Local Government Association

A guide to INSPIRE compliance in Local Government

Newly revised version May 2014

A guide to INSPIRE compliance in local government

Purpose

The purpose of the Infrastructure for Spatial Information in the European Community (INSPIRE) Regulations (2009) is to enable the sharing of environmental data among public sector organisations and to provide better public access to the same data.

This short guide is to assist local authorities to comply with INSPIRE regulations by outlining what the regulations mean, providing information about the technical specifications and listing the steps authorities need to take to become compliant.

What is INSPIRE?

INSPIRE is a set of regulations that define how to publish and share spatial data among public sector organisations through a common Europe wide spatial data infrastructure. Spatial data is information that corresponds to a location, allowing it to be viewed on a map. INSPIRE enables data to be comparable across regions, the UK and Europe to give decision makers consistent evidence about the environment. The regulation came into force in 2009 and its implementation is led by the UK INSPIRE team in Defra (for further information see http://data.gov.uk/location/inspire).

INSPIRE defines common technical standards for publishing spatial datasets such as addresses, transport networks, land use, protected areas and risk zones. In total 34 data themes are defined under INSPIRE grouped into three Annexes each with different implementation schedules. A full list of the data themes is shown in Appendix A.

What does INSPIRE mean for local authorities?

Local authorities are required to publish spatial data under INSPIRE. An indicative list of local government data topics which may fall under the INSPIRE themes is provided in Annex B.

To comply with INSPIRE local authorities must:

- Make data discoverable, by creating INSPIRE standard compliant metadata and publishing this through a discovery service (in the UK this service is data.gov.uk).
- Publish data through INSPIRE standards compliant network services to be able to view and download the data.
- Transform data to comply with a series of INSPIRE data specifications
- Put in place policies etc to enable sharing of data between public bodies including EU bodies.

A brief overview of the technical requirements in local government is given below, for detailed technical guidance please refer to http://data.gov.uk/location/guidance_and_tools.

What do authorities need to do to comply?

The implementation of INSPIRE is divided into two distinct phases:

Phase 1 – publishing your data as it is now.
Phase 2 – publishing INSPIRE compliant data.

Phase 1 – view and download services should now be available for existing INSPIRE datasets. These services and the datasets should be registered with the discovery services on data.gov.uk using compliant discovery metadata.

Milestones for complying with Phase 2 of the INSPIRE regulation are shown in the table below (for more details see
http://data.gov.uk/sites/default/files/UKL%20Getting%20Started%20Guide%203%20v2-1%20%282%29.pdf)

Phase 2	
Date	**Milestone**
December 2012	Publish newly collected and extensively restructured INSPIRE **Annex I** compliant data available
October 2015	Publish newly collected and extensively restructured INSPIRE **Annex II and III** compliant data available.
June 2017	Publish INSPIRE **Annex I** compliant Data
October 2020	Publish INSPIRE **Annex III** compliant data

Step by step guide to implement INSPIRE

This guide describes a set of steps to guide and help authorities to publish data that meets INSPIRE standards:

