

Meeting the Obligations of the EU INSPIRE Directive

Considerations for Public Sector Organisations

White Paper



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Meeting the Obligations of INSPIRE

This white paper outlines how you can deliver an infrastructure to meet key requirements for the INSPIRE agenda. Pitney Bowes Business Insight (PBBI) is focused on building innovative, and easy to use solutions that can help you meet these obligations. This white paper focuses on the obligations, processes and requirements for INSPIRE and explains how these can be met in order to provide value to organisations and citizens.

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Introduction

“All Government organisations face continual challenges with discovering data, and then enabling efficient and appropriate access to that data. The high level goal of INSPIRE is enabling member states of Europe to make better informed decisions, more insightful planning and more efficient resource deployments by a shared and collaborative approach to intelligence and key decision making. This goal will lead to improved operational excellence and lower overall costs.”

Pitney Bowes Business Insight's aim is to provide those organisations impacted by INSPIRE with the ability to:

- Meet the requirements of the EU's INSPIRE Directive as cost effectively and efficiently as possible
- Derive maximum benefit from investments in spatial data infrastructures and metadata
- Improve services to citizens
- Form closer partnerships with other organisations
- Support internal staff in their day-to-day roles

The impact of INSPIRE can be described in 4 key concepts. These four areas have implications in terms of the systems, processes and workflows around data management in an organisation.

- 1) **Metadata** - the publishing of metadata to aid discovery and determination of 'fit for use'. Metadata also determines the ownership and authority of data, and helps reduce duplication of effort.
- 2) **Service Infrastructure** - a range of Open Standard services to connect organisations and disparate systems together. The services fall into 5 main categories [A11.1]
 - a. Discovery - services to find and understand the data
 - b. View - services to visualise data in context
 - c. Download - services to download content
 - d. Transform - service to convert formats and frames of reference
 - e. Invoke - services to combine multiple steps into a single, re-usable process
- 3) **eCommerce** - the management of access for services other than discover and view may require appropriate controls, licenses and charging for use.
- 4) **Compliance** - the monitoring and reporting of compliance with the directives and throughput on services.

Scope

This paper will outline:

- The key steps to undertake for implementing INSPIRE
- Further developments that need consideration
- A discussion on spatial data and indirect data references

Audience and Assumptions

This paper assumes some familiarity with the requirements of INSPIRE, the directives and understanding of the key goals. The following roles can benefit from these topics:

- GIS Practitioners and Managers
- IT Managers and Data Custodians

Initial Steps to INSPIRE

Preparing for INSPIRE can be quite daunting, there are a range of requirements, standards and deadlines outlined. It is important to ensure resources are in place from the onset in order to ensure compliance is achieved as smoothly as possible. However, there are a number of steps to be taken to prepare for the initial phases of INSPIRE.

Step 1 – Undertake a Metadata Audit

Survey your data, determine the principle version, and assign a data steward, somebody who is responsible for the data, maintaining the metadata, and providing ownership within the business. If metadata exists, then verify it is current, where it resides and in what format or schema.

Step 2 – Metadata Capture

Complete an audit of spatial data based on ISO standards and legislation. Use this activity as an opportunity to clean and validate the source data, so you can define its quality criteria and fit for use and purpose. Where possible identify levels of data certification where the appropriate standards can be applied.

Step 3 – Share Your Metadata Internally

Prior to sharing metadata externally or with partner organisations, it will help to make use of the metadata catalogue for internal business use. This allows validation of data and policy prior to exposing potentially sensitive information externally. This enables testing and verification before key decisions are made based on the data. Organisations can start to derive immediate benefit from the data while improving internal operations and awareness.

Step 4 – Start to Undertake a Data Quality Enhancement Process*

Once the metadata is published and a catalogue of data is available, now is the time to start developing a data quality strategy. In many cases, the value of data, and therefore the ROI and cleaning that data, can only be determined once a community of users are aware of its presence, and intrinsic value.

* Data, even if its level of quality does not meet agreed criteria, should still be audited and metadata captured for it. INSPIRE will require metrics on data maintenance, auditing will provide access to those key metrics. It may not be cost effective to clean the data at the time, but keeping a record of it, its data quality issues, and assigning a nominated custodian, means that the data can be accessed, and if required for a certain purpose, it may be appropriate to develop a business case to address the data quality issues. In some cases errors in data, are worth retention as they can be useful in future data quality processes.

Step 5 – Share Your Metadata Externally

Consider your metadata to be public domain, be proud to be a custodian of data, and share this information with the public. This is the first stage to being able to share the actual data. You should, where possible, keep records of requests for data from the public so you can determine initial use requirements.

Note: It is important to start small, take each step in sequence, and then look to scale over time.

Continuing Your Investment in INSPIRE

Once Metadata is captured and is being maintained as part of your ongoing business processes, ensuring the greatest value can be gained from your data is the next phase in INSPIRE. This is delivered by providing other external consumers access to your data.

Step 6 – Prepare Your Data for Publication

Some data may be maintained in databases that also include personal information, or information that cannot for Information Assurance purposes, license limitations or copyright, be released in the public domain directly. In this case, re-producible processes need putting into place, to remove associated information that restricts data distribution, and in some cases the data may need aggregating or generalising, in order to remove identifiable marks.

