INSPIRE
Infrastructure for Spatial Information in Europe

Member State Report:

United Kingdom 2013

Title	United Kingdom INSPIRE Member State Report 2013
Creator	UK-INSPIRE
Date	15 May 2013
Subject	INSPIRE
Status	Final
Publisher	Department for Environment, Food and Rural Affairs
Type	-
Description	UK INSPIRE Member State Report
Contributor	UK-INSPIRE
Format	MS Word
Source	Produced by UK-INSPIRE, Department for the Environment, Food and Rural Affairs
Rights	Crown Copyright 2013. You may use and re-use the information in this publication (not including logos) free of charge in any format or medium, under the terms of the UK Open Government Licence.
Identifier	United Kingdom INSPIRE Member State Report 2013
Language	English
Relation	-
Coverage	United Kingdom of England, Wales, Scotland and Northern Ireland

These are Dublin Core metadata elements. See for more details and examples http://www.dublincore.org/

Version number	Date	Modified by	Comments
1	May 2013	UK-INSPIRE, Defra	

Table of Contents

1 Executive summary

This is the second report from the UK to the European Commission in accordance with Article 21 of the INSPIRE Directive 2007/2/EC and the relevant sections of implementing Directive 2009/442/EC. The report describes the federated approach taken by the UK to implement INSPIRE in England, Northern Ireland, Scotland and Wales, and describes the successful results of this approach.

The report is more complete than the last one submitted in May 2010 but it is still early days for INSPIRE implementation, and particularly in terms of meaningful reports on benefits realised. UK INSPIRE data is being published and is being accessed. Network Services have been put in place in time to meet milestones. We are working to deliver Annex III services in December this year and it is anticipated that benefits will begin to be noticed in the years after that.

A UK location information infrastructure is in place. Sound governance structures have been set up and reviewed regularly to check they are valid and support productivity. Legislation to enact the INSPIRE Directive into UK law has been reviewed and updated.

2 Abbreviations and Acronyms

AGI	Association for Geographic Information
AIB	Architecture and Interoperability Board
BIWG	Business Interoperability Working Group
CSW	Catalogue Service for the Web
Defra	Department for the Environment, Food and Rural Affairs
EDINA	EDINA is the JISC-designated national data centre at the University of Edinburgh.
EIAs	Environmental Impact Assessments
GLF	Government Licensing Framework
INSPIRE Directive	Directive 2007/2/EC
JISC	UK's expert on digital technology for education and research
MS	Member State
NMCAs	National Mapping and Cadastral Agencies
NIMA	Northern Ireland Mapping Agreement
OSMA	One Scotland Mapping Agreement
OGC	Open Geospatial Consortium
OGL	Open Government Licence
OS	Ordnance Survey
PSMA	Public Sector Mapping Agreement
SEAs	Strategic Environmental Assessments
SEWeb	Scotland's Environment Web
SEPA	Scottish Environment Protection Agency
SIB	Scottish Spatial Information Board
SDI	Spatial Data Infrastructure
UKLII	UK location information infrastructure
UKLP	UK Location Programme
WAF	Web Accessible Folder
WFS	OGC Web Feature Server
WMS	OGC Web Map Server

3 Introduction

3.1 Background

This is the second Member State report by the UK to the European Commission. It reports on activity over the three calendar years 2010-2012 and gives an outline description of planned activity on INSPIRE for the next three years.

The UK Location Strategy was published in 2008 and the Location Council was established to oversee implementation in the UK of the INSPIRE Directive 2007/2/EC. The Council reviewed the Strategy and its role in 2012 and took the decision to review how areas of its work and responsibility were delivered. This review is still in progress but has not prevented work on INSPIRE compliance progressing.

As of 1 April 2013, UK INSPIRE Compliance Board, led by the Department for Environment, Food and Rural Affairs, retains responsibility for overseeing UK implementation and compliance with the INSPIRE Directive. Defra has also convened a UK-INSPIRE team which provides regular updates to the Compliance Board and helps to deliver its work.

The report sets out the very positive federated approach taken by the UK to work in collaboration across central, local and devolved government and with data providers in order to fully implement the INSPIRE Directive.

3.2 Method used to compile the report

The report was compiled by the UK-INSPIRE team at Defra with contributions and the agreement of the Devolved Administrations of Wales, Scotland and Northern Ireland. Key stakeholders were invited to contribute. The final version of the report was agreed by UK-INSPIRE, Defra.

4 Co-ordination and quality assurance (Art. 12)

4.1 Coordination (Art. 12.1.)

4.1.1 Member State contact point

Member State Contact Point	
Name of the public authority	Department for Environment, Food and Rural Affairs
Contact information:	
Mailing address	UK-INSPIRE Defra Zone 4D Nobel House 17 Smith Square London SW1P 3JR
Telephone number	+44 20 7238 6951
Telefax number	-
Email address	UK-INSPIRE@defra.gsi.gov.uk
Organisation's website URL	http://data.gov.uk/location/inspire
Contact person (if available)	Alexander Coley
Telephone number	+44 20 7238 6951
Email address	UK-INSPIRE@defra.gsi.gov.uk
Contact person - substitute (if available)	John Dixon
Telephone number	+44 20 7238 6951
Email address	UK-INSPIRE@defra.gsi.gov.uk

4.1.2 The coordination structure

Coordinating structure supporting the MSCP	
Name of the coordination structure	
Contact information:	UK-INSPIRE
Mailing address	UK-INSPIRE Defra Zone 4D Nobel House 17 Smith Square London SW1P 3JR
Telephone number	+44 20 7238 6951
Telefax number	-
Email address	UK-INSPIRE@defra.gsi.gov.uk
Organisation's website URL	http://www.gov.uk/defra
Contact person (if available)	Alexander Coley
Telephone number	+44 20 7238 6951
Email address	UK-INSPIRE@defra.gsi.gov.uk
Contact person - substitute (if available)	John Dixon
Telephone number	+44 20 7238 6951
Email address	UK-INSPIRE@defra.gsi.gov.uk
Date and period of mandate	1 April 2013 onwards

Roles and responsibilities

To implement INSPIRE in the UK separate but broadly consistent regulations covering England, Northern Ireland and Wales; (SI 2009 No 3157) and Scotland (SSI 2009 No 440) came into effect on 31 December 2009. The INSPIRE (Amendment) Regulations 2012 continue the transposition into UK law of INSPIRE. The Amendment Regulations came into effect on 1 August 2012. The INSPIRE (Scotland) Amendment Regulations 2012 came into effect on 23 November 2012.

An informal consolidated text of the England, Northern Ireland and Wales INSPIRE Regulations can be read here.

The INSPIRE (Amendment) Regulations 2012 update the INSPIRE Regulations 2009 to take account of technical Implementing Rules made by the European Commission since the INSPIRE Directive was made. Further amending Statutory Instruments will be introduced to complete transposition as new EC Implementing Rules are made.

Coordination and governance from a UK perspective is provided by Defra. In undertaking this role Defra has set up a governance board with senior representation from key cross-government representatives to govern and assure the compliance with INSPIRE activities. This UK INSPIRE Compliance Board is supported by a technical expert board that provides a detailed level of assurance, guidance and direction. This technical expert board is the Architecture and Interoperability Board (AIB) is comprised of senior representative technical experts and a broader open community of experts within working groups or task and finish groups.

The UK INSPIRE Compliance Board is the key governance body for INSPIRE in the UK from the 1st April 2013. The Board took over INSPIRE implementation responsibilities from the UK Location Council and the UK Location Programme Board.

Key Compliance Board Objectives and Responsibilities

The UK INSPIRE Compliance Board's Terms of Reference have not been finally confirmed but the Board is likely to:

- Coordinate the UK approach to implementation of INSPIRE, providing direction to UK public bodies and taking account of infraction risk.

- Monitor and assure delivery on UK INSPIRE compliance by the UK public sector.

- Hold to account those organisations responsible for providing central services and guidance in support of UK public bodies meeting their INSPIRE obligations.

- Hold UK public bodies to account for meeting their INSPIRE obligations.

The UK INSPIRE Compliance Board as the decision making body which supports Defra in its role as lead Department for UK INSPIRE implementation has a number of key responsibilities, including:

- Oversight of UK INSPIRE compliance and dealing with areas of uncertainty.

- Sign off of the high level milestone plan and subsequent monitoring and review of the plan, taking action if appropriate, to ensure delivery remains on track.