Step 1: Evaluate and select data sets

Step 2: Create INSPIRE compliant metadata

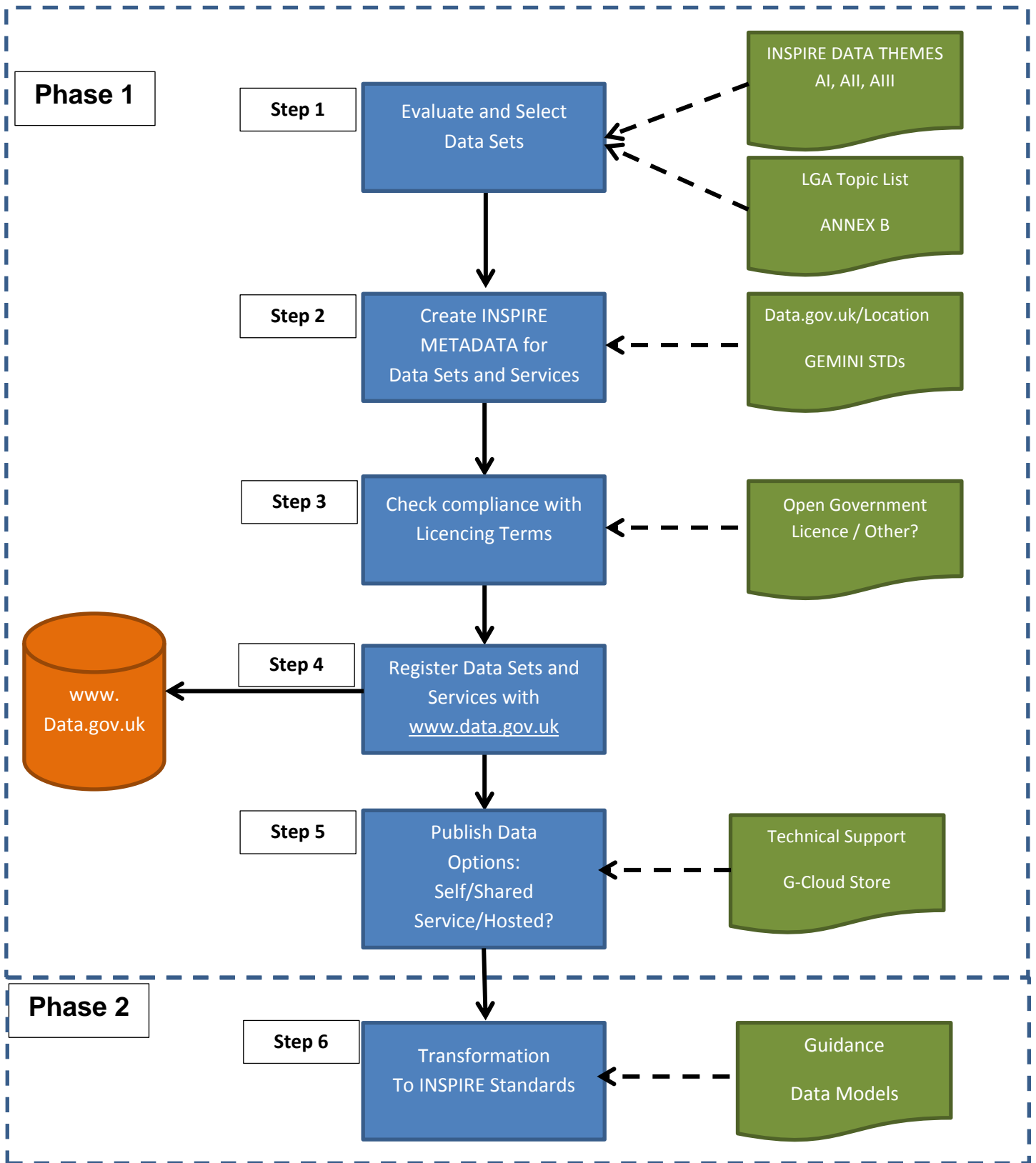Step 3: Check compliance with licencing terms

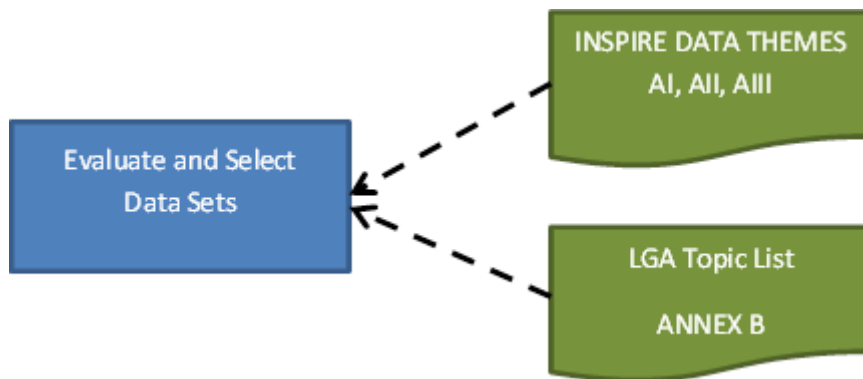Step 4: Register data and services on data.gov.uk

Step 5: Publish data

Step 6: Transform data to INSPIRE standards

The flow diagram below highlights the steps on ways authorities can implement the INSPIRE agenda.

