

European Location Framework (ELF) – What it is, Status and Future Developments



Presentation to: JIIDE 2014 -V Jornadas Ibéricas de Infraestructuras de Datos Espaciais

By: Antti Jakobsson

Date: 5th November 2014

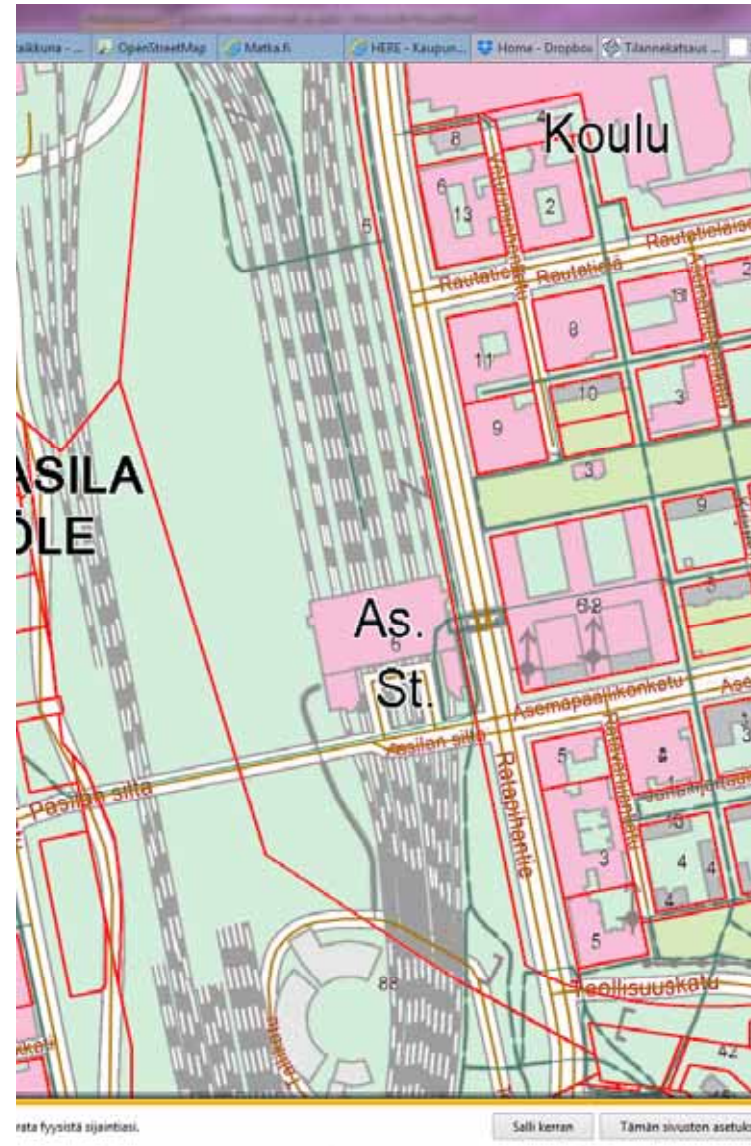
Why ELF?

Authoritysourcing = ELF

OpenStreetMap Finland



Crowdsourcing



Official SDI data combined

GI revolution -> ELF revolution

- **INSPIRE directive has a potential role of game change – ELF will exploit and enhance this opportunity**
- **There is an increase demand on accurate up-to-date for decision making at Global, European, Regional, National and Sub national levels -> ELF provides solutions to all of them**
- **Global players already provide a lot of data -> users rely on these global sources, ELF wants to be one of those sources**
- **Authority data has not been easily available**
- **The way data is utilized has changed (Web GIS)**
- **SMEs can utilize ELF data and create new innovations**

ELF-project in a nutshell (www.elfproject.eu)

- 30 partners, 14 NMCA's (two from Spain)
- Partly funded by the European Commission (ICT-PSP), budget 13 million euro
- Runs between 2/2013-2/2016
- To deliver the European Location Framework (ELF) required to provide up-to-date, authoritative, interoperable, cross-border, reference geo-information for use by the European public and private sectors



The ELF vision –The ELF White Paper

A geospatial reference infrastructure

- ★ Interoperable data and services
- ★ Full coverage of Europe
- ★ Support international standards and INSPIRE
- ★ Quality and metadata
- ★ Management of national data through interoperable processes



ELF Strategic goals

- **Infrastructure**
 - ★ Single access point
 - ★ Standards based and cost efficient
 - ★ Security and performance
- **Data content**
 - ★ Authoritative European reference data
 - ★ Harmonisation and cross border interoperability
 - ★ Up-to-date and trustworthy
 - ★ European Coverage
- **Business Component**
 - ★ Create new opportunities for data providers and users



