

INSPIRE Training and Capacity Building

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**Eionet NRC Environmental Information Systems (EIS)
Meeting, Copenhagen (DK), 25-26 November 2015**

LINKVIT

Leonardo da Vinci Transfer of Innovation project

21 Modules linked to the INSPIRE Directive



- **LINKVIT deals with “Digital Competence”** as defined in the Key competences for Lifelong Learning- A European Framework.
- **Competences in geo-information** are crucial in the new European context to be operational in the assignments of the INSPIRE Directive.
- LINKVIT will aim at creating such competences through a **set of training modules developed in different European initiatives.**

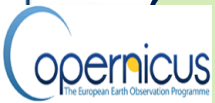
The modules are classified into:

- a) Context Knowledge for INSPIRE
- b) Advanced technical Modules
- c) Modules addressed to the stakeholders of Nature Conservation
- d) Modules addressed to the stakeholders of Geology and Civil Protection
- e) Technological trends and innovative solutions

Levels	Titles
A - Context knowledge for INSPIRE	1. Introduction to INSPIRE
	2. European Geospatial Portals as SDI User Interfaces
	3. Basics of INSPIRE Data and service sharing
	4. Basic concepts of XML and GML
	5. Basics of INSPIRE Data Specifications
	6. Data Quality
	7. Basics of INSPIRE Network Services
	8. Data Harmonisation
B - Advanced technical Modules	9. INSPIRE advanced
	10. Metadata and Catalogue Services
	11. INSPIRE Network Services advanced
	12. Procedures for Data and Metadata Harmonization
	13. Examples of Data Transformation
	14. Metadata and Data validation for INSPIRE
C - Modules addressed to the stakeholders of Nature Conservation	15. Nature Conservation & Natura 2000 Network
	16. Nature Conservation & INSPIRE
D - Module addressed to the stakeholders of Geology and Civil Protection	17. Risk Management
	18. Geological data harmonization
E - Technological trends and innovative solutions	19. Introduction to Linked data
	20. Linked Data Advanced
	21. Introduction to Sensor Web enablement

Already existing learning material is leveraged and reframed to provide end-user oriented modular learning to:

- **Employed people** to be re-qualified on new competence required by INSPIRE
- **Postgraduates**, for easier access to GI-labour market with a post-degree specialization
- **Professional profiles** within public and private sector (**technicians and decisions makers**)



Copernicus



INSPIRE



SEIS



WFD

eContentplus

ICT-PSP

FP7

Data
Harmonisation

Data
Specifications

Services
Provision

SME
Involvement



HUMBOLDT



NATURE-SDIplus



BRISEIDE



smeSpire



NESIS



GeoSmartCity



LIFE+IMAGINE

TRAINING (e-learning)

Training within EU
Projects

Leonardo Da Vinci



VESTA-GIS

Leonardo Da Vinci



eLEANOR



SEIS



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GeoSmartCity



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NATURE-SDIplus

eENVplus

≈ 500 registered users

TRAINING (e-learning)

