



ELF EUROPEAN
LOCATION
FRAMEWORK

Using INSPIRE Data for Cartographic Purpose: The BaseMap Experience

Presentation to: INSPIRE Conference 2015, Lisbon

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Date: 27th May 2015

Agenda

- ★ The Basemap idea
- ★ The Basemap model
- ★ Portrayal
- ★ How does it may look like?
- ★ Conclusions



ELF EUROPEAN
LOCATION
FRAMEWORK

INSPIRE

Cascading Services

Basemap

ELF Master

ELF Regional

ELF Global

GeoLocator

ELF Oskari

ArcGIS Online

ELF Building Site

14 countries

13 million euros

WP3

WP9

WP2

WP8

250 builders

WP5

WP6

WP4

WP7



The Basemap idea

Definition and main principles

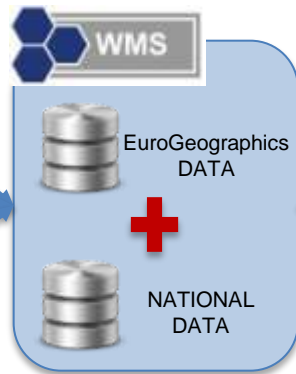
- ★ a pyramid of digital maps displaying INSPIRE/ELF based data at different levels of zoom
 - ★ Themes: Administrative Units, Buildings, Elevation, Hydrography, Land Cover, Transport Network and Geographical Names
- ★ Main use case: Background map for applications
- ★ Geographic extent : geographic Europe (oversea territories excluded)
- ★ CRS: pseudo Mercator (3857) and LAEA (3035)
- ★ Levels of zoom : from a standardized list (2K to 40M)

Service infrastructure

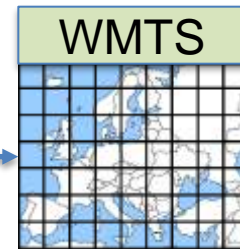
EUROPE



NORWAY



WEB



The Basemap model

ELF Basemap specification

★ Content of ELF Basemap

- ★ Themes
- ★ Feature types
- ★ Attributes used for selection/generalisation and portrayal

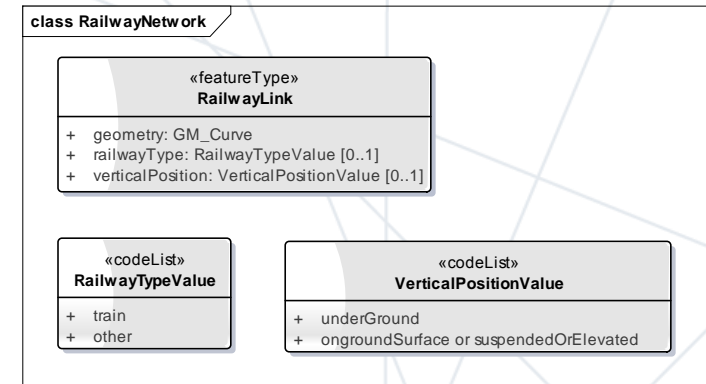
★ Simplification of ELF data model

- ★ Simple, flat structure
- ★ Only useful content for cartographic purposes

★ Common ELF-based terminology

★ SLD file

- ★ Standardized way to document portrayal rules
- ★ Layer name
- ★ Layer source
- ★ Scale range
- ★ Symbol to be applied



	2k – 10 k	10k –40k	40k- 72k
motorway			
primaryRoad			
secondaryRoad			
tertiaryRoad			
otherRoad		(to 20 k)	

Technical guidance documents

DOCUMENTS

.SLD CARTOGRAPHY

.MAP IMPLEMENTATION

.XLS SCALEMASTER

.WOR BASEMAP MODEL
TECHNICAL
GUIDANCE



STRUCTURE

- [-] ELF Basemap for Norway
 - ... LandCoverSurfaces
 - ... Wetlands
 - [+] Waterbody
 - ... Administrative unit
 - [-] Generic Transport Area
 - ... Aerodrome Area
 - ... Railway Station Area
 - [-] Generic Transport Link
 - ... RailwayLink
 - [+] Road Link
 - ... Waterway Link
 - ... Building
 - ... Geographical Names



CARTOGRAPHY



Production Process

EUROPE



Options:

- (1) Common process to flatten and simplify INSPIRE/ELF GML data
- (2) Transformation of existing data to simplified profile of INSPIRE/ELF data model
- (3) Use existing data and transformation/adaptation of SLD