- Ensuring that implementation of INSPIRE is aligned with wider Government information and data policy.

- Monitoring risks and issues and ensure that they are handled effectively.

- Oversight of stakeholder engagement and communications plans.

- Oversight of the technical guidance activities delivered through the Architecture and Interoperability Board.

Key Responsibilities of the Architecture and Interoperability Board

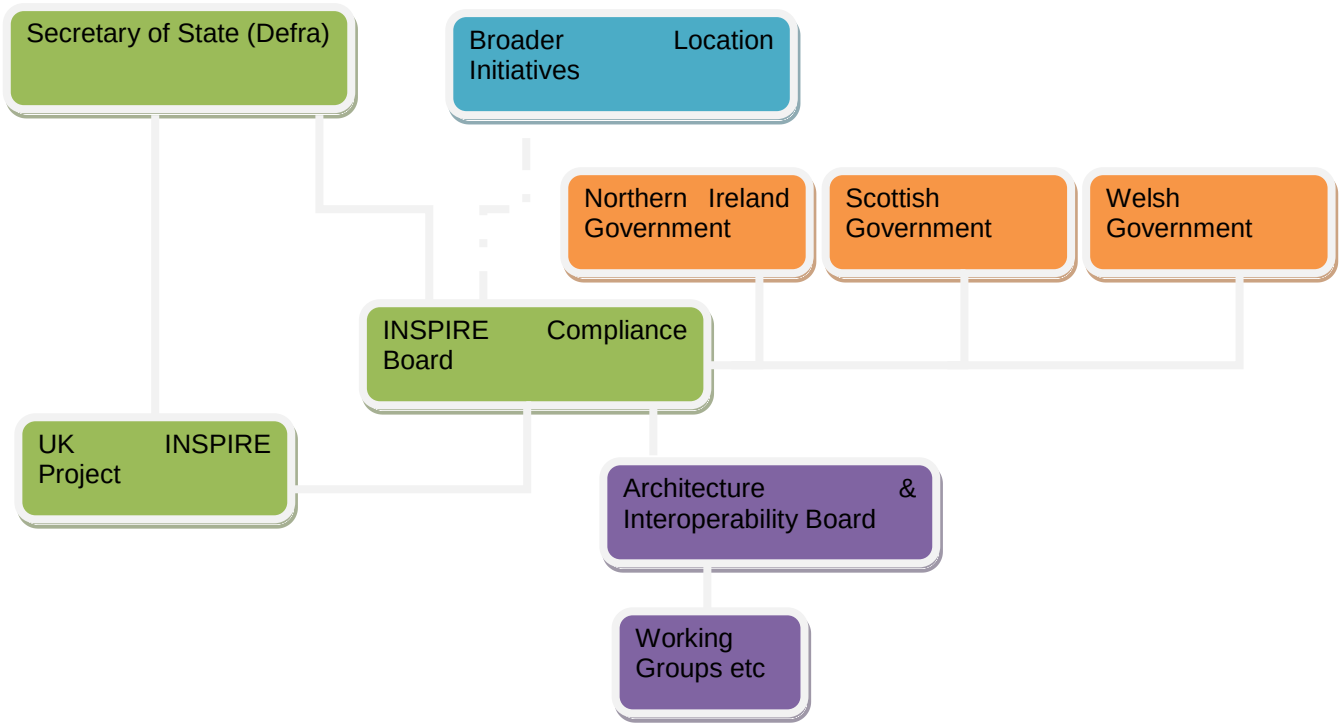
- The AIB is required to oversee and drive the implementation of the UK location interoperability standards and practice guidelines, in conjunction with the INSPIRE Regulations.

- The AIB provides the means of bringing technical expertise and guidance to the UK Location Programme. This includes coordinating and providing oversight of the activities of a number of working groups.

- The AIB Working Groups are a means of bringing together experts in a particular field to contribute to the development of the UK Location Information Infrastructure.

- The AIB takes decisions and signs off specifications and activities that support technical guidance or advice on the development of IT deliverables, the wider UK Location Information Infrastructure or interpretation of Technical aspects or INSPIRE implementation.

Organisation chart



Relation with third parties

The UK has a well developed, active and engaged private sector and special interest community. They are not formally part of the structure but they are actively engaged with on key moments of implementation. A key partner is the Association for Geographic Information (AGI), which developed the UK GEMINI metadata standard for use with INSPIRE.

The INSPIRE governance boards and working groups are comprised of stakeholders from across the public sector. Working groups have included representatives from public, private, academic and 3rd sectors.

At the start of the implementation of INSPIRE in the UK expert consultants were used to help draw up the architecture and strategy. Use of consultants is now less common but experts are occasionally engaged to provide advice as required.

Overview of working practices and procedures

4.1.3 Comments on the monitoring and reporting process

Monitoring

The UK has set up processes that allow much of the data needed for the INSPIRE Monitoring Indicators report to be gathered automatically from the UK metadata portal. This involves extracting details such as dataset name and dataset owner from published

discovery metadata. The UK Location Infrastructure was established to publish location data held by public authorities and is not limited only to publishing INSPIRE data sets.

Some information required in the report cannot be gathered automatically and requires correspondence with UK data publishers. In particular, information on service use, held on data publishers' servers, is supplied manually to UK-INSPIRE. With the current number of services relatively low, this process has not to date been too burdensome. However, the UK is concerned that as the number of services continues to expand collection of information on data use and service use will become an increasingly resource intensive task.

The UK has submitted all its annual INSPIRE Monitoring Indicators report each year in time to meet the 15 May deadline. We also publish the monitoring report on data.gov.uk and some information in the report has also been used in the UK Location annual reports.

Reporting

Reporting is relatively straightforward. Delivery partners and key stakeholders are invited to contribute text and then once it is assembled, to comment on a final draft version. Final edit and sign off is by UK-INSPIRE, which is part of the Defra, the UK Government Department with responsibility for overseeing INSPIRE compliance.

4.2 Quality Assurance (Art. 12.2.)

4.2.1 Quality assurance procedures

Metadata

Metadata in the UK must pass an automated validation process before it can be published on data.gov.uk. This checks that the metadata conforms to the UK GEMINI standard. UK GEMINI is a specification for a set of metadata elements for describing geospatial data resources for discovery purposes. It is compatible with the INSPIRE metadata requirements, and also contains additional elements considered to be useful in the UK context.

UK GEMINI has been produced and is maintained by the Association for Geographic Information (AGI) Standards Committee for widespread use in the GI community, as a free of charge resource. It is fully supported with detailed guidance written by AGI and by UK-INSPIRE.

UK-INSPIRE works closely with data providers to improve the quality of less structured metadata elements such as: abstracts, extents and licensing information.

Network Services

A Quality of Service toolkit is in development. The UK Quality of Service Test Tools will be a subset of tests, developed and supported by the European Spatial Data Infrastructure Network Web Services Test Framework. Full guidance has been published already by the UK on View Service and Download Service. The guidance documents are available on this web page: http://data.gov.uk/location/guidance_and_tools.

4.2.2 Analysis of quality assurance problems

4.2.3 Measures taken to improve the quality assurance

4.2.4 Quality certification mechanisms

The detailed description of the central federated architecture in section 5 below covers all these sections as far as can currently be described.