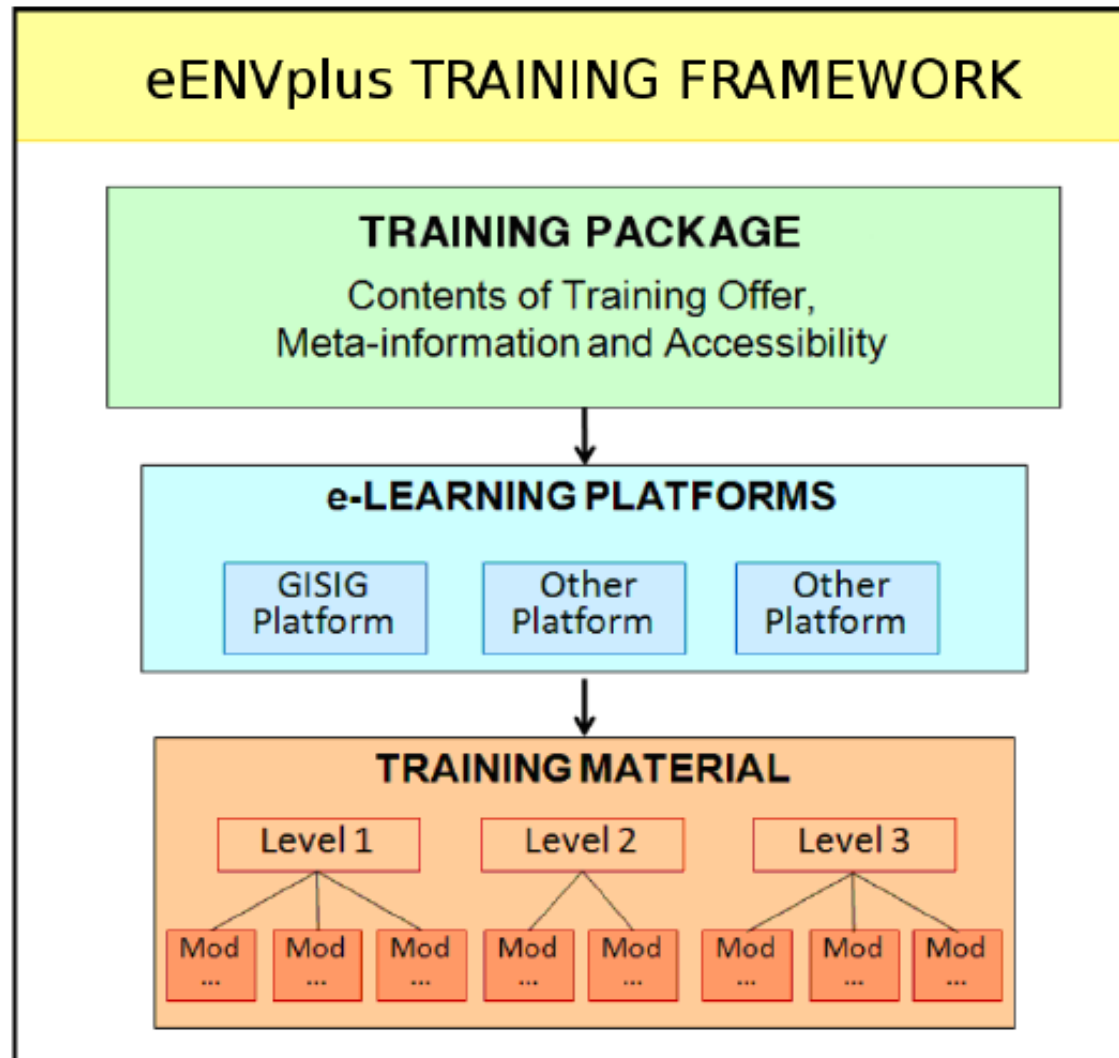
Training within EU Projects



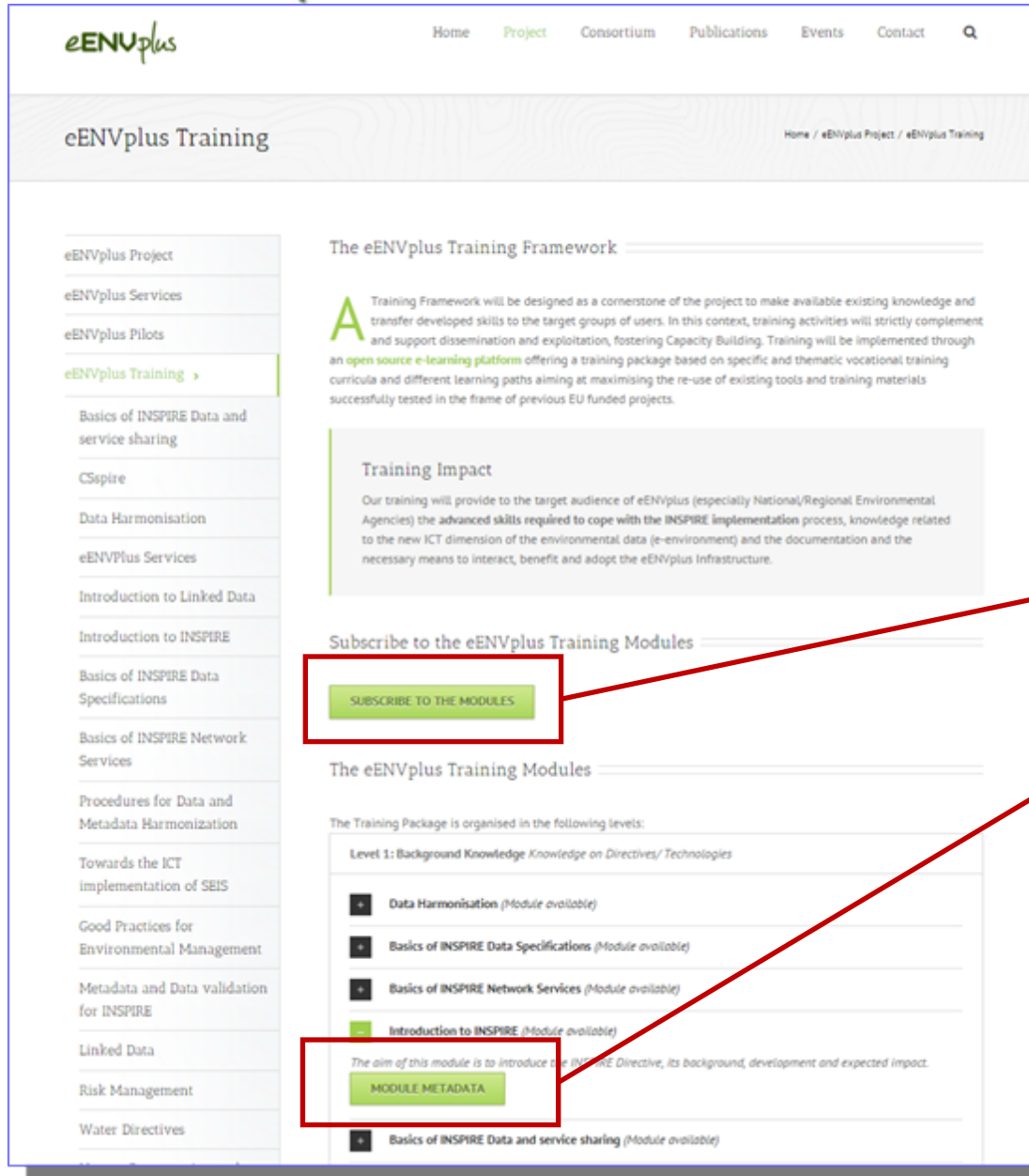
VESTA-GIS



eLEANOR



- Constitute the infrastructure(s) hosting the training modules and training material.
- Established by widely diffused open source e-learning tools.
- Open to the project members and (open registration) to the users Communities.
- 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.
- 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.



eENVplus Training

Home / eENVplus Project / eENVplus Training

eENVplus Project

- eENVplus Services
- eENVplus Pilots
- eENVplus Training >**
 - Basics of INSPIRE Data and service sharing
 - CSpire
 - Data Harmonisation
 - eENVplus Services
 - Introduction to Linked Data
 - Introduction to INSPIRE
 - Basics of INSPIRE Data Specifications
 - Basics of INSPIRE Network Services
 - Procedures for Data and Metadata Harmonization
 - Towards the ICT implementation of SEIS
 - Good Practices for Environmental Management
 - Metadata and Data validation for INSPIRE
 - Linked Data
 - Risk Management
 - Water Directives

The eENVplus Training Framework

A Training Framework will be designed as a cornerstone of the project to make available existing knowledge and transfer developed skills to the target groups of users. In this context, training activities will strictly complement and support dissemination and exploitation, fostering Capacity Building. Training will be implemented through an **open source e-learning platform** offering a training package based on specific and thematic vocational training curricula and different learning paths aiming at maximising the re-use of existing tools and training materials successfully tested in the frame of previous EU funded projects.