Advantages

- Pragmatic approach
- Contribute using existing data/services

Drawbacks

- No systematic use of INSPIRE/ELF data
- Heterogeneous production process

Portrayal

General portrayal rules

★ Show only valid features

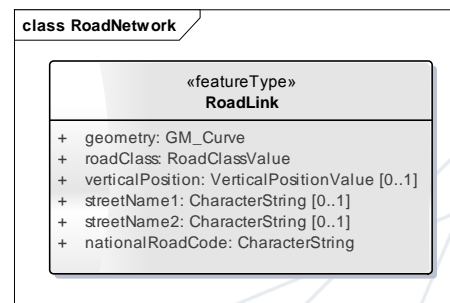
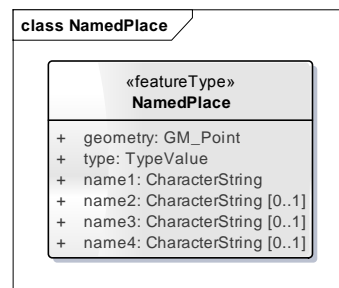
- ★ Consideration of temporal aspects, e.g. lifecycle information and conditionOfFacility: exclude „historical“ features or features „projected/underConstruction“

★ Sea area

- ★ Display as blue background

★ Geographical names

- ★ Limitation of number of names for the same feature (general up to 4 names, 2 street names)
- ★ Issue in countries with multiple languages
- ★ Use of vendor specific parameters allowed to improve portrayal



General portrayal rules

★ Elevation

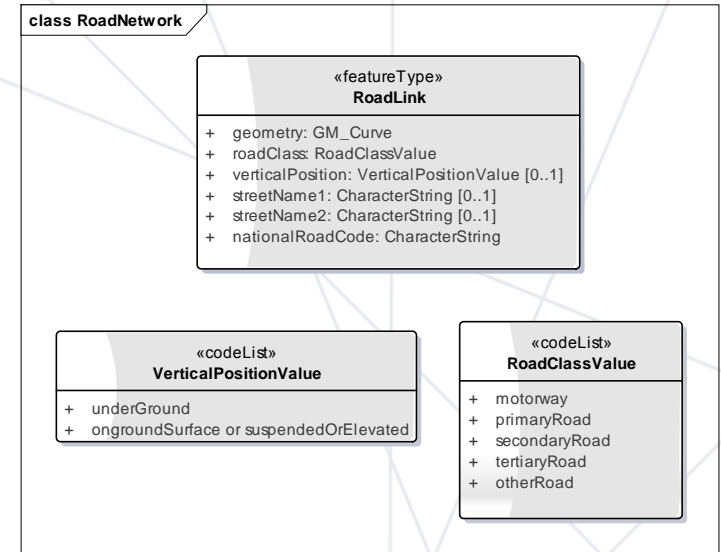
- ★ Hillshading based on EuroGeographics EuroDEM dataset

