

Main outcomes INSPIRE 2017 workshop: ***New Directions in Digital Government Using INSPIRE***

Workshop date/time: 4 September 2017, 14:00 – 17:00

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## **Overview**

Digital Government in Europe is evolving rapidly thanks to advances in technology but also to governments establishing more participative relationships with businesses and citizens. There is a drive to promote economic growth in digital businesses and through the better use of data. In all of this, location data plays a very important role. INSPIRE has created the basis for harmonisation of location information across Europe and is able to underpin some of the important developments in Digital Government. Some Member States have developed integrated strategies and established lessons that others may take into account. Technological advance creates immense opportunity through developments in the internet of things, cloud computing, big data etc. However, it also introduces challenges in terms of privacy, trust and the need for new digital skills.

This workshop at the INSPIRE Conference 2017 aimed to explore these new directions by sharing experiences and ideas. It is part of the ISA<sup>2</sup> work programme undertaken by the European Location Interoperability Solutions for e-Government (ELISE) action, which is developing frameworks and solutions to exploit the potential of location information in digital public services across Europe.

The style of the workshop consisted of brief presentations to introduce key topics followed by interactive discussions in groups with feedback to the general audience. The ELISE team facilitated throughout the workshop, to make sure that attendees could make their contribution to European activities in this field. The audience was divided into groups to discuss particular questions and share their views.

Over 60 people participated to the discussion.

The workshop touched a variety of topics which reflect the breadth and complexity of the ELISE project:

- Digital government trends and the role of location information;
- Location data sharing opportunities and barriers;
- Building a business using public sector location data;
- Role of ELISE in supporting the European data economy;
- Sharing spatial data on the web;
- Digital platforms and APIs;
- The role of an EU gazetteer;
- Public / private sector data exchange and the role of INSPIRE

These were all topics where the audience gave their attention and provided their views and experiences from their country and organisation perspective.



Some of the most interesting outcomes and points discussed during the interactive sessions were:

1. An increasing number of “digital natives” in the citizen community is driving the shift from e-Government to Digital Government, yet digital immaturity of civil servants, legacy and fragmentation of IT systems is inhibiting this transformation. The transition from e-Government to Digital Government should be investigated and the concepts clarified, to raise awareness in public administrations about the opportunities and benefits of innovating external interactions and internal business processes.
2. The discussions highlighted more barriers than opportunities associated with the use of geospatial data, such as resistance to change from public administrations who are often protective of their data, the broadness of the INSPIRE standards, the difficulty to search for the right datasets, and the need for more and better accessibility to data. In terms of some of

the solutions to the barriers, the audience mentioned coordination by the European Commission to help Member States navigate the geospatial standards and the INSPIRE Directive, encouraging public administrations to put themselves into the shoes of the data users and trying to publish the data in a way that would most suit them (a mind-set change).

3. Artificial intelligence, machine created data validation and digitalisation of services are key technology trends in this transformation and spatial data in will be 'just' another data dimension and be integrated in all IT systems and services. Therefore, geospatial data should not be treated as special or remain part of a silo. There should be a combined framework having as its main objective addressing user needs, ensuring data quality and adequate access to services. The need to collect and promote success stories was reiterated by the audience.
4. It is vital to build on SDIs to make spatial data available to a wider audience – by making the data browsable by humans, crawlable by search engines, accessible to developers via APIs and by responding to user feedback. Some aspects are quite well understood (APIs, persistent URIs) while others need more experimentation (presentation in HTML, use of the data by search engines, linking, user feedback).
5. The private sector plays an extremely important role: government is providing the infrastructure, making the data available, and then the private sector should act as an intermediary to provide added value services and stimulate competition. However, it is important for the public sector to collaborate as well with the private sector, to understand if there is indeed an interest to play such an intermediary role.

## Detailed summary of the sessions

### *Part 1: Strategic directions*

#### Presentations

1. [Introduction to ELISE, the ISA<sup>2</sup> geospatial action to promote effective use of location information in digital government across sectors and at European level](#), Francesco Pignatelli (DG JRC)
2. [Top trends in digital government](#), open, inclusive and digital to the core - a presentation on new directions in location-enabled digital government, the new relationships involved, the role of technology and the increased reliance on “ location intelligence”, Ken Van Gansen (Gartner)
3. [Economic opportunities and barriers in the sharing and re-use of geospatial information](#) - examples in location data sharing ecosystems, what has made them successful and the challenges to be overcome, Barbora Kudzmanaite (Wavestone)
4. Case Studies
  - a. Public sector: [Making the most of open data](#), Ulla Kronborg Mazzoli (Agency for Data Supply and Efficiency, DK)
  - b. Public sector: [Powered-by-INSPIRE.NL](#), Rob van de Velde (Geonovum, NL)
  - c. Private sector: [Energy data analytics](#), Gerard Mor Martinez (Beedata, ES)

#### ***Group brainstorming and feedback***

Attendees were invited to contribute to two of the four discussion topics planned for the first session. Feedback was then given to the whole audience by the facilitator or note taker. Each group was invited to consider a set of predefined questions. The main outcomes are summarised below.

