ELF and the use of standards
ISO/TC 211 and OGC standards

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Chair of ISO/TC 211
Co-ordinator ELF-project

UN-GGIM

OGC® Making location count.

ISO International Organization for Standardization TC 211

ELF EUROPEAN LOCATION FRAMEWORK

Two ISO/OGC/IHO initiatives:
Collaboration of SDOs and Study Group on SDG

- UN-GGIM session 5, August 2015 in New York, from the Report (5/108):

….

(e) Noted the need for the further development of harmonized and interoperable standards between the statistical and geospatial communities, expressed its appreciation to the standards organizations for their increased efforts in this area, and encouraged Member States to contribute to these efforts, in particular through collaboration with the Expert Group on the Integration of Statistical and Geospatial Information;

(f) Urged Member States to participate in the proposed joint study group and in the international geospatial standards development processes of the Open Geospatial Consortium, the Technical Committee 211 of the International Organization for Standardization and the International Hydrographic Organization and other relevant standards bodies, in order to ensure that the geospatial standards required to monitor and measure the sustainable development goals are relevant and available.

….

Content

- Status of initiatives
  - Collaboration on standards
  - Study of SDGs and targets
- Overview of ELF
  - ELF concept
  - Data content
  - Services
  - Licensing
- Integrating statistics
  - Table Joining Service
  - CASPeR client
- Future of ELF
  - Organizational setup

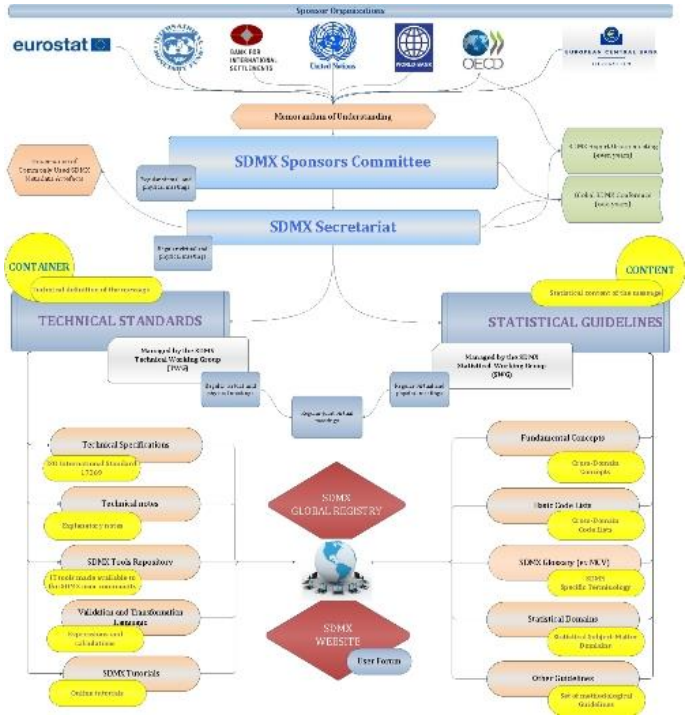
Relevant standards bodies

- ISO/TC 69 Applications of statistical methods
  - Sampling, testing, accuracy – 102 standards
- ISO/TC 154 Processes, data elements and documents in commerce, industry and administration
  - ISO 17369:2013 Statistical data and metadata exchange (SDMX) (also sdmx)
  - else, standards for commerce, EDIFACT, ebXML, …
- in geospatial, ISO/TC 211, OGC, IHO
- in IT, W3C, OASIS, IETF, …
- …

The existing core standards

extract …

- SDMX
- ISO 19103, 19109, 19115, …
- O&M (ISO 19156), ISO 19112
- GML (ISO 19136)
- WMS (ISO 19128)
- WFS (ISO 19142)
- WCS
- TJS
- ISO 19152 LADM
- ISO 19160 series on addressing
- ….



Metadata

- INSPIRE metadata – datasets and services
- ISO 19115-1:2014 – Geographic information – Metadata – Part 1: Fundamentals
- ISO 19115-2:2008 – Geographic information – Metadata – Part 2: Extensions for imagery and gridded data (under revision)
- ISO 19115-3 – Geographic information - Metadata - Part 3: XML schema implementation of metadata fundamentals
- DCAT AP - for describing public sector datasets in Europe
- DCAT - interoperability between data catalogs

Draft JSG report - ISO/OGC

DRAFT

Report

The sustainable development goals and targets and the use and needs for international standards

A report by the International Hydrographic Organization, the Technical Committee 211 of the International Organization for Standardization and the Open Geospatial Consortium

UN-GGIM OGC ISO International Organization for Standardization TC 211

Not more than a template yet …

IAEG-SDGs

Inter-agency Expert Group on SDG Indicators

Goal 1
End poverty in all its forms everywhere

Targets	Indicator	Analysis
1.1 By 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	Indicator 1.1.1: Proportion of population below the international poverty line, by sex, age, employment status and geographical location (urban/rural)	?
1.2 By 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	Indicator 1.2.1: Proportion of population living below the national poverty line, by sex and age Indicator 1.2.2: Proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	?
1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	Indicator 1.3.1: Proportion of population covered by social protection floors/systems, by sex, distinguishing children, unemployed persons, older persons, persons with disabilities, pregnant women, newborns, work-injury victims and the poor and the vulnerable	?

Metadata compilation

- Metadata for Goal 1
- Metadata for Goal 2
- Metadata for Goal 3
- Metadata for Goal 4
- Metadata for Goal 5
- Metadata for Goal 6
- Metadata for Goal 7
- Metadata for Goal 8
- Metadata for Goal 9
- Metadata for Goal 10
- Metadata for Goal 11
- Metadata for Goal 12
- Metadata for Goal 13
- Metadata for Goal 14
- Metadata for Goal 15
- Metadata for Goal 16
- Metadata for Goal 17

What is ELF? … in short:

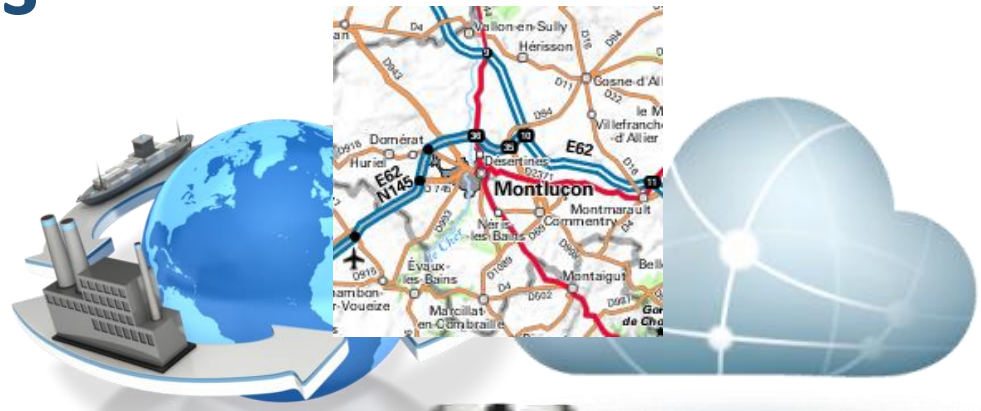
The European Location Framework is a technical infrastructure which delivers

authoritative, interoperable, cross-border

geospatial reference data for analysing and understanding information connected to places and features