Training Impact

Our training will provide to the target audience of eENVplus (especially National/Regional Environmental Agencies) the **advanced skills required to cope with the INSPIRE implementation process**, knowledge related to the new ICT dimension of the environmental data (e-environment) and the documentation and the necessary means to interact, benefit and adopt the eENVplus Infrastructure.

Subscribe to the eENVplus Training Modules

SUBSCRIBE TO THE MODULES

The eENVplus Training Modules

The Training Package is organised in the following levels:

Level 1: Background Knowledge Knowledge on Directives/ Technologies

- Data Harmonisation** (Module available)
- Basics of INSPIRE Data Specifications** (Module available)
- Basics of INSPIRE Network Services** (Module available)
- Introduction to INSPIRE** (Module available)

The aim of this module is to introduce the INSPIRE Directive, its background, development and expected impact.

MODULE METADATA

Basics of INSPIRE Data and service sharing (Module available)

eENVplus website:

Training section

- Access to the Module list
- Access to the e-Learning Platform
- For each module access the Metadata

[eENVplus Project](#)
[eENVplus Services](#)
[eENVplus Pilots](#)
[eENVplus Training >](#)
[Basics of INSPIRE Data and service sharing](#)
[CSpire](#)
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[Basics of INSPIRE Data Specifications](#)
[Basics of INSPIRE Network Services](#)
[Procedures for Data and Metadata Harmonization](#)
[Towards the ICT implementation of SEIS](#)
[Good Practices for Environmental Management](#)

Introduction to INSPIRE

Source

Earlier versions of this training module have been developed within the VESTA-GIS project in 2009 (<http://www.vesta-gis.eu/>), the Nature-SDIPlus project in 2010 (<http://www.nature-sdi.eu/>) and within the Educational Services Programme (EduServ) of EuroSDR in 2010 and 2011 (<http://www.euroedr.net>).

Ownership

Author: Danny Vandenbroucke, KU Leuven. The material is provided under Creative Commons Attribution Share-Alike License (<http://creativecommons.org/licenses/by-sa/3.0/>).

Abstract

The INSPIRE initiative was initiated by the European Commission in 2001 to enhance the sharing of harmonized spatial data and services between public authorities in order to assist environmental policy-making and activities that may have a direct or indirect impact on the environment. The INSPIRE Directive entered into force in May 2007. Member States transposed the Directive into national legislation and started to implement INSPIRE components: setting-up a coordinating structure, harmonizing spatial data, developing network services to access the data, maintaining metadata for spatial data & services, and putting in place measures to improve data & service sharing.

This module deals with the main elements of the INSPIRE Directive: its context and background, the scope and major chapters of the Directive, an overview of the related implementing rules, the conformity of spatial data and services, and the potential for new innovative solutions based on INSPIRE. The module also pays attention to the relationship between INSPIRE and other Directives such as the Directive 2003/98/EC on the re-use of public sector information (PSI) and Directive 2003/4/EC on public access to environmental information. The training material consist of presentations, supporting documents and a weblecture. The module is a self-learning module.

Common Metadata template

Structured in a clustering training perspective to allow interoperability of training modules within different project Training Frameworks.

- Format
- Expected workload

[eENVplus Project](#)
[eENVplus Services](#)
[eENVplus Pilots](#)
[eENVplus Training »](#)
[Basics of INSPIRE Data and service sharing](#)
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Each Training Module must be detailed with metadata:

- Module name
- Source
- Ownership
- Abstract
- Structure
- Learning outcomes
- Intended audience
- Pre-requisites
- Language
- Format
- Expected workload

The Training Framework is structured in 4 levels:

- ❑ Level 1: **Background Knowledge** (*Knowledge on Directives/ Technologies*)
- ❑ Level 2: **Thematic Knowledge** (*Knowledge on specific related knowledge areas*)
- ❑ Level 3: **The eENVplus Infrastructure** (*Knowledge on the technical outcomes of eENVplus*)
- ❑ Level 4 - **eENVplus scenarios** (*These modules will be available in a later stage of the project*)