#### TOPIC 1: Digital government trends and the role of location information

Facilitator: Ken Van Gansen (Gartner)

Note taker: David Allessie (Gartner)

**Q1: Is your Government on a journey from e-Government to Digital Government? If YES, what is the key driver for digital transformation? If NO, what is the key inhibitor for digital transformation?**

Two trends were distinguished in the brainstorm: an acceleration towards Digital Government and a slow, long road towards Digital Government.

1. On the one hand, a trend towards Digital Government that is driven by the need to change within governments was presented in the brainstorm. An example came from France, where the President of the Republic is pushing towards a government that is making more effective use of digital technologies. In this trend, the need to change was clearly felt and translated into initiatives that are part of a Digital Government agenda. Citizens are increasingly digital

natives and are best served not just by e-services, but by platforms in which they have some degree of control. Not only change is a must for some governments, but there is also an increasing demand for privacy by citizens. Another driver of this shift is economic growth, as the Digital Government paradigm is deemed to enable this growth. Examples of countries that are advanced in this area are Denmark, Estonia and the Czech Republic, as they have a clear digital strategy.

2. On the other hand, a number of participants highlighted that there is still a long way to go before governments are embracing the shift towards Digital Government. As with most changes within an organisation, change is something that employees and civil servants do not necessarily want. In addition, digital immaturity in the public sector is considered to be a key inhibitor. This goes hand in hand with a lack of skills and knowledge to realise the shift. From a technical point of view, the legacy systems and fragmentation of IT infrastructure in public organisations also inhibit this change. Citizens are also more and more demanding privacy from their e-services, which is considered to be an inhibitor as well for digital transformation.

**Q2: Does the digital age contribute to a shift in the ‘public task’ and are there any variations across sectors?**

Two interesting statements arose in the discussion. The first was that government has no future outside of Digital Government. This means that public administrations have an urgent need to capture the value from digital transformation and if they fail to do so, they do not have a right to exist.

A shift in the ‘public task’ can be found in the fact that more and more citizens are challenging the data that is provided by government. For example in The Netherlands, citizens are measuring noise pollution themselves close to airports, which results in data often more accurate than the data measured by the government. Governments, on the other hand, are using and including this data in their own database and giving it back to the citizens. This is a sign that they recognise that data measured by citizens is sometimes more accurate and that their public task may not be in data collection but in data distribution.

**Q3: What technology trends play a key role in your digital transformation?**

A number of technology trends were identified that play a key role in digital government transformation, including Artificial Intelligence, Blockchain, machine-generated data input/validation instead of human input/validation, web services and Web Feature Services (WFS), open-source developments and digitalisation in the broadest sense. Not all trends reached consensus, for example blockchain was perceived to be more hype than truth by some participants. However, it was also recognised that these technology trends are only one dimension of digitalisation, as the way that governments and citizens are able to use these technologies is much more important.

**Q4: What shifts do you envisage in the next 5 years in the use of location information, and in what sectors?**

In five years, spatial data will disappear as a separate information entity. It will become invisible and just another data dimension. This stresses the value of location information in public services and a number of participants argued that this shift is already taking place.

## TOPIC 2: Location data sharing opportunities and barriers

Facilitator: Debora di Giacomo (Wavestone)

Note taker: Barbora Kudzmanaite (Wavestone)

### **Q1: What are the main opportunities that could be unlocked by a more extensive application of the INSPIRE Directive for the delivery of geospatial data based products and services?**

- Open geospatial data can help to bring end-users closer with the data scientists to create and unlock new opportunities.
- SMEs could benefit from more open geospatial data being available – new business opportunities, higher revenue streams and cost savings;
- A lot of value can be created from easier access and reuse of geospatial data on the web;
- Interoperability between different data sets can help create even more data reuse and innovation.

### **Q2: What could be done to tackle some of the identified barriers to the wider applications of the geospatial data?**

- Perhaps more strict and well defined standards within INSPIRE are needed;
- A mind-set change needs to take place – more open data could be created and its benefits clearly highlighted;
- Service level agreements could be put in place to foster more data reuse by the private sector;
- Public administrations could try to take the perspective of the user – make datasets more easily searchable and allow users to rank or rate datasets.