A single access point to pan-European services

ELF platform

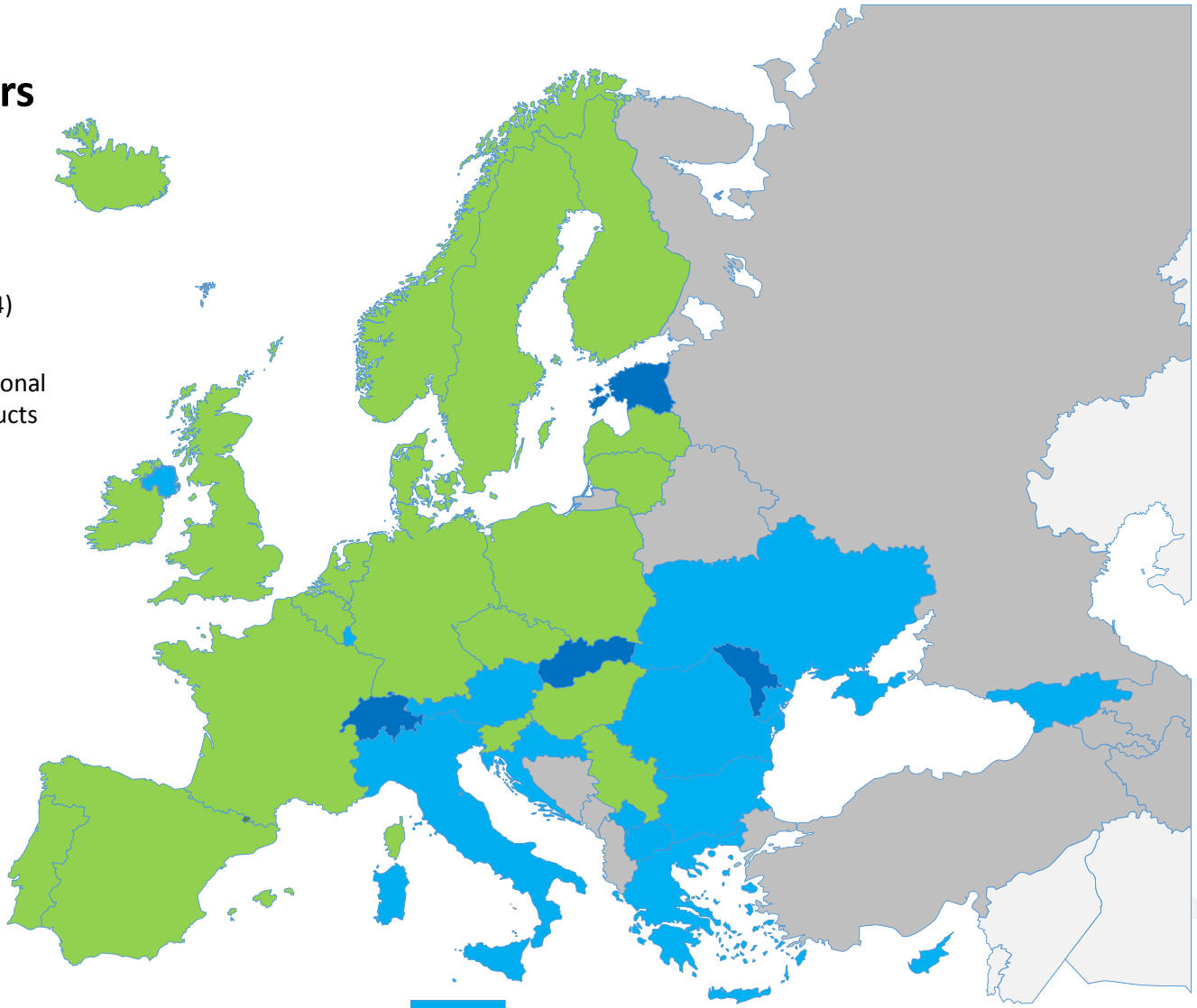


ELF cloud platform

It is all about the Content!

Data content providers in 2016/17

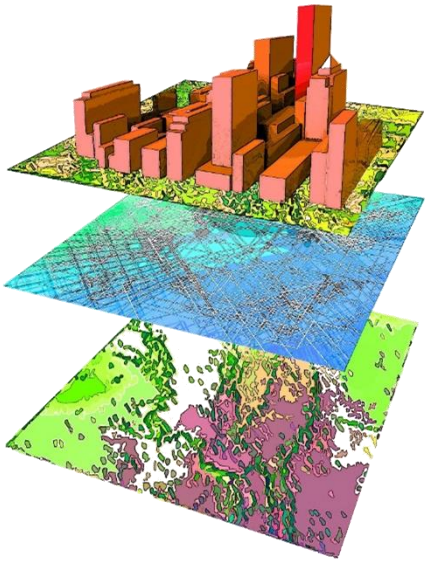
- Project partner countries 20)
- Data provider outside project (4)
- Contributors to ELF Global/Regional through EuroGeographics products ERM,EGM,EBM



ELF data content and specifications

Supported versions

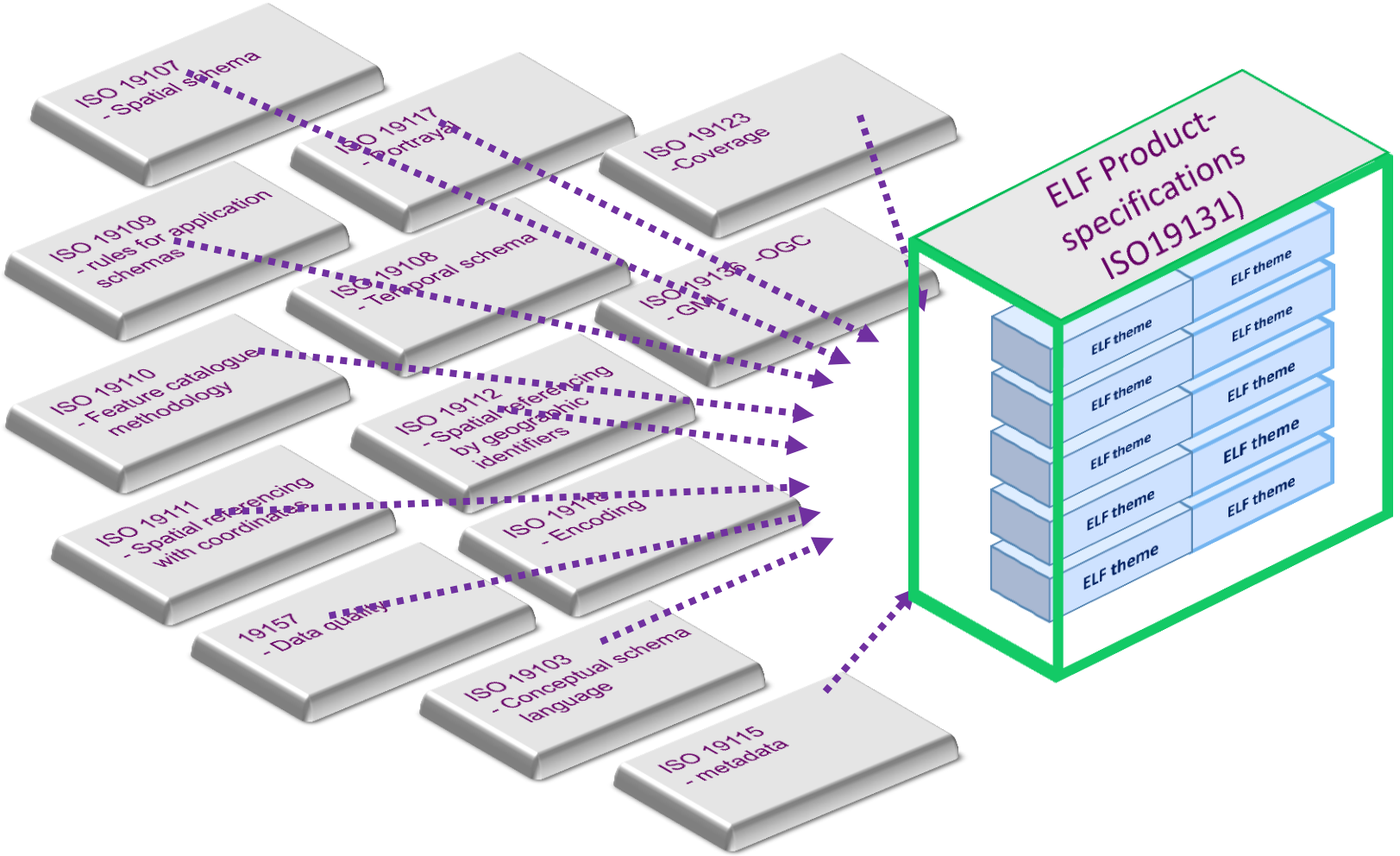
- INSPIRE v3
- ELF v1/INSPIRE v4



Details on versions

- INSPIRE version 3
- ELF version 1.0
  - Based upon INSPIRE version 4 (where version 4 exists)
  - Extensions for the following themes
    - AU – Administrative units
    - TN – Transport networks (common elements, air, railway, road, water)
    - GN - Geographical names
    - HY – Hydrography (network, physical waters)
  - mostly caused by legacy requirements, e.g. EuroGeographics products EBM, ERM, and additional requirements, e.g. from Eurostat

State-of-the-art modelling using International Standards and ELF modelling guidelines

