

## DELIVERABLE

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### D 2.3: Data Maintenance and Processing Specification

**Revision:** final

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| Dissemination Level                                                                  |                                                                              |   |
| P                                                                                    | Public                                                                       | x |
| C                                                                                    | Confidential, only for members of the consortium and the Commission Services |   |

## Revision History and Statement of Originality

| Revision | Date       | Author/Editor  | Organisation | Description                                           |
|----------|------------|----------------|--------------|-------------------------------------------------------|
| 0.1      | 11/11/2014 | Anja Hopfstock | BKG          | Baseline                                              |
| 0.2      | 20/11/2014 | Anja Hopfstock | BKG          | Comments from Dominique Laurent and Nathalie Delattre |
| 1.0      | 30/01/2015 | Anja Hopfstock | BKG          | PMG comment resolution and final editorial changes    |
|          |            |                |              |                                                       |
|          |            |                |              |                                                       |

### **Statement of originality:**

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

# Data Maintenance and Processing Specification

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## Framework document

## References

| Ref. | Title/Version/Publication Date/Author                                                                                                                                                                                                         |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| [1]  | D2.3 Data Maintenance and Processing Specification<br><a href="http://www.elfproject.eu/documentation/specification/data-maintenance-and-processing">http://www.elfproject.eu/documentation/specification/data-maintenance-and-processing</a> |
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## I Scope

The ELF data maintenance and processing specification describes the data maintenance and production workflow that will be applied on the national reference datasets of the NMCAs in order to insure a better data interoperability and harmonization at cross-border level when providing data on the ELF platform.

Indeed, the reference datasets of NMCAs need a number of supporting processes in order to work properly in an interoperable manner at cross-border level. The ELF Data Specifications are accompanied by data maintenance and processing specifications which define the processes between the actors in order to achieve the data interoperability and harmonisation required at cross-border and pan-European level. The concepts of these interoperability processes encompass:

- data transformation ( coordinate/model)
- data aggregation and edge-matching ( cross-border consistency)
- data quality evaluation and conformance testing
- quality management (utilizing accreditation)
- data generalization
- maintenance of Unique identifiers and lifecycle information enabling incremental updates
- visualisation