INSPIRE FLOWCHART

Phase 1

Step 1 — Evaluate and Select Data Sets

INSPIRE DATA THEMES AI, AII, AIII

LGA Topic List ANNEX B

Step 2 — Create INSPIRE METADATA for Data Sets and Services

Data.gov.uk/Location GEMINI STDs

Step 3 — Check compliance with Licencing Terms

Open Government Licence / Other?

Step 4 — Register Data Sets and Services with www.data.gov.uk

www. Data.gov.uk

Step 5 — Publish Data Options: Self/Shared Service/Hosted?

Technical Support G-Cloud Store

Phase 2

Step 6 — Transformation To INSPIRE Standards

Guidance Data Models

STEP 1: Evaluate and Select Data Sets

Which datasets will have to be published?

The INSPIRE regulations define and describe 34 data themes divided into three annexes. The scope of the data themes are defined down to feature level through detailed data specifications.

The LGA - working in conjunction with representatives in local authorities - has produced an indicative list of the data topics which fall within scope of the INSPIRE themes based on their statutory requirements. Not all of the data themes are within the scope of a local authority's public task. A copy of the list is shown at Annex B of this guide.

The list defines a minimum set of data sets. It is within the remit of each local authority to decide which datasets to publish under statutory duty. This varies between different authority types. The regulations cover existing spatial data sets and do not require the creation of new data sets. However, any new data sets created in the future will have to comply with INSPIRE regulations. There is no requirement to transfer data that is not held electronically into an electronic format.

Local authorities have to publish addresses, street networks and protected sites under **Annex I** data themes. These obligations have been passed on to national portals that collate and publish the data on behalf of local authorities. Namely, GeoPlace collates address and street data from local authorities and publishes them as part of the Data Corporation Agreement. Natural England collates and publishes local nature reserves data from local authorities and English Heritage does the same for conservation areas. You should check that your organisation has processes in place to pass relevant data to these organisations unless you publish your data already in compliance with INSPIRE.

Local authorities are not mandated to publish any of the **Annex II** data themes, however, if they hold the data they can - rather than must - publish the data.

Many of **Annex III** datasets fall within a local authority public task. Local authorities are mandated to publish the data if they have to create them under statutory duty.

Using the INSPIRE data themes each authority should evaluate its data catalogue/inventory to identify data within scope of INSPIRE. Authorities should then select relevant data topics and data sets to be shared.
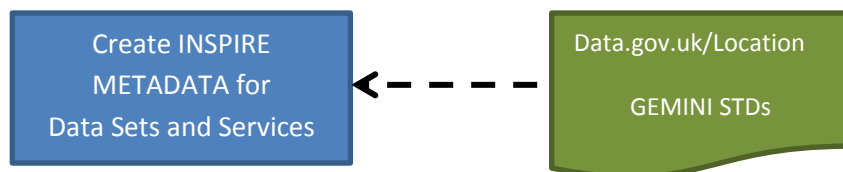
For example: From Appendix B in this document.

- Theme: Utility and Government Services
- Topic Areas:
  - Administrative and Government Services.
  - Environmental management Facilities (waste disposal and recovery).
  - Premises database/land and property assets.

Notes:
- A full list of data themes (AI, AII and AIII) can be found in Appendix A of this document.
- To support data selection, the LGA has developed an indicative data topic list. This is outlined in Appendix B of this document.
- However, to identify all the relevant topics and data sets, authorities may need to undertake a 'data audit' as part of this process.
- Local authorities may need to refer to the INSPIRE data specifications on the EU INSPIRE website for further details, available on http://inspire.ec.europa.eu/index.cfm/pageid/2.

