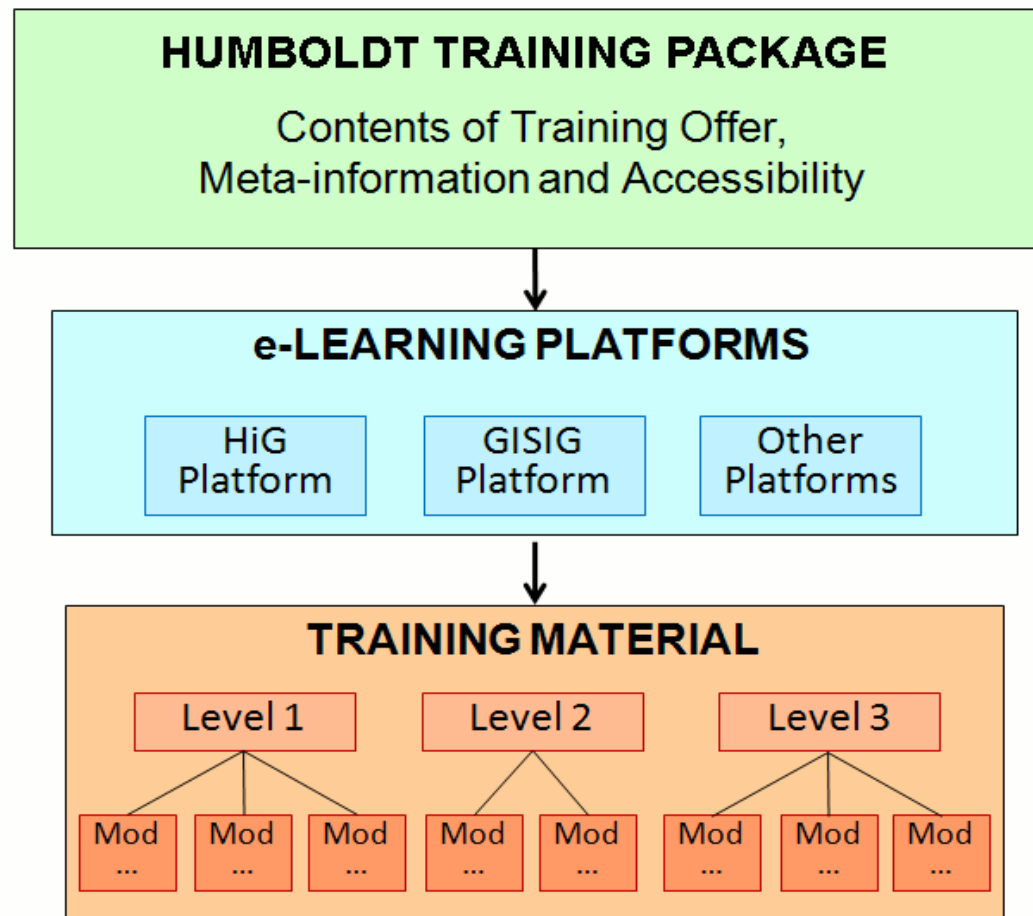
Training material **prepared during the project** (with the contribution of project partners)

Training material **developed in other contexts** and made available for the project

Training about what?

- **Basic general knowledge** (Data harmonisation, data modelling, IT standards, INSPIRE and GMES)
- **Project results** (The use of the HUMBOLDT tools)
- **Application of the HUMBOLDT tools** (H. Scenarios)