Level 1: Background Knowledge (Knowledge on Directives/ Technologies)	
1.1	Introduction to INSPIRE
1.2	Basics of INSPIRE Data and service sharing
1.3	Basics of INSPIRE Data Specifications
1.4	Basics of INSPIRE Network Services
1.5	Data Harmonisation
1.6	Procedures for Data and Metadata Harmonisation
1.7	Towards the ICT implementation of SEIS
1.8	Good Practices for Environmental Management
1.9	Introduction to Linked Data



Modules from the LINKVIT Training Framework

Level 2: Thematic Knowledge (Knowledge on specific related knowledge areas)	
2.1	Water Directives
2.2	Nature Conservation and Natura 2000 Network
2.3	Nature Conservation and INSPIRE
2.4	Risk Management
2.5	Geological Data Harmonisation



Modules from the LINKVIT Training Framework

Level 3: The eENVplus Infrastructure (Knowledge on the technical outcomes of eENVplus)	
3.1	Examples of Data Transformation
3.2	Metadata and Data validation for INSPIRE
3.3	The eENVplus Architecture
3.4	The eENVplus Thesaurus Framework
3.5	The eENVplus services
	<i>Components of the eENVplus services Modules:</i> View service Download service for vector Ingestion service Web processing service Notification service
3.6	eENVplus catalogue and connection to operational infrastructures
3.7	Mobile Mapping and advanced visualisation



Modules from the LINKVIT Training Framework

Level 4 – eENVplus scenarios

4.1	Implementation of a SEIS for air quality data
4.2	Providing INSPIRE-compliant access to utility services: the case of sewage networks in Flanders
4.3	CSspire
4.4	Natural Areas INSPIRE Compliance Toolbox
4.5	Forest Fire Management Scenario
4.6	Window on the Protected Areas – Mobile Conservation Map (WMA MCM)
4.7	NLSI - Mobile application for Nature Conservation (INSPIRE Geoportal)
4.8	Geological Map Harmonization
4.9	Urban Landuse Planning: INSPIRE'd land use planning Indicators to monitor good urban planning practices

eENVplus considered different professional profiles:

- ☐ Managers
- ☐ Professionals
- ☐ End Users

For each professional profile suggested «Learning paths» are provided, with different modules, recommended and optional, for each profile.

eLearning Training actions have been also organised, at country level, involving INSPIRE Stakeholders

Recommended core training modules	Optional modules
Context knowledge	
1.1 Introduction to INSPIRE	1.3 Basics of INSPIRE Data Specifications
1.5 Data Harmonization	1.4 Basics of INSPIRE Network Services
1.9 Introduction to Linked Data	1.7 Towards the ICT implementation of SEIS
	1.8 Good Practices for Environmental Management
	Level 2 Modules, according to the thematic interest
Project specific	
3.3 The eENVplus Architecture	Other modules of Level 3
	Level 4 Modules, according to the thematic interest

Recommended	Optional
Context knowledge	
1.1 Introduction to INSPIRE	1.9 Introduction to Linked Data
1.2 Basics of INSPIRE Data and service sharing	Level 2 Modules, according to the thematic interest
1.3 Basics of INSPIRE Data Specifications	
1.4 Basics of INSPIRE Network Services	
1.5 Data Harmonization	
1.6 Procedures for Data and Metadata Harmonisation	
Professional modules	
3.1 Example of Data Transformation	1.6 Towards the ICT implementation of SEIS
3.2 Metadata and Data validation for INSPIRE	1.7 Good Practices for Environmental Management
3.3 The eENVplus architecture	Level 4 Modules, according to the thematic interest
3.4 The eENVplus Thesaurus Framework	
3.5 The eENVplus services	
3.6 eENVplus catalogue and connection to operational infrastructures	
3.7 Mobile Mapping and advanced visualisation	

Recommended	Optional
Context knowledge	
1.1 Introduction to INSPIRE	1.3 Basics of INSPIRE Data Specifications
	1.4 Basics of INSPIRE Network Services
	1.8 Good Practices for Environmental Management
	Level 2 Modules, according to the thematic interest
Project specific	
3.3 The eENVplus architecture	Other modules of Level 3
3.5 The eENVplus services	Level 4 Modules, according to the thematic interest
3.7 Mobile Mapping and advanced visualisation	