★ Transport Network Properties

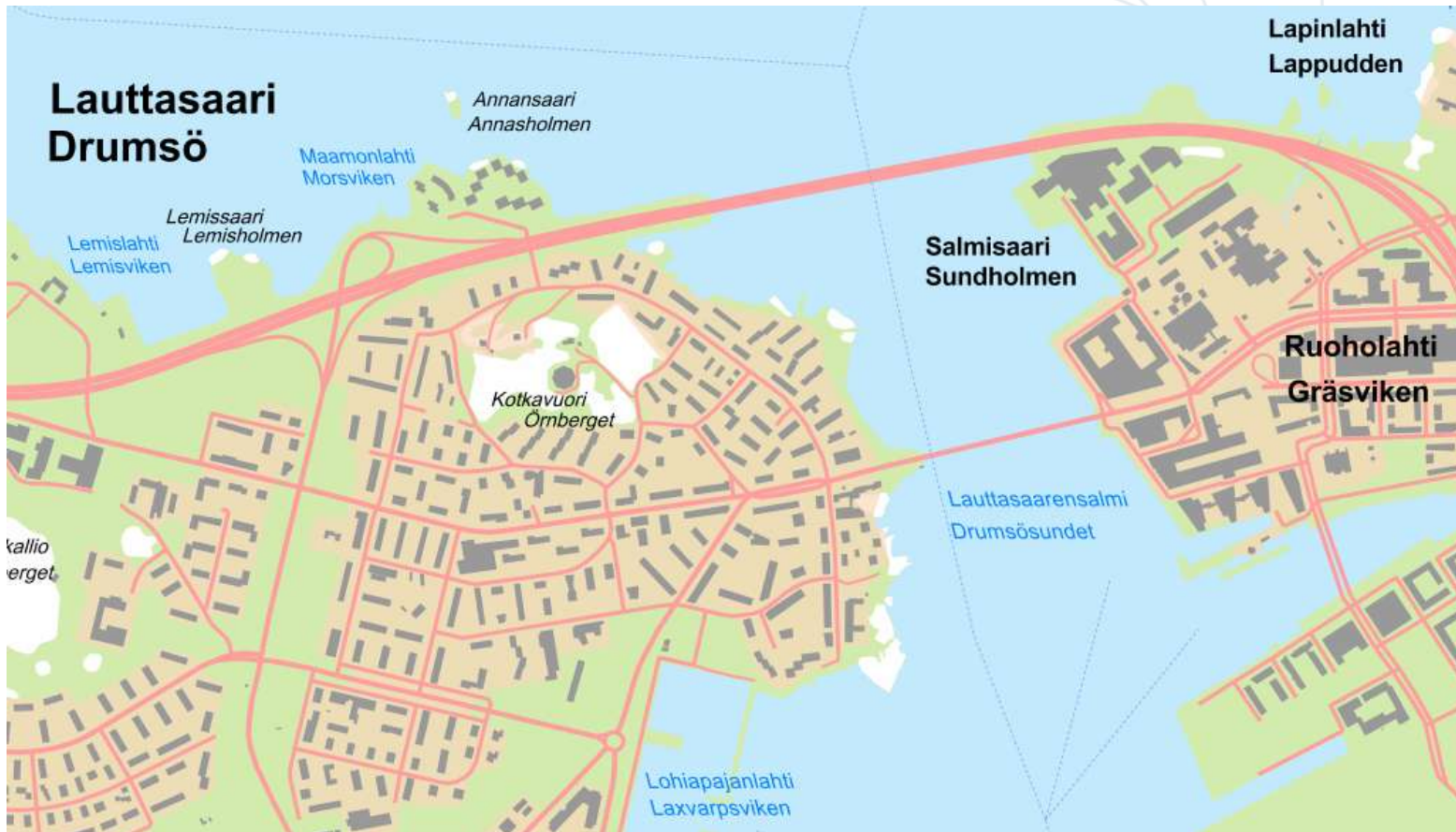
- ★ Simplified into attributes attached to features
- ★ Partly two attributes driving the selection and portrayal
- ★ European Road Classification based on combination of FormOfWay and FunctionalRoadClass

★ Settlements

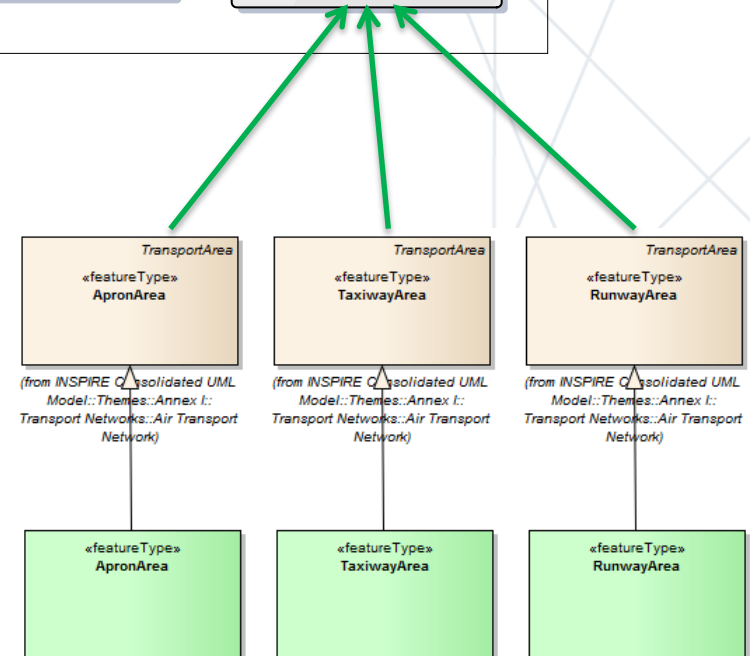
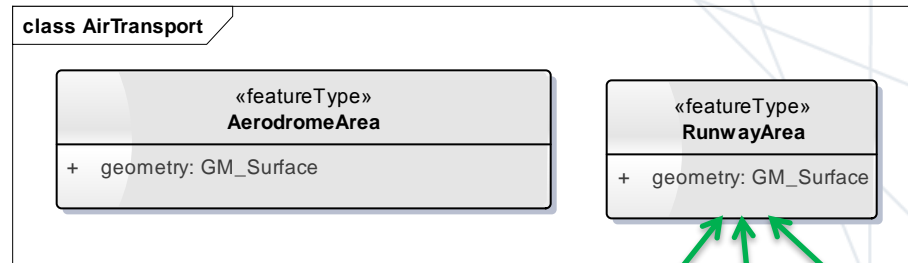
- ★ Possibility for classification missing in INSPIRE GN::NamedPlace
- ★ based on EuroGeographics EuroRegionalMap dataset using population information