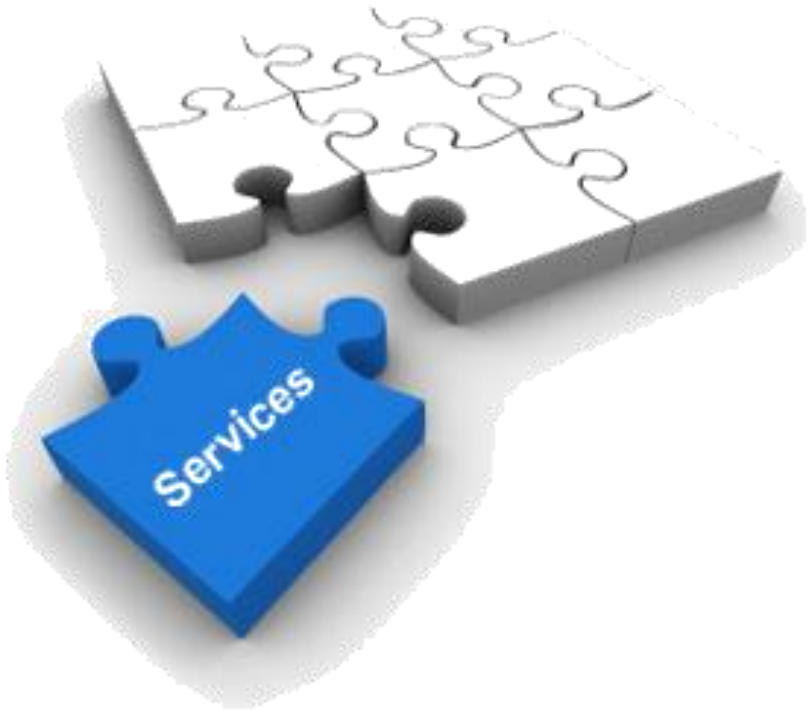


Precise data specifications – a necessity for evidence-based decisions

ELF builds on INSPIRE …

• Cadastral Parcels	• CP
• Addresses	• AD
• Administrative Units	• AU
• Hydrography	• HY – phys & network
• Sea regions	• SR
• Transport Networks	• TN – road, rail, air, cable
• Geographical Names	• GN
• Elevation	• EL – grid & vector
• Land Cover	• LC
• Buildings	• BU – 2D & 2D extended
• Protected Sites	• PS

ELF service types

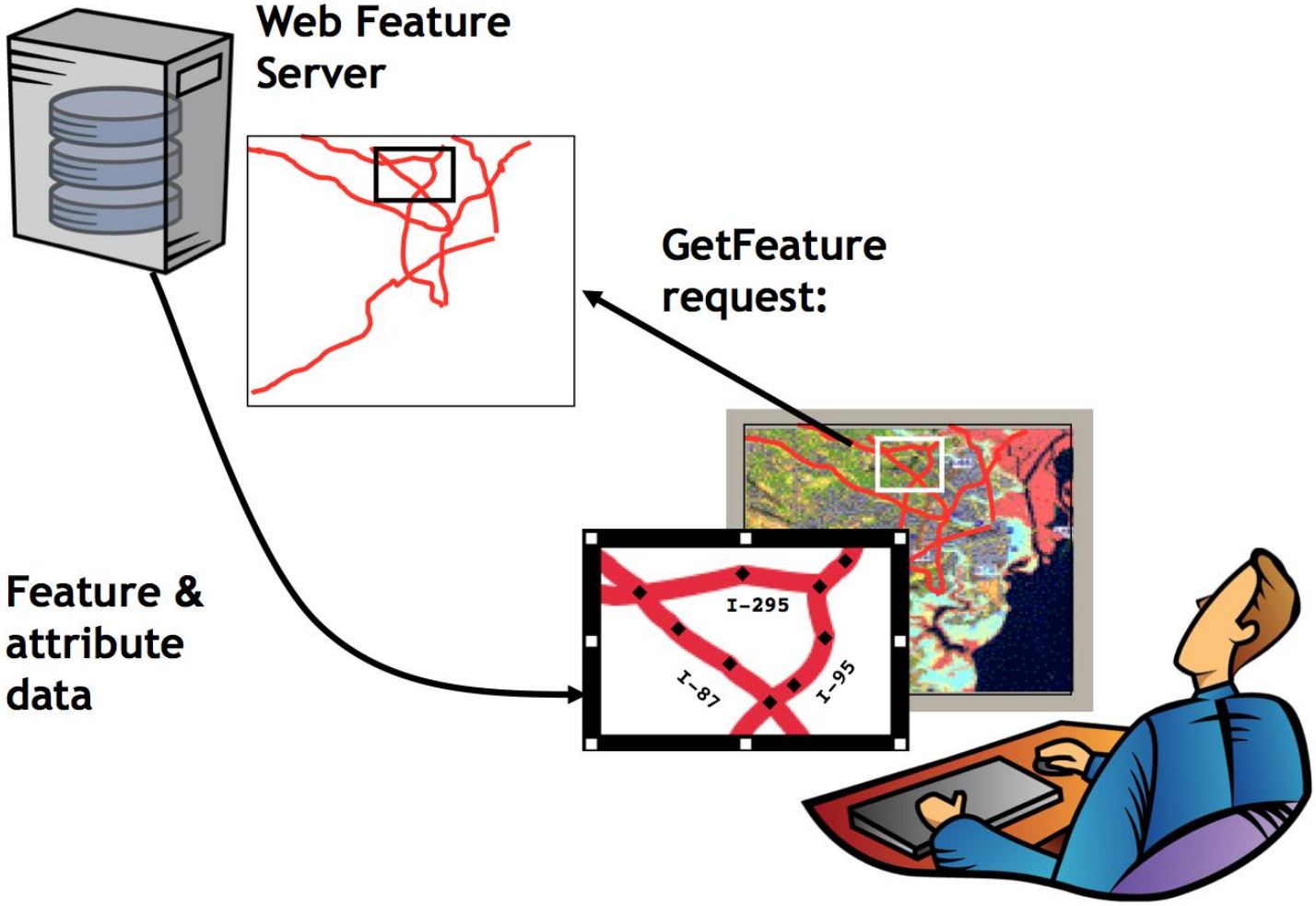


ELF is all about accessing data as services

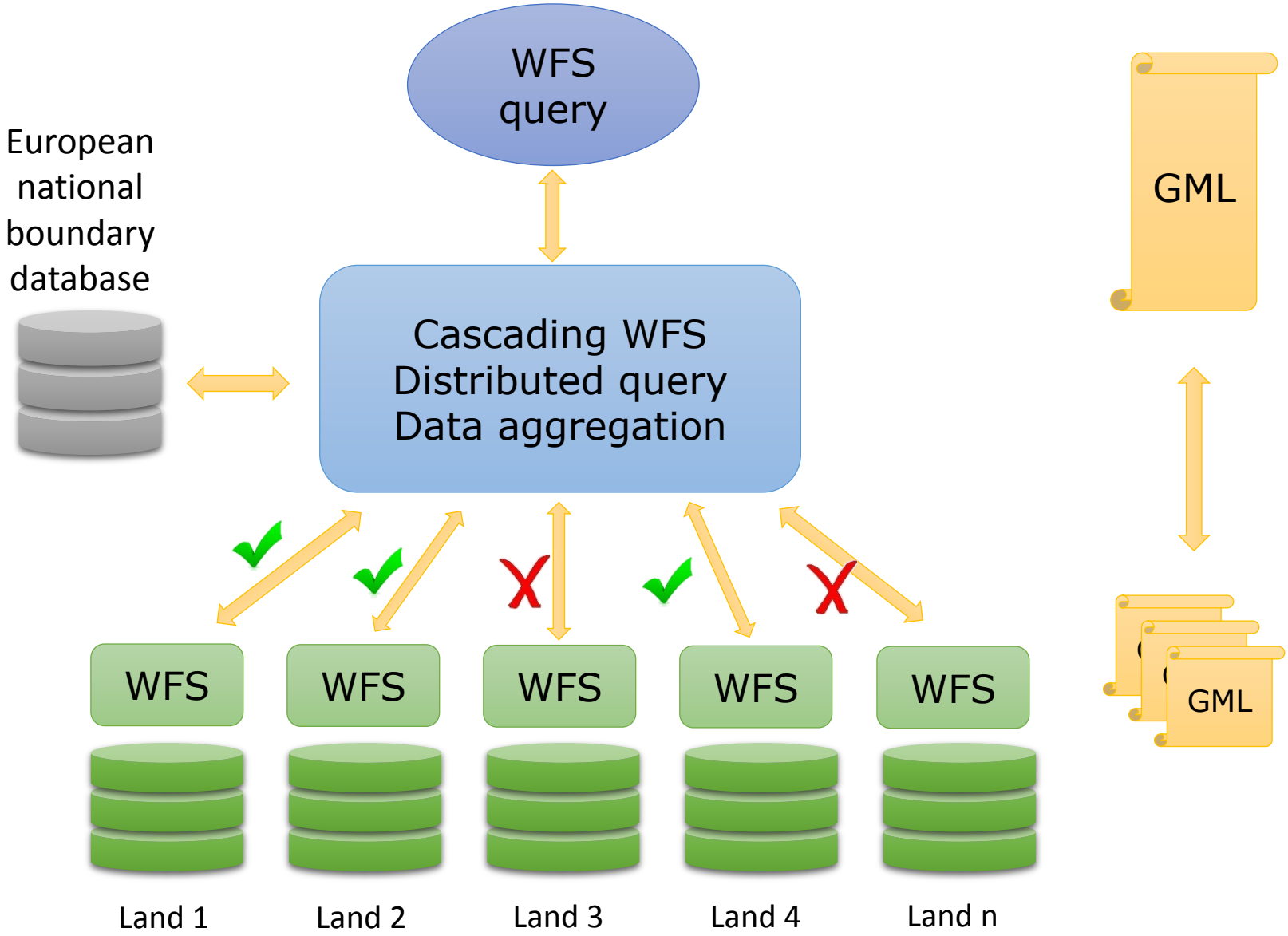
ELF highlights

- The ELF basemap – administrative and topographic
- The cadastral index map – including parcels, addresses and buildings
- The ELF download services
- The cascaded download services
- The Geolocator
- The Geo Product Finder
- The geotools