### **Q3: Within the framework of INSPIRE, what factors continue to limit the access to and reuse of geospatial information, held either by public or private organisations, for potential users?**

- Broadness of the INSPIRE specifications;
- INSPIRE is not the only standard in the market. Each domain that is related to geospatial data has its own standards and specifications – discrepancies remain;
- Searchability of data is a barrier;
- Greater accessibility and visibility of the published data are needed;
- It is not easy to reuse and combine geospatial data with others types of data;
- There is resistance to change amongst public administrations who are not always comfortable with the idea of their data being reused.

### **Q4: What are the most important actions that policy makers at European and Member States' level could take to improve the use of geospatial data and the delivery of geospatial data based products and services?**

- Coordination: the European Commission should continue supporting Member States in helping them understand and navigate all Directives and regulations linked to geospatial data;
- The European Commission should aim to standardise data reporting practices.

### TOPIC 3: Building a business using public sector location data

Facilitator: Gerard Mor (Beedata, ES)

Note taker: Giacomo Martirano (DG JRC, External Consultant)

#### **Q1: Public open data value is increased when it is used in private sector products or services. Do these products and services need high quality data, and if so, is this need met in practice?**

Data harmonisation is perceived as an important condition for data (re)usability. The level of quality of data needed strongly depends on users' requirements, which may vary significantly across different uses/applications.

The users need to know very precisely what they can get from the data made available, therefore "high quality data" equals "high quality metadata".

National catalogues of open data should provide a strong support.

#### **Q2: INSPIRE relates to data from the public sector: are there the right conditions to access and reuse this data for commercial purposes?**

The lack of harmonisation in the different data policies (at MS level) represents, in general, a high barrier.

Use of data for commercial purposes generally implies specific conditions to access and use, which need to be addressed (and possible related issues solved) on a case-by-case basis.

It was suggested that the public sector could start conversations with SMEs on the topic and help data producers to provide more harmonised data in order for it to be reused by others in a simple way. For example, Dutch SMEs prefer PDOK (<https://www.pdok.nl/>) instead of INSPIRE data because it is easier to use.

#### **Q3: Are data protection policies a help or a hindrance in using public open data?**

Data protection policies applied to users' data cannot be avoided. More transparency about the use of the data should be applied, e.g. asking the final customers if they allow the sharing of their data.

### TOPIC 4: Role of ELISE in supporting the European data economy

Facilitator: Francesco Pignatelli (DG JRC)

Note taker: Maria Teresa Borzacchiello (DG JRC)

#### **Q1: What is the role of location information in the roadmap towards digital transformation of government in your country?**

The audience showed some confusion over the difference between e-Government and Digital Government. Therefore the two terms should be clarified and explained well. Most of participants welcomed new developments, including feedback from citizens.

On geospatial data, they pointed out that such data is more and more embedded in existing governmental services, but they form a silo as particular standards, specifications and so on set them apart. The audience agreed that geospatial data is not special, but should be considered as any other kind of data.

The concept of digital transformation was also discussed: to create the ecosystem and to understand the added value of transformation along the whole value chain is important. If geospatial data is made fit for purpose, it can help the public sector to be efficient.

**Q2: What barriers are you encountering and what opportunities are you exploiting where pan-European collaboration may be relevant?**

The importance of EU cooperation was highlighted in particular by representatives of new or candidate EU countries, hoping to learn from more mature countries. Moreover, skills and education of users is critical, especially when the use of the data is low. Shared guidelines can be also a possibility to share experiences.

**Q3: What could ISA2 bring to SMEs working with location information and INSPIRE help them support the European data economy?**

In some cases, the private sector is building on the inefficiencies of the public sector. For example, private companies could help in validating the quality of open data, in providing support with the provision of metadata and discovery services, which are the first step for the use of the available data.

The private sector plays an extremely important role: government is providing the infrastructure, making the data available, and then the private sector should act as an intermediary to provide added value services and stimulate competition. However, it is important for the public sector to collaborate as well with the private sector, to understand if there is indeed an interest to play such an intermediary role.

Creating a market place is very important to stimulate this competition.