STEP 2: Create INSPIRE compliant METADATA for data and services

Metadata

Metadata is the data about the datasets and services which councils are required to publish under INSPIRE regulations. Metadata provides the means for data users to discover what data exists and what services are available, or vice versa.

You will need to create two types of discovery metadata:

- Metadata for the dataset being published.
- Metadata for the network services being used to publish the data.

Both need to be managed together, as both must reference each other unless a publishing service is not available yet.

The metadata standard for data sets used for INSPIRE in the UK is the UK Location Application Profile of GEMINI2 which specifies a set of metadata elements for

describing geographic data resources. This profile must be used to create INSPIRE compliant metadata for each data set. It will ensure that your metadata is compliant with the data.gov.uk discovery service.

You can use the on-line UKLP Dataset Metadata Template to create your metadata. We would advise you to test the process on a metadata record for a single data set and validate it first (see also step 4). Then use the approved template as a basis for creating new metadata XML files.
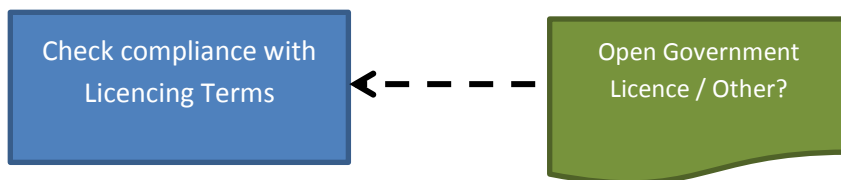
UK Location has created an online tool called the "Metadata Editor" for creating UK GEMINI2 metadata for registering on data.gov.uk.

Further guidance is available for:
- Creating, maintaining and registering metadata : http://data.gov.uk/sites/default/files/DMS%20Operational%20Guide%202-2.pdf.
- Implementing GEMINI2 UK metadata standards and an on-line tool for creating GEMINI2 metadata (the "Metadata Editor"): http://data.gov.uk/location/guidance_and_tools#discoverymetadataservice.

Note: Data.gov.uk is the UK INSPIRE compliant metadata portal.

STEP 3: Check compliance with Licencing Terms

Authorities must ensure they comply with relevant licensing arrangements before publishing the data. If data are not bound by any third party licensing restrictions such as the Public Sector Mapping Agreement (PSMA) licence, it should be published under the Open Government Licence. Available here: http://www.nationalarchives.gov.uk/doc/open-government-licence/
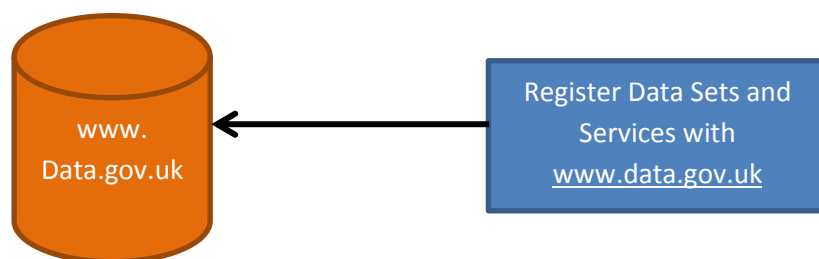
Licensing your data

When publishing your data you should state how the data can be used and shared. Government policy encourages the publication of public data under the Open Government Licence which permits open onward reuse. For further information please visit: http://www.nationalarchives.gov.uk/doc/open-government-licence/.

Many of the geographic data collated by local authorities are derived from third party data most notably Ordnance Survey (OS) data. The PSMA licenses OS data to local authorities and other public sector bodies. The PSMA allows the publication of datasets which contain OS derived data under the terms of the PSMA licence.

