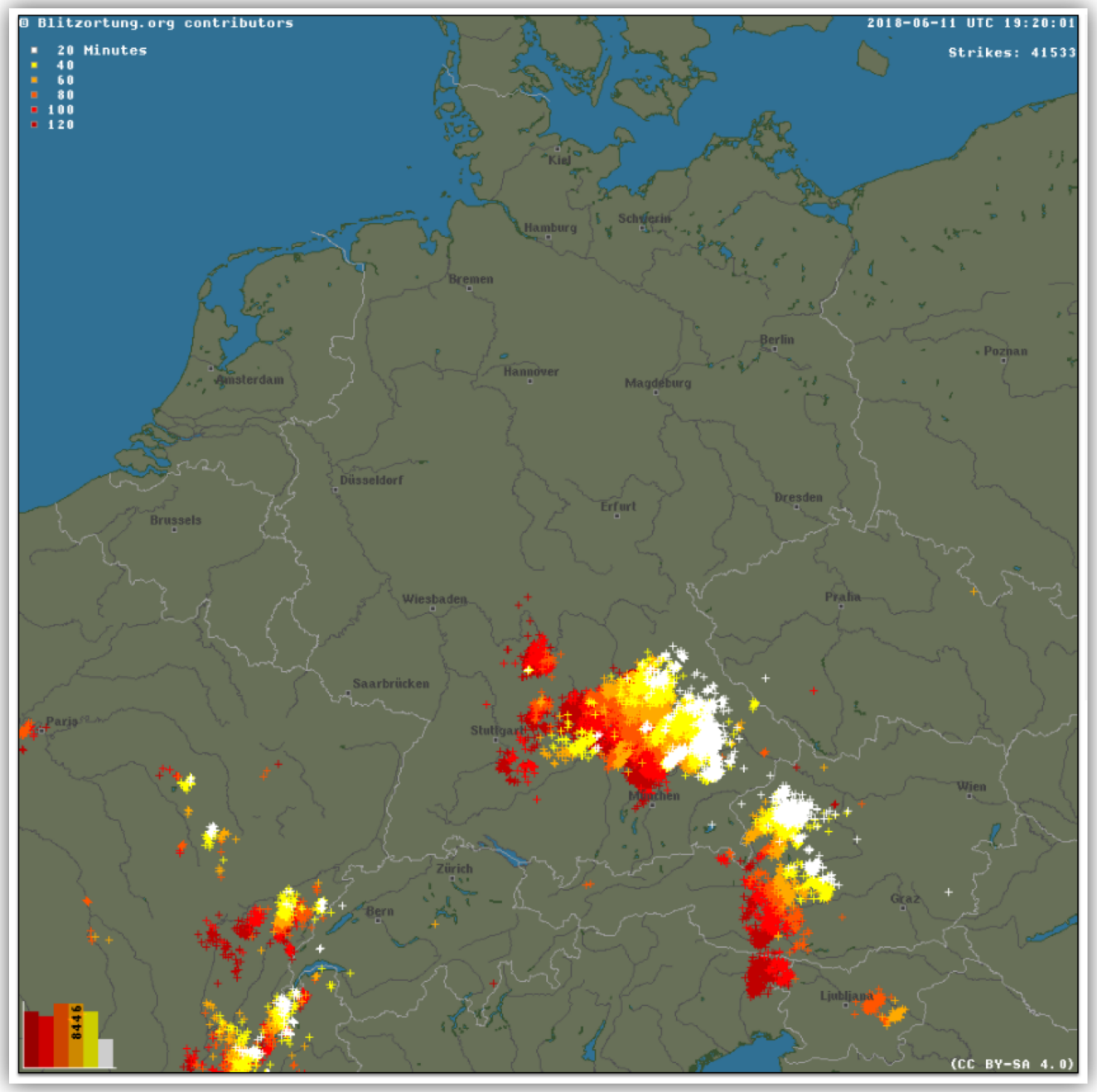


European Commission

European Commission

DG JRC

Part of the European Commission

- Technical coordinator of INSPIRE
  - Technical coordinator providing support
    to Member States and other policies
  - Competence centre for geospatial interoperability

European Commission

INSPIRE2030

A vision for the European Spatial Data Infrastructure of the Future

Alexander Kotsev, Vanda Lima, Robert Tomas, Vlado Cetl, Michael Lutz, Sven Schade

2007: A baby is born

I

(Acts adopted under the EC Treaty/Euratom Treaty whose publication is obligatory)

DIRECTIVES

DIRECTIVE 2007/2/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 14 March 2007

establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 175(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Economic and Social Committee [1],

After consulting the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty, in the light of the joint text approved by the Conciliation Committee on 17 January 2007 [2],

Whereas:

(1) Community policy on the environment must aim at a high level of protection taking into account the diversity of situations in the various regions of the Community. Moreover, information, including spatial information, is needed for the formulation and implementation of this policy and other Community policies, which must integrate environmental protection requirements in accordance with Article 6 of the Treaty. In order to bring about such integration, it is necessary to establish a measure of coordination between the users and providers of the information so that information and knowledge from different sectors can be combined.

(2) The Sixth Environment Action Programme adopted by Decision No 1600/2002/EC of the European Parliament and of the Council of 22 July 2002 [3] requires full consideration to be given to ensuring that the Community's environmental policy-making is undertaken in an integrated way, taking into account regional and local differences. A number of problems exist regarding the availability, quality, organisation, accessibility and sharing of spatial information needed in order to achieve the objectives set out in that programme.

(3) The problems regarding the availability, quality, organisation, accessibility and sharing of spatial information are common to a large number of policy and information themes and are experienced across the various levels of public authority. Solving these problems requires measures that address exchange, sharing, access and use of interoperable spatial data and spatial data services across the various levels of public authority and across different sectors. An infrastructure for spatial information in the Community should therefore be established.

(4) The Infrastructure for Spatial Information in the European Community (Inspire) should assist policy-making in relation to policies and activities that may have a direct or indirect impact on the environment.

(5) Inspire should be based on the infrastructures for spatial information that are created by the Member States and that are made compatible with common implementing rules and are supplemented with measures at Community level. These measures should ensure that the infrastructures for spatial information created by the Member States are compatible and usable in a Community and transboundary context.

[1] OJ C 221, 8.9.2005, p. 33.

[2] Opinion of the European Parliament of 7 June 2005 (OJ C 124 E, 25.5.2006, p. 116), Council Common Position of 23 January 2006 (OJ C 126 E, 30.5.2006, p. 16) and Position of the European Parliament of 13 June 2006 (not yet published in the Official Journal). Decision of the Council of 29 January 2007 and legislative resolution of the European Parliament of 13 February 2007 (not yet published in the Official Journal).

[3] OJ L 242, 10.9.2002, p. 1.