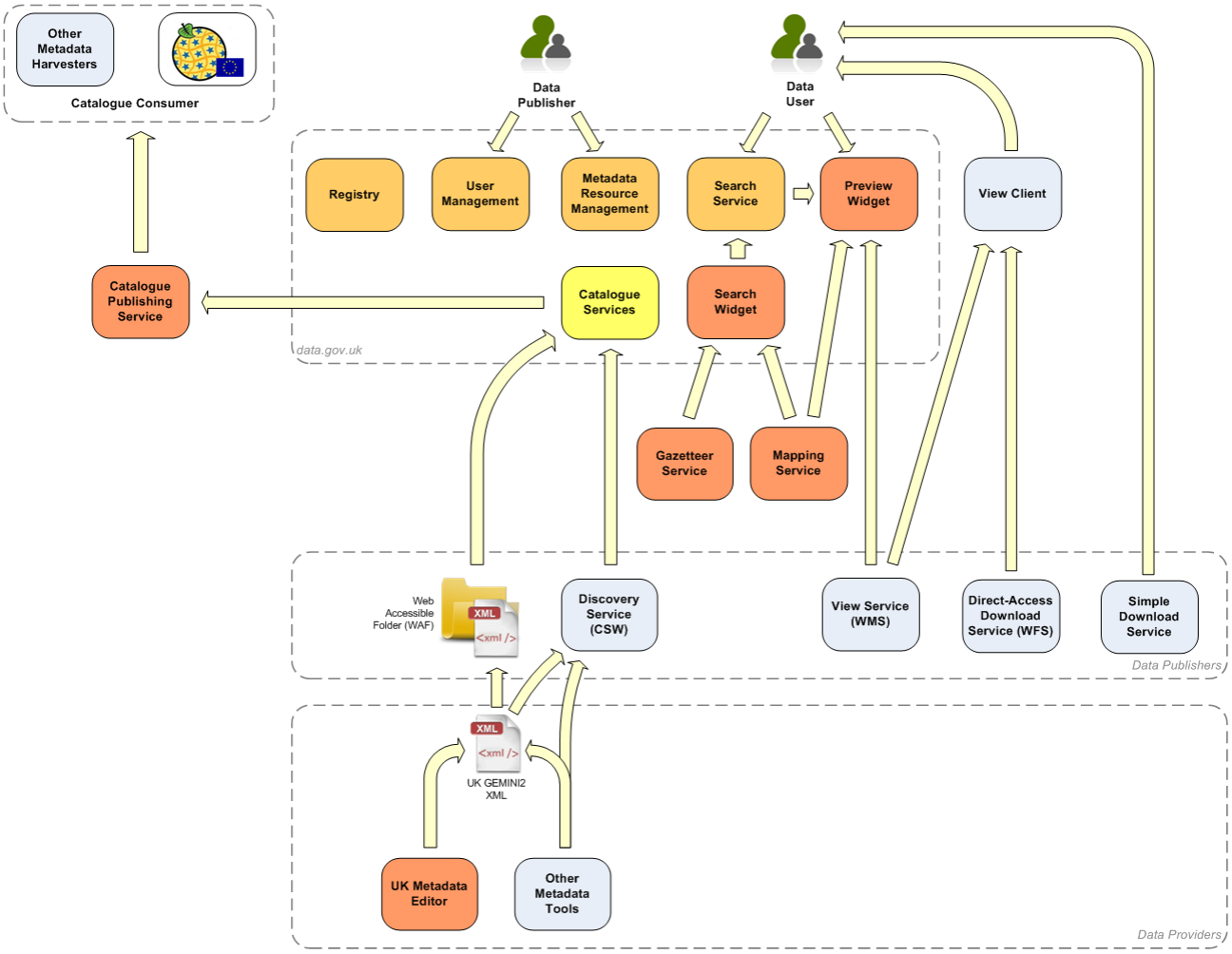
5 Functioning and coordination of the infrastructure (Art.13)

5.1 General overview description of the SDI

A detailed overview of the technical architecture being implemented for the UK location information infrastructure (UKLII) is set out in the graphic below.

As noted above, the Devolved Administrations of Northern Ireland, Scotland and Wales have substructures but all work together with England to form the UK wide whole.

Each component of the solution is described further below the graphic.



UK Wide Public bodies and England

(i) Data Providers

(a) UK Location Metadata Editor

The UK Metadata Editor is a tool that has been created for the UKLII which allows a user to create and edit UK GEMINI2 compliant metadata records. The editor is based on the open-source GeoNetwork product. The editor can be used in one of two ways:

- A web-hosted version of the tool is provided, which provides full functionality to create, edit and validate metadata records. Records are saved locally as XML files.

- A downloadable version of the same tool. This allows the data provider to install the UKLII-configured GeoNetwork software locally and create their metadata using that tool. The download is provided as a set of configuration files to be installed on top of a standard (new or existing) GeoNetwork 2.6 install.

(b) Other Metadata Tools

Use of the UK Metadata editor is not mandated. Any other tool that can create metadata may be used. Such a tool would however need to support the publication of data as UK GEMINI2-compliant, either through a CSW interface or via a Web Accessible Folder.

(ii) Data Publishers

(a) Discovery Service (CSW)

A data publisher or their agent may choose to publish their metadata records through a CSW interface. No specific tool is provided by the UK to support this (although a localised installation of the UK Metadata Editor can be expanded to provide a CSW). Additionally there are many other tools available both commercial and open-source which support this specification. Details of compliant products are published on the OGC web-site.

(b) Web Accessible Folder (WAF)

If a data publisher chooses not to publish metadata records through a CSW interface, it will need to publish the data via a Web Accessible Folder (WAF). A WAF is an HTTP-accessible directory of files in which all files and their time-stamps are visible to a web browser or client. All the files in this folder must be UK GEMINI2 XML files.

(c) View Service (WMS)

Data publishers will need to publish their data (as opposed to metadata) via an OGC Web Map Server (WMS) compliant specification. This service will be used as part of the central services to allow data consumers to preview (that is, to view) the dataset. Once discovered, and subject to any access and/or licensing restrictions the data provided by this service can be accessed by any WMS-compliant client application.

(d) Direct-Access Download Service (WFS)

Data publishers will need to publish their data for download. One option for doing this is to provide a direct-access download service via an OGC Web Feature Server (WFS) compliant specification. This service will not be used by any of the central services, but will be referenced from the metadata for a dataset. Once discovered, subject to any access and/or

licensing restrictions, the data provided by the service can be accessed by any WFS-compliant client application.

(e) Simple Download Service

An alternative to the direct-access approach described in the previous paragraph is to provide a simple download service. This requires the data to be made available as file-based data for http download. This service will not be used by any of the central services, but will be referenced from the metadata for a dataset. Subject the dataset to access and/or licensing restrictions, a data user will be able to download data directly from this service.

(iii) data.gov.uk

(a) Registers and Registries

The concept was that a registry would provide a central repository for all salient domain data of the location information domain (excluding metadata and gazetteer data). This would include code lists and valid values that are relevant to the UKLII. Developments in this area have developed this thinking with a project delivering a technology piece with pilot implementation to provide for a registry and namespace governance framework. This is broader than the location domain and is being implemented within the wider data.gov.uk area to support a number of similar areas. Details and the code are available at: https://github.com/der/ukl-registry-poc/wiki.

(b) User Management

The user management component allows users of data.gov.uk to manage user accounts. This includes tools to create, update and delete user accounts. All data publishers need an appropriately privileged account on data.gov.uk to allow them to register their metadata resources. Data users do not need an account to allow them to use the search and preview tools.

(c) Metadata Resource Management

The Metadata Resource Management component will be accessible to appropriately privileged users via data.gov.uk. It will allow those users to register the source of their metadata (either a CSW or WAF), and to manage the registration of those resources. This includes defining when and how often metadata should be harvested from those sources.

(d) Catalogue Services

The Catalogue Service component is the 'back-end' component of data.gov.uk which manages all the metadata. As well as storing the metadata, it has three key roles in the context of UKLII.

- Harvesting metadata from data publishers, based on criteria specified by data publishers, either via CSW or WAF interfaces. This includes updates to existing records, as well as import of new records.

- Supporting search queries from Data Consumers, by returning matching metadata records based on specified search criteria.

- Supporting the extraction of INSPIRE-related metadata records as requested by the Catalogue Publishing Service (which subsequently makes this data accessible to the EU and others).

(e) Search Service

The Search Service component is an extension of the current data.gov.uk search tools. It provides a mechanism to allow all metadata records within data.gov.uk to be searched, based on a spatial extent and/or INSPIRE-related fields. Definition of the spatial extent is provided by the Search function (see next paragraph) embedded within the Search Service.

(f) Spatial Search function

The Spatial Search component is a browser-based mapping component, embedded within the data.gov.uk Search Service, which allows a data consumer to specify the spatial extent of a search they wish to run against the metadata catalogue. The spatial extent of the search, defined by a rectangle, is defined by the user against a backdrop of contextual mapping (provided by the Mapping Service). The component also supports identification of a location based on a gazetteer search of named locations (supported by the Gazetteer Service).

(g) Preview Function

The Preview component is a browser-based mapping component, embedded within the data.gov.uk web-site, which allows the contents of datasets to be viewed. This interacts with View Services (WMS) provided by data publishers, and displays the contents of those services directly within the browser. A limited set of GIS-type tools are provided to allow basic viewing and display of one or more datasets, both singularly and in combination.