## Part 2: Developing solutions

1. [Sharing spatial data on the web](#) – building on SDIs to make spatial data available to a wider audience – by making the data browsable by humans, crawlable by search engines, accessible to developers via APIs and by [supporting user feedback](#), Clemens Portele (interactive instruments) / Paul Van Genechten (GeoCat)
2. [Digital platforms and APIs](#) – the growing importance of location-enabled digital platforms, how they are governed and operate, the role of APIs in the context of these platforms, and the implications for INSPIRE, Ken Van Gansen (Gartner)
3. [Searching for information linked to location](#) – an EU ‘gazetteer’ approach to complement national solutions, Lorena Hernandez (DG JRC, External Consultant)
4. Case Studies
  - a. Public sector: [API Carto for the winegrower](#) and other users, Marc Leobet (FR)
  - b. Private sector: [Road safety data exchange in Europe](#), Maxime Flament (ERTICO)

### *Group brainstorming and feedback*

Attendees were invited to contribute to two of the four discussion topics planned for the second session. Feedback was then given to the whole audience by the facilitator or note taker. Each group was invited to consider a set of predefined questions. The main outcomes are summarised below.

#### TOPIC 1: Sharing spatial data on the web

Facilitator: Clemens Portele (interactive instruments)

Note taker: Paul Van Genechten (GeoCat)

#### **Q1: What is the target audience, specialists as intermediaries to the market, or non-specialists to get the widest possible direct use?**

- The target audience is the non-specialist
- This is mainly developers and content creators with geo-knowledge
- It is not always easy to use spatial data correctly without spatial expertise

#### **Q2: Will applying these best practices in data sharing make it easier to use INSPIRE in Digital Government? What are the most important gaps that should be addressed?**

- Good APIs are essential
- Using the technological state-of-the-art that developers expect is important – but it is not just about technology
- Government datasets are mainly designed to support government processes, open data rules promote the publication of the raw data in original form, but there is friction between raw data and easy-to-use data
- Indexing by search engines is important, but geoportals may remain relevant
- Indexing of datasets by search engines is in its early stages, both for our community and the search engines, more experimentation and work is required

- It is important to make HTML generated from data useful for humans
- In many cases, the data itself is not really useful alone, it needs to be presented with context (using maps, links, etc.)
- Sharing vs publication - publication is about making it available, sharing includes making the data useful
- Our standardisation activities over the last 20 years make it possible that we can work on these topics and use proxies, other domains are not in a position to do this
- Can this be used to integrate non-LMO data without meeting all INSPIRE requirements (metadata, services)? (yes)
- Central access points seem important, too
- What is the role of government - how much of this is a government task that should be funded publicly or where should this be done by intermediaries / the market?

**Q3: What will work best in practice in terms of user feedback on the data?**

- Participants had experience with user feedback
- From experience, feedback from developers is more useful than from end-users
- In an e-participation application, the only input that was received was from specialists
- Acceptance of feedback mechanisms is not yet at the same level as for other use cases (reviews of hotels, movies, recipes, etc.)
- No one in the discussion group was at a stage of publishing feedback, although people are more aware of the value of feedback

TOPIC 2: Digital platforms and APIs

Facilitator: Ken Van Gansen (Gartner)

Note taker: Simon Vrekar (DG JRC, External Consultant)

**Q1: Is your government developing new digital public services along the platform paradigm? If YES, what is the key driver for taking a platform approach? If NO, what is the key inhibitor for not taking a platform approach?**

A general observation was that participants were quite confused regarding the term 'platform', usually mixing the technical term 'platform' and general concept of 'digital platform'. Most common drivers that were mentioned were: INSPIRE, e-Government, military, transparency, collaboration between communities, single access point to the data. On the other hand, barriers were mentioned such as: lack of precise standards or too many of them (and too broad standards), legislation/regulation, privacy, unclear roles of public/private, competition.

**Q2: What platform business model is most applicable to your digital public services and why?**

Responses to that question were not quite clear as mentioned above. In the case of France, the Urban Risk Planning 'platform' was mentioned as an example of the 'creation' type of business model. On the other hand, the Finnish Geospatial platform is rather in the 'orchestration' business model group.

**Q3: Where is your country using APIs for location information? What benefits and issues are you finding?**

The highlighted benefits of APIs included: standardisation, ease of use, promoting data sharing, supporting the ‘once only’ principle and ‘breaking the barriers’ to data access. Two specific issues were mentioned: implementation difficulties/complexity and the ‘fear’ of losing grip on the data by making it available outside the ‘silo’. Also, APIs are seen as requiring specific GIS/technical knowledge. It was suggested that an easy way to access the functionality provided by APIs should be provided.

TOPIC 3: The role of an EU gazetteer

**Q1: Will an EU gazetteer be useful? Are the applications listed relevant to you? Can you propose any other missing application?**

As a first step, to understand the possible user demand for a pan European gazetteer, participants were asked to rate the degree of relevance (**Low | Medium | High | Don’t know**) of a list of cross border applications taken from the ELISE EU Gazetteer feasibility study. They were also asked to indicate which applications they saw as the highest priority. The results are in the following table.