Nokia 2600, 15 million sold

European Commission

2007 - 2018

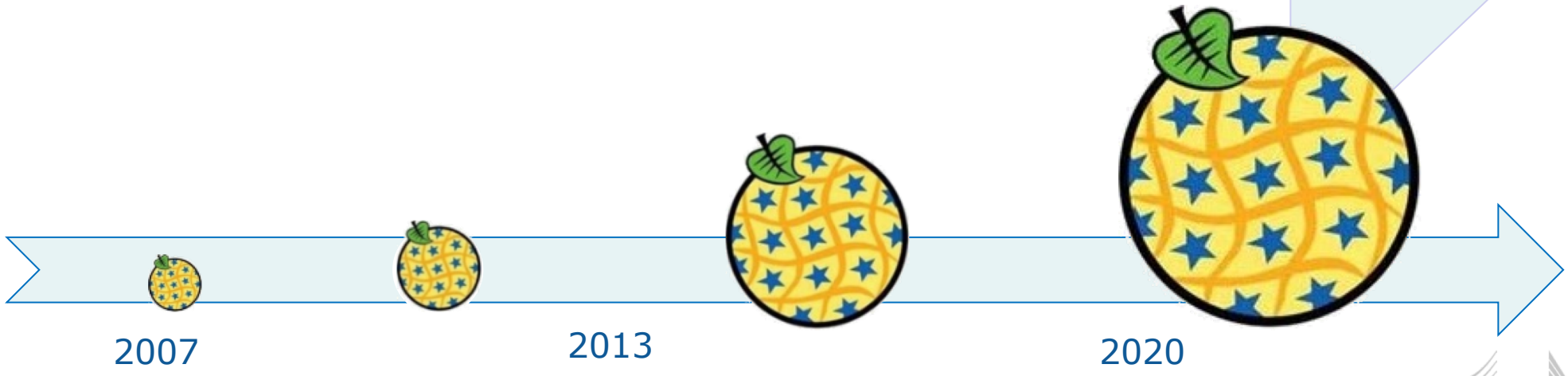
EU Legislation

Transposition

Drafting
- Guidelines
- Data models

Implementation

Operation
- Maintenance
- **Evolution**



European Commission

2007 - 2018

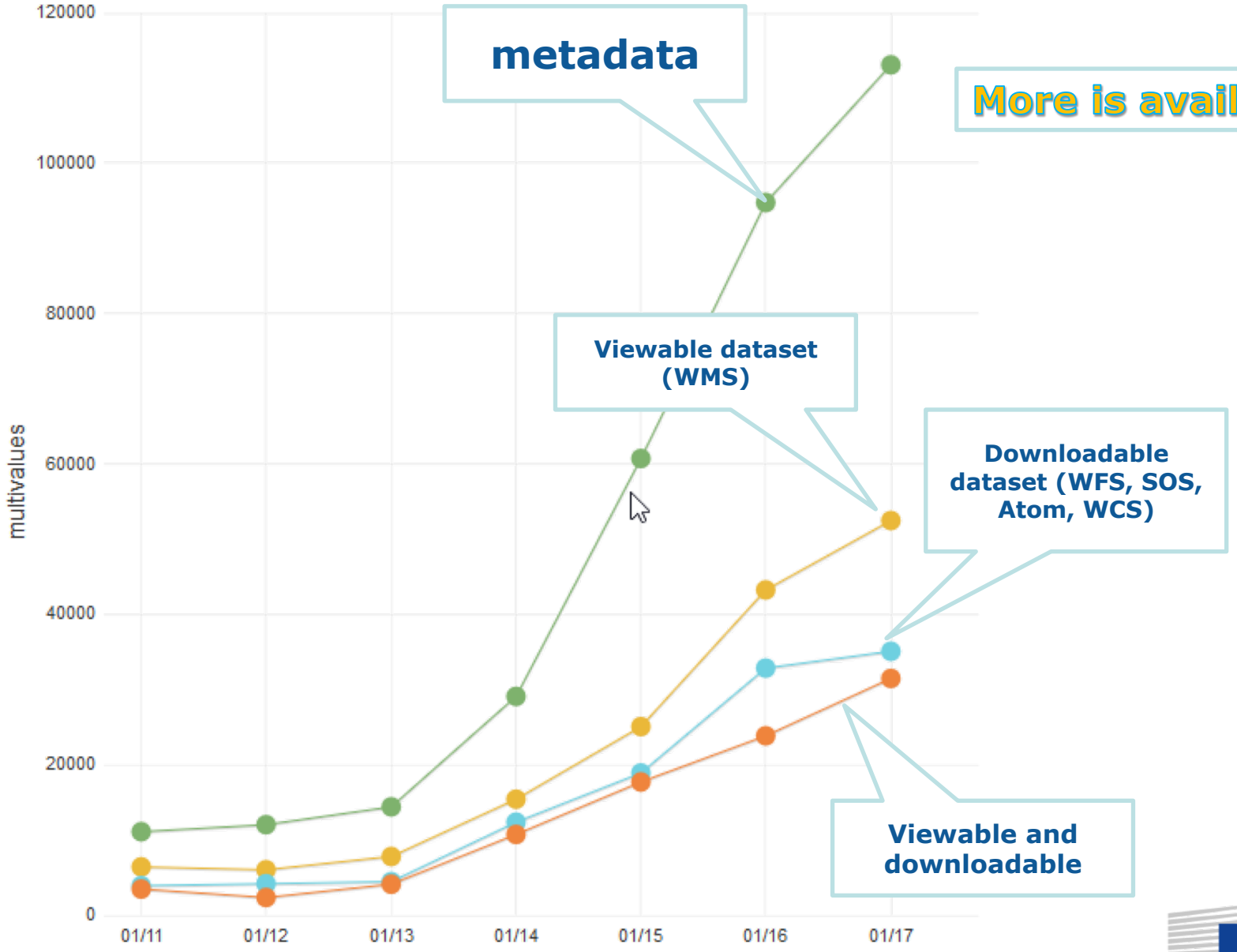
draft

implement

use

European Commission

2018: Implementation 'state-of-play'