(iv) Others

(a) Catalogue Publishing Service

The Catalogue Publishing Service provides the CSW interface which the EU geoportal uses to harvest UK INSPIRE metadata. It extracts relevant records from the data.gov.uk Catalogue Service and stores those in its own repository. It will supply metadata records in response to CSW query requests received from other applications, of which the EU geoportal is one. The Catalogue Publishing Service will be based on the open-source GeoNetwork product.

(b) View Client

The View Client is an application used by data users to access data published by data publishers within the UKLII. The View Client can be any application which supports the OGC WMS standard to access View Services, or the OGC WFS standard to access direct-access download services. If any datasets being accessed are subject to access and/or licensing restrictions the client will need to support the data publisher-defined access or authentication mechanisms.

Provision of View Clients is not within the scope of UKLII.

(v) Supporting Services

(a) Gazetteer Service

The Gazetteer Service provides information, including the spatial location, about a named feature. It is used to support searching for datasets, by providing information about the geographic location of a named location.

(b) Mapping Service

The Mapping Service provides context background mapping as part of the spatial search function, to enable a Data Consumer to adequately define the spatial extent of their search. It is implemented based on the Ordnance Survey OpenSpace API. This Mapping Service is also used to provide context background mapping when previewing datasets.

Northern Ireland

The Northern Ireland INSPIRE portal Spatial NI™ was created as a project under the overarching Northern Ireland Geographical Information Strategy 2009–2019[1] Programme. The portal forms the technical infrastructure of the Northern Ireland SDI and assists in meeting some of the Northern Ireland Geographical Information Strategy objectives such as conforming to emerging national and European legislative requirements, enabling data sharing and collaboration, promoting education and assisting in the realisation of business benefits through the use of Geographical Information.

The overall vision of the Northern Ireland Geographical Information Strategy is: 'We will improve services and thereby develop the economy, the environment, and the society of Northern Ireland by placing information about location at everyone's fingertips and supporting the development of sufficient skills and knowledge to exploit this information'.

The Spatial NI project mission statement is: 'By the middle of 2012 we will have implemented the required technology and business infrastructure to support the delivery of a Northern Ireland Spatial Data Infrastructure to assist in meeting the objectives of the Northern Ireland GI Strategy and INSPIRE, and to link with the UK INSPIRE Hub. Spatial NI will then become the de facto infrastructure to support the finding, discovery and use of geographic information in Northern Ireland'.

Spatial NI was built as a cost effective centralised solution for Northern Ireland's data providers and publishers to enable them to meet the demands of the INSPIRE Directive. The metadata catalogue of Spatial NI is linked to Member State portal – data.gov.uk. As well as meeting INSPIRE the portal is designed to support the wider implementation of GI within Northern Ireland which will subsequently support the enablement of strategic change. The key functional requirements for the portal were to: Align with Northern Ireland's GI and INSPIRE strategies, to deliver the technical functionality necessary, to be scalable, sustainable, deliver the necessary security requirements including role based access, and to provide a client based viewer with GI functionality.

Scotland

The development of a Spatial Data Infrastructure for Scotland was one of the major elements in implementing the One Scotland: One Geography, the Geographic Information Strategy for Scotland. This strategy was published in 2005, with an Implementation Plan from 2006 to 2011.

The SDI for Scotland is now owned by the Scottish Spatial Information Board. This board (SIB) was set up in July 2011 to ensure there was an appropriate governance structure in place to manage the INSPIRE (Scotland) Regulations requirements and the One Scotland Mapping Agreement. It is one of several work streams (see attached document) put in place to provide greater coherence and a structure with which to implement the Digital Future: Delivery of Public Services strategy, which can be read here:

[1] http://www.gistrategyni.gov.uk/Homepage/gi_for_ni_strategy_09-19_web.pdf

http://www.scotland.gov.uk/Publications/2012/09/6272/0. The strategy sets a number of objectives in relation to effective use and management of public sector data, both to improve service delivery and to promote economic growth.

Wales

Welsh Government's approach to the delivery of INSPIRE services is collaborative, low-cost, agile and scalable.

Collaborative: Welsh Government has worked closely with the three national environmental bodies in Wales on a shared approach to the delivery of INSPIRE. Similarly for a number of local government datasets, a shared approach to delivery has been adopted, with a central team compiling local versions of the data into single national map versions for each dataset.

Low-cost: all the services are provided using primarily open source components (PostGIS, GeoServer, Geonetwork) hosted on the cloud (Windows platform on Amazon EC2, with S3 storage).

Agile: the infrastructure was established by an in-house team, working closely with the growing communities working with the same software stack. Ongoing management and development of the services continues to be delivered by the in-house team, with re-use of the established infrastructure in a number of projects.

Scalable: during 2013 the services will be extended to cover further datasets and potentially more public sector organisations. The technical aspects of the infrastructure can readily be scaled by implementing additional copies of the underlying software stack on the cloud. Data-processing and conversion remains perhaps the most onerous aspect of INSPIRE and it is likely that a 'mixed model' will be adopted with some organisations working independently and others submitting their data to a central conversion bureau.

5.2 INSPIRE Stakeholders

A wide range of stakeholders have been engaged during the implementation of the infrastructure for spatial information. A stakeholder matrix table is set out at Annex A, which identifies UK INSPIRE stakeholders and how UK-INSPIRE plans to work to engage with them.

Until 31 March 2013, the UK Location Council and UK Location Programme Board provided strategic coordination and also represented the key stakeholders – data users, data producers and service providers – until March 2013. Since then, UK INSPIRE Compliance Board has become a key forum to co-ordinate stakeholders' interests as well as the main governance group.

As part of its Business Engagement Strategy, Defra has developed a Stakeholder Engagement Plan that identifies the key stakeholders and their role and degree of accountability and engagement.

The following table list details of key data providers, data users, service providers and coordinating bodies.

Organisation name	Data Provider	Data User	Service Provider	Coordinating bodies
Agriculture, Food & Biosciences Institute (NI)	X	X		
Annex I & II Theme Groups	X	X		
Association for Geographic Information	X	X		X
British Atmospheric Data Centre	X	X		
British Geological Survey	X	X		
British Waterways	X	X		
Business Interoperability Working Group	X	X		X
Cabinet Office		X	X	X
Cefas	X	X		
Centre for Ecology and Hydrology	X	X		
Civil Aviation Authority	X			
Civil Contingency Teams	X	X		
Co-ordinate Ref System & Grids Working Group	X	X		X
Countryside Council for Wales (CCW)	X	X		
Crown Estates	X	X		
Data Publishing Working Group	X	X		X
Data Specifications Working Group	X	X		X
Defra	X	X		X
Department for Business, Innovation & Skills (BIS)	X	X		X
Department for Communities & Local Government	X	X		X
Department of Health	X	X		
Dept. Culture Media and Sport	X	X		
Dept. Energy & Climate Change	X	X		
Dept. For Transport (DfT)	X	X		X
Download Services Task & Finish Group	X	X		X
Emergency Services	X	X		
English Heritage	X	X		
Environment Agency	X	X		X
Eurocontrol	X			
FERA	X	X		

Forestry Commission	X	X		
General Registers of Scotland (GROS)	X	X		
Geological Survey of Northern Ireland (GSNI)	X	X		
GeoPlace (LGA/OS JV)	X	X		
Health and Safety Executive (HSE)	X			
Health Protection Agency	X	X		
Highways Agency	X	X		
Historic Scotland	X	X		
HM Treasury				X
IT Steering Group	X	X	X	X
Joint Nature Conservancy Council (JNCC)	X	X		
Land & Property Services NI	X	X	X	X
Land Registry	X	X		X
Linked Data Working Group	X	X		X
Local Government Association	X	X		X
Marine Fisheries Agency	X	X		
Marine Scotland - Science	X	X		
Maritime & Coastguards Agency	X	X		
Medical Research Council	X			
Met Office	X	X		
Metadata Working Group	X	X		X
Ministry of Defence	X	X		
Ministry of Defence				X
MLURI	X	X		
National Archives (S)	X	X		
National Library (S)	X	X		
National Park Authorities	X	X		
National Trust for Scotland	X	X		
NATS (En Route)	X			
Natural England	X	X		
NERC	X	X		
Network Rail	X	X		
NHS	X	X		
NHS (England)	X	X		
NIEA Built Heritage (DOENI)	X	X		
NIEA Natural Heritage (DOENI)	X	X		
NIEA Water Management Unit (DOENI)	X	X		
Northern Ireland DARD	X	X		