Download services – the key ELF service type



Innovation – Operational cascading WFS



Some other key ELF Products

- **ELF Topographic Basemap**
  - WMTS
- **ELF Administrative Basemap**
  - WMS using EuroBoundaryMap
- **ELF Cadastral Index Map**
  - Cascading WMS using CP, BU, AD and AU
- **ELF Geo Locator**
  - Geo-referencing API using GN, AD and AU

Implementation plan -> October 2016

Country	BE	NL	GB	IE	FR	ES	PT	NO	FI	SE	DK	IS	LT	LV	DE	PL	CZ	SI	RS	HU
ELF Basemap	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Cadastral Index Map		■				■		■	■	■	■	■	■	■		■	■	■	■	■
Download services																				
Download AU	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Download GN	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
Download_HY-PW	■	■	■		■	■		■	■	■	■		■	■			■			■
Download_HY-NW									■		■			■						
Download_LC		■				■	■	■	■	■	■		■	■		■			■	■
Download_TN-Air	■	■			■			■	■	■	■	■	■			■	■			■
Download_TN-Road	■	■	■		■	■		■	■	■	■	■	■			■	■			■
Download_TN-Rail	■	■			■			■	■	■	■	■	■			■	■			■
Download_TN-Cable	■	■								■		■				■	■			■
Download_TN-Water	■	■						■	■	■		■				■	■			■
Download_EL				■		■	■	■	■	■	■		■			■	■		■	■
Download_EL Grid							■									■				
Download_BU_2D	■			■	■			■	■		■	■	■			■	■	■	■	■
Download_BU_Ex		■				■					■	■				■	■			
Download_AD		■			■	■		■	■			■		■		■	■	■	■	
Download_CP		■				■		■	■			■		■		■	■	■	■	■
Download_PS							■		■	■		■	■							
Download_SR		■					■	■	■	■										
Download_SU											■									

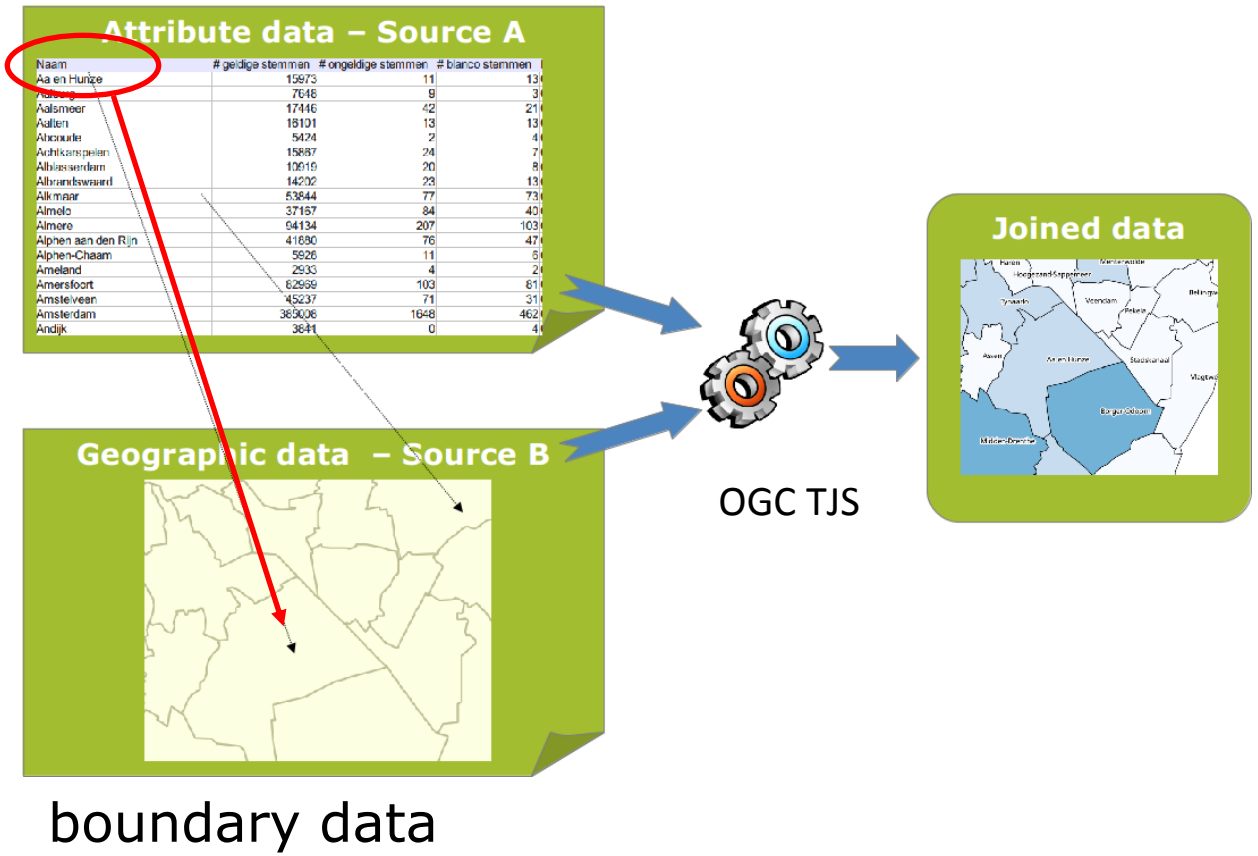
ELF Geotools

- Transformation
- Data Quality Validation
- Generalisation
- Edge Matching
- Visualisation
- Change Detection
- Table Joining Service
- Security Manager

Table joining (service) and unique id's (keys)

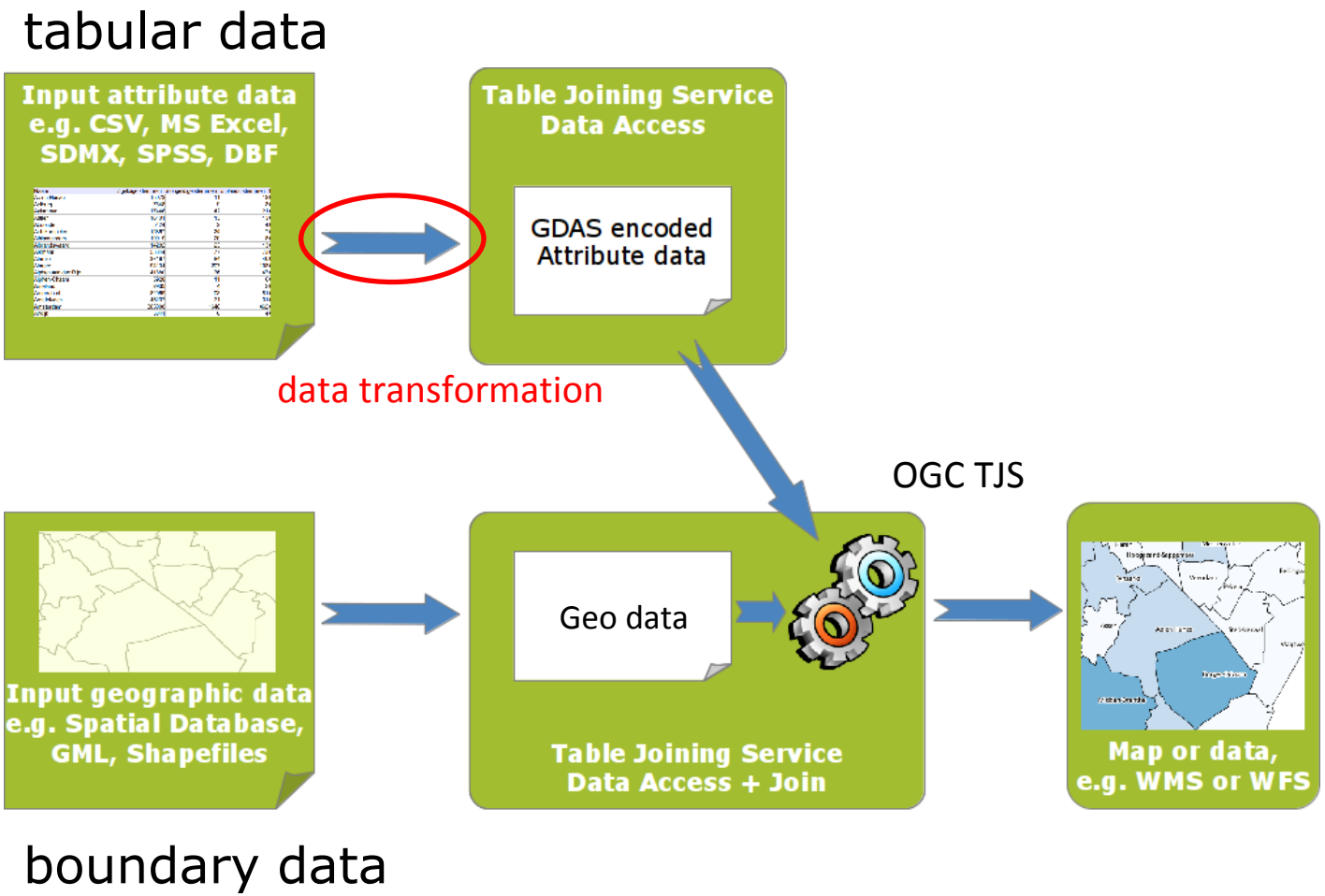
tabular data

Unique id's (keys)