HUMBOLDT TRAINING FRAMEWORK



The HUMBOLDT Training Package

Main entrance to all the training aspects related to HUMBOLDT

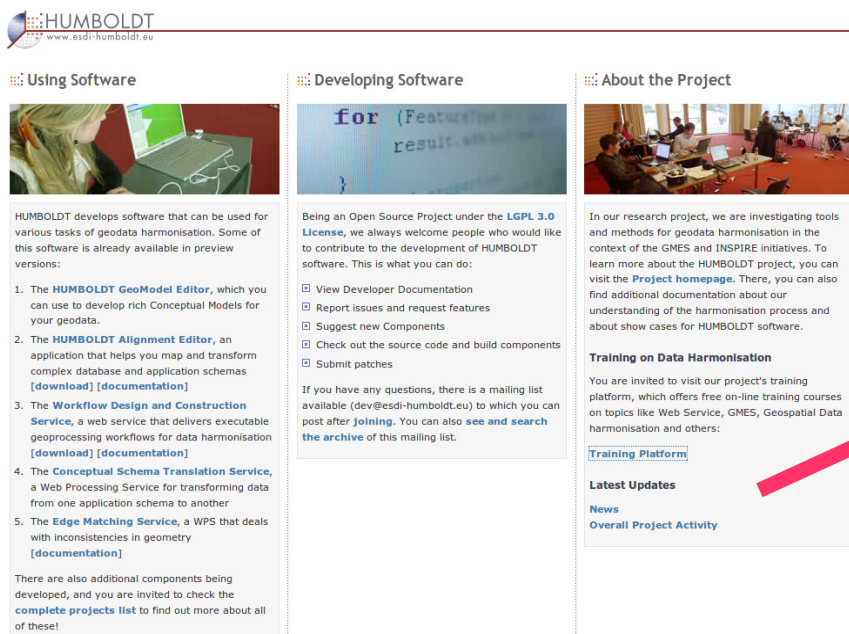
The Training Package is a website that **gives the user all necessary information about the training offer**

From the Training Package site you can:

- **Explore** and have all the information about the HUMBOLDT training offer and Infrastructure
- **Subscribe** to the to the training material
- **Access** to the training material

The HUMBOLDT Training Package

Accessed from the “Training” link in the project's Community website
<http://community.esdi-humboldt.eu/>



Using Software

HUMBOLDT develops software that can be used for various tasks of geodata harmonisation. Some of this software is already available in preview versions:

1. The **HUMBOLDT GeoModel Editor**, which you can use to develop rich Conceptual Models for your geodata.
2. The **HUMBOLDT Alignment Editor**, an application that helps you map and transform complex database and application schemas [\[download\]](#) [\[documentation\]](#)
3. The **Workflow Design and Construction Service**, a web service that delivers executable geoprocessing workflows for data harmonisation [\[download\]](#) [\[documentation\]](#)
4. The **Conceptual Schema Translation Service**, a Web Processing Service for transforming data from one application schema to another
5. The **Edge Matching Service**, a WPS that deals with inconsistencies in geometry [\[documentation\]](#)

There are also additional components being developed, and you are invited to check the [complete projects list](#) to find out more about all of these!

Developing Software

Being an Open Source Project under the **LGPL 3.0 License**, we always welcome people who would like to contribute to the development of HUMBOLDT software. This is what you can do:

- View Developer Documentation
- Report issues and request features
- Suggest new Components
- Check out the source code and build components
- Submit patches

If you have any questions, there is a mailing list available (dev@esdi-humboldt.eu) to which you can post after [Joining](#). You can also [see and search the archive](#) of this mailing list.

About the Project

In our research project, we are investigating tools and methods for geodata harmonisation in the context of the GMES and INSPIRE initiatives. To learn more about the HUMBOLDT project, you can visit the [Project homepage](#). There, you can also find additional documentation about our understanding of the harmonisation process and about show cases for HUMBOLDT software.

Training on Data Harmonisation

You are invited to visit our project's training platform, which offers free on-line training courses on topics like Web Service, GMES, Geospatial Data harmonisation and others:

[Training Platform](#)

Latest Updates

[News](#)
[Overall Project Activity](#)