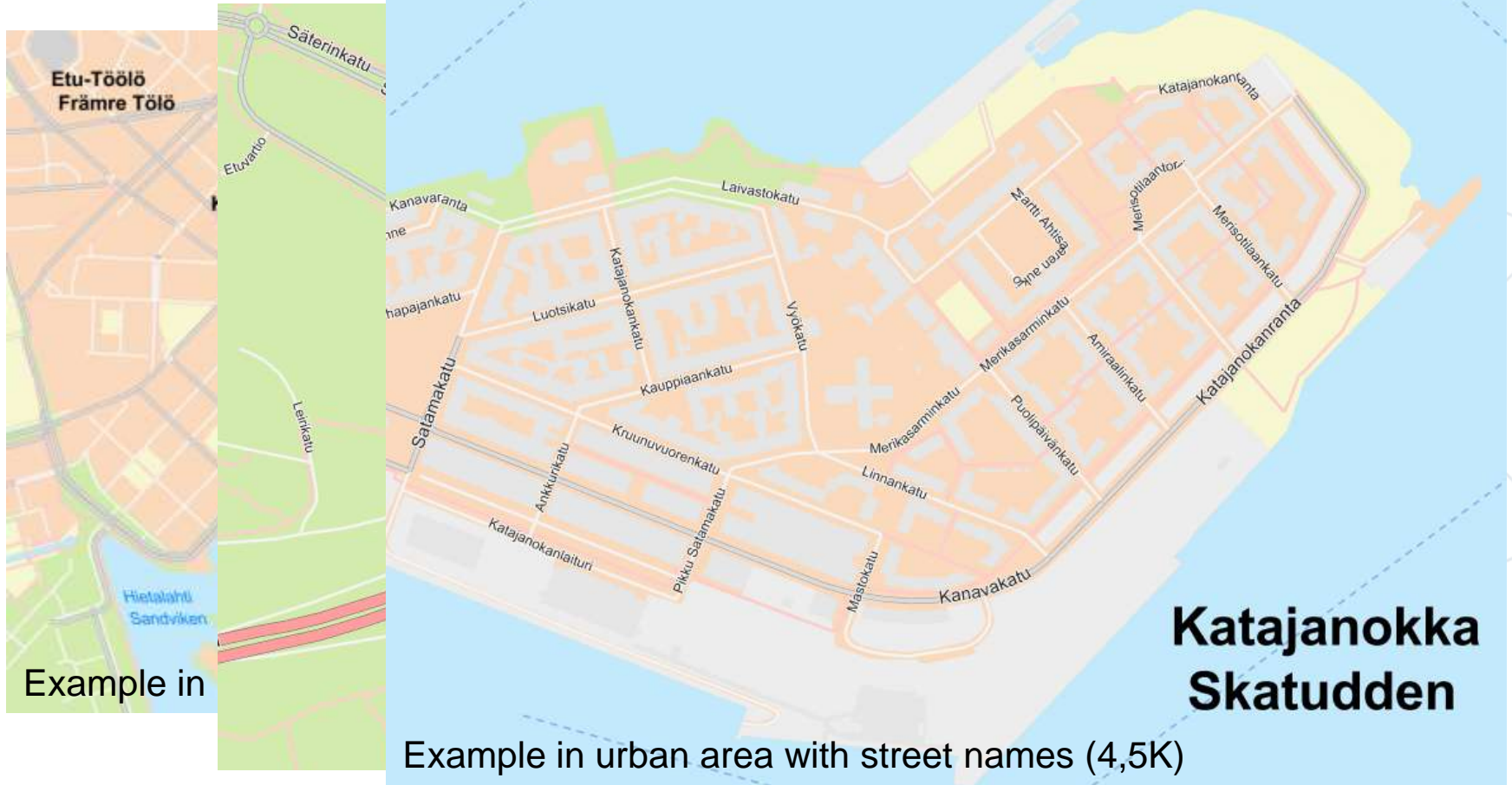
Geographical Names



Transport Network (1)



Transport Network (2)



How does it may look like?