The OS has issued an End User Licence for INSPIRE. The INSPIRE End User Licence allows PSMA members to release data in order to meet their INSPIRE obligations, including through the provision of Web Mapping Services (WMS) and Web Feature Services (WFS). This licence is drafted on the basis of click or deemed acceptance and does not require the PSMA member to retain details of the end user. The licence is available on http://www.ordnancesurvey.co.uk/business-and-government/public-sector/mapping-agreements/inspire-licence.html.
Further guidance is published as follows:

• Data sharing operational guidance
http://data.gov.uk/location/guidance_and_tools#datasharingoperationalguidance

- Guidance on PSMA licences
  http://www.ordnancesurvey.co.uk/oswebsite/public-sector/mapping-agreement/licensing.html
- Guidance on PSMA INSPIRE licences:
  http://www.ordnancesurvey.co.uk/business-and-government/help-and-support/public-sector/guidance/inspire.html
- Licensing for open data publishers by the Open Data Institute
  http://theodi.org/guide/publishers-guide-open-data-licensing

STEP 4: Register Data with www.data.gov.uk

UK Location discovery metadata records are registered using the UK Government data publishing and discovery portal data.gov.uk. Data.gov.uk is a single point of registration, discovery and access for a range of data, not purely location information. It provides two channels for registering discovery metadata, one for location metadata (including INSPIRE) and one for everything else.

Publishing discovery metadata for UK Location for data and services is a four stage process:
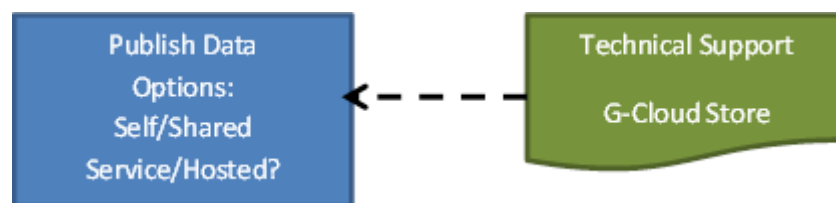
1. Register your organisation on data.gov.uk so that your authority data and services can be searched externally.
2. Publish discovery metadata records for data and services to a harvest location (EG on your authorities website), from which the resources can be machine-accessed from the Internet.

3. Register your harvest location with data.gov.uk.

4. Collection (sometimes known as 'harvesting'): data.gov.uk collects the metadata records from the registered location, makes them available within data.gov.uk, and for further collection on to Europe.

Once collected, the individual data and service discovery metadata records will be validated. If the validation is successful, the metadata record will be visible within data.gov.uk. Further guidance relating to creating, maintaining and registering metadata can be found here:
http://data.gov.uk/sites/default/files/DMS%20Operational%20Guide%202-2.pdf.

STEP 5: Publish the Data

Under INSPIRE it is not sufficient to just publish the dataset on your website or to provide an interactive map.

INSPIRE specifies network service to directly stream data into other applications that
- Allow datasets to be searchable (**Discovery Service** provided by data.gov.uk)
- Allow datasets to be visualised (**View Service**)
- Provide access to data content (**Download Service**)

Discovery Service

- A discovery service enables searches of your online meta data catalogue (see above for further information on how to create metadata).
- In the UK this service is provided by UK Location Discovery Metadata Service on data.gov.uk.
- To publish the metadata into UK Location, you must first register yourself as a data publisher using the central registration service of data.gov.uk, your authority may already be registered with the site, user registration support can be obtained from the data.gov.uk team team@data.gov.uk.
- Once you publish your data you need to register your metadata, view and download services on data.gov.uk.

View Service (Web Mapping Service (WMS))

- A view service is a publically-accessible network service which provides an image of part of a spatial data set in response to user-defined requests defined by Open Geospatial Consortium Standards.
- It presents a snapshot of spatial data as an image (GIF, JPEG or PNG)
- INSPIRE View Services must be compliant with the INSPIRE Regulation on Network Services (http://inspire.jrc.ec.europa.eu/index.cfm/pageid/3).
- UK specific guidance is available on data.gov.uk at http://data.gov.uk/location/guidance_and_tools#viewservices
- Just publishing images of maps does not meet the requirements for view services.