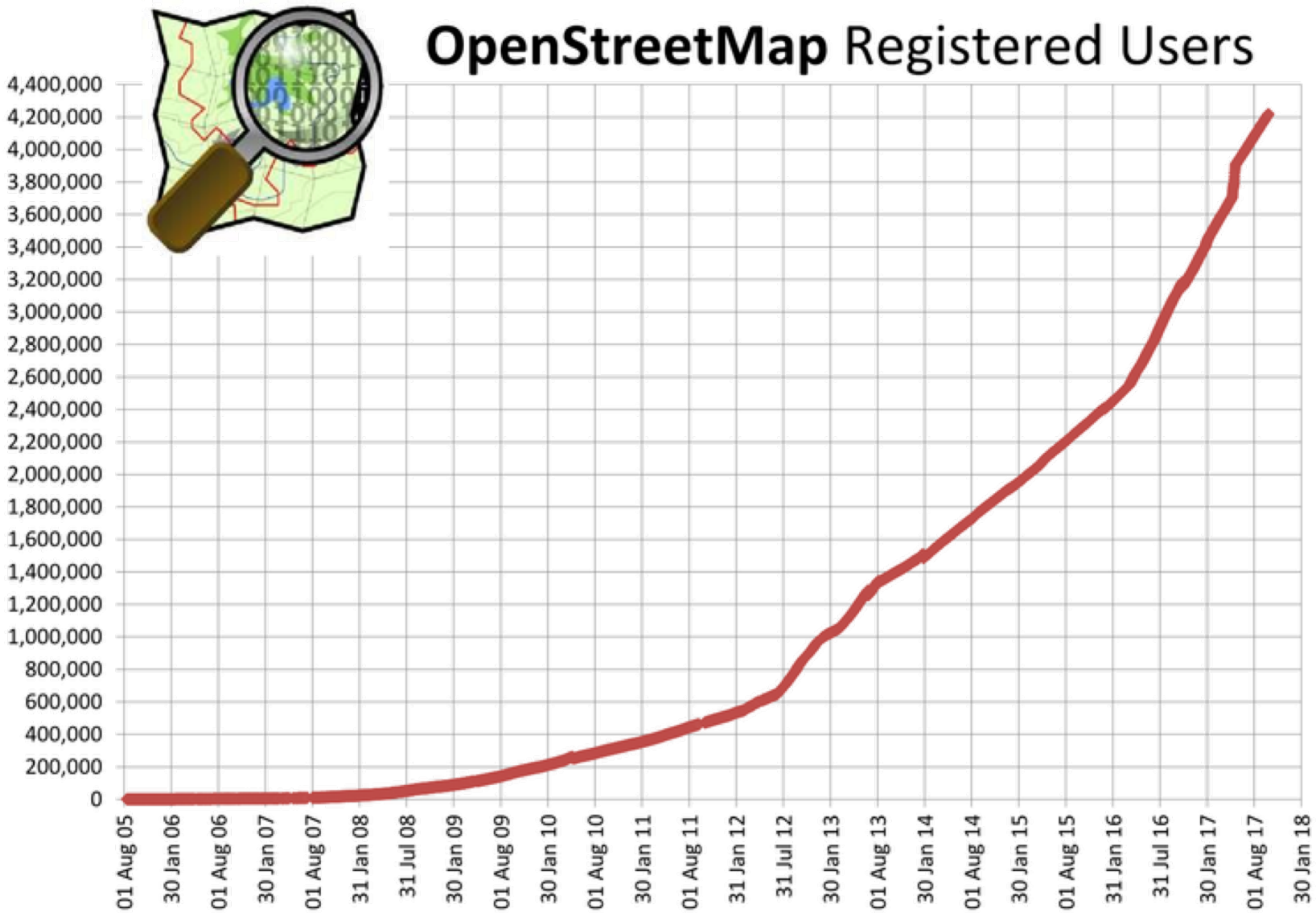


More is available at national level

Source: EEA INSPIRE Dashboard

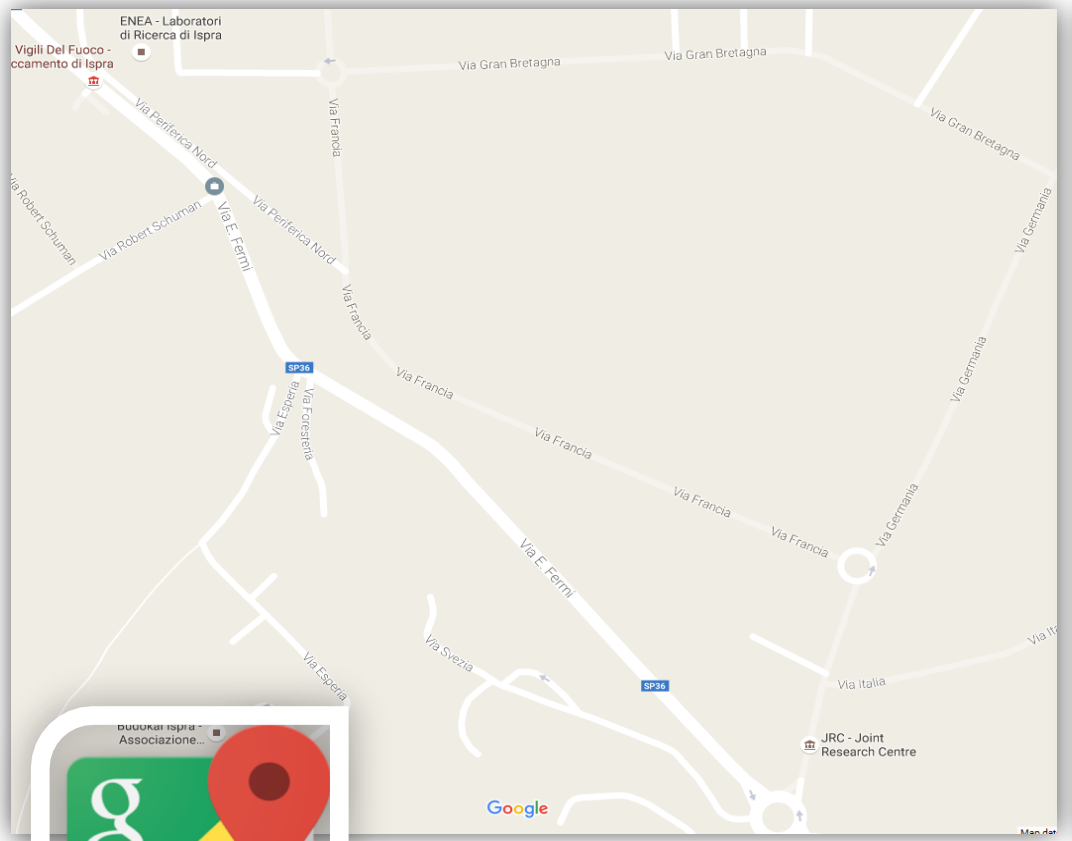
European Commission

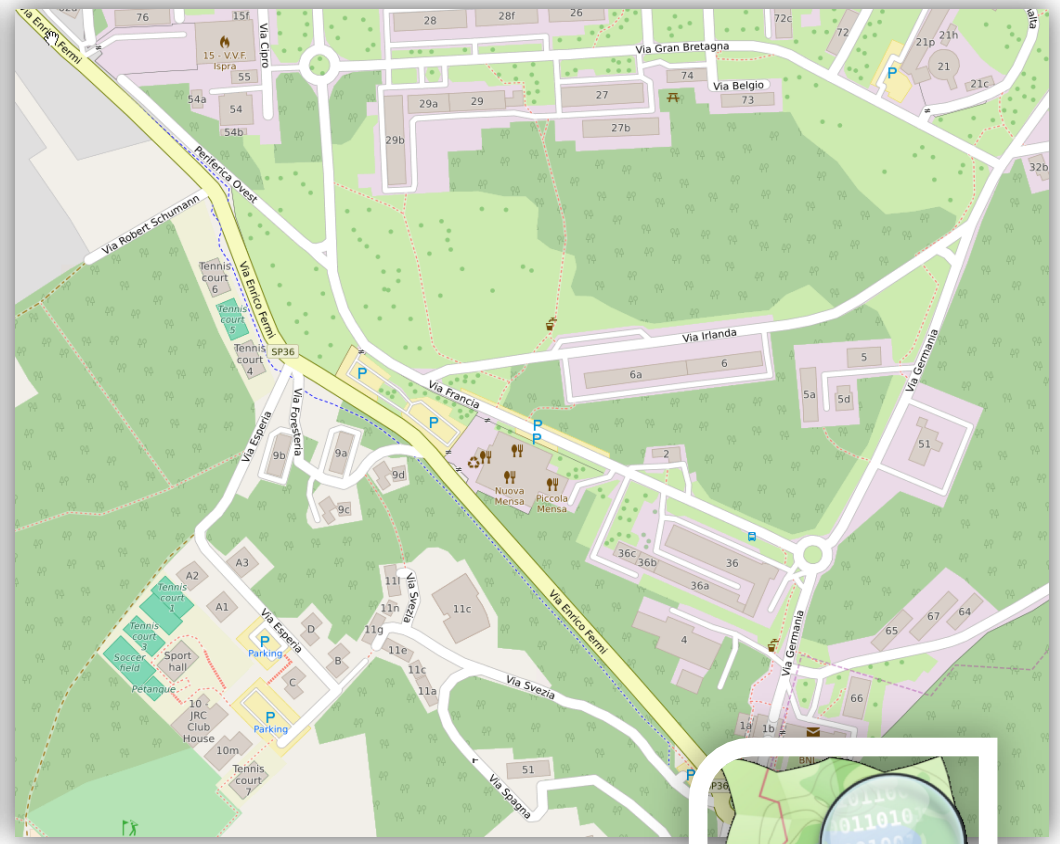
2007 - 2018



European Commission

2007 - 2018





European Commission

Q: Do we still need an SDI?