ELF

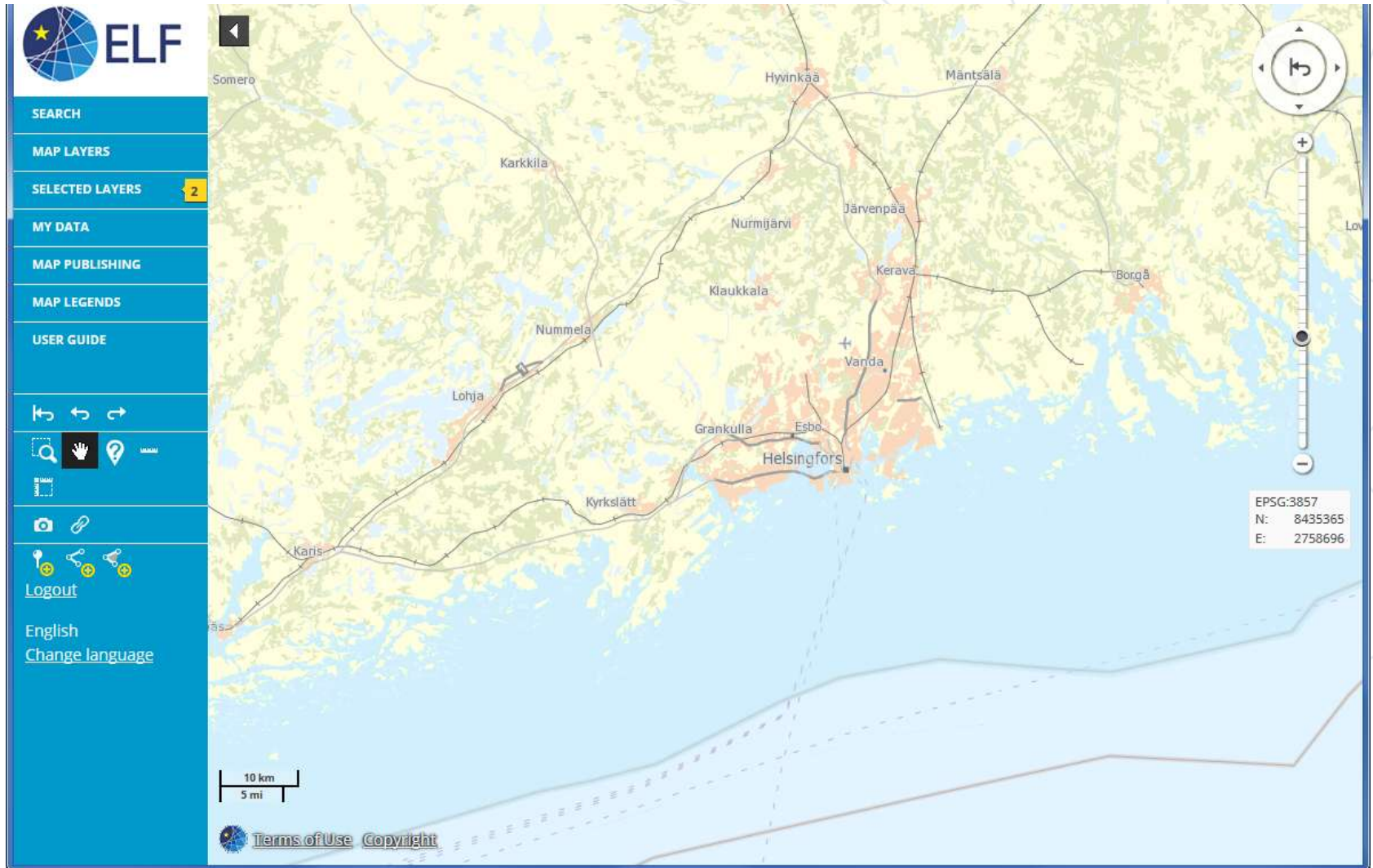
- SEARCH
- MAP LAYERS
- SELECTED LAYERS **2**
- MY DATA
- MAP PUBLISHING
- MAP LEGENDS
- USER GUIDE