Download Service (Web Feature Service (WFS))

- A download service is a network service that provides access to the underlying data.
- There are three types of download service:
    - two providing pre-defined datasets
        1. Atom feed delivering pre-defined datasets
        2. WFS delivering pre-defined datasets
    - one providing direct access download
        3. WFS providing direct access to features
- INSPIRE Download Services must be compliant with the INSPIRE Regulation on Network Services (http://inspire.jrc.ec.europa.eu/index.cfm/pageid/3)
- UK specific guidance is available at: http://data.gov.uk/location/guidance_and_tools#downloadservices
- An overview of all services and tools is available on: http://data.gov.uk/location/guidance_and_tools#gemini2technicalguidance.

Publishing Options

The options for implementing publishing services are as follows:

- Proprietary software provider (often available as an additional module, ask your provider for options).
- Open Source (UKLP funded open source solution are GeoNetwork for catalogue service web, GeoServer for WMS and WFS).
- Hosted Service (through data publishing services).

To help publish data that meets the INSPIRE Standards and Discovery service, ready-made technical solutions are now available from suppliers to meet the publishing needs here: http://data.gov.uk/location/guidance_and_tools#gemini2technicalguidance.
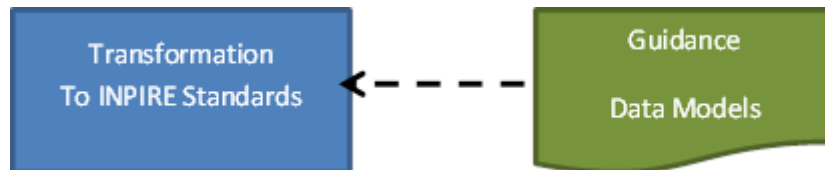

Some suppliers provide their solution through a government framework contract on the GCloud store.
- The GCloud store offers digital and infrastructure services procured by the Government Procurement Service on behalf of the public sector. Public sector

bodies can call of services offered on the GCloud store thereby reducing procurement costs. Further information about the GCloud store is available on http://gcloud.civilservice.gov.uk/cloudstore/.

To determine the best way forward for your authority, discuss your publishing options with your business/IT, other service departments or other local authorities to identify the best way to provide INSPIRE compliant view and download services. You may also want to consult a GIS software supplier or check the GCloud Store.

STEP 6: Transformation

In Phase 2 of the INSPIRE programme, the data will need to be transformed to INSPIRE standards so that it is comparable with data from other public sector organisations. The INSPIRE data specifications describe the requirements for each of the 34 data themes. Guidance and data models are available here:

http://inspire.jrc.ec.europa.eu/index.cfm/pageid/2/list/2

The transformation service maps your existing data schema to the new INSPIRE data schema. This can be done by either changing the database to meet INSPIRE structures at source or by transforming it before publication. Transformation Services can be categorised into different areas of functionality by transforming

- Data formats (e.g. from a proprietary format such as shape files to GML).
- Coordinate reference systems (CRS) (e.g. from the national gird to latitude and longitude).
- Data from a source logical schema to the INSPIRE logical schema (based on data specification models) (e.g. referring the name of one data column to a different standardised name).

Options for implementing transformation services:

- Part of a proprietary GIS software (often available as a separate module).
- Specialised transformation software.
- Use of external transformation services (bureau services or hosted site).

Data transformation tools are included in some software products or are available to purchase from separate providers from the GCloud store.
Further guidance on transformation services is available on
http://data.gov.uk/location/guidance_and_tools#transformationservices.

Reformatting of local authority data sets may be achieved as a matter of course by 2017 for Annex I datasets and 2020 for Annex III datasets. Once the data has been transformed, update your metadata entry and publish it.

What support is available?

Defra has put into place new burdens funding arrangements for local authorities in England to implement INSPIRE publishing services. This was a one-off direct payment to local authorities in England to enable local authorities to implement a solution which best suits their needs.