A: Definitely!

Q: Why?

A: The exponential growth and heterogeneity of data only raises the importance of an integrated (a.k.a. SDI) approach towards data management.

European Commission

Q: What would the SDI in 2030 be?

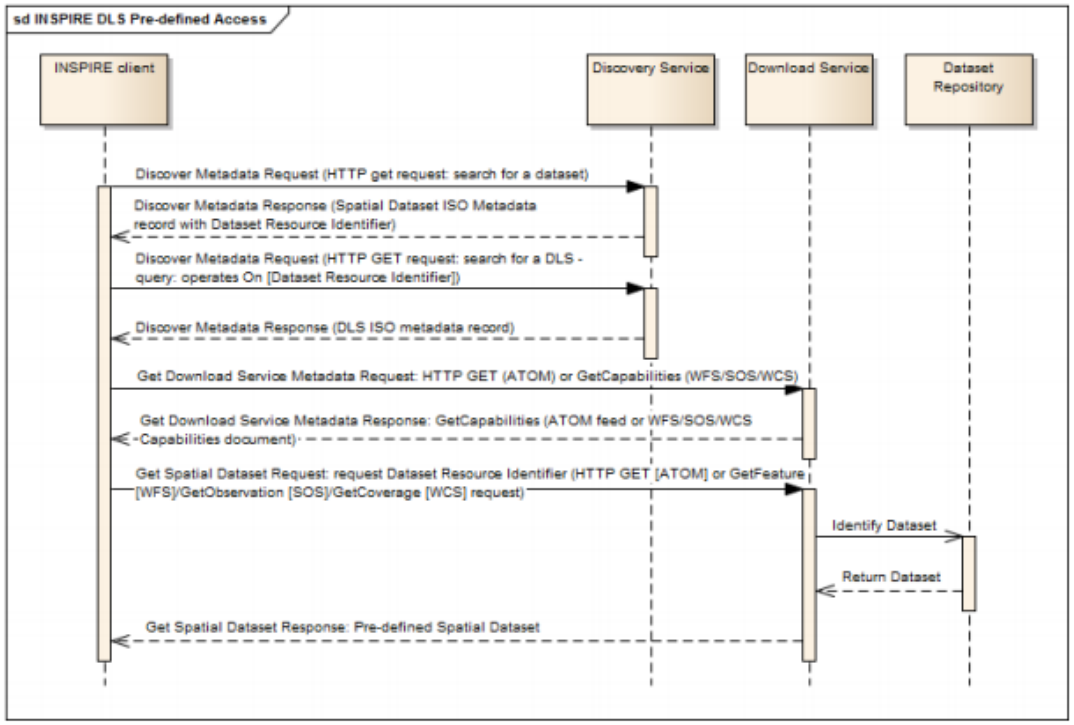
A: We do not know!

Some trends to consider:

1. SDI and mainstream ICT
2. SDI as a platform
3. Coupling of data and algorithms
4. New data sources
5. What kind of infrastructure

European Commission

SDIs and mainstream ICT 1/2



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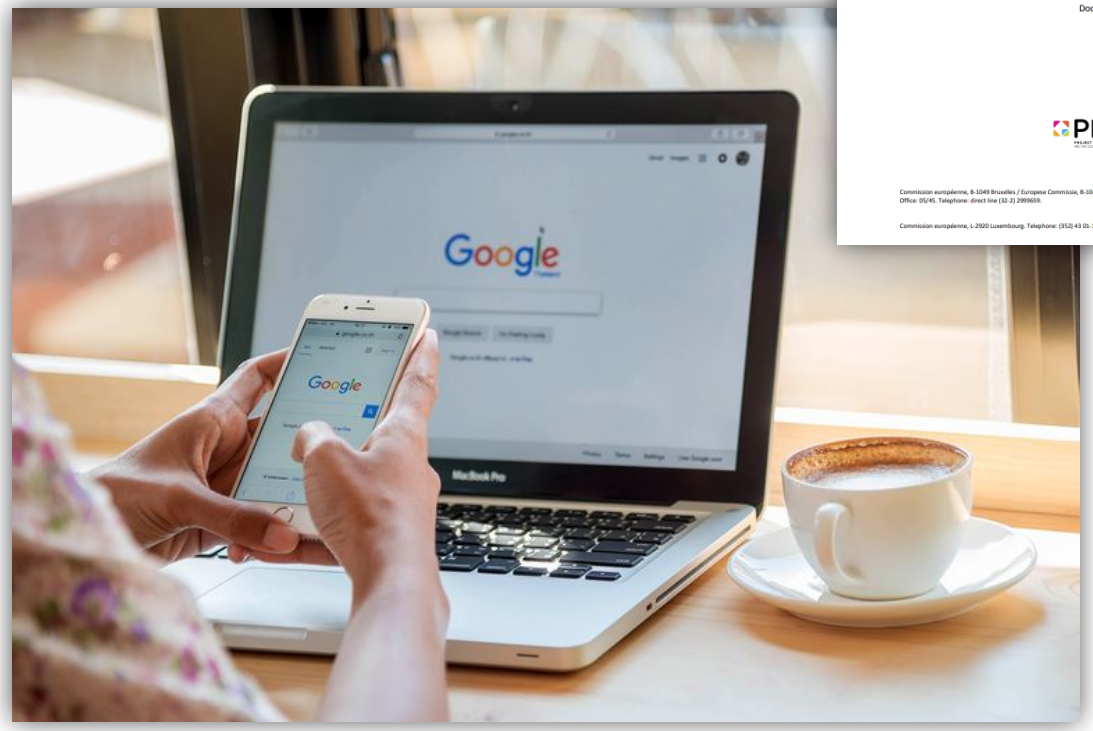
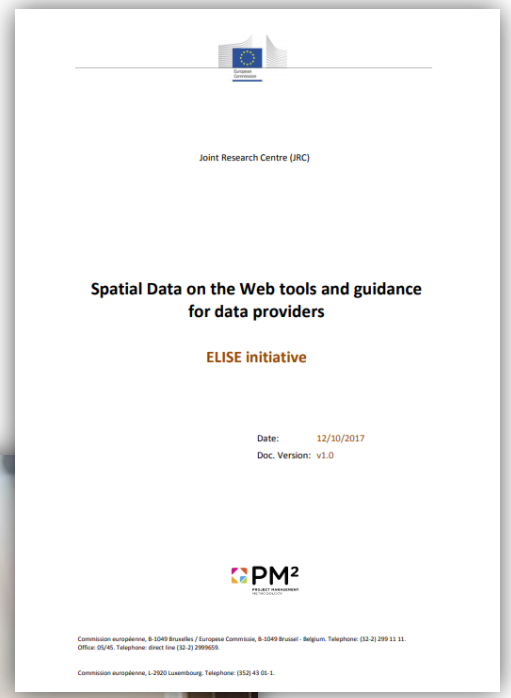




Joint Research Centre (JRC)

Spatial Data on the Web tools and guidance for data providers

ELISE initiative

Date: 12/10/2017
Doc. Version: v1.0

PM²

Commission européenne, B-1049 Bruxelles / Europese Commissie, B-1049 Brussel - Belgium. Telephone: (32-2) 299 11 11.
Office: DS/45. Telephone: direct line (32-2) 2989059.