Northern Ireland Roads Service	X	X		
Northern Ireland Statistics & Research Agency	X	X		
NSRI (National Soils Research Institute)	X	X		
NUAG	X	X		
Office for National Statistics (ONS)	X	X		
Office of Public Sector Information				X
Ordnance Survey (GB)	X	X	X	X
Planning Service Northern Ireland (DOENI)	X	X		
RCAHMS	X	X		
Registers of Scotland	X	X		
Rivers Agency (NI)	X	X		
Rural Payments Agency (RPA)	X	X		
Scottish Assessors Assoc	X	X		
Scottish Environment Protection Agency	X	X		
Scottish Government	X	X	X	X
Scottish Government Improvement Service	X	X		
Scottish Local Authorities	X	X		
Scottish Natural Heritage	X	X		
Scottish Place Name Society	X	X		
Scottish Water	X	X		
Seazone Hydrospatial	X	X		
Shareholder Executive				X
The Coal Authority	X	X		
The National Archive				X
Translink (NI)	X	X		
Transport Direct	X	X		
Transport for London (incl. Tubelines)	X	X		
Transport Scotland	X	X		
UK Location User Group Chair				X
UK Statistics Authority				X
Underground & light rail operators	X	X		
United Kingdom Hydrographic Office (UKHO)	X	X		
University of Edinburgh	X	X		
User Evaluation Sub-Group		X		
Valuation Office Agency	X	X		

Waterways Ireland	X	X		
Welsh Assembly government	X	X	X	X
UK INSPIRE Compliance Board	X	X	X	X

5.3 Role of the various stakeholders

Up to 31 March 2013 the Location Council and UK Location Programme Board provided strategic leadership and oversight in development and maintenance of the infrastructure for spatial information. Since then UK-INSPIRE and the UK INSPIRE Compliance Board has taken on the responsibility for INSPIRE.

A range of specialist working groups have provided technical support and advice in the management, development and hosting of services and standards. The UK Location User Group represented the needs of data users. Data providers were represented by a number of themed task and finish groups and advised on the range of INSPIRE data they held and issues around publication.

5.4 Measures taken to facilitate sharing

Data sharing between public authorities was facilitated by raising awareness of INSPIRE requirements and the benefits to data sharing amongst UK public bodies. A wide range of approaches were taken to ensure the requirements and benefits were widely understood. These included provision of guidance documents, a helpdesk, web, e-mail and social media, webinars, blogs, bilateral engagement and numerous workshops held in partnership with organisations including the Local Government Association, national mapping agencies and the AGI.

5.5 Stakeholder cooperation

Good stakeholder cooperation has been key to successful implementation so far. The following list is examples of groups that have had membership drawn from across the UK public sector, and in some case from academic and specialist sectors.

- UK Location Council
- UK Location Programme Board
- Business Interoperability Working Group
- Co-ordinate Ref System & Grids Working Group
- Data Publishing Working Group
- Data Specifications Working Group
- Download Services Task & Finish Group
- IT Steering Group
- Linked Data Working Group
- Metadata Working Group
- Annex I & II Theme Groups.

5.6 Access to services through the INSPIRE Geoportal

The access link to the consolidated UK services is described in detail in section 5.1 of this document. Metadata describing all UK INSPIRE network services are made available through a single standards based discovery service CSW. This is used by the Geoportal and potentially others to directly access those network services.

6 Usage of the infrastructure for spatial information (Art.14)

6.1 Use of spatial data services in the SDI

UK Wide Public bodies and England

As the network services are still relatively new uptake is still in the initial low level phase. The majority of data has been available through view services that have currently not been in general useful in complex or public facing applications. This has in part been due to limitations in the WMS standards alongside layer styling.

A number of data providers are investigating additional aspects of the WMS standard to improve the functionality. In addition as download services become more established considerable interests has highlighted significant improvements in uptake.

One example of current view service provision of underpinning base mapping to widely used web applications is the OS OnDemand service which Ordnance Survey are using to deliver their INSPIRE Datasets. Details are available at the following two links:

www.ordnancesurvey.co.uk/ondemand and http://data.gov.uk/dataset/os-ondemand1.

The UK wide SDI is openly available and does not only hold INSPIRE data. In the UK INSPIRE is part of a wider agenda which includes making public data more open and more easily available, making government more transparent, and allowing citizens digitally to access all government services by default. While the use of data by applications is not currently automatically tracked, we do highlight examples of good and innovative use. There is considerable data use which is not tracked at the UK wide level.

Northern Ireland

In the period January 2013 to May 2013 the Northern Ireland portal Spatial NI had around 7,500 unique visitors to the site and some 22,000 returning visitors (75% returning visitors and 25% new visitors). The average session time on the site was 11 minutes.

Recently in Northern Ireland the web services on Spatial NI were used by all organisations involved in relief operations during a snow blizzard in which over 40,000 farm animals were killed during a period of severe weather. The availability of data combined with and the Spatial NI view client were an invaluable tool during the emergency operation.

Scotland

Scotland's Environment Web (SEWeb) – http://www.environment.scotland.gov.uk/ brings environmental information together in one place for the first time. SEWeb's approach is to provide access to data and information in a digital format, bringing together information on Scotland's environment so that it is easily available and in a useable form.

Jointly funded by the European Union's LIFE+ programme and the Scottish Environment Protection Agency (SEPA) and with input and support from a number of partner organisations across Scotland, it aims to move away from static reports, to a website with access to the most up-to-date environmental information.

The approach taken by SEWeb will be of benefit to a range of audiences, including policy makers, the education sector, young people and the wider public. It will provide an

authoritative and up-to-date account of the state of Scotland's environment and will help to prioritise environmental problems, and to identify the key challenges.

SEWeb's map page draws on publicly available WMS from a range of partners and external sources. To optimise metadata searches WMS metadata conforming to the UK GEMINI standard are required.

Wales

Welsh Government has applied a service-oriented architecture approach to the delivery of its online information services, including for spatial data. Over the last two years, Welsh Government has used online mapping for stakeholder consultation and information provision across a number of functional domains, including Marine Spatial Planning, Environmental Noise, Economic Development and Planning and Development control. Each of these applications has consumed spatial data services, including INSPIRE services, more general WMS and WFS and also 3rd party tile cache services for contextual and backdrop mapping.

6.2 Use of the spatial datasets

A selected number of examples are presented below, from around the UK. More will be highlighted in future at data.gov.uk

UK Wide Public bodies and England

- Natural England has systematically joined together geographical information on the environment to target environmental stewardship scheme funding (£2.9 billion 2007-13). Subsequently agreements are of a higher quality giving better environmental outcomes, more effectively administered and more widely understood by stakeholders.

  http://www.naturalengland.org.uk/ourwork/farming/funding/es/hls/targeting/approach.aspx

- Blackpool District Council has identified potential annual savings of £4m by using geographic data to better manage its highway assets

- BT OpenReach have used OS data to manage more accurately street work activities. They have reduced penalties associated with street works from a 7 figure sum, with a 4 figure target in sight. Using data provided through OS web services has also saved BT OpenReach a 6 figure sum on IT spend. http://youtu.be/MhxQR3egFPE

- Insurance companies can reduce risk exposure by analysing geographical information. Evaluating the flood risk of individual properties, rather than groups of properties can enable insurers to sell policies competitively for properties that were previously deemed to be too high a risk to cover, increasing revenue.

  http://www.ordnancesurvey.co.uk/oswebsite/business/financial-services/applications/insurance/flooding.html.

Northern Ireland

Google Analytics services have been monitoring Spatial NI website usage since January 2013. To date the site has 43,678 visitors (10,509 of these being unique visitors) with users spending on average 10.5 minutes per session viewing content on the Spatial NI site. The majority of site activity is concentrated during the working week (on average around 400+ visits per day) suggesting users are accessing the Spatial NI mapping resources to assist with their existing working practises.

Spatial air quality data is used in developing policy/air quality management plans. See:

http://www.airqualityni.co.uk/reports.php?n_action=guidance

Spatial water quality data/ river basin management plans under the Water Framework Directive will be used for developing policy relating to water quality objectives and measures and implementation of River Basin Management Plans. See:

http://www.doeni.gov.uk/niea/water-home/wfd/public_partic_3.htm

Scotland

In Scotland, the coasts and seas provide food, energy sources (wind, wave and tidal power, minerals and fossil fuels), routes and harbours for shipping, tourism and recreational opportunities and sites of cultural and historical interest. They also contain distinctive and important habitats and support a diverse range of species which we need to protect, conserve and enhance. These all need to be managed effectively. Scotland's Marine Atlas and the National Marine Plan Interactive:

http://www.scotland.gov.uk/Topics/marine/seamanagement/nmpihome/nmpi

provide an on-going assessment of the condition of Scotland's seas, based on scientific evidence from data (including spatial data) and analysis and supported by expert judgement. The atlas can be viewed online at:

http://www.scotland.gov.uk/Publications/2011/03/16182005/0
or
http://www.scotland.gov.uk/Topics/marine/education/atlas.