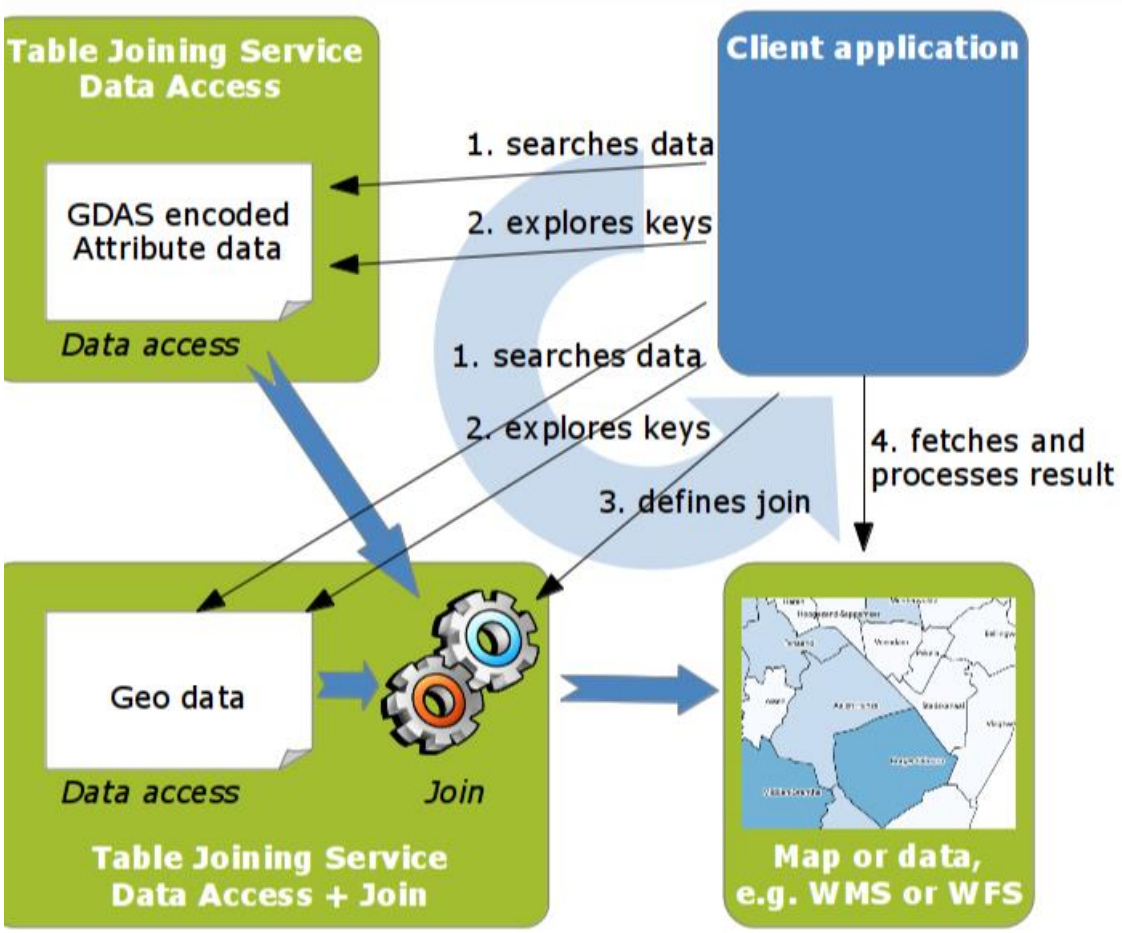
boundary data

TJS and the GDAS (XML) data format



Client application and TJS operations

tabular data



boundary data

OGC TJS operations

Service Discovery	• GetCapabilities
Data Access	• DescribeFrameworks • DescribeDatasets • DescribeData • GetData
Data Joining	• DescribeJoinAbilities • DescribeKey • JoinData

UN-GGIM ELF EUROPEAN LOCATION FRAMEWORK OGC ISO

One Reference Geo-Information Source for Europe

APPLICATIONS MENU

- Overview
- **Health Statistics**
- Real Estate
- Insurance
- Emergency Mapping

SEARCH

Search

Health Statistics

As an example of the ELF in action, this part of the project, led by the Geodetic Institute of Slovenia and Kadaster of Netherlands will develop an application for visualising geo-statistics and providing the basis of a geo-statistical reference framework, dealing specifically with the INSPIRE theme of Human Health and Safety.

Human health analysis starts with information on the geographical distribution of such areas as allergies, cancers, and respiratory diseases. For this purpose, health data from environmental, health or statistical agencies will be linked to administrative and/or statistical units using the ELF platform as the authoritative reference of geo-information.

UPCOMING EVENTS

European Forum for Geostatistics
Sofia, Bulgaria
Wednesday, October 23, 2013 to Friday, October 25, 2013

Esri EMEA User Conference
Munich, Germany
Wednesday, October 23, 2013 to Friday, October 25, 2013