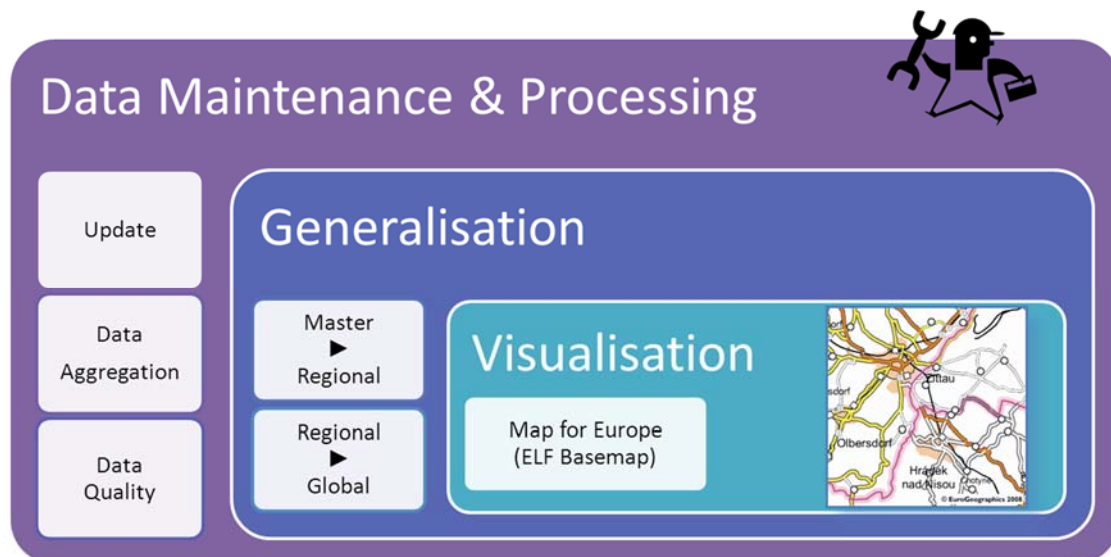
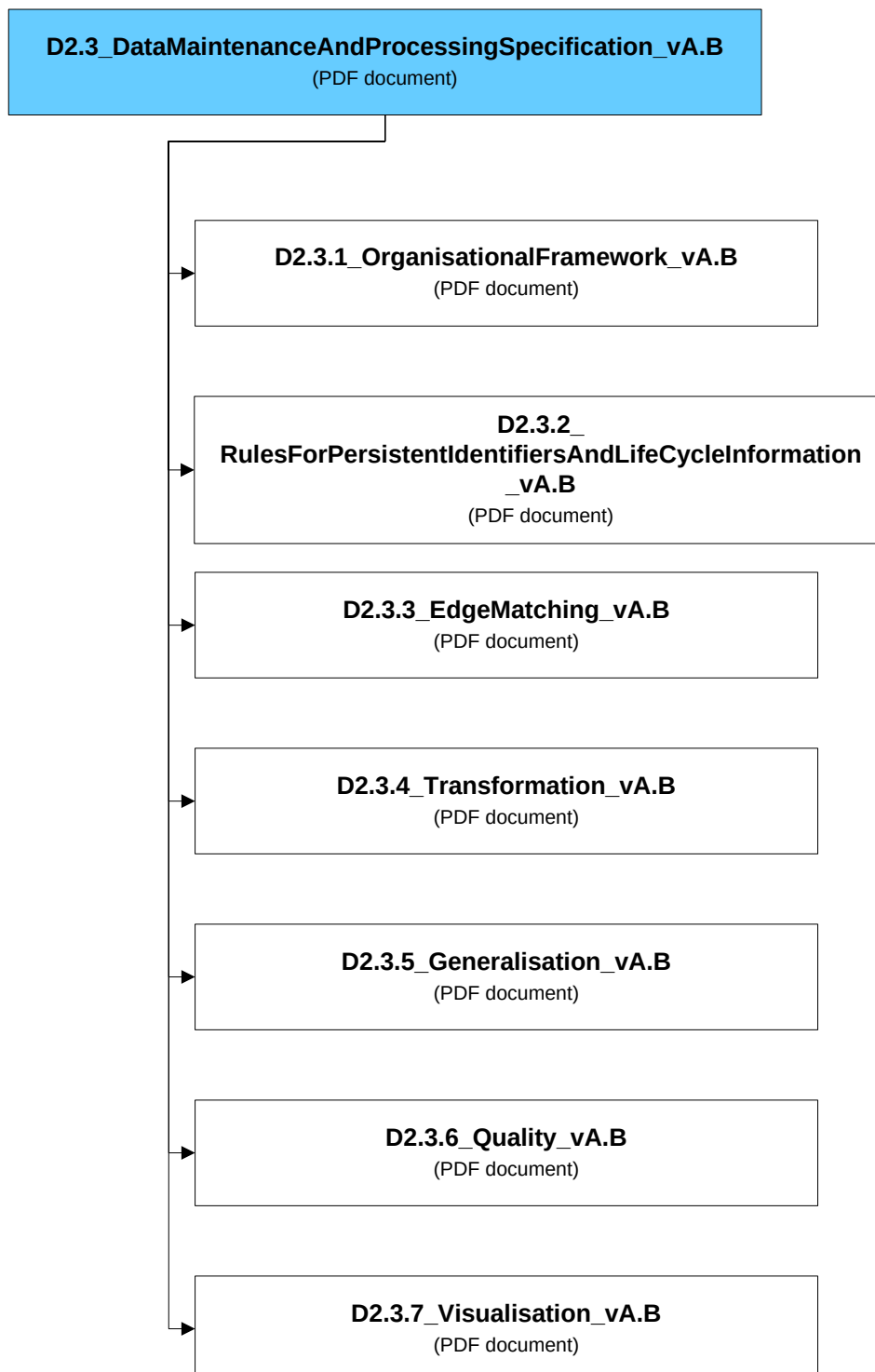


Figure 1 – Scope of the ELF Data Maintenance and Processing specification

The deliverable D2.3 consists of several parts described in the following section.