Navigation icons: Home, Back, Forward, Search, Hand, Location pin, Layers, Print, Share, Log out, Change language

Scale: 200 km / 200 mi

EPSG:3857
N: 7374725
E: 1286978

[Terms of Use](#) [Copyright](#)

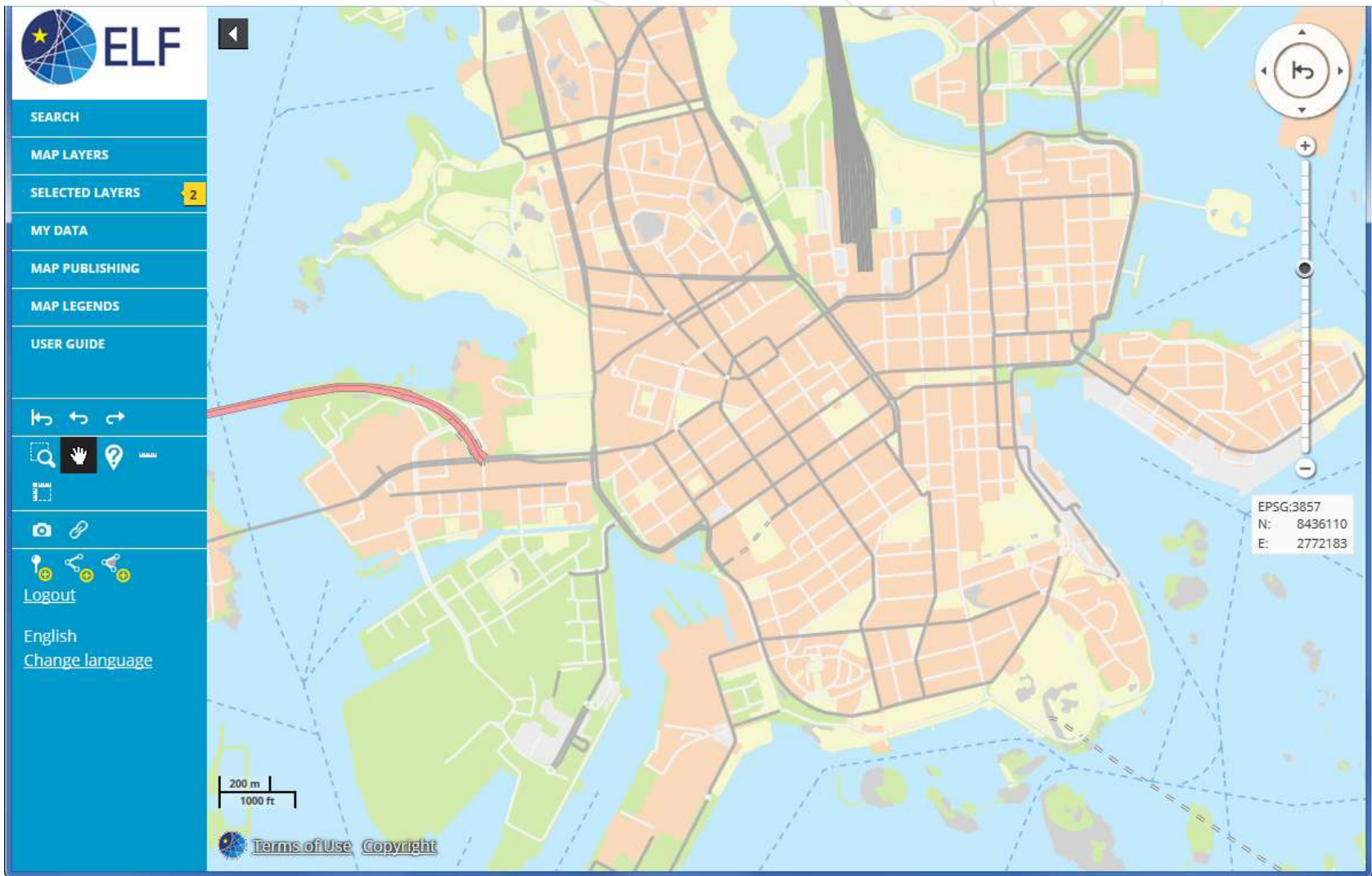


The screenshot displays the ELF web application interface. On the left is a blue sidebar with navigation options: SEARCH, MAP LAYERS, SELECTED LAYERS (with a '2' icon), MY DATA, MAP PUBLISHING, MAP LEGENDS, and USER GUIDE. Below these are icons for home, search, and location, followed by a 'Logout' button and a 'Change language' link set to 'English'. The main area shows a map of the Helsinki region with labels for Somero, Karkkila, Hyvinkää, Mantsala, Nurmijärvi, Järvenpää, Kerava, Borgå, Lohja, Nummela, Klaukkala, Vanda, Grankulla, Esbo, Helsingfors, Kyrkslätt, and Karis. A scale bar indicates 10 km and 5 mi. A coordinate box in the bottom right shows EPSG:3857, N: 8435365, and E: 2758696. A 'Terms of Use Copyright' link is at the bottom left of the map area.