ID of application	Name of the application	Low relevance	Medium relevance	High relevance	Don’t know	First priority
1	Federated search across existing data portals	3	3	6	0	1
2	Statistical analysis	1	2	5	2	1
3	Collaborative territorial planning	1	8	3	0	0
4	Law enforcement, analysis of crimes	6	2	4	0	2
5	Validation of (foreign addresses)	2	8	0	2	0
6	Situational awareness during emergency response	1	0	11	0	6

As illustrated by the table, the application where a pan European gazetteer is considered to be very relevant is **“Situational awareness during emergency response”**, with votes from 11 out of 12 participants. This is followed by the more generic applications **“Federated search across existing data portals”** and **“Statistical analysis”**. It is worth reporting a comment from an attendee who indicated that any of the business specific applications (3-6) cannot be possible without the generic applications being in place (1, 2). In identifying priorities, participants pointed out again the application **“Situational awareness during emergency response”**, followed by **“Law enforcement, analysis of crimes”** as a system to support the terrorism fight.

Additional examples of cross border applications that could use a pan European gazetteer were:

- Transportation movements (commuters, tourists, trade...)
- Geo-referencing customer data from enterprises

**Q2: What capabilities should an EU gazetteer service provide? How should MS data sources be integrated?**

The participants agreed with the capabilities or functionalities to be provided by a gazetteer service mentioned during the speed presentation (locate, disambiguate, geocode, reverse geocode, lookup, link).

They did not suggest any additional features but they indicated that it would be advisable to understand what “failed” in former initiatives for building an EU-gazetteer and to rely on machine-readable interfaces if a federated approach is applied.

**Q3: In what ways does INSPIRE present new opportunities for an EU gazetteer?**

This question could not be covered fully because running out of time, but an attendee mentioned that address datasets coming from INSPIRE could be valuable for an EU gazetteer, since they already provide harmonised representations of addresses, a theme that is traditionally very different from one country to the other.

TOPIC 4: Public / private sector data exchange and the role of INSPIRE

Facilitator: Maxime Flament (ERTICO)

Note taker: Maria Teresa Borzacchiello (DG JRC)

**Q1: How can the private sector leverage the wealth of public spatial data available through INSPIRE framework to create business opportunities?**

The INSPIRE aim to promote data accessibility can also provide business opportunities.

As INSPIRE is difficult for end users to use, there is the need for private sector intermediaries to create applications for simplifying and bringing INSPIRE to the level of the users.

However, it is not clear whether the private sector has an interest in being an intermediary for exploiting INSPIRE data. According to the participants, INSPIRE should be one trusted source, leveraging on that fact that it is authoritative and it should have some validity and good quality. However, public administrations are afraid of the term “trusted” – they are cautious in giving guarantees of quality. In Portugal, they have exploited the possibility of applying the same rules for geospatial data for the public and the private sector.

**Q2: What are the conditions for the private sector to be able to exchange their data with the public sector for the benefit of the society, without losing their competitive advantage?**

There should be mutual benefits: the return of new datasets from the private sector to the public sector is not automatic: sharing data is very difficult and there should be clear licensing conditions.

**Q3: In your Member State, are there examples of successful cooperation between public and private sector involving mutual data exchange?**

The following examples were provided by the audience:

- In Sweden, the TN-ITS protocol has been implemented, to enable accurate and up-to-date road safety data exchange between public road authorities and private navigation system providers
- In Denmark, they investigated the use of data in OpenStreetMap (OSM) and found that the major problem is the license term: OSM data cannot be used for any commercial service

- In Azores (PT), all the addresses were shared with the post offices. When this became a private company, the government still shared the address data with them, as they benefit from each other, e.g. when there is a change in the addresses, the post office send information back to the government
- In Belgium, the route network plus private grounds information about existing plans are shared with the fire service to update their maps
- In France, public administrations do not have to pay for IGN data – and also data are open to private sector if there is a public purpose

The audience agreed that there is the need to find and share more success stories like these.

**Q4: What is the policy context in your country and what difference will the revision of the PSI Directive make (e.g. “reverse PSI”)?**

In general, it was agreed that it is not clear how to deal with data coming from the private sector. The audience was also referring to the difficulties of dealing with private data (e.g. privacy issues), suggesting that there should be clarity of definitions when discussing these matters, especially for non-experts.

More info about ELISE at: [https://ec.europa.eu/isa2/actions/elise\\_en](https://ec.europa.eu/isa2/actions/elise_en)