## 2 The structure of the deliverable

This document provides an overview of the several parts that form the “Data Maintenance and Processing specification” package.



*Figure 2 – Structure of deliverable D2.3*

## **2.1 ELF Organisational Framework**

The document describes the principles for obtaining the cross-border data interoperability in different matter: semantic, organisational and technical.

Based on best practices examples in pan-European production and on test-cases of the ELF project, the deliverable provides recommendations for achieving semantic and cross-border interoperability of geospatial data and provides some findings and conclusions on the ability to reach this cross-border level for the ELF data.

The document describes the organisational processes for updating and maintaining the ELF data and the depending data specifications in case the ELF data content will be extended according to users' needs and applications.

In matter of technical interoperability, the document describes an ELF data workflow starting from national data sources to their publication on web services and including the proper use of the geo-processing tools in quality, edge-matching, changes detection and generalization. This process is named the data supply chain. Moreover, the documents analyses the feasibility for applying the INSPIRE data interoperability principles on the ELF data and their implication on the geo-processing tools, data supply chain, web mapping application and data publication on Web services.

The deliverable is a living document and might be amended by the end of the project according to experiences, findings and conclusions taken from use cases.

## **2.2 Rules for Persistent Identifiers and Life Cycle Information**

Based on the results of the ESDIN project this sub-deliverable further elaborates the implementation of persistent unique identifiers and life-cycle information. The proposed rules for maintaining persistent identifiers (UIDs) and life-cycle information in ELF datasets provide the input for the implementation of the change detection tool by WP4 (D4.6). This tool will have to be run, at each new data set release, by the data producers who can't supply the UID and life-cycle information attributes directly from their source data. The main purpose is to enable the delivery of incremental updates.

## 2.3 Edgematching

This sub-deliverable describes the edge matching process from a high level within the context of the ELF project and specifies the requirements of the edge matching tools. The following picture portrays the link between edge matching and other deliverables in the ELF framework.

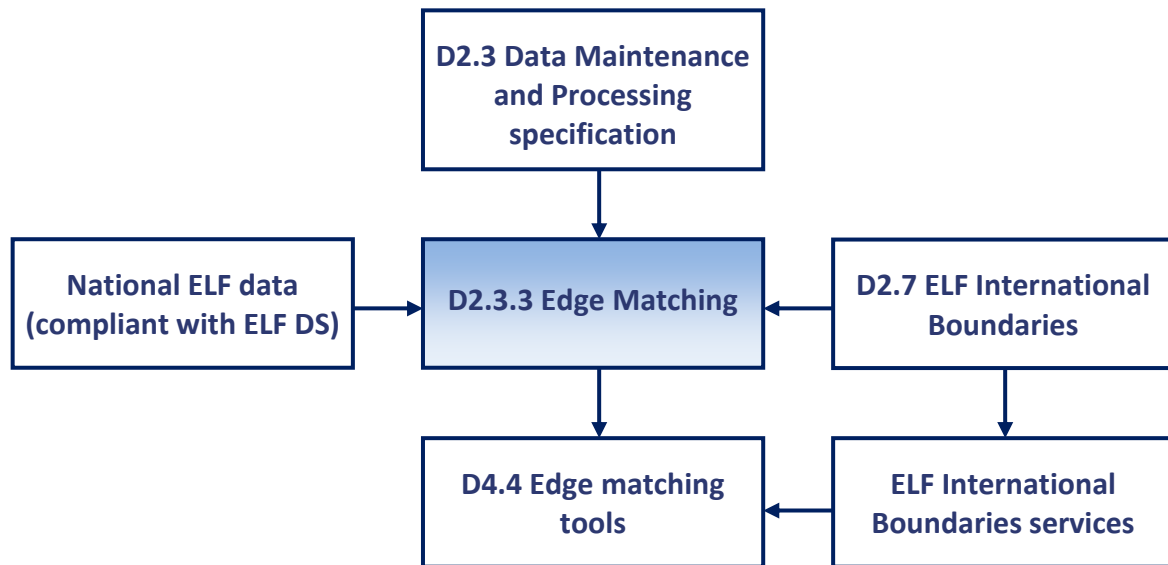


Figure 3 – Edgematching in the ELF framework



## 2.4 Transformation

The sub-deliverable sets the focus on the schema transformation from national data sources to the ELF schema. It describes the preparation and the transformation process. Based on the results of the ESDIN project the documentation of the schema mapping using ELF mapping tables is described and recommended as means of communication between domain and IT-experts. Sharing this documentation among ELF community would support the maintenance of the ELF data specifications by enabling further harmonisation of data content.