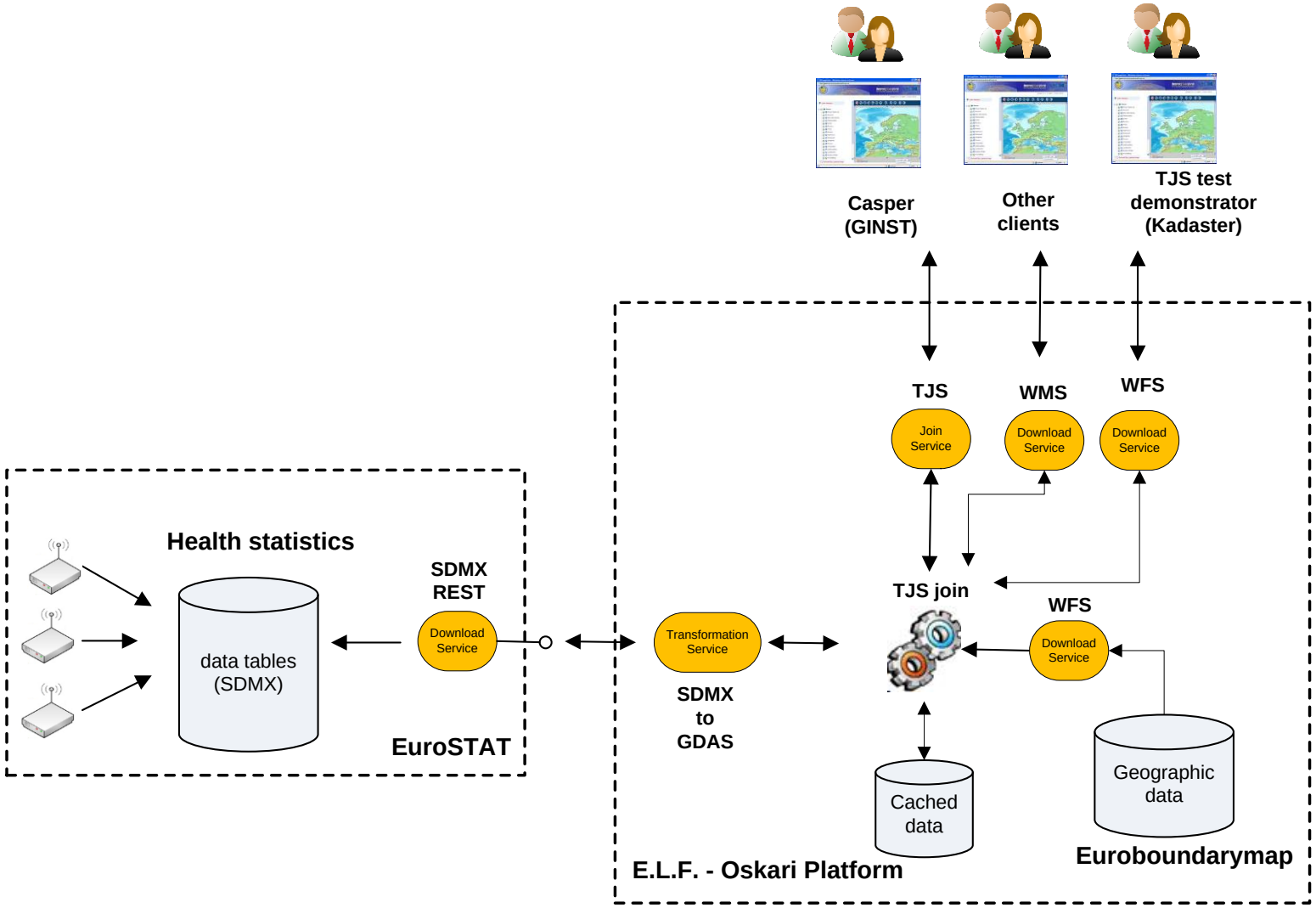
TWITTER

Tweets Follow

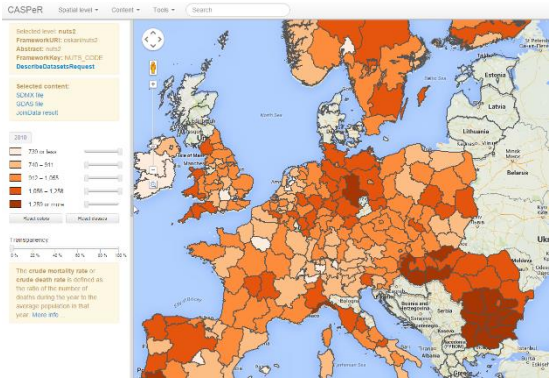
ELF Project 28 Aug
@ELFProjectEU
Presentation of the ELF - European Location Framework on @slideshare slideshare.net/ajakobsso at #iccDD2013 via @AnttiJakobsson

Architecture deployment

E.L.F. health statistics application



Mapping European health statistics

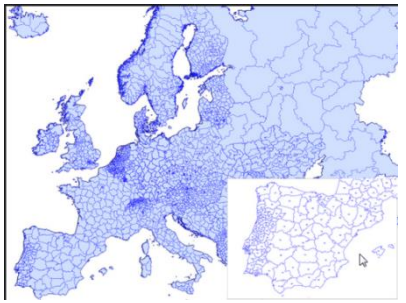


CASPeR application

pc4	wpkl	woonplaats	adressen	gemeente
5371	3254	Ravenstein	1469	Oss
5371	3256	Deursen-Dennenburg	231	Oss
5371	3257	Huisseling	188	Oss
5371	3263	Overlangel	187	Oss
5371	3259	Dieden	79	Oss
5371	3262	Neerloon	78	Oss
5371	3260	Demen	74	Oss
5371	3261	Neerlangel	28	Oss
5371	3264	Keent	22	Oss

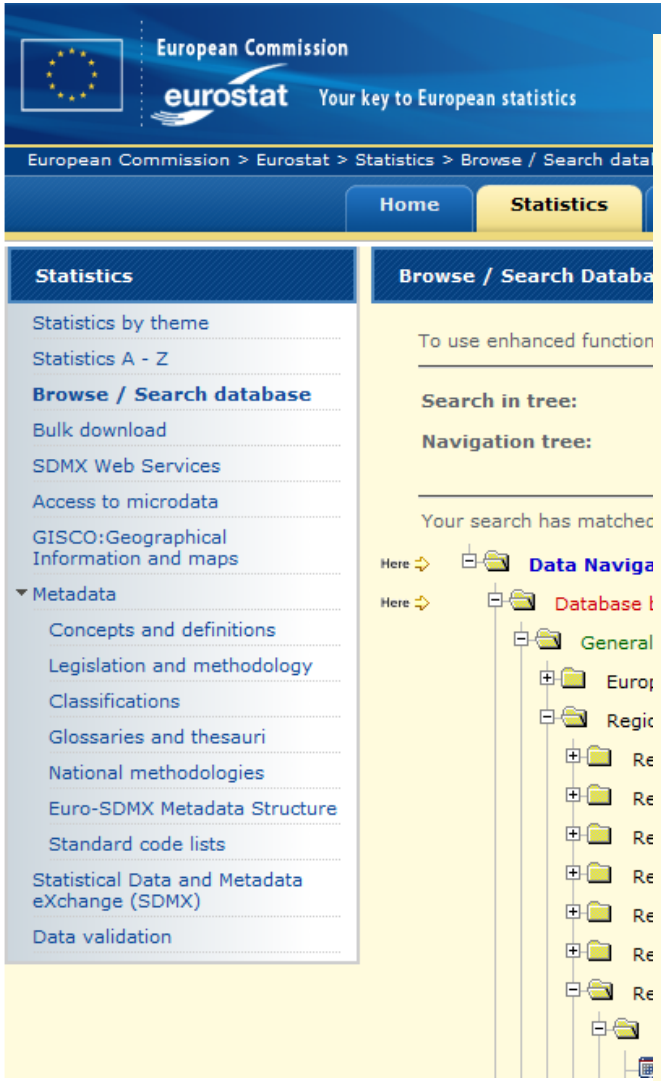
Eurostat's health statistics (>300 tables)

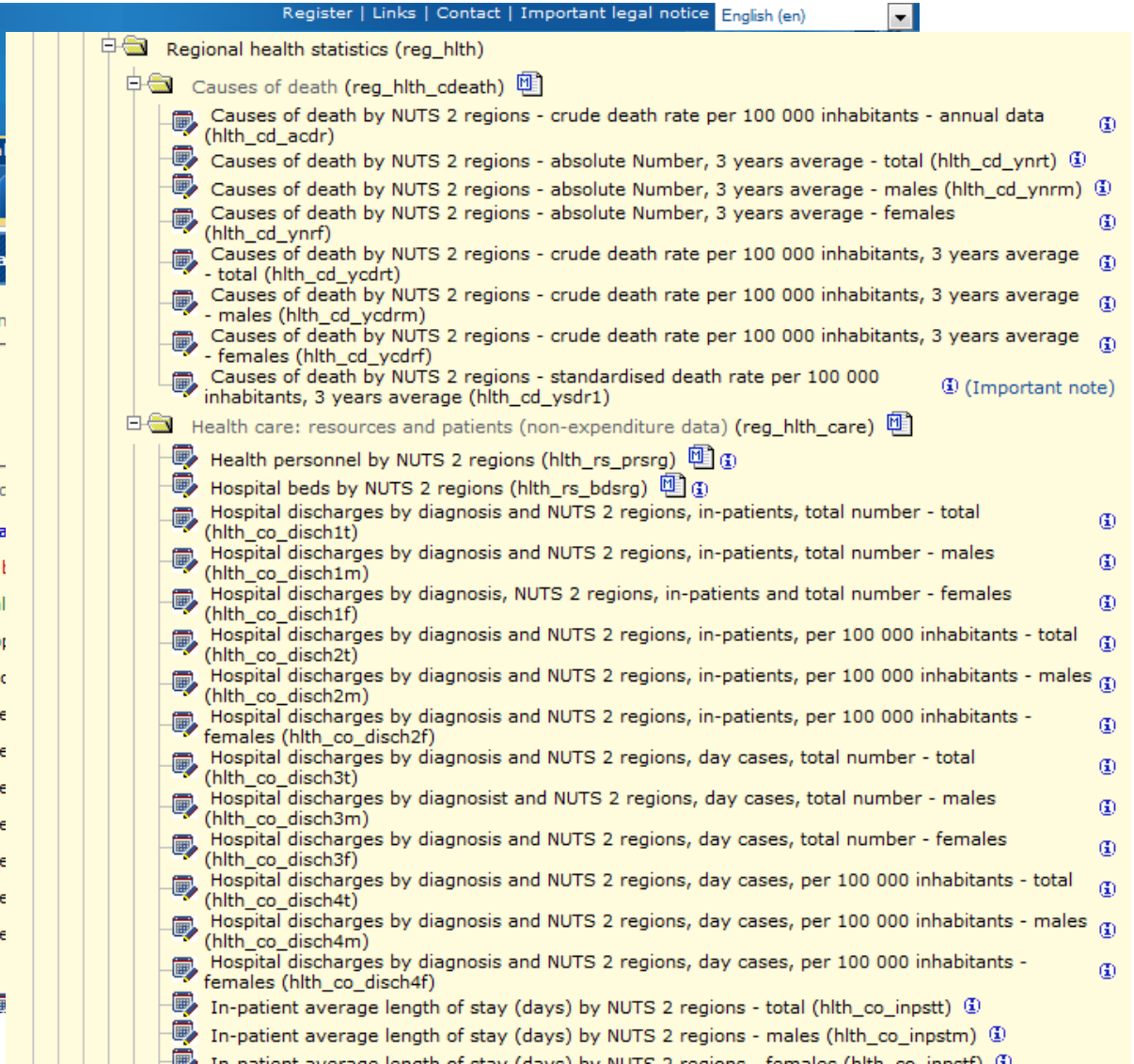
TJS



ELF platform Administrative Units

Eurostat's health statistics (>300 tables)





TJS tabular data transformation tool

GDAS Transformation tool

Input standards:

SDMX

Odata - Open Data Protocol

CSV

SDMX is an initiative to foster standards for the exchange of statistical information.