The LGA and the Defra INSPIRE project team are working together to support and advice authorities in meeting the INSPIRE requirements. Existing online resources and guidance can be accessed on these sites. We are in the process of reviewing and complementing some of the existing guidance:

- Defra UK Location webpage http://data.gov.uk/location
- Local Government INSPIRE pages: http://tinyurl.com/www-local-gov-inspire
- Knowledge Hub INSPIRE forum https://knowledgehub.local.gov.uk/group/inspiredirectiveanduklocationprogramme/

If you would like to get in contact please e-mail:
- The LGA at inspire@local.gov.uk for policy or dataset advice.
- The Defra INSPIRE Programme at UK-INSPIRE-Help@Defra.gsi.gov.uk for technical advice.
- team@data.gov.uk for data registration on data.gov.uk

Appendix A: INSPIRE data themes grouped into three Annexes

INSPIRE Data Themes	

ANNEX I
  Coordinate reference systems
  Geographical grid systems
  Geographical names
  Administrative units
  Addresses
  Cadastral parcels
  Transport networks
  Hydrography
  Protected sites
	ANNEX II
	  Elevation
	  Land cover
	  Orthoimagery
	  Geology

ANNEX III
  Statistical units
  Buildings
  Soil
  Land use
  Human health and safety
  Utility and governmental services
  Environmental monitoring Facilities
  Production and industrial facilities
  Agricultural and aquaculture facilities
  Population distribution and demography
  Area management / restriction /
  regulation zones & reporting units
	Natural risk zones
	Atmospheric conditions
	Meteorological geographical features
	Oceanographic geographical features
	Sea regions
	Bio-geographical regions
	Habitats and biotopes
	Species distribution
	Energy Resources
	Mineral Resources

Appendix B: Indicative list of local government data topics for the INSPIRE data themes

The table below lists data topics that may fall under INSPIRE **Annex I and III themes**. Currently, there are no obligations to local authorities to publish data under Annex II data themes. The list has been updated to reflect the outcome of the Defra review and additional information has been added. There may be considerable overlap between different themes especially between protected sites, area management and land use. Some further clarifications are required and the list will be updated accordingly. This list is an indicative list and may change. The LGA welcomes further comments and suggestions to inspire@local.gov.uk. The list is also available as a spreadsheet on http://tinyurl.com/www-local-gov-inspire.

Note: Unitary authorities (UA) include metropolitan districts and London boroughs, NPA = National Parks and Broad Authority, C=County councils, D= District Councils

Indicative list of local government data topics that may fall under INSPIRE Annex I and III data themes						
Theme	Abbre-viation	Link to description	Annex	Data topic	Authority type	Existing Publication Channel
Addresses	AD	http://inspire.ec.europa.eu/theme/ad/	i	Local Land and Property Gazetteers	UA, D	GeoPlace/OS
			iii	Local Air Quality Management Zones (AQMZ)	UA, D	
			iii	Quiet Area (noise control)	UA, D	
			iii	Smoke control Zones (Furnace Emission)	UA, D	
			iii	Stepping Stones	NPA, UA, D	
			iii	Wildlife corridors	NPA, UA, D	
Bio-geographical Regions	BR	http://inspire.ec.europa.eu/theme/br/	iii	Local Landscape Character Areas	UA, C	
Energy Resources	ER	http://inspire.ec.europa.eu/theme/er/	iii	Renewable Energy Schemes and Potential Maps		
Environmental Monitoring Facilities	EF	http://inspire.ec.europa.eu/theme/ef/	iii	Furnace Emissions/smoke monitoring	UA, D	
			iii	Local Air Quality monitoring Stations	UA, D	
			iii	Water sampling	UA,D	
Habitats and Biotopes	HB	http://inspire.ec.europa.eu/theme/hb/	iii	Aged or Veteran Tree		
			iii	Habitat & Species Inventories • Biodiversity Action Plan habitat	NPA, C, UA	