Commission européenne, L-2920 Luxembourg. Telephone: (352) 43 01-1.

European Commission

Standardisation 2.0

- WFS 3.0 and SensorThings API
  - Openness
  - Agility
  - Implementations first
  - Exhaustiveness *versus* Simplicity

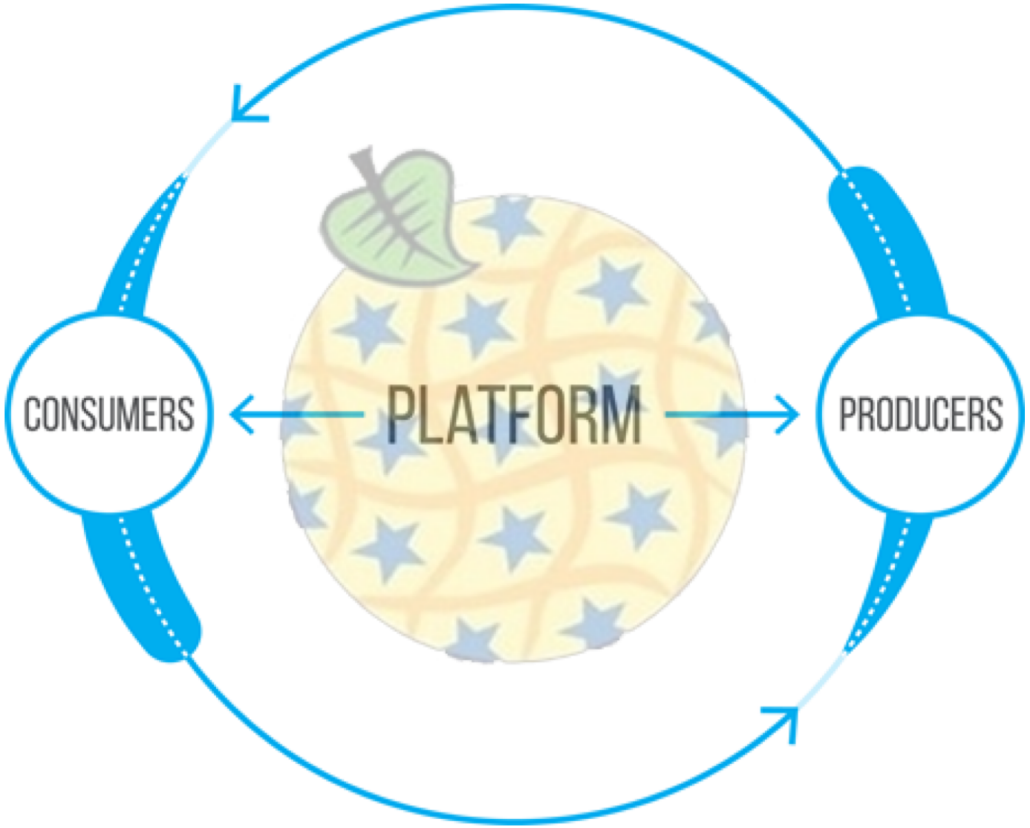
- New tools
  - GitHub
  - Hackathons

SDI as a platform

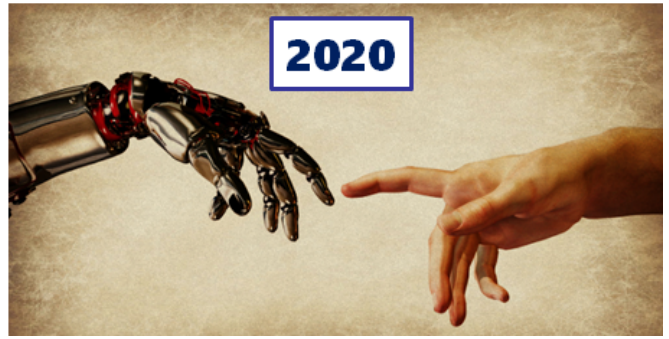
Geospatial platforms

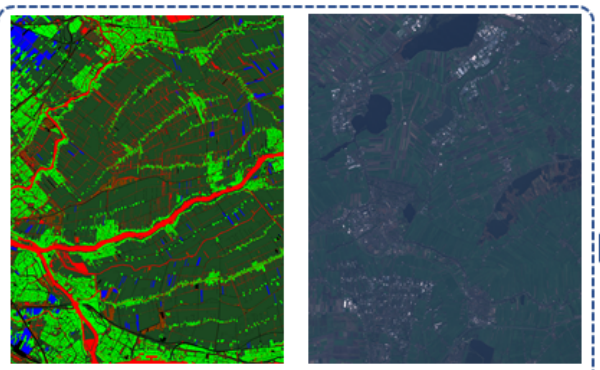
- ArcGIS Online
- JRC Earth Observation Data and Processing Platform

Mainstream ICT platforms



Coupling data and algorithms

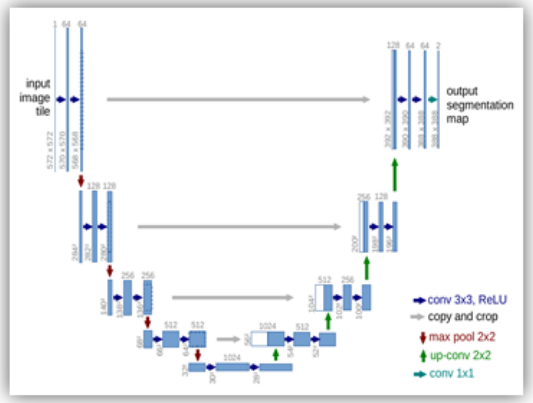




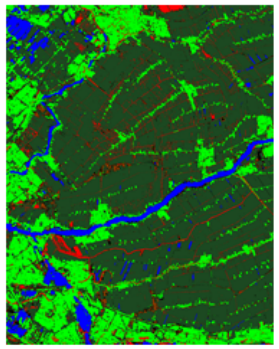
Basic topography (SDI)