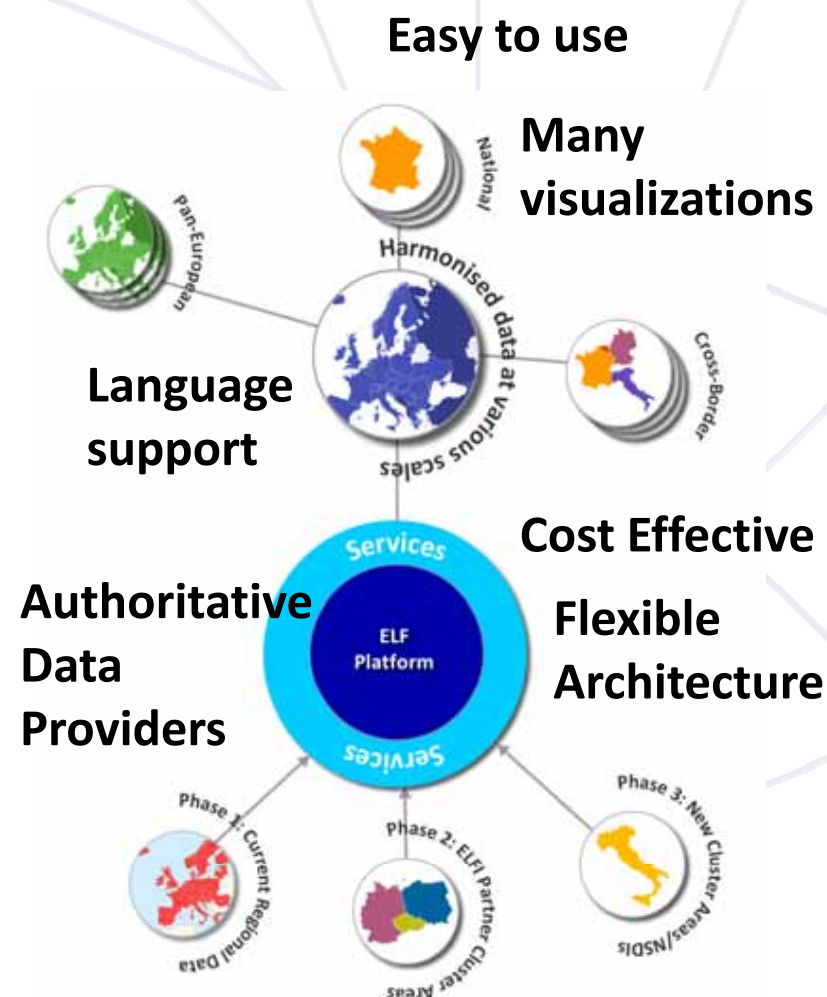
ELF Success factors

- **Maximise the uses and users**
 - ★ Satisfying user's needs is our benchmark
 - ★ Flexible for future users to be accommodated
- **Be the preferred solution**
 - ★ Immediate, fast and reliable access
 - ★ INSPIRE data that joins up at the borders
 - ★ European Coverage, up-to-date
 - ★ Multiple access interfaces
 - ★ Stability and security



ELF – from data to services

- Combine national reference geo-information
- Support several ELF affiliated platforms
- New Basemap service for Europe
- Support of European languages
- Geo Locator, Geo-tools and Geo Product Finder
- Linkage with other content
- Easy Web Maps for Applications



Key concepts in ELF

- One source for reference geo-information
 - ★ Harmonisation
 - ★ Cross-border management
 - ★ License management
- Focus on use of services
- Georeferencing
- Multiple interfaces
- Quality