				• Nesting/protected bird sites • Species survey/protected species		
Human Health & Safety	HH	http://inspire.ec.europa.eu/theme/hh/	iii	COMAH sites (emergency planning)	UA,C	Public Register for COMAH sites - HSE
			iii	Local Air Quality Monitoring - continuous assessment and annual mean/exceedences	UA, D	
			iii	Noise monitoring	UA,D	
Hydrography	HY	http://inspire.ec.europa.eu/theme/hy/	i	Structures of flood risk	UA, C	
Land Use	LU	http://inspire.ec.europa.eu/theme/lu/	iii	Ancient Woodland		Natural England
			iii	Allotments	NPA, UA, D	
			iii	Coastal Areas • Area of undeveloped coast • Coastal Change Management Areas	UA, D	Natural England
			iii	Compulsory purchase orders	UA, D,C, NPA	
			iii	Contaminated Land	NPA, UA, D	
			iii	Development Control Orders • Article 4 land	NPA, UA, D	
			iii	Greenbelt	NPA, UA, D	DCLG
			iii	Open/Green Spaces • Green Infrastructure • Recreational Areas	NPA, UA, D	
			iii	Parking Zones	UA, D,	
			iii	Previously Developed Land (Brownfield sites)	NPA, UA, D	DCLG/HCA
			iii	Registered Common Land	UA, C, NPA	Natural England
			iii	Rural Exception Sites	UA, D	
			iii	Section 106/ community infrastructure levy	UA, D	
			iii	Statutory Safeguarding Zones	UA, D,C	
			iii	Strategic Cultural Areas	UA, D, C, NPA	

			iii	Strategic Industrial Locations	UA, D, C, NPA	
			iii	Town or Village Greens	UA, D, NPA	
			iii	Town Centre Classification	UA, D, NPA	
			iii	Town Centre Uses	UA, D, NPA	
			iii	Transport Schemes	UA, C	
			iii	Tree preservation orders	NPA, UA, D	
			iii	Urban area/ rural settlement boundaries	NPA, UA, D	ONS
			iii	Various development zones • Regeneration Areas • Opportunity and Intensification Areas • Development Areas • Sustainable Communities Growth Areas • Strategic Regional Development Corridors • Safer Neighbourhood areas	NPA, UA, D	
Mineral Resources	MR	http://inspire.ec.europa.eu/theme/mr/	iii	Areas suitable and licenced for Energy Production	UA, D	Environmental Permit Registers
			iii	Minerals of Local and National Importance	UA,C, NPA	British Geological Survey
			iii	Minerals Safeguarding Areas	UA, C	
			iii	Mineral Consultation Areas	UA, C	
			iii	Permitted mineral reserves	UA, C	
Natural Risk Zones	NZ	http://inspire.ec.europa.eu/theme/nz/	iii	Local flood risk management strategy areas	UA, C	
Production and Industrial Facilities	PF	http://inspire.ec.europa.eu/theme/pf/	iii	Agricultural Waste Producers	UA,D	Environmental Permit Registers
			iii	Environmental Permits (Industrial, Waste Operators, Radioactive Substances, Water Discharge)	UA,D	Environmental Permit Registers /Environment Agency

			iii	Food production facilities	UA, D	Environmental Permit Registers
			iii	Hazardous Waste Producers	UA, D	Environmental Permit Registers
			iii	Permitted mineral reserves	UA, C	
			iii	Areas suitable for coal extraction and disposal of colliery spoil	UA, C, D	
			iii	Waste, Brokers, Carriers and Dealers	UA, D	Environmental Permit Registers
Protected Sites	PS	http://inspire.ec.europa.eu/theme/ps/	i	Conservation Areas	UA, D, NP	English Heritage
			i	Local Nature Reserves	UA, D, NP	Natural England
			i	Area of Beauty in National Parks (Mountains, Moors, Wood, Coast)	NPA	
			i	Local Wildlife Sites	NPA, UA,D,C	
			iii	Hedgerows (Removal & Retention)	NPA, UA, D	
Transport Networks	TN	http://inspire.ec.europa.eu/theme/tn/	i	Local Street Gazetteer	UA, C	GeoPlace
Utility & Governmental Services	US	http://inspire.ec.europa.eu/theme/us/	iii	Administrative and Government Services	All	
			iii	Environmental Management Facilities (waste disposal and recovery)		
			iii	Premises database/land and property assets	D, UA, C, NPA	

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