Copernicus Sentinel 2B

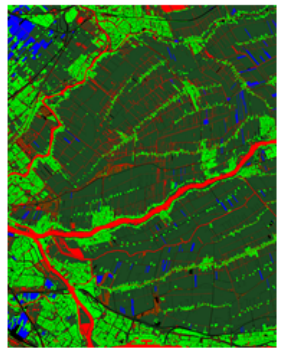
Input



Architecture



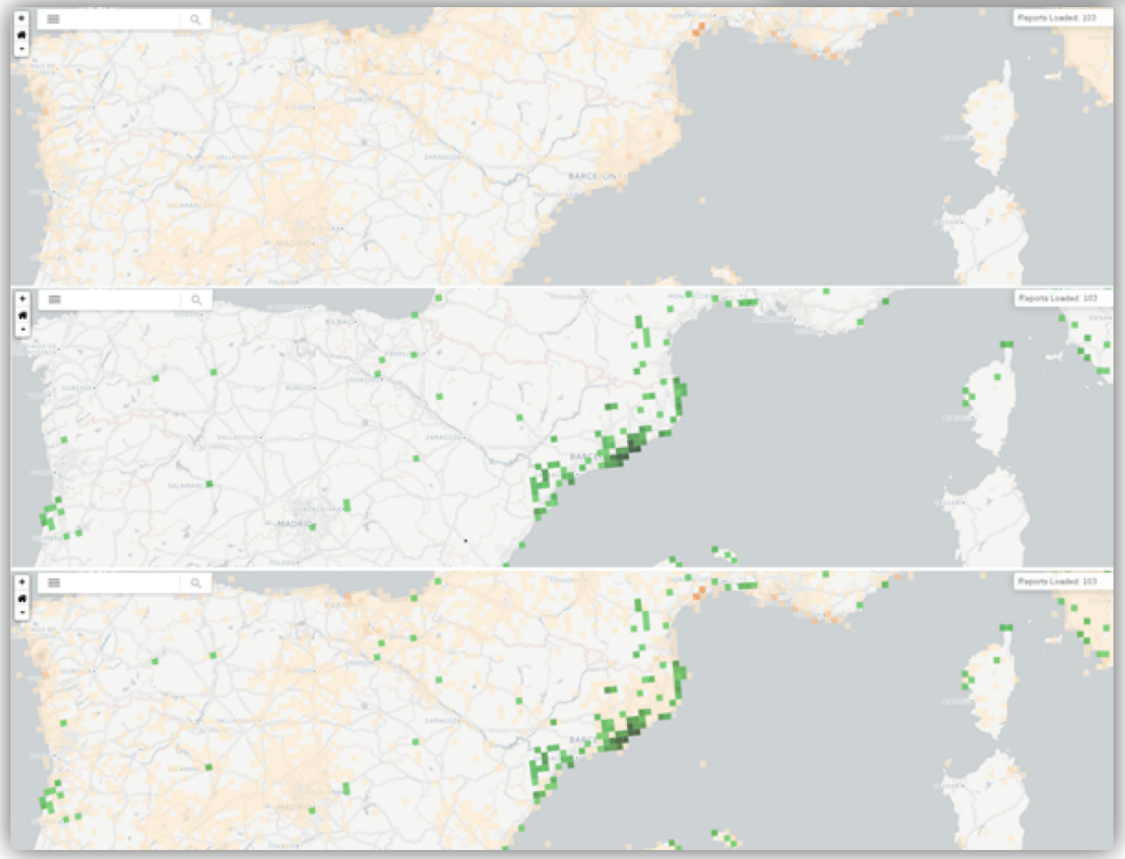
Deep Learning (80 %)



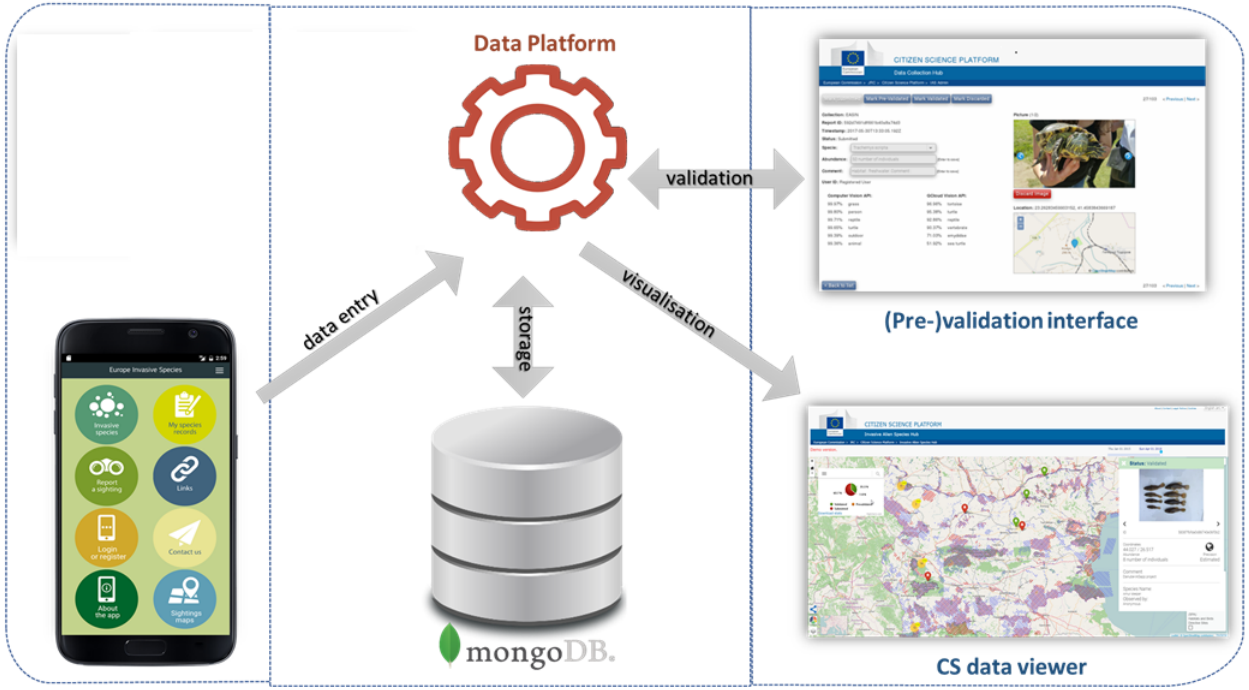
Random forest (70 %)