Wales

The exchange and re-use of spatial datasets was already well established prior to the implementation of INSPIRE, including online delivery mechanisms. The increase in usage associated specifically with the implementation of INSPIRE is therefore marginal and difficult to distinguish from the impact of a more general campaign for the more efficient and effective sharing and re-use of data.

One specific area of good practice identified has been in the use of online services for the delivery of maps of statutory planning zones. Previously distributed by hard copy or PDF documents users have now largely switched to the online version available at http://data.wales.gov.uk/apps/floodmapping/. This app is based on web services and an INSPIRE version of the service is available. We are aware of at least one organisation that has implemented a connection to this service to use the data within its own architecture.

6.3 Use of the SDI by the general public

UK Wide Public bodies and England

The UK has developed a preview client as part of its SDI to provide the general public with access to data held within some INSPIRE View Services without the need for specialist software.

Northern Ireland

Around 30% of approximately 1,000 registered users on Spatial NI are members of the public.

Scotland

Both the SEWeb and National Marine Plan Interactive are used by the public with much or all of the spatial data on them coming from WMS services published as part of the SDI.

Wales

The Welsh Government is not aware of a significant level of general public interest or usage of the spatial datasets and online services. We are however pleased with the reception of the presentation-layer 'apps' that have been provided for specific issues and topics. These apps are generally designed with a single-use purpose in mind and are developed using standard online toolkits with a minimal investment of staff time and effort.

A good example of an app of this kind is that used to display the outcomes of the noise mapping exercise associated with the Environmental Noise Directive:

http://data.wales.gov.uk/apps/noise.

This app makes extensive use of a tiled raster version of the noise maps dataset and provides a clean and polished user interface that is usable on a variety of modern devices.

6.4 Cross-border usage

Northern Ireland

Northern Ireland is the only part of the United Kingdom that shares a land border with another Member State (Republic of Ireland). A number of meetings have taken place recently with Irish INSPIRE colleagues to discuss INSPIRE coordination. Initial agreements include the sharing of metadata catalogues so that data can be discovered in each others' jurisdictions and the sharing of background mapping for portal viewers.

Discussions have also taken place on coordinating data transformation for INSPIRE including agreement on underlying datasets for each INSPIRE theme. Initial tests on transformed protected sites for Northern Ireland and Ireland show differences in the interpretation of the INSPIRE data specifications. A pilot is also underway to deliver planning web services from Northern Ireland to an Irish spatial planning portal which will for the first time enable planning data to be viewed at an Irish cross border level.

6.5 Use of transformation services

The UK decided not to implement a centralised Schema Transformation service, due to the federated nature of data publishing in the UK and the domain specific nature of transformation. Instead we will be encouraging and auditing those organisations responsible for in-scope data to make that data conformant to INSPIRE specifications, either through re-engineering their source data, or through implementing transformation as part of their internal processes. However, there will be no requirement on these data publishers to make these transformation activities available as publically-accessible network services.

Full details of the UK wide position on Transformation Services is set out here:

http://data.gov.uk/blog/uk-location-transformation-services-update.

Initially data will be published as-is through Download Services, and will not necessarily be made available in conformance with the INSPIRE data specifications. The UK will ensure that all published datasets are conformant to the INSPIRE data specifications within (and ideally in advance of) the timescales laid down in the implementing rules for interoperability of spatial data sets and services.

This approach was validated by the INSPIRE IOC Taskforce via correspondence.

Northern Ireland

Northern Ireland does have transformation capabilities with its Spatial NI system and has completed some initial transformations including cadastral parcels, protected sites, administrative boundaries and addresses.

7 Data sharing arrangements (Art.15)

7.1 Data sharing arrangements between public authorities

In the UK we are working towards simplified arrangements. The direction of travel is towards arrangements which treat the public sector as a single body and an equal partner. This can be by way of simplified licences – which, in the case of the Government Licensing Framework will provide a framework of licences – and framework agreements, which will contain licences within them. Details of GLF are at:

http://www.nationalarchives.gov.uk/information-management/government-licensing/the-framework.htm

The national mapping agencies that cover the UK have framework agreements with the public sector – one for Scotland (One Scotland Mapping Agreement (OSMA)), one for England and Wales (Public Sector Mapping Agreement (PSMA)), and one for Northern Ireland (Northern Ireland Mapping Agreement (NIMA)). Other customers and partners use separate licences.

See: http://www.ordnancesurvey.co.uk/oswebsite/licensing/index.html

In addition, there are issues remaining with multiple third party rights in INSPIRE data sets which are being considered centrally in the UK.

Some examples of framework agreements are:

- The Ordnance Survey, JISC Collections, Higher Education Funding Council England 'OS Data Supply and Licence Agreement'. This framework agreement secures access to Ordnance Survey data for the UK Higher Education sector through EDINA services. A recent survey (2009) identified 4 European countries (Denmark, Norway, UK and Sweden) as having similar national agreements between their NMCA and academic sectors in place (http://itcnt05.itc.nl/Plone/agile/initiatives/Spatial_Data_Access_Final Report.pdf).

- The Academic community has a data sharing mechanism in ShareGeo (the closed version) which respects existing data publisher agreements but allows re-use of derived data to authenticated users.

- PSMA and OSMA provide datasets from two private sector suppliers to central government organisations in Great Britain.

- The framework agreements are managed by Department of Business, Innovation and Skills (PSMA); Scottish Government (OSMA); The National Archives (GLF and OGL). They are varied and fit for purpose, in particular in relation to sharing data within the public sector. The Government Licensing Framework is issued by The National Archives is itself aligned with INSPIRE guidelines. All arrangements have been developed over time in an iterative process and are updated and improved whenever possible.

  See:
  http://www.ordnancesurvey.co.uk/oswebsite/public-sector/mapping-agreement/index.html, and

  http://www.ordnancesurvey.co.uk/oswebsite/public-sector/scotland/index.html
  http://www.nationalarchives.gov.uk/doc/open-government-licence/open-government-licence.htm

- The requirements of Article 17 of the Directive have been enacted into national legislation in the 2009 INSPIRE Regulations in England, Wales and Northern Ireland and in Scotland. Amending Statutory Instruments were introduced in 2012 in England, Wales and Northern Ireland, and in Scotland, to incorporate recent EU Implementing Regulations into the UK INSPIRE Regulations.

- For emergency access to data sets in the UK there is no single over-arching solution. However, the PSMA licence does makes provision for sharing data in emergencies, and various parts of government are developing technical solutions, for the Cabinet Office's National Resilience Extranet, the local civil contingencies arrangements.

- The Civil Contingencies Act 2004 sets out a legal framework for emergency preparedness in the UK, defining those (largely non central Government) organisations with either a primary role (emergency services, Environment Agency, parts of National Health Service and Local Authorities) or secondary role (such as utility companies, transport operators)) in the response to an emergency, and their statutory responsibilities. These include a duty to work collaboratively together in the planning and response to emergencies and to share information between them.

- The UK's Data Protection Act contains a public interest test and accompanying guidance makes clear that in an emergency it is expected that it is in the public interest for relevant information to be shared with those who need it.

- In addition, some data providers have made specific arrangements. For example: Ordnance Survey's Mapping for Emergencies Services, which operates 24/7. See:

  http://www.ordnancesurvey.co.uk/oswebsite/support/knowledgebase/mapping-for-emergencies.html

Northern Ireland

Northern Ireland have changed their licensing agreements and created a non-commercial INSPIRE licence in order to facilitate greater access to data. Northern Ireland is also currently liaising with the Republic of Ireland in order to create a similar licence experience across both portals. Further information about Northern Ireland licensing for INSPIRE is here:

http://www.gistrategyni.gov.uk/index/spatialni/spatial_ni_licences.htm

7.2 Data sharing arrangements between public authorities and Community institutions and bodies

Many UK Spatial data sets and services can easily be accessed under the UK Government Licensing Framework, including open access by the Community's institutions and bodies. Details of the UK GLF are here:

http://www.nationalarchives.gov.uk/information-management/uk-gov-licensing-framework.htm

A number of public authorities in the UK are not able to use an open licence for all data and services, in particular those which operate under a trading fund model. The metadata will indicate and make clear what conditions apply for each dataset or service when supplied to a community institution.