Step 7 – Determine the Licenses Under Which Data Will Be Shared

There are many different licenses available under which data can be shared. Considerations need to be made for the control, attribution and liability associated with the use of the data by 3rd parties. For example data published via <http://data.gov.uk/terms-and-conditions> is aligned with the Creative Commons license, but all warranty for data quality is relinquished. This may be an important consideration when working across agencies with regard to decisions related to government operations, therefore data may be published under different licences depending on who will consume and use the data.

Step 8 – Provide a Service for the Download of Data

Providing data download is a first step in making your data available to others. In many cases on <http://data.gov.uk/> for example, the data is available as a spreadsheet, it is possible to automate the access and consumption of such data formats, but the processes would still in most cases require the involvement of a person in the process. There is also in some cases a significant delay in data acquisition with a dependency on the bandwidth between the data provider and consumer being sufficient for the data volume being accessed. Also in this context the data consumer becomes responsible for copying, storing and maintaining the data for future use. This can result in a proliferation of copies, of different vintages.

Step 9 – Provide a Direct Service to Data

However the real power comes in providing the data as a service, so applications can consume the data more directly and closer to real-time. For example, data feeds such as <http://backstage.bbc.co.uk/data/TravelFeeds> provide live data information in a format that is very easy to integrate and gain value from. INSPIRE lists a range of OGC standard services, but consider using feeds and data services beyond just the standards, publishing update information via RSS for example allows data consumers to subscribe to your updates and changes. In many cases the end user does not need to take on the overhead of maintaining the data.

Step 10 – Provide Reports on Your Compliancy

INSPIRE is a measurable programme, and in most countries compliance is a legal obligation. An important aspect is being able to demonstrate compliance is the ability to capture metrics on processes, metadata quality, data quality and service availability. Organisations who have an INSPIRE obligation, have to provide a service, with a high level of SLA. Just like with the metadata and source data, the metrics will be made available to other organisations to drive continuous improvement initiatives. Having a method of measure will also enable the ongoing development of future business cases, as well as the optimisation of processes and services delivered.

INSPIRE is not about just meeting the obligations laid down in the directives, it is also about putting in place the processes and systems which will enable to continuous development, and improvement of processes, data integration, data quality and value gained from connecting information together. This is a long term programme and will be a key initiative of delivering a shared information society where transparency of information and the innovation and value gained from that shared information can drive key benefits to society as a whole.

A Note on Spatial Data

The INSPIRE directive refers to spatial data throughout, and defines it as data with a direct or in-direct reference to a specific location or geographical area [A3.2]. The phrase 'indirect reference' broadens the remit greatly, as this means any data that has a key or reference is applicable to the directive. Refer to the Directives Annex I – III for specific lists of target data sets.

For example, in the United Kingdom, the process of geo-coding, and attaching either Ordnance Survey TOID [4] keys or National Land and Property [5] UPRN keys is standard practise, to datasets such as citizen, asset and tax information, this results in these 'indirect' datasets being covered within the INSPIRE Directive as well. Of note is reference to Annex III which includes many datasets captured and managed via PBBi's Confirm Infrastructure Management Platform.

The directive indicates spatial data requires special handling as part of its lifecycle. Data, either spatial or otherwise is equally important in this process. All data should undergo appropriate data integration, master data management and data quality processes independent of type. This is critically important where a cross reference between spatial and non-spatial datasets is present.

Summary

References

[1] Directive 2007/2/EC, 25/4/2007

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:108:0001:0014:EN:PDF>

[2] eSDI-Net+, Community Network

<http://www.esdinetplus.eu/>

[3] Metadata Regulation No 1205/2008, 3/12/2008

<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:326:0012:0030:EN:PDF>

[4] UK Ordnance Survey TOID

<http://www.ordnancesurvey.co.uk/oswebsite/freefun/geofacts/geo1201.html>

[5] UK National Land and Property Gazetteer

<http://www.nlpg.org.uk/nlpg/>

Resources

INSPIRE Main Website

<http://inspire.jrc.ec.europa.eu/>

INSPIRE Conference 2009

http://inspire.jrc.ec.europa.eu/events/conferences/inspire_2009/index.cfm

Pitney Bowes Business Insight

<http://www.pbinsight.com>

MapInfo Stratus Blog

<http://stratus.pbbiblogs.com/>

About Pitney Bowes Business Insight

Pitney Bowes Business Insight (PBBI) is a wholly-owned subsidiary of Pitney Bowes Inc. (NYSE:PBI). PBBI provides a unique combination of location intelligence, data management, and customer communication management solutions that enable organisations to make more informed decisions about customers, competition and market expansion. With the industry's most comprehensive set of solutions for maximising the value of customer data, PBBI provides the tools required to more effectively locate, connect and communicate with customers and citizens in today's global markets. Leading organisations rely on PBBI solutions to increase the accuracy and effectiveness of customer and citizen information delivery and drive profitable growth. For more information visit: www.pbinsight.co.uk

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