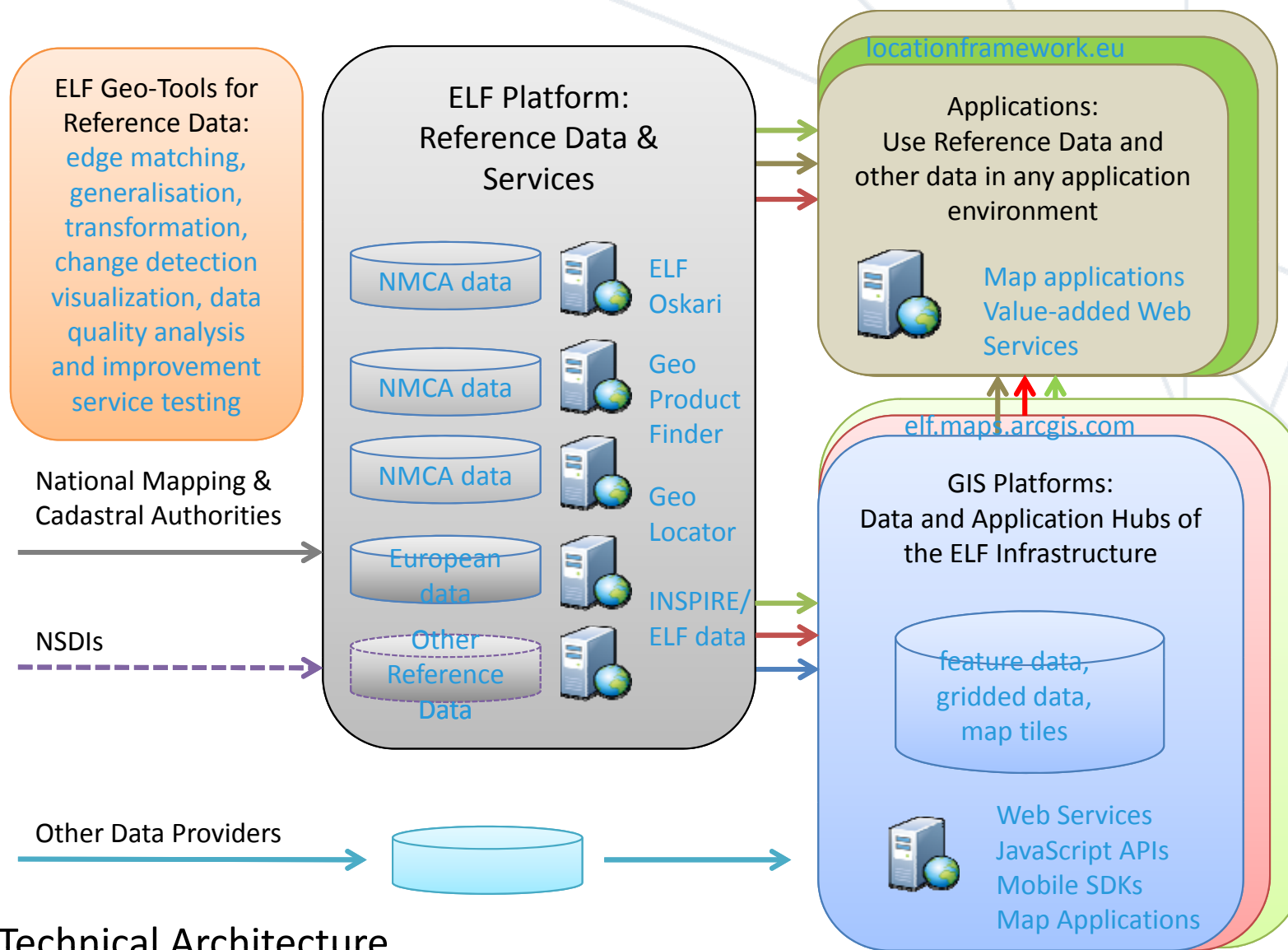
Offering

Co-operation among
Authoritative Data Providers

User Requirements

Demand

Technical Architecture



D5.3 ELF Technical Architecture

ELF Services

- View Services
 - ★ ELF Admin Basemap WMTS
 - ★ ELF Topo Basemap WMTS
 - ★ ELF Global ja Regional themes WMTSs (i.e. TN Roads)
 - ★ ELF National themes WMTSs (AU, BU, EL, GN*, HY, TN, LC) WMTS
 - ★ ELF Cadastral Map WMS (CP, AD, AU, BU) WMS
- Download Services
 - ★ ELF cascaded WFSs (AU, BU, EL(WCS), GN, HY, TN, LC, CP) and national WFSs
 - ★ ELF Global ja Regional WFS (EGM, ERM, EBM) ja Atom feeds
 - ★ ELF GeoLocator (GN, AD, AU, CP) WFS-G

Global (576K, 1M, 2M)

Regional (144K, 288K)

Master LoD2 (36K, 72K)

Master LoD1 (9K, 18K)

Master LoD0 (1K, 2K, 4K)