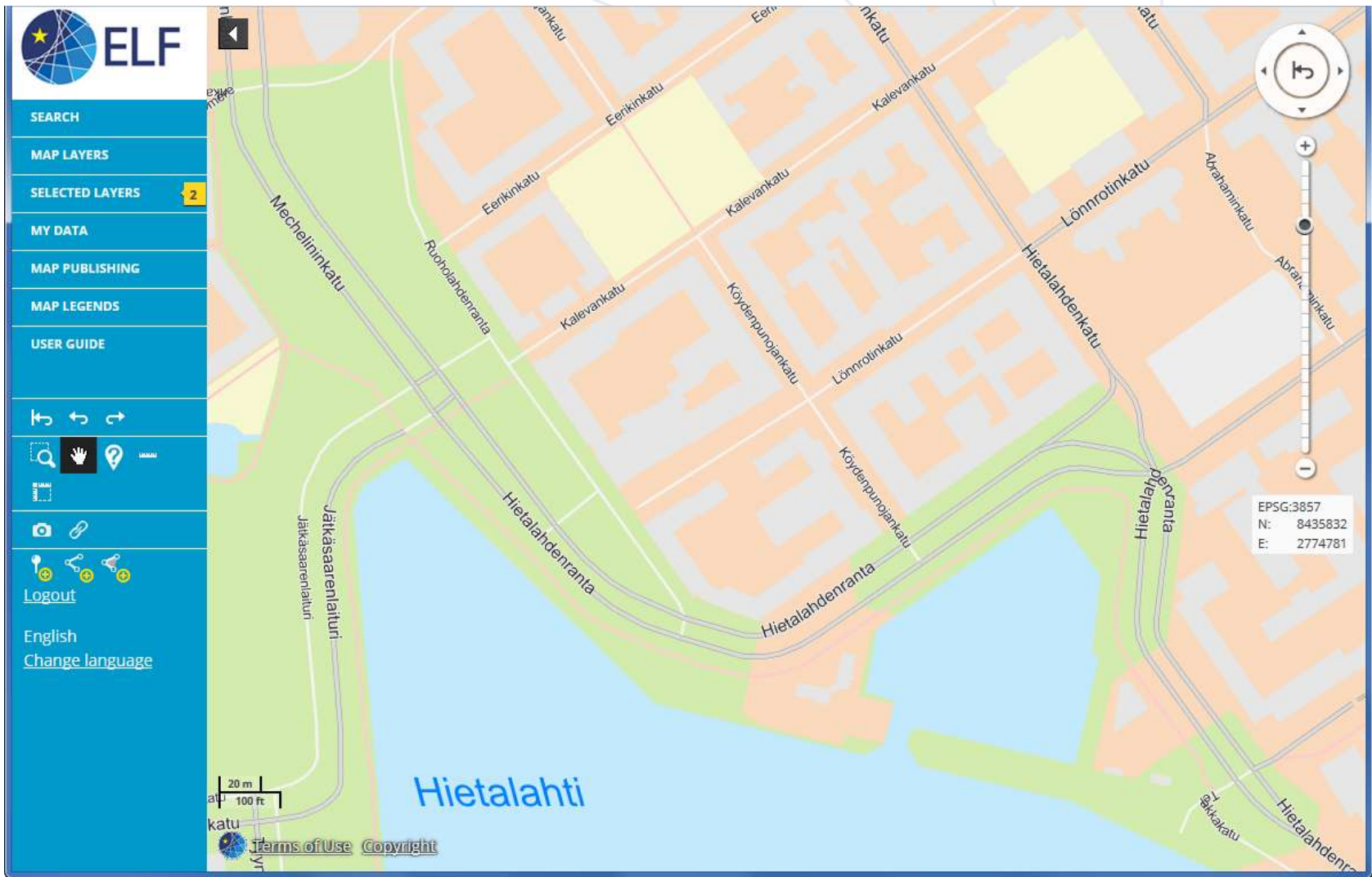
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The screenshot displays the ELF web application interface. On the left is a blue sidebar menu with the following items: SEARCH, MAP LAYERS, SELECTED LAYERS (with a yellow '2' icon), MY DATA, MAP PUBLISHING, MAP LEGENDS, and USER GUIDE. Below the menu are navigation icons (home, back, forward), a search icon, a hand icon, a location pin icon, a scale bar, a camera icon, and a link icon. At the bottom of the sidebar are 'Logout' and 'Change language' (set to English). The main map area shows a city street grid with a red path highlighted. A scale bar at the bottom left indicates 200 m and 1000 ft. A 'Terms of Use Copyright' link is at the bottom left. On the right side of the map, there is a compass, a vertical scale bar, and a coordinate box showing: EPSG:3857, N: 8436110, E: 2772183.