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Training Platform

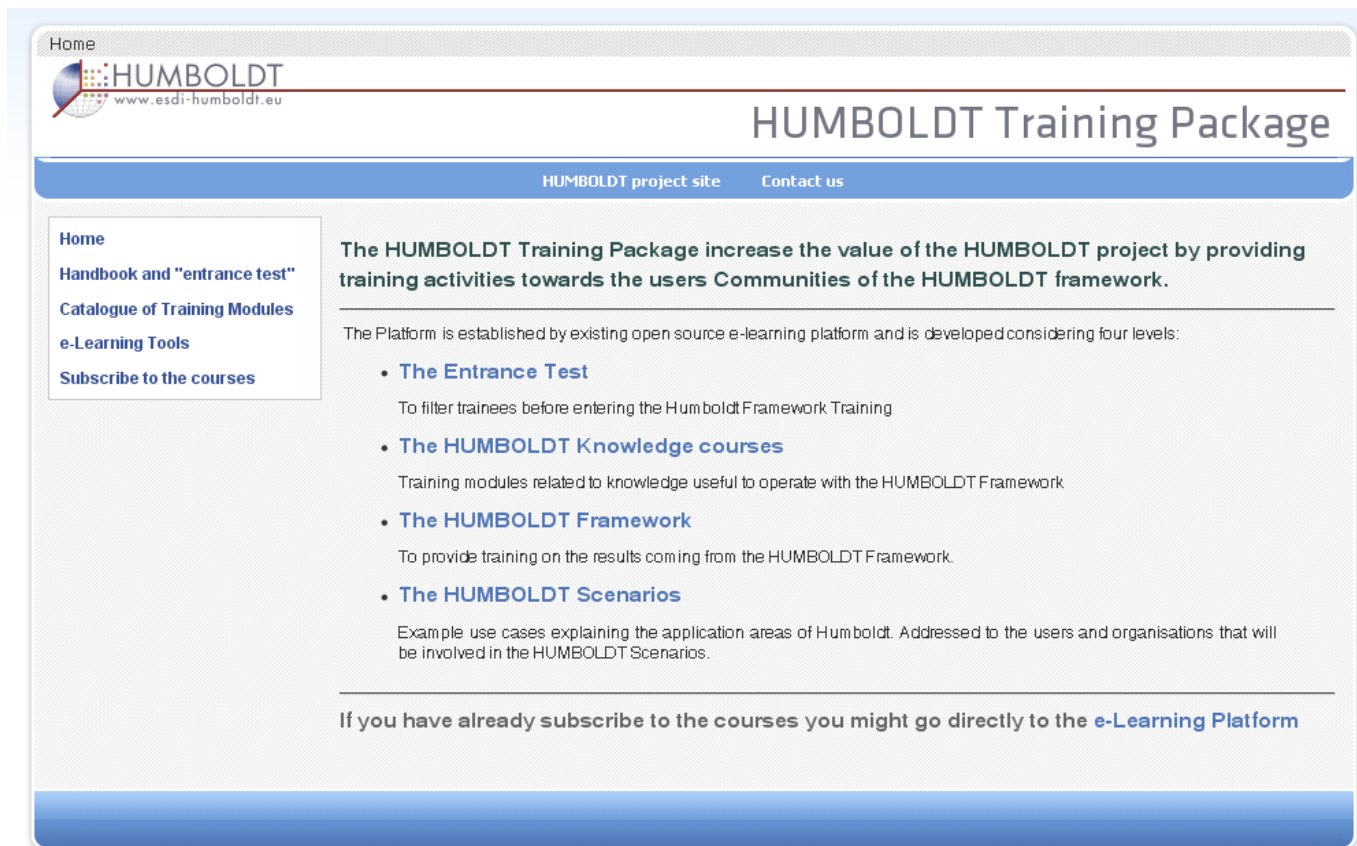
Latest Updates

News

Overall Project Activity

The HUMBOLDT Training Package

Accessed from the “Training” link in the project's Community website
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The screenshot shows the HUMBOLDT Training Package website. The header includes the HUMBOLDT logo and the URL www.esdi-humboldt.eu. The main title is "HUMBOLDT Training Package". Below the title, there are two links: "HUMBOLDT project site" and "Contact us". The main content area is divided into a left sidebar and a main text area. The sidebar contains links for "Home", "Handbook and 'entrance test'", "Catalogue of Training Modules", "e-Learning Tools", and "Subscribe to the courses". The main text area starts with a paragraph: "The HUMBOLDT Training Package increase the value of the HUMBOLDT project by providing training activities towards the users Communities of the HUMBOLDT framework." This is followed by a sub-heading: "The Platform is established by existing open source e-learning platform and is developed considering four levels:". Below this, there is a bulleted list of four items: "The Entrance Test", "The HUMBOLDT Knowledge courses", "The HUMBOLDT Framework", and "The HUMBOLDT Scenarios". Each item has a brief description. The list ends with a paragraph: "Example use cases explaining the application areas of Humboldt. Addressed to the users and organisations that will be involved in the HUMBOLDT Scenarios." At the bottom of the main text area, there is a link: "If you have already subscribe to the courses you might go directly to the e-Learning Platform".

Home

HUMBOLDT
www.esdi-humboldt.eu

HUMBOLDT Training Package

HUMBOLDT project site Contact us

Home
Handbook and "entrance test"
Catalogue of Training Modules
e-Learning Tools
Subscribe to the courses

The HUMBOLDT Training Package increase the value of the HUMBOLDT project by providing training activities towards the users Communities of the HUMBOLDT framework.