EGM= EuroGlobalMap

1:1000 000

ERM= EuroRegionalMap

1:250 000

EBM= EuroBoundaryMap

1:100 000

AU= Administrative Units

BU= Buildings

TN= Transport Network

EL= Elevation

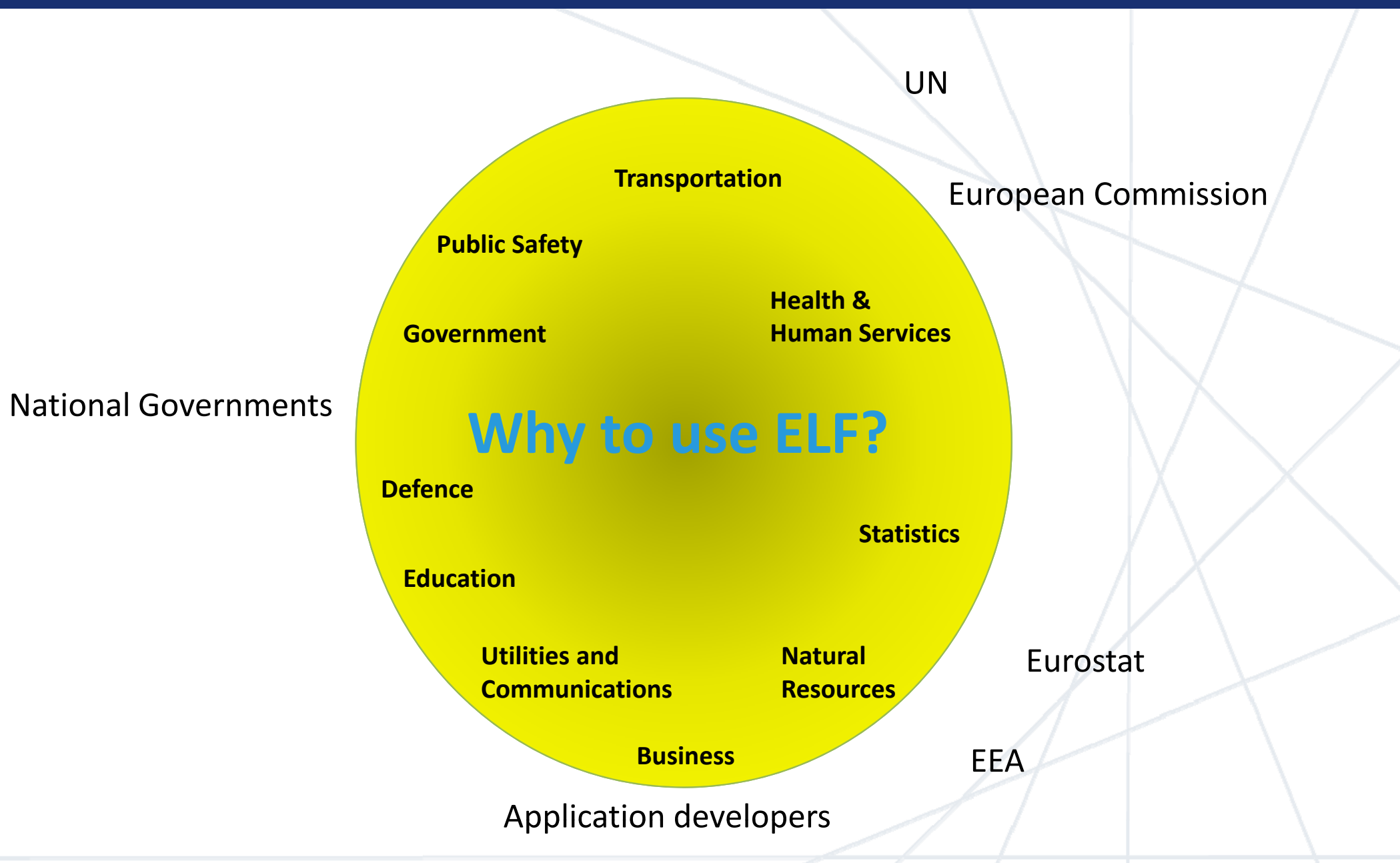
GN= Geographical Names

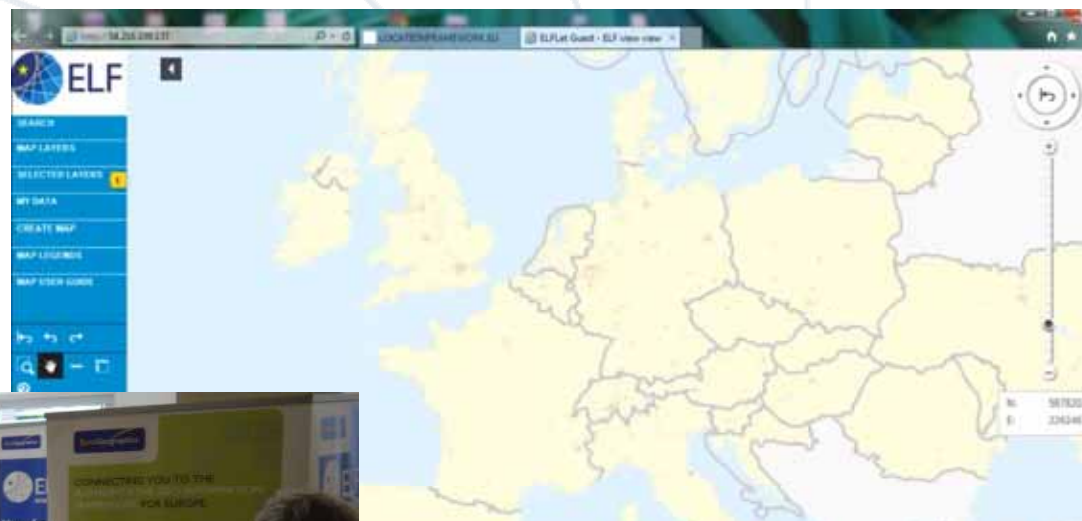
AD= Addresses

HY= Hydrography

LC= Land Cover

CP= Cadastral Parcels





ELF pre-operational launch at the INSPIRE conference June 2014

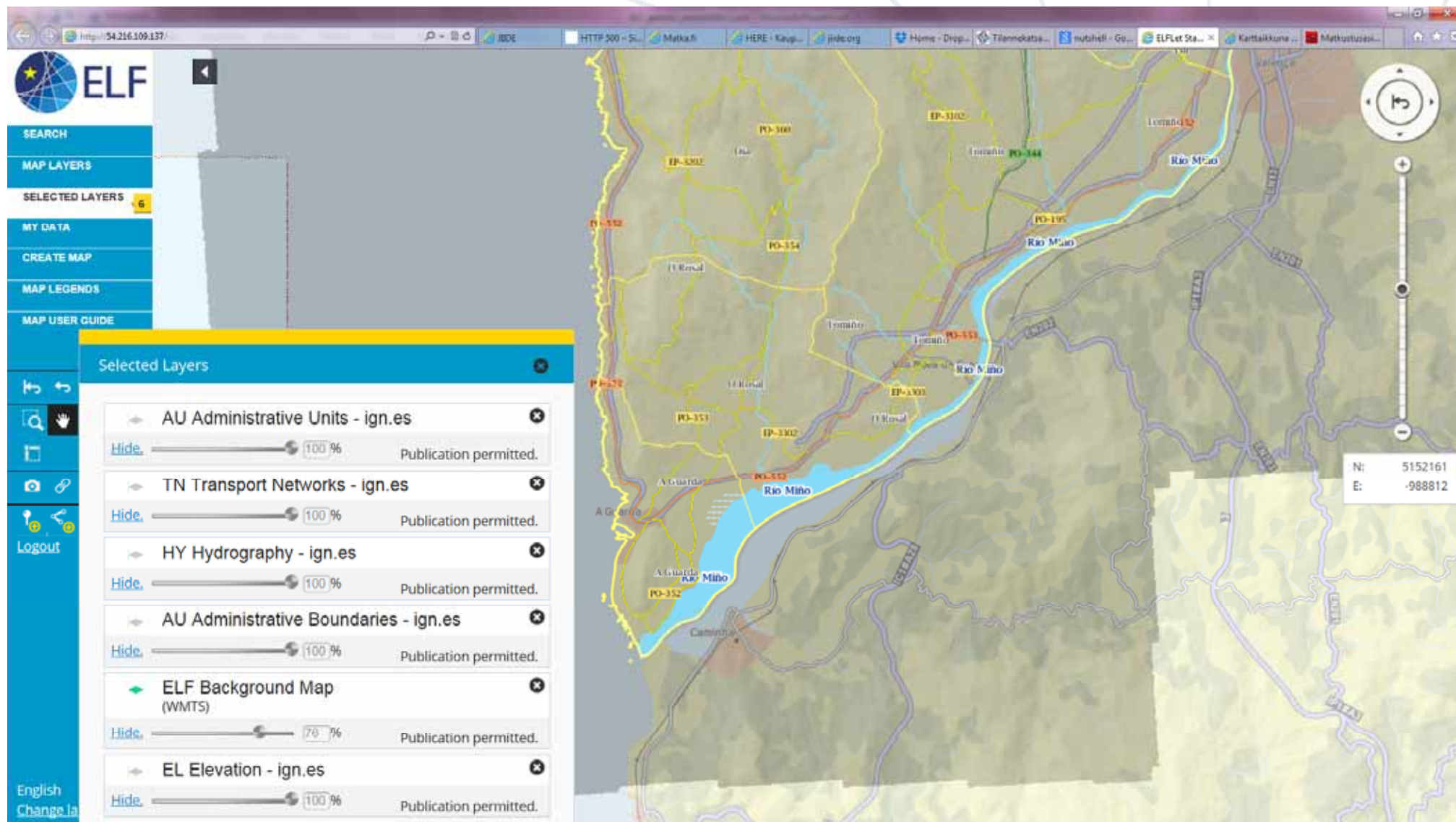
Data Services and Content available now

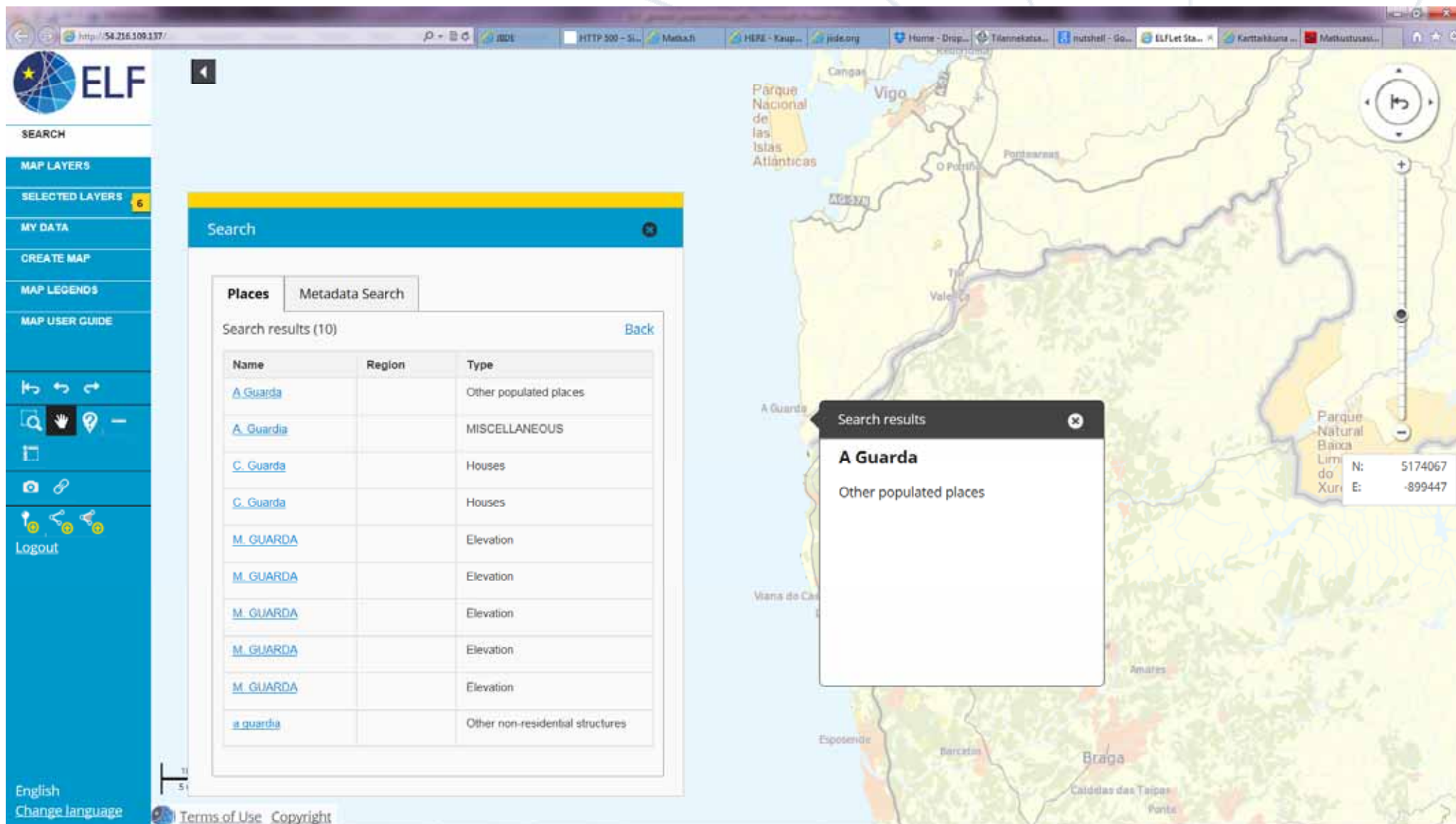
- EuroGeographics EuroGlobalMap (open) Web Service, EuroBoundaryMap Web Service
- EuroGeographics EuroRegionalMap (AU, TN) WMTS
- ELF Basemap (Global, Regional part) WMTS
- ELF GeoLocator (Geographical Names, 20 countries, Addresses 3, Admin unit names 1)
- ELF national services WFS (AD (1), AU (2), BU (1), GN(5), HY (1)) and WMS (AU (1), EL (1), GN (1), HY (1), TN (1))
- Metadata (2)

Locationframework.eu

- Showcase Application – Implementation done with Oskari (www.oskari.org)
- ArcGIS Online
- Documentation
- (Registration)
- (GeoProductFinder)







The screenshot displays the ELF web application interface. On the left is a sidebar with navigation links: SEARCH, MAP LAYERS, SELECTED LAYERS (6), MY DATA, CREATE MAP, MAP LEGENDS, and MAP USER GUIDE. Below these are map interaction tools and a Logout button. The main content area features a 'Search' panel with tabs for 'Places' and 'Metadata Search'. The 'Places' tab shows 10 search results in a table. A 'Search results' popup window is open over the map, displaying details for 'A Guarda'.