The screenshot displays the ELF web application interface. On the left is a blue sidebar menu with the following items: SEARCH, MAP LAYERS, SELECTED LAYERS (with a '2' icon), MY DATA, MAP PUBLISHING, MAP LEGENDS, and USER GUIDE. Below the menu are navigation icons for home, back, forward, search, and a hand cursor. There are also icons for map layers, a camera, and a location pin. At the bottom of the sidebar are links for 'Logout', 'English', and 'Change language'. The main map area shows a street grid in Hietalahti, with labels for streets like Mechelininkatu, Eerikinkatu, Kalevankatu, Lönnrotinkatu, and Hietalahdenranta. A scale bar at the bottom left indicates 20 meters and 100 feet. A coordinate box at the bottom right shows EPSG:3857, N: 8435832, and E: 2774781. The ELF logo is also present in the top left corner of the map area.

Conclusions

Challenges

- ★ Fitness-for-purpose of INSPIRE/ELF data for mapping
 - ★ INSPIRE/ELF data model and format:
complexity of data model (e.g. transport properties), missing classification information, overlaps between themes
 - ★ heterogeneous data content: limited mandatory information, national classifications
- ★ Production process
 - ★ Use of INSPIRE/ELF data
 - ★ Use of existing data and/or services
- ★ Service infrastructure
 - ★ Harvesting national WMS
 - ★ Set up WMTS
- ✓ Pilot Basemap for Nordic cluster (Norway, Sweden, Finland, Netherlands):
Basemap with simple content to be used as background map

More information



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LOCATIONFRAMEWORK

[ELF Services Website](#)

ABOUT ELF

Welcome to the web site of the **European Location Framework (ELF)** project. Launched in March 2013, the project will run for three years and deliver a pan European cloud platform and web services to build on the existing work of the INSPIRE Directive and enable access to harmonised data in cross border applications.

Applied to areas such as

Latest News

Online training for project partners & EuroGeographics' members

Tuesday, February 17, 2015 - 12:25

A reminder for project partners and members of EuroGeographics. Presentations from ELF web training sessions, along with videos of each,...

[Read more](#)

ELF Code Lists Presented at Data Modelling Workshop

Tuesday, February 17, 2015 - 12:02

The European Location Framework (ELF) Project recently presented its code lists at a workshop focusing on data modelling and model-driven...

[Read more](#)

UPCOMING EVENTS

ELF Day

Prague, Czech Republic
Tuesday, May 5, 2015

EuroGeographics Extraordinary General Assembly 2015

Leuven, Belgium
Tuesday, May 5, 2015
to Wednesday, May 6,
2015

INSPIRE/Geospatial World Forum

Lisbon, Portugal
Monday, May 25, 2015
to Friday, May 29, 2015

From isolated components to integrated, cross-border seamless authoritative reference data ...



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Thank you!