7.3 Barriers to the sharing and the actions taken to overcome them

Various barriers have been identified, for example: the varied and complex licence models used in the UK, different revenue recovery models, and the distributed nature of network around location data. This mixed economy makes harmonisation and sharing a challenge.

The UK is leading on open data initiatives and fosters the release of public sector data under Open Government Licences. Public sector bodies have registered almost 10,000 datasets on data.gov.uk of which about 10 per cent relate to location. At present about 15% of the data is available under the Open Government Licence. Where possible the use of the Open Government licence is promoted for use by public bodies.

For other data, where the Open Government Licence is not appropriate, licensing arrangements are in place to share data between public sector bodies. An example is the Public Sector Mapping Agreement, which applies to some Ordnance Survey data supplied to public authorities in England. This Agreement has been extended to include licences to assist PSMA members who are covered by INSPIRE with the INSPIRE End User Licence, and the Web Map Service licence which make it easier for member to provide INSPIRE services. There remain however, many datasets and services for which there are no similar framework agreements in place for public sector users.

Where the data being provided is not available under the Open Government Licence, there is often a need to manage access to the data or services. There is no standard way of doing this which can form a barrier to sharing To start formally to address these and other barriers, in 2011 a Business Interoperability Working Group (BIWG) was convened by the Architecture Interoperability Board (AIB). The group investigated how digital rights management could be used with location data and services to improve the interoperability of data services. The group proposed a federated approach to access management. Further research and scoping work is required to determine how a federated approach can be implemented.

The position paper on rights management is published at:
http://data.gov.uk/library/uklp-access-control-and-rights-management-position-statement

In addition, the focus for discussions on the sharing of public sector information in general is through The National Archives, who are responsible for the licensing of Crown copyright and the UK Government Licensing Framework, and the Cabinet Office who are responsible for the open data and transparency agendas. The working groups brought together by the UK Location Programme helped to galvanise, inform and advise the wider data provider community of INSPIRE requirements. There have been also detailed discussions among

smaller groups of users, such as the users of Ordnance Survey data in England, Scotland, Northern Ireland and Wales.

For example, the PSMA user group has established a licence communication group that is working with the OS to simplify and develop licences where possible and to improve the understanding and communication of PSMA licensing. Examples would be the development of the INSPIRE End User Licence, Web Map Service licence, and Commission Body licence.

Other groups in the UK are:

- UK Location User Group, founded in 2010 met three times each year until recently. New arrangements are being considered. The User Group provided a voice for users into the UK Location Programme; advised UK Location Council of users' key strategic concerns; assisted with developing the benefits realisation strategy; identified useful case studies; established evaluation sub-group to test services being provided; and engaged with business area user groups (3rd sector, retail, environment, etc); kept represented user sectors informed of progress.

- Northern Ireland INSPIRE Technical Group. The group was set up in May 2008 and meets at least quarterly. It is managed by the Northern Ireland GI Programme Office (which is run by Northern Ireland Land & Property Services) and Chaired by the Project Manager of the Northern Ireland INSPIRE portal who sits on the Northern Ireland GI Delivery Board. The group has representatives from all Annex I and II dataset holders. The aims of the group are to work towards the successful implementation of INSPIRE in NI through the dissemination of information on INSPIRE and sharing of ideas and processes. A licensing workshop was organised through the group with speakers from the National Archives and the Chair of the INSPIRE data and service sharing drafting team to give advice and guidance.

- Licensing Forum. The Licensing Forum meets quarterly and provides a regular venue for discussions around licensing of UK public sector information. Its members comprise the major UK public sector information providers, with a particular emphasis on holders of geospatial data. By building a network of professionals across government the Licensing Forum helps to facilitate and disseminate best practices on data sharing.

- UK INSPIRE Theme Groups. Theme Groups meet quarterly. They are the main vehicle for engaging with INSPIRE data providers. The groups have been formed around the INSPIRE themes to identify datasets, develop approaches to data transformation and address issues of data interoperability such as cross-border sites and common reference bases.

- The UK Location Programme also organised other highly effective working groups which have already provided important input to tools, standards and technical guidance produced by UK Location. These include the Data Providers Working Group and the Metadata Working Group.

- AGI INSPIRE special interest group.

- Various sector and organisation led groups such as the Local Authority INSPIRE advisory network.

8 Cost / Benefit aspects (Art.16)

8.1 Costs resulting from implementing INSPIRE Directive

The costs of implementing INSPIRE in the UK are not considered to be prohibitive but measuring them is not possible without investment, and so they have not been part of the initial plan. We have not so far collected detailed costs other than the actual central costs of running the UK Location Programme.

We will be taking forward as part of the benefits work a method of estimating costs and expect to be in a position to report on this by 2016. UKLP assisted and UK-INSPIRE will continue to assist with costing models on a case by case, individual basis. It must be understood that within the UK's federated approach costs vary considerably so estimates cannot be made.

The costs of the UK Location Programme for the past three financial years are shown on the next page.

2010-2011

Organisation	Funding Provision (k)
Department for Environment, Food and Rural Affairs	£1,274
Department for Communities and Local Government	£250
Total budget	£1,524
Area of expenditure	**Cost (k)**
Defra funded staff costs	£180
Other costs*	£147
Consultancy	£444
IT development	£753
Total expenditure	**£1,524**

2011-2012

Budget	£1,683
Area of expenditure	**Cost (k)**
Defra funded staff costs	£680
Other costs*	£127
IT development	£775
Total expenditure	**£1,582**

2012-2013

Budget	£
Area of expenditure	**Cost (k)**
Defra funded staff costs	£592
Other costs*	£75
IT development	£265
Total expenditure	**£929** (provisional)

* These relate to a variety of costs, including running costs, marketing and communication costs, consultancy and secondee travel and subsistence expenses.

8.2 Benefits observed

The approach taken to measurement and realisation of benefits from INSPIRE in the UK differs from a typical project in two important ways:

- The ultimate benefits are delivered by a very large number of projects and initiatives each delivering relatively small value. For example, up to £7.5m pa is expected to be saved in efficiencies completing Environmental Impact Assessments (EIAs) and Strategic Environmental Assessments (SEAs). However, this estimate is itself made up of a relatively small cost saving for each of the very many EIAs and SEAs that must be completed.

- Those responsible for delivering the ultimate benefits are found in a diverse set of locations incorporating central and local government, third and private sectors.

In effect, while the UK has set up an infrastructure and set of services that users may access and exploit as they wish, the end benefits from INSPIRE will be realised by the users rather than the implementation itself.

Tracking the end benefits at the point at which they are realised would require input from each user of the data (across up to 430 local authorities, many central government agencies and representatives from 3rd and private sectors), would involve substantial effort and may potentially act as a deterrent to use of the data.

In a similar way the National Grid delivers electricity to homes across the UK but the ultimate use of that energy is up to each user with the potential benefits of using it too numerous and varied to track, and with the use made of the energy entirely up to the consumer.

Given this situation it was not considered to be a realistic strategy for UK-INSPIRE to develop a Benefits Realisation Strategy purely focussed on the delivery of the end benefits. Instead the strategy places an emphasis on the areas that can be managed effectively.

Under the UK Location Programme a strategy set out the ways in which the Programme ***enabled*** the end benefits to be realised by ensuring that the infrastructure and services that are delivered are effective in allowing the data to be accessed and used with the ultimate aim of delivering benefits. In effect the Programme aimed to act as a catalyst, expanding on the pockets of best practice for using location data that do exist within the UK so that the effects are felt more widely.

Although it is not possible to track and measure each and every end benefit that accrues from the use of the location and INSPIRE data made available in the UK, the Programme collected examples of these, via published case studies, papers and presentations. Over the past three years UKLP worked with key partners such as Ordnance Survey, Local Government Association, the devolved administrations, the research councils, the Technology Strategy Board and Infrastructure UK to stimulate uptake of location data through both innovation and re-use of existing case studies.

Going forward UK-INSPIRE is now developing a new strategy to focus on benefits that can be attributed to INSPIRE. The strategy sets out a framework and activities to enable UK-INSPIRE to meet two key aims for benefits realisation:

- To coordinate efforts to identify, measure, articulate and report on benefits of INSPIRE work in the UK.