Result

Use of specialised apps



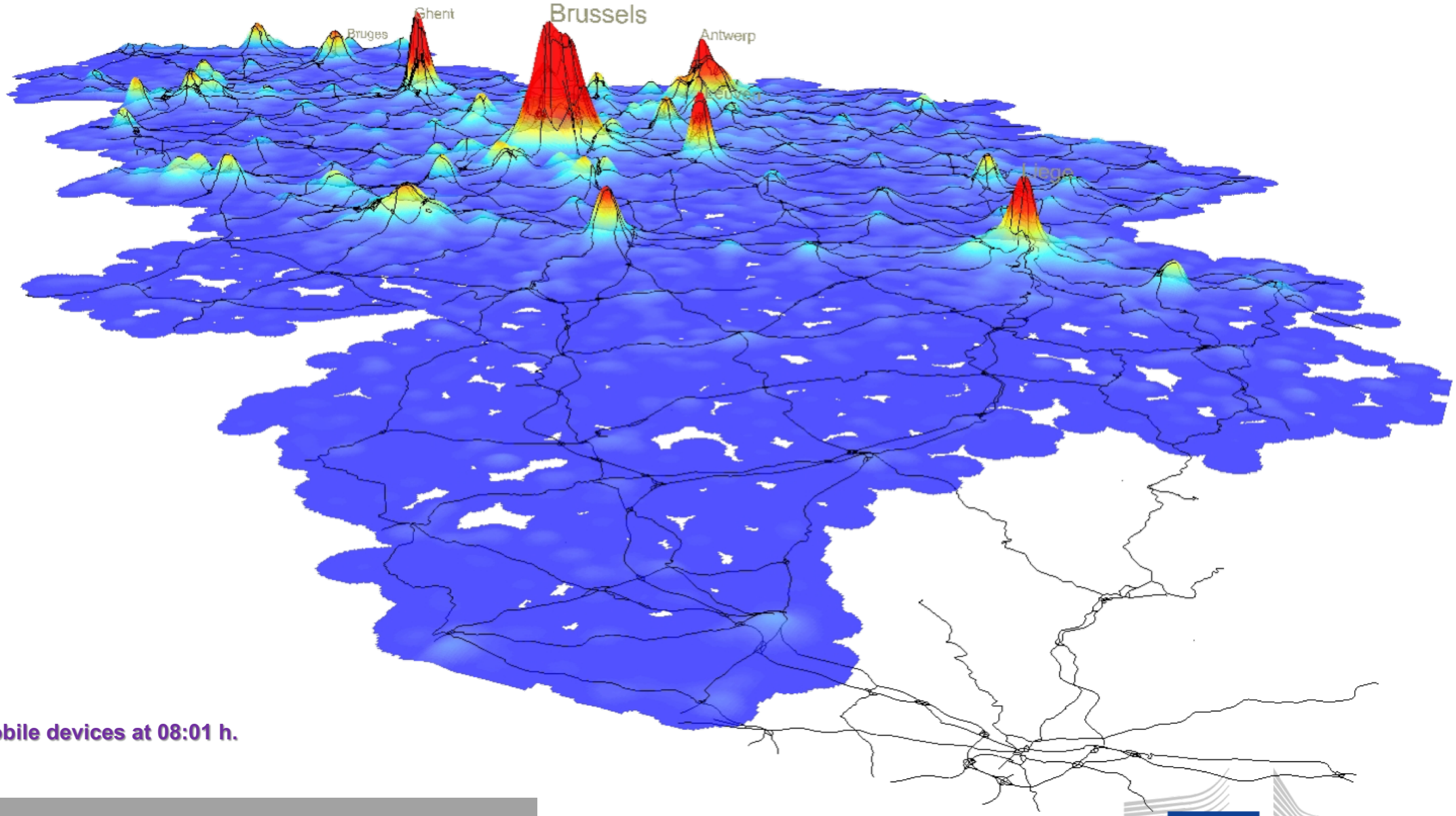
D2 and B.6



New data sources 1/4

European Commission

Population Density from Cell Phone data

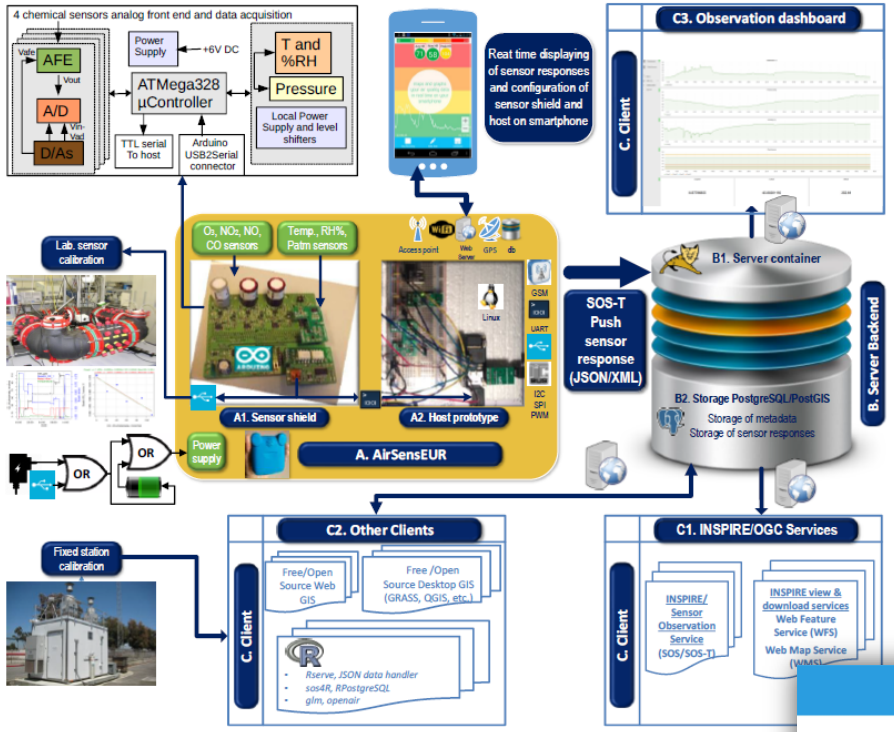


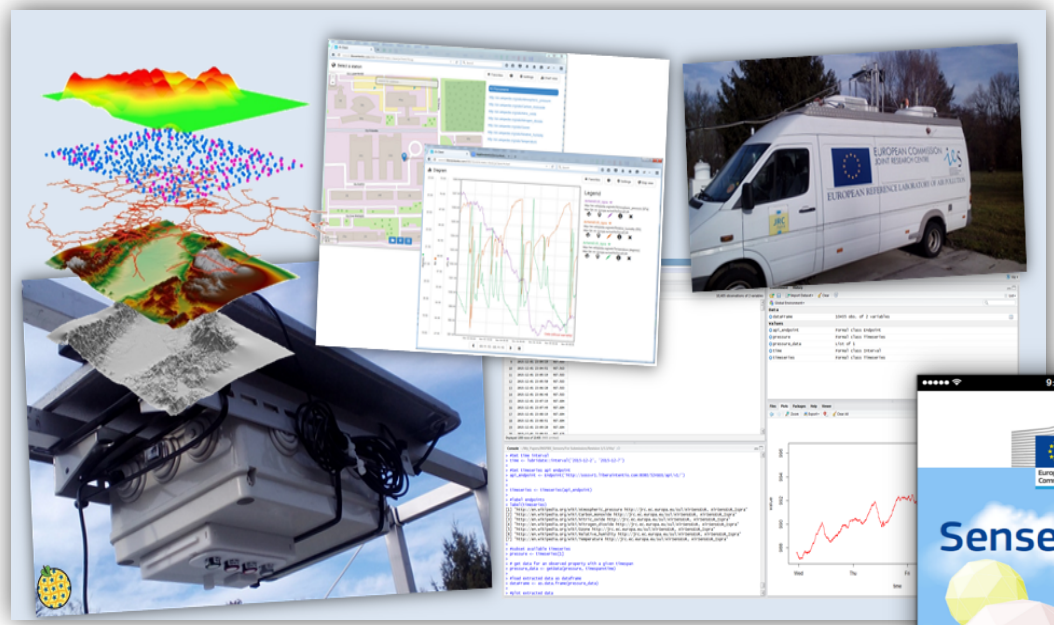
Mobile devices at 08:01 h.