Sponsored by
BIS - ECB - EUROSTAT - IMF - OECD - UN - World Bank

TJS implementation

TJS as a GEOSERVER community plugin

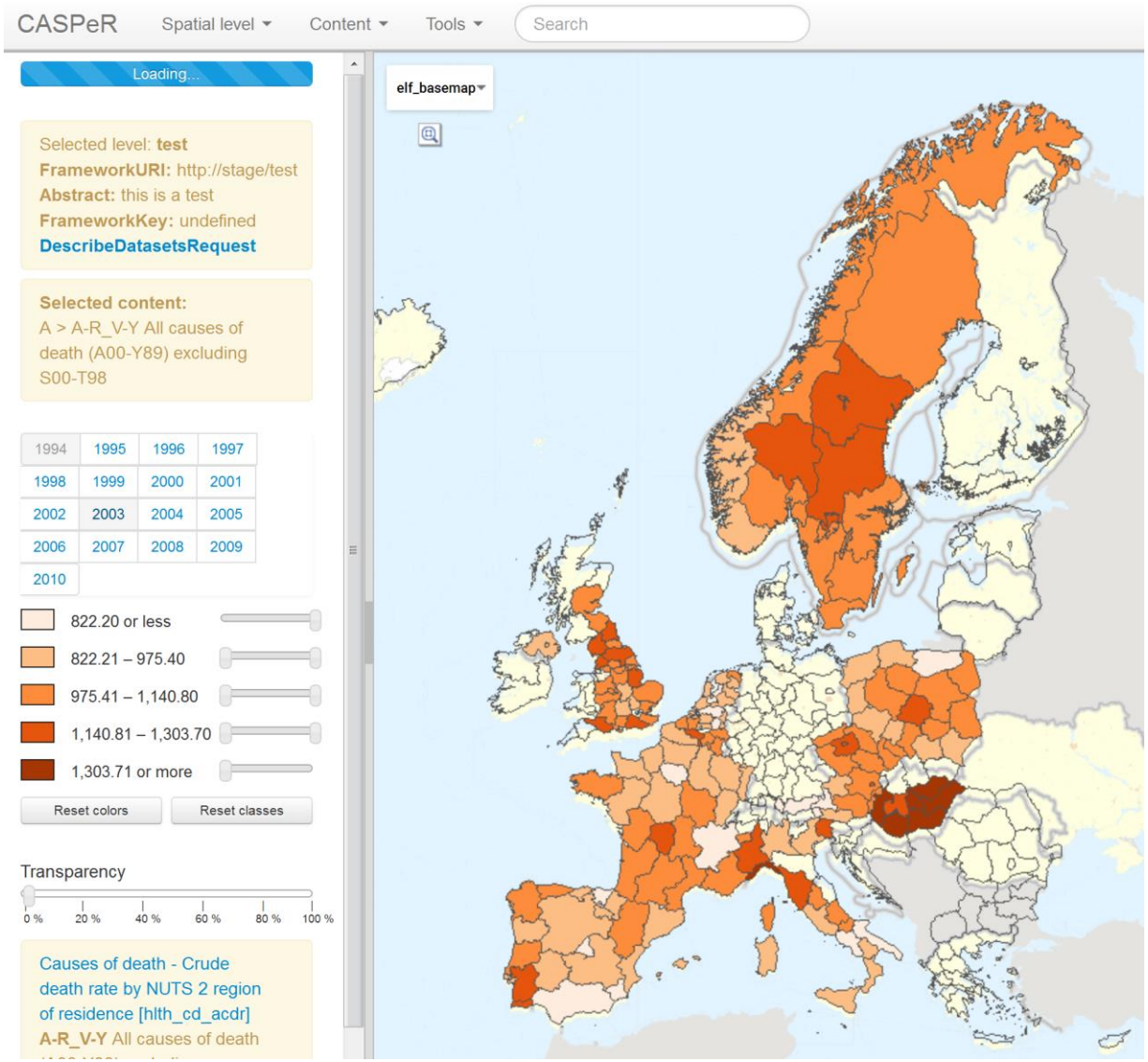
Open source project

Code public available on GitHub:

https://github.com/thijsbrentjens/geoserver/tree/tjs_2.2.x/

CASPeR client

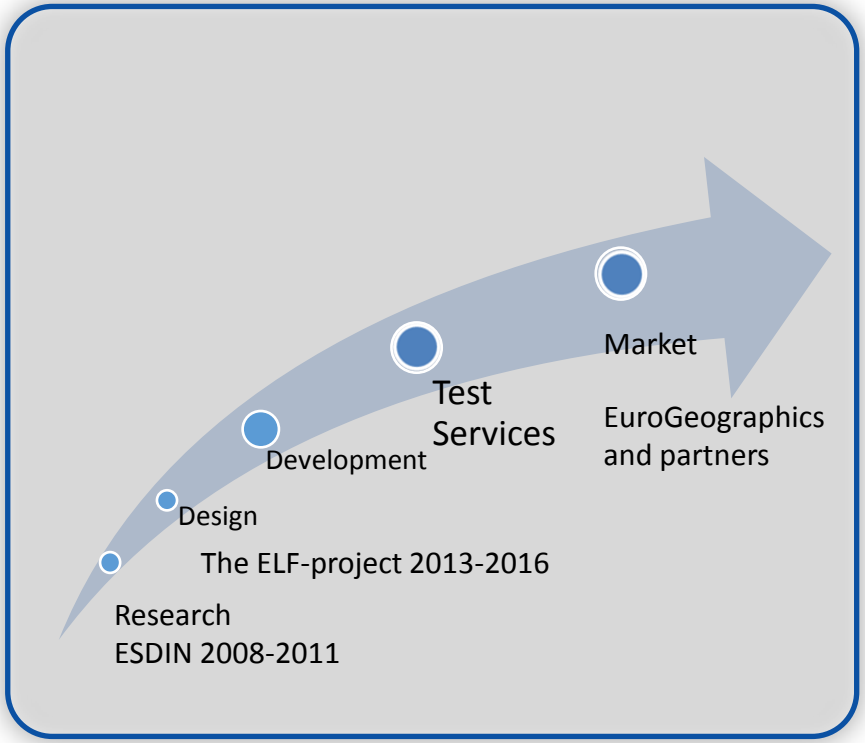
- Demo



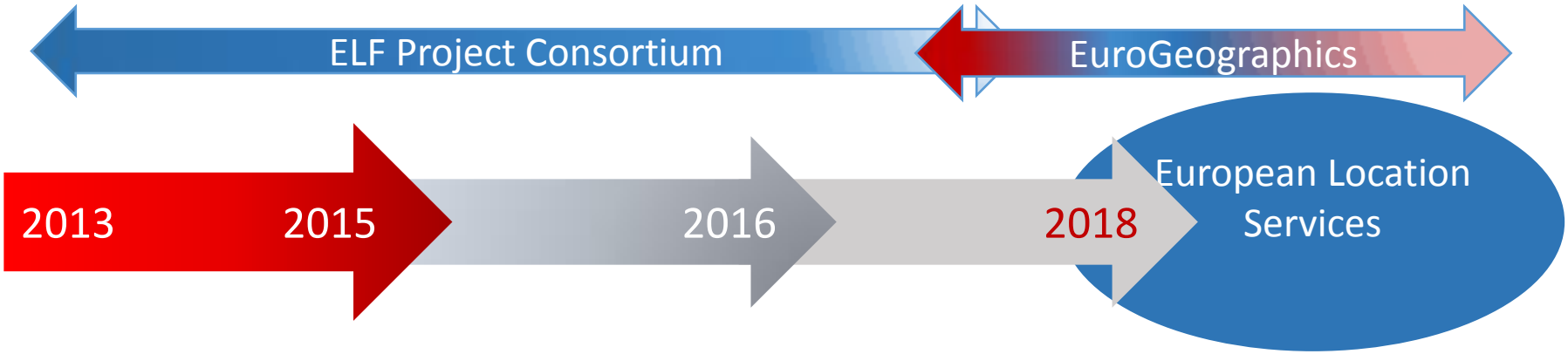
The Future of ELF

… from ELF project the European Location Services – ELS

…



Timescales



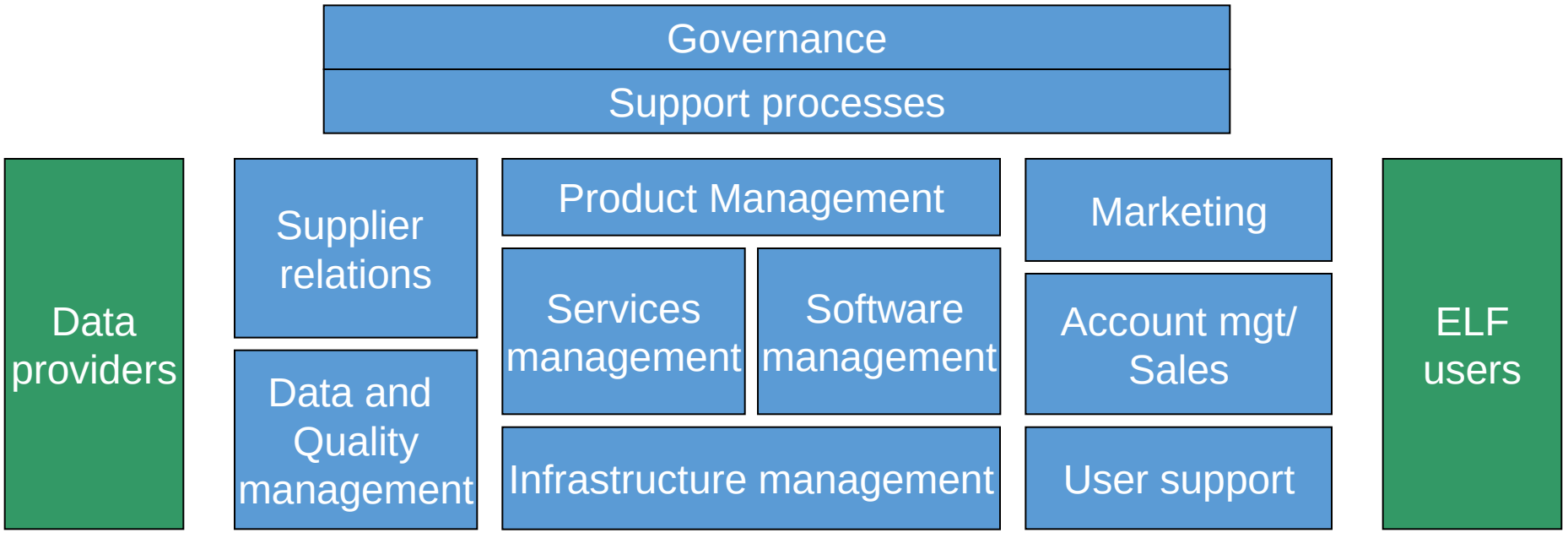
2013
Project start

May 2016
- Testing

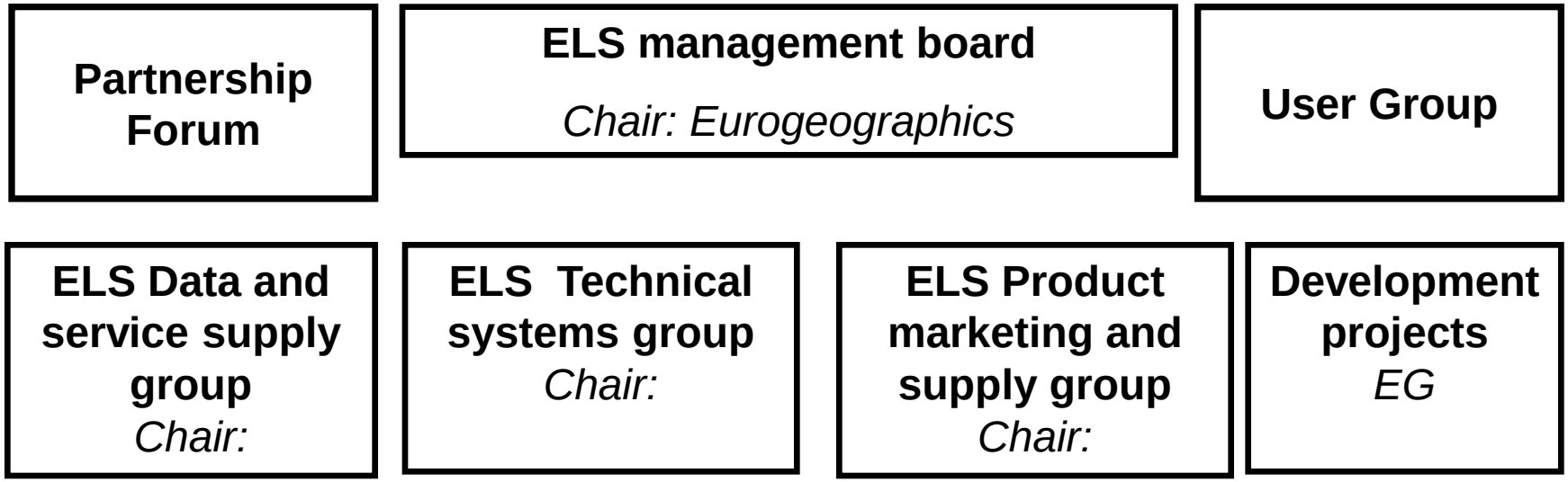
Oct 2016
- Project end
- Transition phase begins

2016 – 2018
- Development of an Operational service

Activity Components

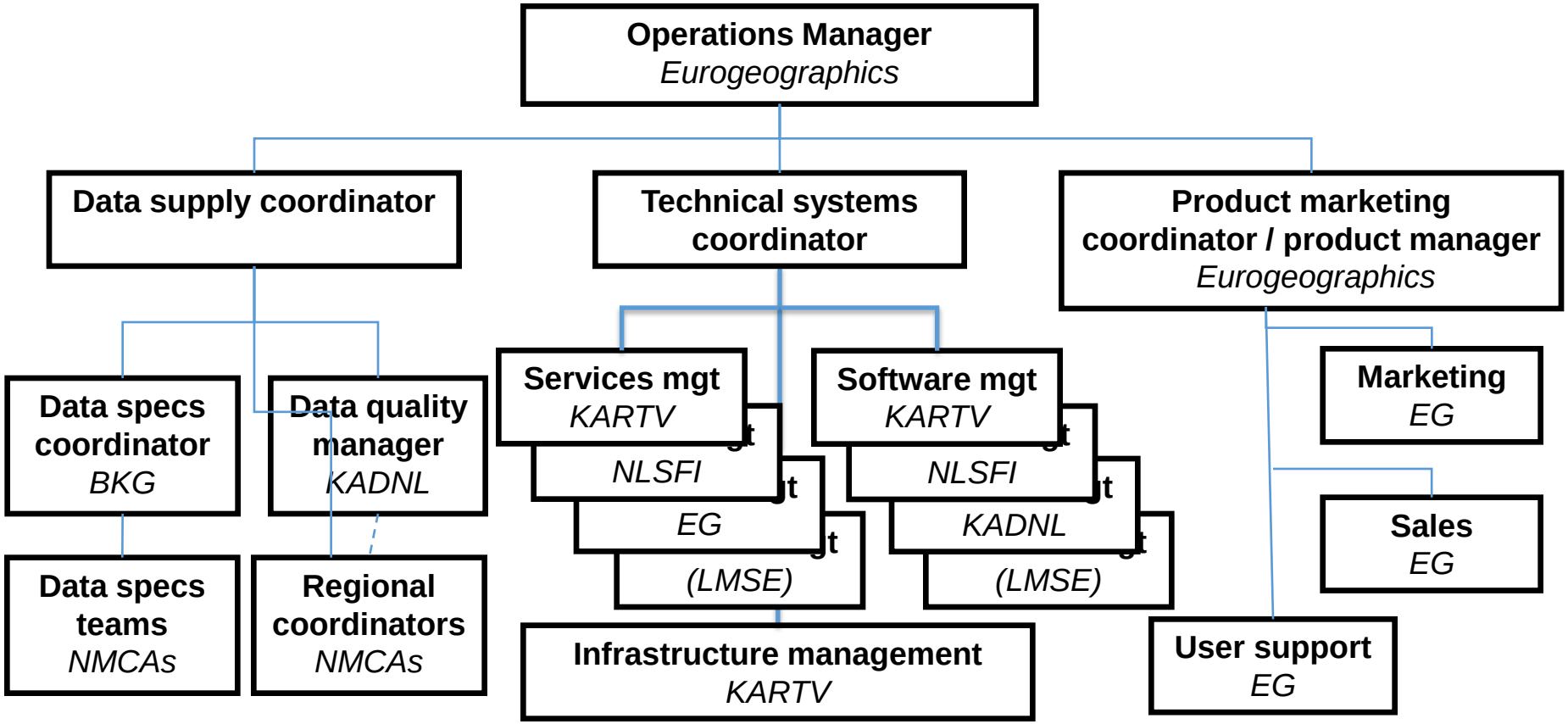


Governance Structure



Note: the Governance structure serves to advise Eurogeographics on the strategic aspects of ELF, involving the relevant partners. This is NOT and Operational management structure. Development projects are not in the operational structure but are managed from the management board.

A Federated Management Structure



Thenk you for your attention!