Name	Region	Type
A Guarda		Other populated places
A_Guardia		MISCELLANEOUS
C. Guarda		Houses
C. Guarda		Houses
M. GUARDA		Elevation
M. GUARDA		Elevation
M. GUARDA		Elevation
M. GUARDA		Elevation
M. GUARDA		Elevation
a guarda		Other non-residential structures

Search results

A Guarda

Other populated places

Parque Nacional de las Islas Atlánticas

Vigo

O Porriño

Porto Barrios

Val do

A Guarda

Viana do Castelo

Amarelos

Braga

Caldas das Taipas

Epoufende

Barcelos

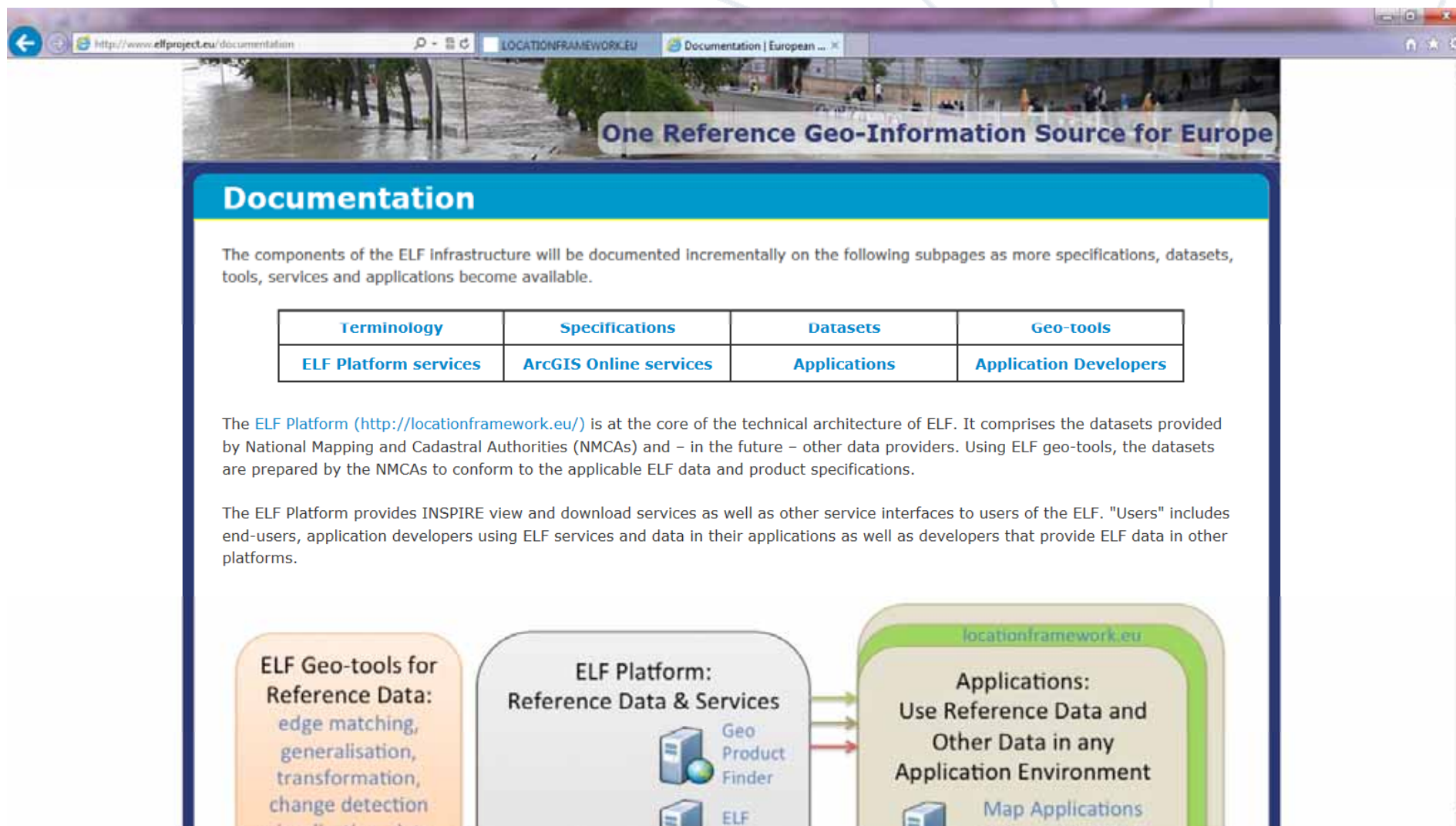
Parque Natural Banca Limido Xur

N: 5174067

E: -899447

English
Change language

Terms of Use Copyright



The screenshot shows the website <http://www.elfproject.eu/documentation>. The page features a header image of a flooded street with the text "One Reference Geo-Information Source for Europe". Below this is a blue "Documentation" section header. The main content area explains that the ELF infrastructure components will be documented incrementally. A table lists the subpages: Terminology, Specifications, Datasets, and Geo-tools, with corresponding links for ELF Platform services, ArcGIS Online services, Applications, and Application Developers. Two paragraphs describe the ELF Platform and its services. At the bottom, a diagram illustrates the workflow from ELF Geo-tools for Reference Data to the ELF Platform (Reference Data & Services) and finally to Applications (Use Reference Data and Other Data in any Application Environment).

Documentation

The components of the ELF Infrastructure will be documented incrementally on the following subpages as more specifications, datasets, tools, services and applications become available.

Terminology	Specifications	Datasets	Geo-tools
ELF Platform services	ArcGIS Online services	Applications	Application Developers

The [ELF Platform \(http://locationframework.eu/\)](http://locationframework.eu/) is at the core of the technical architecture of ELF. It comprises the datasets provided by National Mapping and Cadastral Authorities (NMCAs) and – in the future – other data providers. Using ELF geo-tools, the datasets are prepared by the NMCAs to conform to the applicable ELF data and product specifications.

The ELF Platform provides INSPIRE view and download services as well as other service interfaces to users of the ELF. "Users" includes end-users, application developers using ELF services and data in their applications as well as developers that provide ELF data in other platforms.

Diagram:

- ELF Geo-tools for Reference Data:** edge matching, generalisation, transformation, change detection, visualization, data
- ELF Platform: Reference Data & Services**
 - Geo Product Finder
 - ELF