- To promote wider use and adoption of INSPIRE services and data in the UK.

These aims will be met using the following key activities:

- Developing a baseline which will provide a common framework from which to measure benefits of INSPIRE over time;
- Promoting and sharing case studies to demonstrate benefits to Publishers, Users, and the wider economy;
- Continuously engaging with the wider INSPIRE community (publishers and users) in order to communicate, promote, publicise and share benefits case studies and best practice from UK and EU;
- Monitoring activity levels (usage and publication activities) through management information and analytics from portals (data.gov.uk) or other web services;
- Reporting on UK INSPIRE benefits in order to fulfil the European Commission's triennial report requirements.

9 Conclusions

Three years on from the last report, the implementation of INSPIRE in the UK is on target and in a good shape. Governance structures and mechanisms are sound. A central infrastructure is in place. Milestones have been met and necessary legislation is in place.

The implementation of INSPIRE in the UK will continue in line with the roadmap timetable. The UK is making plans to ensure we measure costs and benefits of implementation, and to promote use of INSPIRE datasets. We expect to be able to report more fully on benefits in the next report in 2016.

10 Annex A – UK INSPIRE Stakeholder Matrix (Note this page is A3 size)

Stakeholder Group	Why do we need to engage?			Engagement Channel	Who are we talking to?	Programme Responsible Party
	What do they do?	Benefit to them	Benefit to us			
INSPIRE Data Providers	~ Manage and publish INSPIRE data ~ Provide technical expertise and feedback	~ Avoidance of infraction costs which could be passed to them ~ Alignment with Open Data standards and requirements ~ Their data is more widely used and accessible	~ Data is published and widely accessible ~ UK is INSPIRE compliant ~ INSPIRE data is at the heart of the Transparency agenda ~ Consistent application of data standards and services across the UK	~ Website and other comms ~ Data publishing working group ~ Provision of collaborative tools (pledge/profile) ~ Formation of partnerships with important data sectors ~ Events (hosting & participating in 3rd party) ~ Senior staff/ministerial engagement	~ Local government ~ Central government ~ Devolved administrations ~ Research Councils ~ Data Sharing Partnerships (EG MEDIN; NBN...) ~ non-governmental organisations with public tasks (EG Canals and Rivers Trust)	~ INSPIRE Engagement Team
European Commission (legislators)	~ develop INSPIRE legislation ~ produce technical standards and guidance required for INSPIRE implementation ~ monitor INSPIRE compliance across MS	~ joined up environmental data across the member states to inform EU policy making	~ European INSPIRE legislation and standards are fit for purpose and maintained ~ New environmental Directives and reporting requirements build on INSPIRE - reduced data collection & reporting burden ~ UK is INSPIRE compliant	~ INSPIRE Committee ~ EC Working Groups ~ Review and comment on EC papers ~ EU Monitoring Reports	~ EC - DG Env, JRC, Eurostat	~ Project SRO ~ AIB Chair & working group experts ~ Policy Lead ~ Monitoring lead
EU Member States	~ implement INSPIRE solutions	~ development of open software/tools they can reuse ~ shared knowledge, best practice and lessons learned	~ resolution of cross border issues ~ presentation of collective views to the Commission - UK is more influential at EU level ~ develop open software/tools we can reuse ~ shared knowledge, best practice and lessons learned	~ INSPIRE Committee & contacts in MS ~ EC Working Groups ~ INSPIRE Conference ~ Neighbouring countries meetings	~ EU Member States	~ Project SRO ~ AIB chair ~ Programme Architect ~ Policy Lead
Other EU Initiatives/Bodies	~ develop new EU policies and strategies which will impact the UK	~ More accessible location data means more evidence based policy making in the EU ~ Reduced data capture and management costs through the reuse of existing location data and infrastructure	~ New requirements for environmental/location data build on INSPIRE ~ Location data and infrastructure is widely used at EU level providing demonstrable benefits and cost savings	~ Through Policy makers	~ EEA ~ JRC ~ GMES ~ SEIS	~ Data Exploitation Manager
UK Data Policy Makers	~ develop national data policies and standards e.g. Open Data Strategy, UK Gov Licensing Framework, Right to Data (Freedoms Act)	~ development and provision of INSPIRE data standards, guidance, technical approaches and infrastructure which could be used more widely	~ our strategic direction and governance aligns with wider data policy across UK ~ INSPIRE data policies, standards and services are adopted more widely across Gov ~ UK data policy and standards also resolve issues affecting location data e.g. licensing .	~ Engagement with Cabinet Office Transparency team ~ Engagement with BIS data strategy team ~ Participation in relevant committees ~ Contribute & respond to policy documents (consultations, whitepapers, draft legislation etc)	~ Data Strategy Board ~ GI Customer Group ~ Open Data User Group ~ Transparency Board ~ GDS - Digital policy & web delivery ~ Devolved Admin data groups	~ Project SRO ~ Policy Lead ~ AIB Chair
Environmental policy makers (within Defra)	~ Develop environmental policies and initiatives which have new requirements for location data	~ More accessible location data means more evidence based policy making in Defra ~ Reduced data capture and management costs to Defra through reuse of existing INSPIRE data	~ New requirements for environmental data build on INSPIRE ~ INSPIRE data and infrastructure is widely used by Defra network providing demonstrable benefits and cost savings to Defra	~ Defra strategic evidence team ~ Defra data strategy team ~ Defra knowledge partners	~ Defra policy teams	~ Data Exploitation Manager
Other policy makers	~ Develop policies and initiatives which have new requirements for location data	~ More accessible INSPIRE data means more evidence based policy making in UK Gov ~ Reduced data capture and management costs to UK Gov through reuse of existing INSPIRE data	~ INSPIRE data and infrastructure is widely used by UK policy makers, providing demonstrable benefits and cost savings to UK Gov	~ Project SRO ~ Devolved Admin reps ~ User Group	~ other government departments	~ Data Exploitation Manager
Devolved administrations	~ Manage and publish INSPIRE data ~ Build technical infrastructures to publish INSPIRE data	~ Technical infrastructures and data are interoperable across borders ~ Access to UK wide INSPIRE datasets ~ Development of data standards and guidance which can be shared	~ Compatible of legislation, policies, standards and decisions across the UK ~ Devolved data are accessible via data.gov.uk to EU ~ Whole of UK is INSPIRE compliant	~ National contact points ~ AIB and working groups	~ Welsh Government ~ Scottish Government ~ Land and Property Services (Northern Ireland) ~ Government of Gibraltar	~ Project SRO ~ INSPIRE Engagement Team
Technical Delivery Partners (OS & CO)	~ deliver and host technical infrastructure	~ ability to influence technical direction and standards ~ promotion of their technical skills and software	~ location infrastructure on data.gov.uk is fit for purpose and INSPIRE compliant ~ INSPIRE data is published to EC	~ UKLP development team ~ MoU between Defra, OS & CO	~ Ordnance Survey ~ data.gov.uk team (Cabinet Office)	~ IT project manager
System Suppliers	~ provide INSPIRE software and/or service solutions to data publishers	~ new revenue opportunities	~ provision of INSPIRE compatible products/services ~ choice of products for data publishers ~ growth in GIS market	~ Through trade and professional bodies	~ AGI ~ other trade bodies (BCS?)	~ INSPIRE Engagement Team
Technical Experts	~ Develop, maintain and quality assure data related policies, standards, guidance and infrastructure in the UK ~ Provide technical advice to EU	~ influence programme solutions and direction	~ robust/fit for purpose location infrastructure design, policies and guidance	~ AIB and expert working groups	~ Independent technical experts across the UK	~ AIB Chair ~ IT Project manager ~ Policy Lead
Data Users (public, private & 3rd sector)	~ consume and analyse INSPIRE data to meet their needs ~ develop apps and systems which consume INSPIRE data	~ improved access to data	~ better policy making and public services at EU, national and local government level ~ INSPIRE data stimulates economic growth ~ government savings through improved access to, and reuse of, location data	~ Trade and professional bodies ~ Generic communications (blogs, case studies etc) ~ Events (hosting and participating in 3rd party)	~ Open Data Institute ~ Academia ~ Civil society ~ NGO's ~ Business (retail, insurance, financial, logistics, comms...) ~ Utilities ~ Blue Light ~ Data Providers ~ Policy Makers ~ Devolved administrations	~ Data Exploitation Manager