The following picture portrays the link between transformation and the other deliverables in the ELF framework.

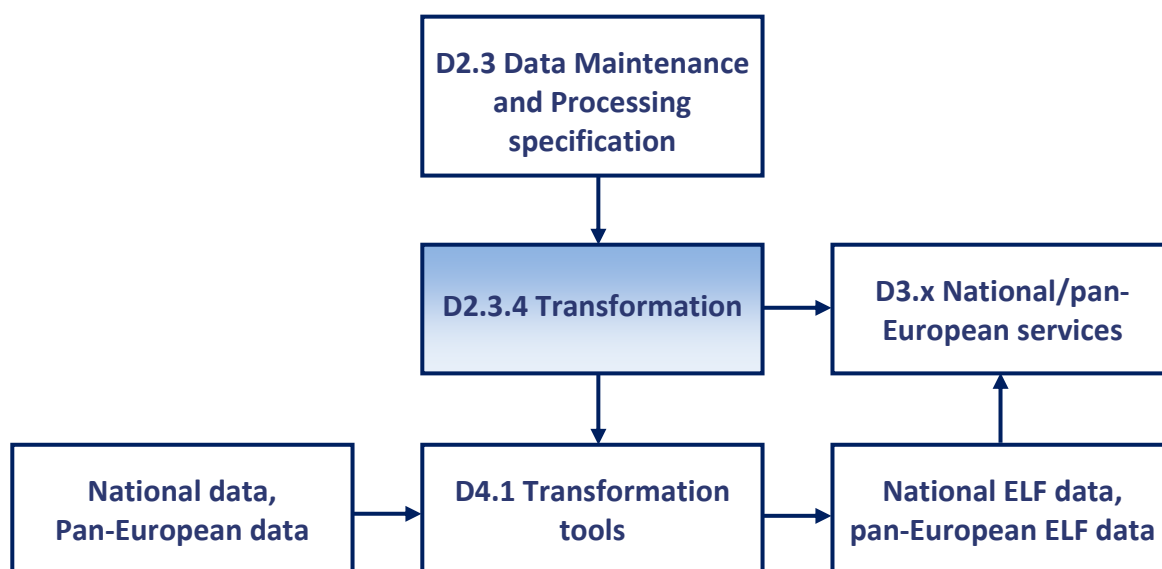


Figure 4 – Transformation in the ELF framework

## 2.5 Generalisation

The primary purpose of this document is to specify the requirements of the generalisation process within the context of the ELF project. This document does not specify the detailed implementation as a geotool.

The ELF Generalisation task will provide tools for the national data producers to generalise their topographic ELF data from Master Level1 to Master Level2 and from ELF Regional to ELF Global.

The Generalisation Specification gives the principles and methods of the needed generalisations. It defines rules (in natural language) and mapping tables between the different Data specifications defined in ELF (Master Level1/Master Level2, Regional/Global). In the ELF project, tools are developed for the generalisation from Master Level1 to Master Level2, and from Regional to Global (see D4.3).

## 2.6 Quality

The quality specification describes the details and requirements of the data quality evaluation process and quality management within the context of the ELF project in the operational stage. It also specifies when data quality evaluation processes should be performed within the overall ELF workflow. This document will evolve as the geo-tools developed by WP4 (D4.2) are progressing.

## 2.7 Visualisation

ELF Visualisation aims at providing a portrayal specification to enable viewing the ELF data in accordance with the INSPIRE technical guidance for the view service.

Based on the analysis of the INSPIRE portrayal and several use cases, extensions on the form of additional map layers and other well-defined styles are proposed.