- Applications: Use Reference Data and Other Data in any Application Environment**
 - Map Applications

Title	Responsible party	Open data	Description	Services
Administrative units (Norway) Master level		Yes	National dataset. High resolution. Contains 3 levels of administrative units. Updated every 6 months.	ELF Administrative units (Norway) WFS
ELF Administrative units(Sweden)	Lantmäteriet (NMCA Sweden)	No	National dataset.	ELF Administrative units (Sweden) WFS
ELF Hydrography (Finland) Master level	Maanmittauslaitos (NMCA Finland)	Yes	National dataset. Recommended scalerange <1:25.000.	ELF Hydrography (Finland) WFS
ELF Addresses (Czech Republic) Master level	CUZK (NMCA Czech Republic)	Yes	National high resolution dataset. Updated daily. Recommended scalerange for mapping <1:20.000	ELF Addresses (Czech Republic) WFS
ELF Cadastral Parcels (Czech Republic) Master level	CUZK (NMCA Czech Republic)	Yes	High resolution National dataset. Daily updates.	ELF Cadastral Parcels (Czech Republic) WFS
Administrative units (Czech Republic)	CUZK (NMCA Czech Republic)	Yes	Official version of Administrative unit in the Czech Republic. Recommended scalerange < 1:250.000	ELF Administrative units (Czech Republic) WFS
ELF Geographical names(Finland), Master level	Maanmittauslaitos (NMCA Finland)	Yes	Geographical names Finland. Recommended scalerange < 1:50.000	ELF Geographical nmaes(Finland) WFS
Geographical Names (Sweden), ELF Master Level	Lantmäteriet (NMCA Sweden)	No	Geographical Names in Sweden. Datasource is Swedish Placename register. Recommended scalerange is < 1:50.000	ELF Geographical names (Sweden) WFS
			The master level hydrography dataset for Norway serves the Inspire feature types <ul style="list-style-type: none"> • Standing water • Watercourse 	

Further ahead

- Basemap providing national level of details available in 2015
- ELF Cadastral Map WMS
- More national data during 2015 and 2016
- National events for application developers (ELF national Tours) starting in autumn 2015
- More other data
- Geo Product Finder functionalities
- Publishing Web Maps (from the Showcase app)
- TJS adding support to tabular data (like statistics)

What benefits ELF creates at national level

- Create new business in Europe (startups, application developers, SMEs)
- Linking national INSPIRE services through ELF (for example to Commission and EU Institute use)
- Regional co-operation with neighbouring countries
- Use ELF nationally when need to utilize similar data from all of Europe (example statistics)
- Improves interoperability and quality of authoritative data in Europe



Follow the ELF project www.elfproject.eu

Twitter @ELFProjectEU

See what is available www.locationframework.eu