The Platform is established by existing open source e-learning platform and is developed considering four levels:

- **The Entrance Test**
To filter trainees before entering the Humboldt Framework Training
- **The HUMBOLDT Knowledge courses**
Training modules related to knowledge useful to operate with the HUMBOLDT Framework
- **The HUMBOLDT Framework**
To provide training on the results coming from the HUMBOLDT Framework.
- **The HUMBOLDT Scenarios**
Example use cases explaining the application areas of Humboldt. Addressed to the users and organisations that will be involved in the HUMBOLDT Scenarios.

If you have already subscribe to the courses you might go directly to the [e-Learning Platform](#)

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The Training Package site structure: Modules list

For each content level a list of available Modules is provided in the Training Package site

Level 1 "HUMBOLDT Knowledge"

Training related to knowledge useful to operate with the HUMBOLDT Framework

Level 1 Training Modules have been already identified as:

- **Overview of GMES**

The concepts, status and development of Global Monitoring for Environment and Security EC-ESA initiative.

 [Description](#)  [Subscribe to this course](#)  [Go to the course](#)

- **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.

 [Description](#)  [Subscribe to this course](#)  [Go to the course](#)

- **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.

 [Description](#)  [Subscribe to this course](#)  [Go to the course](#)

- **Data Harmonisation**

The basic concepts as well as practice use of geographic data harmonisation.

 [Description](#)  [Subscribe to this course](#)  [Go to the course](#)

- **INSPIRE (under development)**

Click on each Module to have the description of the course

The HUMBOLDT Training Platform

Constitutes the **infrastructure hosting the training** modules and training material.

Established by widely diffused **open source** e-Learning tools.

Once **subscribed** to the Module (or Modules), the user is redirected to an e-Learning platform with **personalized access**.

Decentralised: Training Material is hosted in different platforms in Italy and Sweden.

Training material developed on a **variety of formats**: Presentations with voice, screencasts, plain text lectures, exercises, etc.

Allows **monitoring the user progress** and students/teachers interaction


Link with Vesta-GIS (all HUMBOLDT courses listed in the Vesta-GIS catalogue)

The HUMBOLDT Training Platform

A decentralized infrastructure composed of different e-learning platforms hosting the courses.

Humboldt E-Learning Portal - Humboldt Users online: 0

Portal Homepage



Welcome to the e-Learning Platform of the HUMBOLDT Project

Training activities towards the users Communities of the HUMBOLDT framework

- Level 1: The HUMBOLDT Knowledge courses:
Training modules related to knowledge useful to operate with the HUMBOLDT Framework
- Level 2: The HUMBOLDT Framework:
Training on the results coming from the HUMBOLDT Framework.
- Level 3: The HUMBOLDT Scenarios:
Addressed to the users and organisations that will be involved in the HUMBOLDT Scenarios.

English

Username

Password

OK

User

Lost Password

General

ESDI-Humboldt Homepage

Hosted by Gävle GIS Institute, University of Gävle.

Platform Dokeos 1.8.5 © 2009

The HIG HUMBOLDT e-Learning platform hosted in Gävle (Sweden)

The HUMBOLDT Training Modules: The Entrance Test

To verify that the trainee has sufficient “pre-knowledge” before entering the Modules and assess the attitudes of the trainee versus the HUMBOLDT Framework in order to identify/suggest the right Entry Level

Technical and Specific Issues

This section covers topics such as Data Harmonisation, Web Services, INSPIRE, Metadata and GMES

? Question 1 : What is the INSPIRE Directive:

- An European Directive that intends to unlock to potential of the European Public Sector Information
- An European Directive that intends to support the creation of an European Spatial Data Infrastructure

? Question 2 : Which of the following sentences best applies to INSPIRE:

- Data should be maintained at the level where this can be done most effectively
- Data should be maintained in a central database managed by the European Commission

? Question 3 : What is the main task of the INSPIRE Drafting Teams:

- Support the development of the so called INSPIRE Implementing Rules
- Drafting the text of the INSPIRE Directive

? Question 4 : What are the basic elements of Web Services?:

- XHTML and CSS
- XML and XLST
- UDDI, WSDL and SOAP

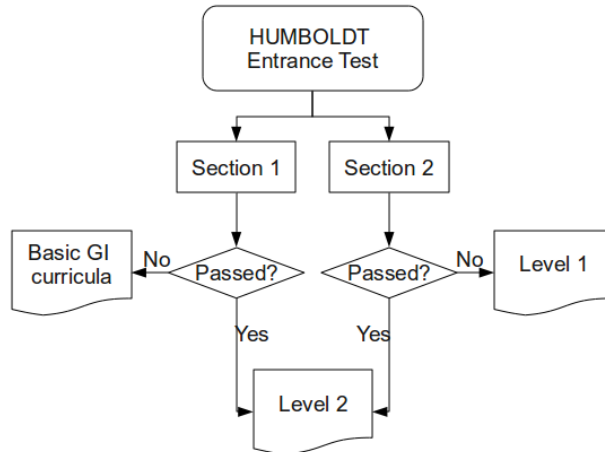
? Question 5 : What is meant by SOA?:

- An information technology architecture that enables distributed computing environments with many different types of computing platforms and applications
- Common phrase for “Service Oriented Applet”
- A protocol used for describing web services

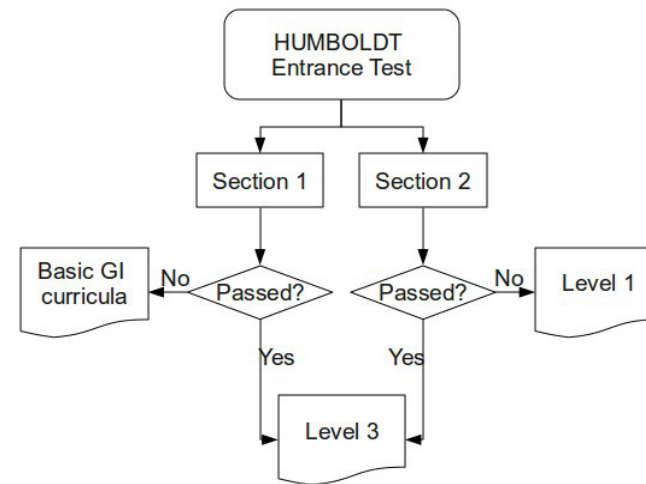
The HUMBOLDT Training Modules: The Entrance Test

The entrance test is an added value tool that operates independently to the courses.

Depending on the Entrance test results **the students are suggested to follow a specific curricula** of modules:



Learning path for technical people



Learning path for scenario experts

The HUMBOLDT Training Modules

Level 1

- **Level 1 “Preliminary Knowledge”:**
 - Overview of GMES (concepts and services)
 - Web Services
 - Metadata (concepts and standards)
 - INSPIRE (Directive and the Specifications)
 - Introduction to Data Harmonisation

The HUMBOLDT Training Modules: Training Level 1 “Preliminary Knowledge”


Course Home

Enter training component 2: "GMES Services"

Build | Organize | Display

2 GMES Services

- Information ✓
- GMES Services - Flash movie ✓
- 2.1 Service Elements ✓
- 2.2 Fast-Track Services ✓
- 2.3 Space Segment




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3


GMES Services 1 – Emergency Response Core Service

The Fast Track 'emergency' does not cover ERCS as a whole.
The suggested steps are:

Step-by-step implementation starting from existing elements,
Developing **new capacities** if and when mandatory.



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Example for the Level 1, “GMES” Module in the HiG e-learning platform

The HUMBOLDT Training Modules:

Training Level 2 “The HUMBOLDT Framework“

The HUMBOLDT Framework: software components

The HUMOLDT Model Editor, a UML editor that is specifically geared towards the creation of UML application schemas;

The HUMBOLDT Alignment Editor, a tool that supports the definition of conceptual schema transformations;

A specific step-by-step tutorial on the use of this tool is currently under preparation in this level of training. This material will complement the user documentation available in the project’s community website

The Mediator Service, a proxy service that executes transformation chains to provide harmonised geodata;

The Workflow Service, a service that analyses data sets and decides which processing is required to match a target product description;

Several transformation services exposed as OGC **Web Processing Services**, such as **Coordinate Transformation Service** and **Edge Matching Service**.

The HUMBOLDT Training Modules: Training Level 2 “The HUMBOLDT Framework“

Humboldt E-Learning Portal - Humboldt Level 2 - Data Harmonisation with the Humboldt Framework

Users online: 1 (1 In this course) | Help


Portal Homepage My courses Logout (register)

Level 2 - Data Harmonisation with the Humboldt Framework

HUMBOLDT training Level 2: The Humboldt Framework

Data Harmonisation with the Humboldt Framework (draft)

The module “Level 1: Data Harmonisation Concept” introduces the basic concepts in data harmonisation, and is of course a prerequisite for this course.