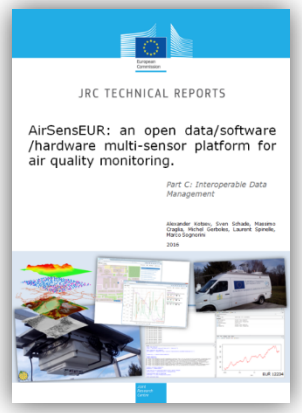
New data sources 2/4

European Commission

AirSensEUR: Open Hardware/Software/Data



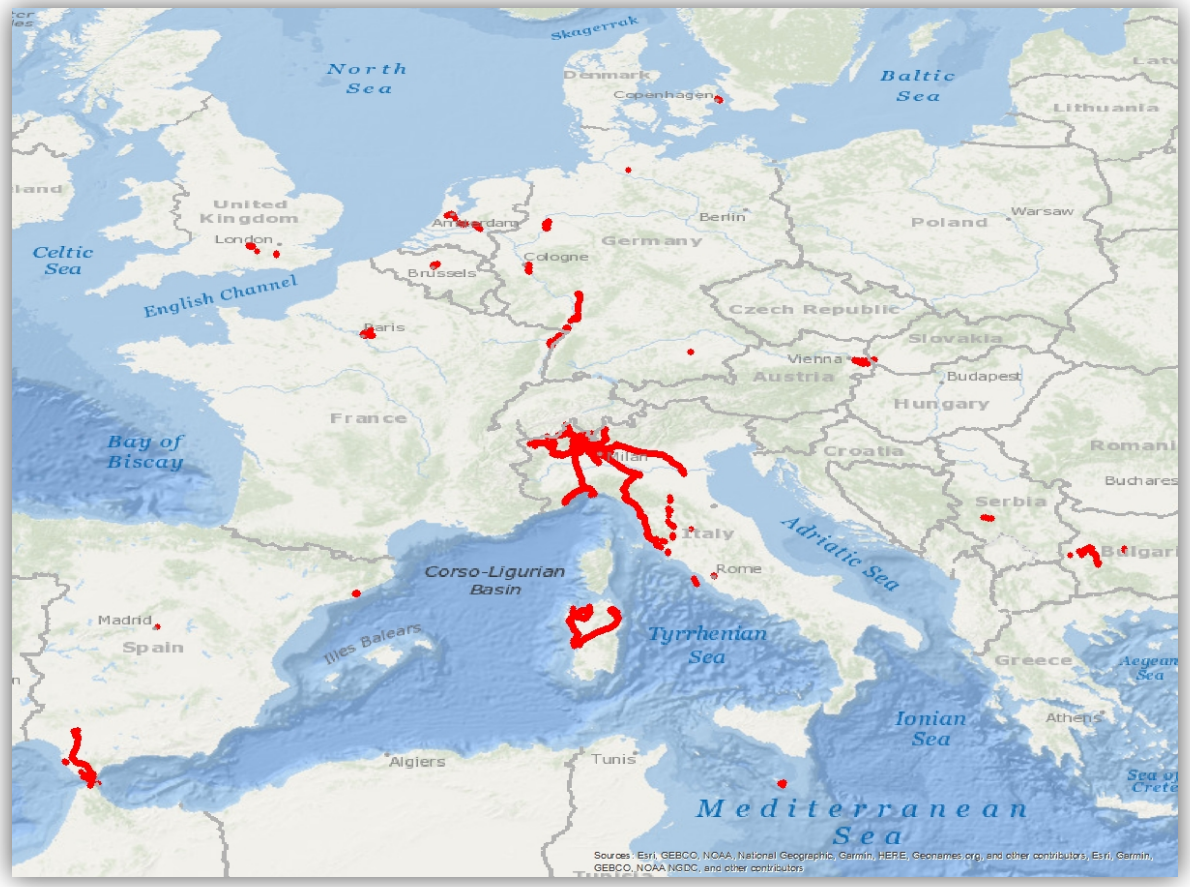


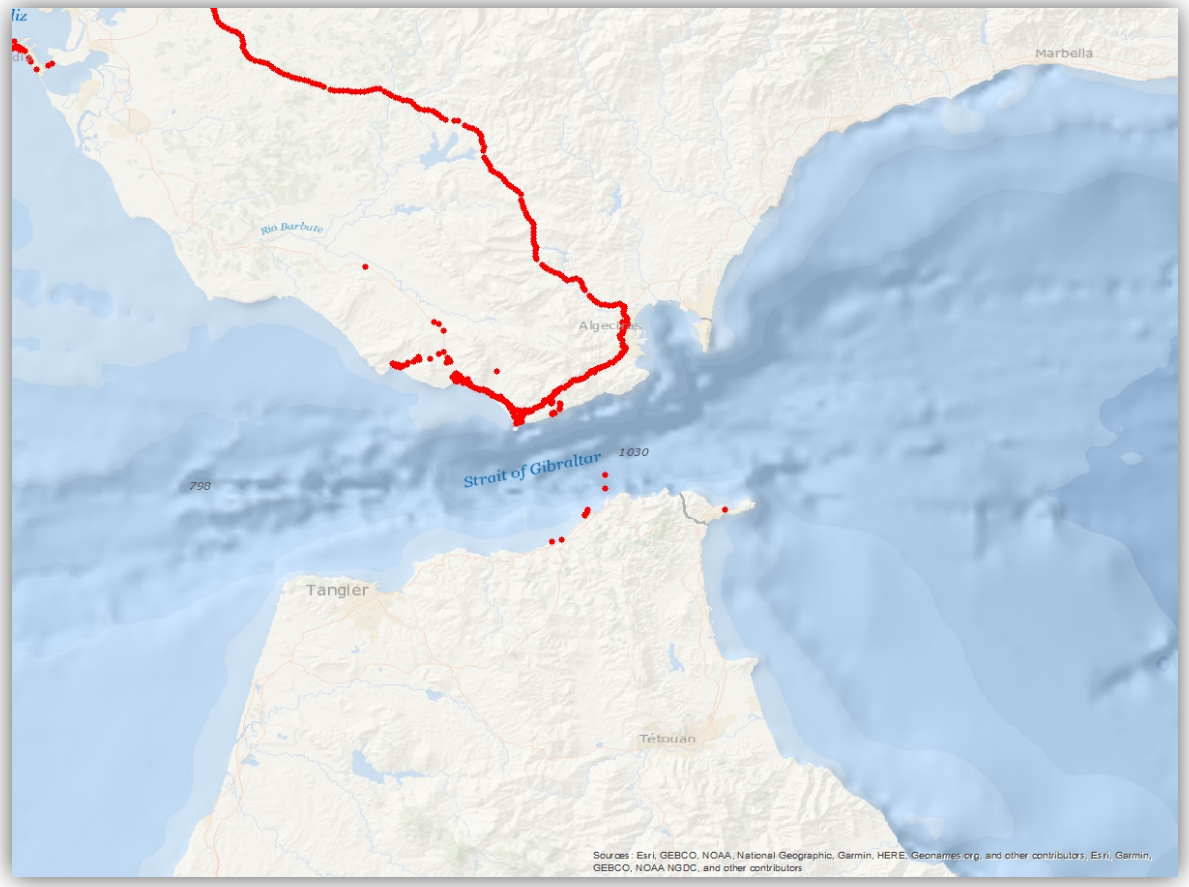


New data sources 3/4

European Commission

GDPR and Personal data





New data sources 4/4

European Commission

What kind of infrastructure?

Different possibilities

- Spatio-temporal data infrastructure
- Open spatial data infrastructure
- Analytical data iinfrastructure
- Linked data infrastructure
- e-Government data infrastructure
- Public-private data infrastructure

ALL OF THE ABOVE!

What kind of infrastructure?

- We might need to broaden our understanding of SDI and consider the following aspects:
  - Types of data (Open-close; spatio-temporal; public/private/citizen
  - Architecture (RESTful; asynchronous)
  - Role of stakeholders
  - Data governance
  - Data quality

"An SDI is a coordinated series of agreements on technology standards, institutional arrangements, and policies that enable the discovery and use of geospatial information by users and for purposes other than those it was created for."
Kuhn, W. 2005


Thanks!
European
Commission

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