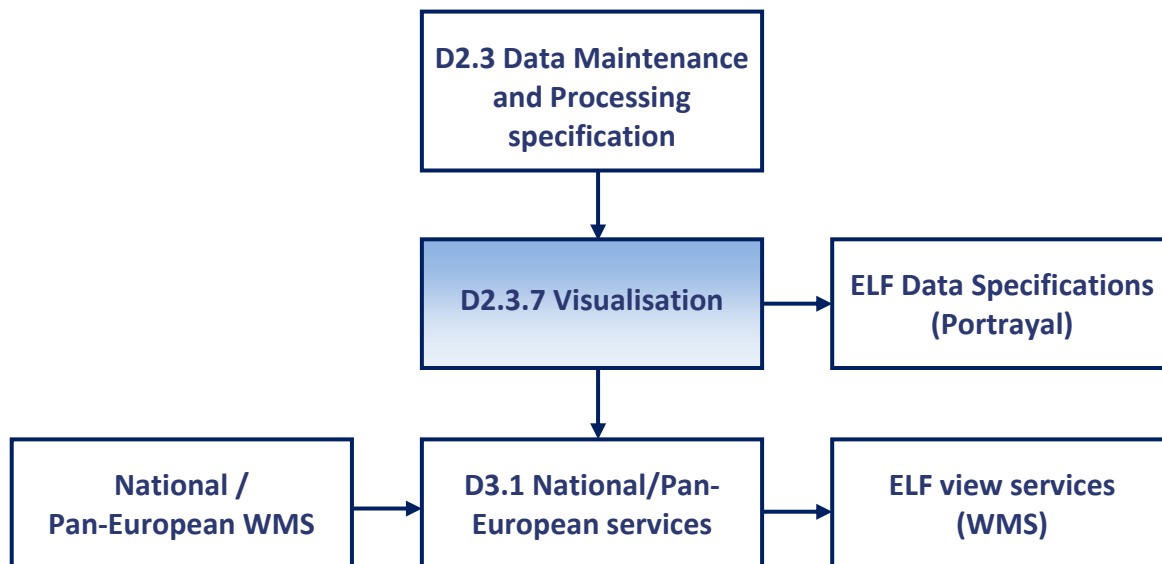


Figure 5 – Visualisation in the ELF framework

### 3 Summary and Conclusions

The deliverable describes the processing guidelines and specifications in geo-processing, data maintenance and data interoperability in order to achieve one of the main goals of the ELF project, which is to provide ELF data, INSPIRE compliant, achieving cross-border interoperability that would fit most of the ELF applications and users' need on a European coverage. All those recommendations and specifications are dedicated to data producers and geo-processing tools developers working on ELF data and are the follow-up of the specifications and guidelines initiated in the ESDIN project.

The slide features a header with the ELF logo and a title 'Why extending INSPIRE?'. Below the title, it states 'ELF delivers authoritative, interoperable, cross-border reference data'. A list of five bullet points follows, each preceded by a star icon. To the right of the text is a graphic of a globe composed of colorful puzzle pieces. The footer contains the date '20 Nov, 2014', the European Union flag, and text about the Competitiveness and Innovation framework Programme (CIP) and the ICT Policy Support Programme (PSP) Call 6 (Grant 325140). The title 'EUROPEAN LOCATION FRAMEWORK' is also present in the footer.

**Why extending INSPIRE?**

ELF delivers authoritative, interoperable, cross-border reference data

- ★ Seamless and consistent across borders enabling spatial analysis in a global, European and regional cross-border context;
- ★ Consistent between themes, so that different themes can be used together;
- ★ Consistent between resolutions, so that a feature present on national level is present at European regional and global level if it should be present according to selection criteria;
- ★ Up-to-date, maintained and quality ensured enabling users to meet their requirements.

➤ **Be clear about what NMCAs provide**

20 Nov, 2014

the Competitiveness and Innovation framework Programme (CIP)  
ICT Policy Support Programme (PSP) Call 6 (Grant 325140)

EUROPEAN LOCATION FRAMEWORK

Figure 6 – ELF objectives

The added value compared with the ESDIN project is a better integration of the INSPIRE data modelling principles and technical guidance and more detailed specifications in matter of tools development and processing guidelines.

As the data maintenance and processing is an on-going process, this deliverable is going to be updated along with the progress in the implementation of the ELF data specifications and the development of the geo-tools.