Harmonisation is a broad topic which involves the adaptation of existing data and services to standards and rules according to the regulations and requirements in an SDI. Humboldt is mostly interested in data harmonisation, which represents a main issue for combining of trans-sectoral, trans-lingual and trans-border information originating from different sources. HUMBOLDT will create the possibility to combine data from heterogeneous sources into integrated, consistent and unambiguous information products, in a way that is of no concern to the end-user. HUMBOLDT will provide the tools that will automate and facilitate the transformation of a source data set to a target data set. In the figure you can see a diagram of the translation from source data set to target model.

According to INSPIRE Reference Data and Metadata Position Paper a data harmonisation process includes 20 components like data models (conceptual schemas, application schemas), data formats, reference models (systems, grids), terminology, languages, multiple representations (scales, level-of-details), spatial and temporal aspects, etc. A lot of processes like data transfer, data capturing, generalisation, edge matching (e.g. consistency between data), transformation, reclassification, encoding/decoding may also be included in the data harmonisation process. HUMBOLDT addresses 11 of these components namely: terminology, rules for application and feature catalogues, spatial and temporal aspects, Multi-lingual text and cultural adaptivity, coordinate referencing and units model, data translation (or transformation) model/guidelines, metadata, quality, data transfer, consistency between data and multiple representations (see fig. below).


Learning objectives:

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.

The module consists of three components, each organised in one or more short lectures.

- Component 1: Harmonised data models
- Component 2: Schema translation (model-to-model mapping)
- Component 3: Other harmonisation issues

Please access the training material by clicking the symbol 

(A) INSPIRE Principles	(B) Terminology	(C) Reference model
(D) Rules for application Schemas and feature catalogues	(E) Spatial and temporal aspects	(F) Multi-lingual text and cultural adaptability
(G) Coordinate referencing and units model	(H) Object referencing modelling	(I) Data translation model/guidelines
(J) Portrayal model	(K) Identifier Management	(L) Registers and registries
(M) Metadata	(N) Maintenance	(O) Quality
(P) Data Transfer	(Q) Consistency between data	(R) Multiple representations
(S) Data capturing	(T) Conformance	(INSPIRE 2008)

Example for the Level 2, “Data Harmonisation with the HUMBOLDT Framework” Module

The HUMBOLDT Training Modules:

Training Level 3: “The HUMBOLDT Scenarios“

Harmonisation aspects in different domains:

Border Security: Enabling Effective Border Control and Security in Rural Areas

Urban Planning: European Urban Management Information Systems

Forest: Land cover and vegetation integration

Urban Atlas: Support city habitability

Transboundary Catchments: Integrated management of cross-border catchment areas

Protected Areas: Management of Protected Areas of Regional Parks

ERiskA: Collect and combine existing data concerning natural risks and vulnerability efficiently

Ocean: Oil/Contaminants spill crisis impact and management

Atmosphere: Air quality data integration and provision through a Location-based Service (LBS)

The HUMBOLDT Training Modules: Training Level 3: “The HUMBOLDT Scenarios“

Humboldt E-Learning Portal - Humboldt
Level 3 - The Protected Areas HUMBOLDT Scenario

Users online: 1 (1 In this course)
Logout (HUMBOLDT)

Portal Homepage
My courses

Level 3 - The Protected Areas HUMBOLDT Scenario

HUMBOLDT training Level 3: The Scenarios

The Protected Areas Scenario (draft)

The HUMBOLDT scenarios describe a set of use cases in which the HUMBOLDT framework can be applied. The Protected Areas Scenario is part of a set of real-world application prototypes.

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.


Learning objectives:


- See geo-information for protected sites embedded in a seamless flow of diverse information from multiple sources
- To exploit the HUMBOLDT Framework for different purposes (use cases) in the life of protected areas
- To demonstrate the INSPIRE approach in a specific application field


The module consists of three components, each organised in one or more short lectures.


- **Component 1: Scenario general overview**
- **Component 2: Analysis of required data and definition of the Scenario harmonised data model**
- **Component 3: Scenario interaction with the HUMBOLDT Framework**


Please access the training material by clicking the symbol scombuilder.gif

 [Links](#)

 [Component 3: "Scenario interaction with the HUMBOLDT Framework"](#)

 [Component 1: "Scenario general overview"](#)

 [Component 2: Analysis of required data and definition of the scenario harmonised data model](#)



Example for the Level 3 - “The Protected Areas HUMBOLDT Scenario” in the e-learning platform

What to do

1. Go to the Humboldt community web site
2. Access the Humboldt training framework
3. Register
4. Enter the courses you are interested in