Approaches to data policy in the marine sector

Marine Environmental Data and Information Network (MEDIN) - Research Project

Final Report – December 2010

Version 1.1

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Executive Summary

The Marine Environmental Data Information Network (MEDIN) commissioned an independent study to investigate and report on approaches to data policy in the marine sector in relation to the wider re-use of marine environmental data. The focus of the study was on public sector data, however, private data holdings are also discussed where appropriate.

A **guidance review** was undertaken by The GeoData Institute and a **data policy audit** was undertaken by The Crown Estate. The data policy audit included interviewing 21 public bodies, 6 private companies and 1 charity. The interviews were undertaken between April and June 2010 and the report captures the status of data policies for this time period. These work packages are reported in this document.

In the last 2 years, policies regarding the UK's marine and terrestrial environmental data have seen a relaxation of public sector licence terms in some circumstances and there are examples of improved data sharing and re-use, however, some examples to the contrary were found.   There is scope for improving this situation by standardisation; reducing the variety of licences by adopting common licence terms, providing licence templates to simplify data sharing and re-use, and providing contract templates to achieve standardised data generation. It was also found that with some simple measures public bodies could do more to inform data users as to what is available for no-charge with no restrictions on re-use and what is with charge and restrictions. A lack of clarity of when this applied to certain data was found to confuse and sometimes frustrate those trying to obtain these data when perceived blockages to data were not fully explained.

Developments in the marine environmental data sector including those resultant from the EU's Infrastructure for Spatial Information in Europe (INSPIRE) and Public Sector Information (PSI) Directives, The UK Location Programme (UKLP) activities, MEDIN initiatives and centralised government data sharing polices and initiatives such as data.gov.uk. These initiatives are all driving the improvement of the *status quo*, however, clearer licensing and guidance, co-ordinated data activities and increased funding are required to achieve the level of improvement that is generally considered to be required. For example, a number of public sector data portals for sharing and presenting data for re-use either exist or are under development, and the coordination and potential consolidation of these initiatives should be considered.

The main differences in approach regarding data policy and licensing are between public bodies that undertake commercial activities (e.g. the Met Office, UKHO and BGS) and those that do not (e.g. Cefas, JNCC, Natural England, etc.) which results in differences in policy regarding how each organisation works with and regards its data.

Main conclusions:

- Interoperability of data and metadata to be improved
- Common standards, policies and agreements are required
- Sharing and re-use is improving
- General clarification is required (e.g. list Public Task datasets and products; Information Fair Trader Scheme (IFTS); UKLP and INSPIRE)
- Many portals exist; co-ordination and rationalisation would be beneficial
- Some practices (costs and licence terms) should be reviewed

- Funding is required for portals and for some organisations to bring their metadata up to the INSPIRE standard

Key recommendations for the following topics are:

- **Access policies**
  - Put a pan-government marine data plan in place to lever the importance of marine data management
  - Organisations to declare what data they hold is PSI (Public Task) on an asset list
  - Make it easier to locate the correct contacts for obtaining data
  - The provision of no charge, freely available, quality assured national datasets would be of great value to the public and private sector alike
- **Operational approaches**
  - Making existing datasets INSPIRE compliant will require significant resources and effort which is a big issue for some organisations. Support, guidance and tools for expediting this process would be valued
  - Data researchers would prefer as few portals as possible to obtain data in a format they can re-use
  - Make it a contractual requirement for contractors to post data to MEDIN Data Archive Centres (DACs) or similar
- **Best practice initiatives**
  - That a single common metadata standard, INSPIRE compliant, is used across the sector as far as is practicable. Changing metadata standards once adopted is extremely costly and time consuming.
- **Pricing and licensing**
  - Pan-government terms to avoid inappropriately high charges for licensing their data to other government organisations

Glossary

It is important to define the meaning of key terms used throughout this report to provide clarity of meaning. In particular it is important to clarify the meaning of the terms of data "re-use" and "sharing" in the context of this study.

Charge – A cost for the data / the associated licence above nominal handling charges. See also 'Data licensing with a handling charge' below.

Click-use – 'Click-use' licences are for re-using public sector information. Click-use is the term used to describe OPSI online licences for the re-use of Crown copyright information and Parliamentary copyright information. There are two Click-use licences: the Public Sector Information (PSI) Licence (formerly known as the Core Licence) and the Parliamentary Licence (this covers Parliamentary copyright information). There is no charge for the PSI Licence or the Parliamentary Licence. Some Crown copyright material is covered by waiver conditions.

Crown copyright – Copyright material which is produced by employees of the Crown in the course of their duties. Therefore, most material originated by ministers and civil servants is protected by Crown copyright. The Director of OPSI in her role as Queen's Printer has been appointed by Her Majesty the Queen to manage all copyrights owned by the Crown on Her Majesty's behalf. OPSI's Information Policy team licenses on the Queen's Printers behalf.

Data licensing with a handling charge – data requests from public sector bodies which do incur a nominal delivery charge due to the complexity and volume of the request.

Data sharing – Sharing of data between organisations for no charge, with no re-use rights.

Data licensing with no charge – downloading data automatically from a portal or a small manually delivered data requests from public sector bodies, with no charge for the data, the associated licence or delivery.

Derived products – (either using the raw data or sources that are themselves derived from the raw data) are a particularly controversial area. Joint Intellectual Property Rights (IPR) and / or ownership are generally recognised as irrelevant as the important issue is the "rights" given to the licensee to use that data. A particular area of difficulty for licensees to understand is that of "copy derived" and "non copy derived" data.

- Copy derived means that the derived data set includes a copy of the original information as a whole or any substantial part of it (as defined by Copyright legislation and case law) or that the derived data set can be reverse engineered to create a copy of the original information or any substantial part of it.

- Non-copy derived means that the derived data set does not include a copy of the original information as a whole or any substantial part of it (as defined by Copyright legislation and case law) or that the derived data set cannot be reverse engineered to create a copy of the original information.

Metadata – A geospatial metadata record is a file of information, usually presented as an XML document, which captures the basic characteristics of a data or information resource. It represents the who, what, when, where, why and how of the resource. Geospatial metadata are used to document geographic digital resources such as Geographic Information System (GIS) files, geospatial databases, and earth imagery.

Public Task – The Public Task of a public sector body are the public datasets which it must provide to fulfil its obligation to the Public. These are typically raw data which have had minimal further processing. This is opposed to the commercial business activities of Trading Funds.

Raw data - Basic data and information, raw data, public sector data.

Re-use – the use of data by persons or legal entities of documents held by public sector bodies for commercial or non-commercial purposes other than the initial purpose related to the public task for which the documents were produced. The exchange of documents between public sector bodies purely in pursuit of their public tasks does not constitute such re-use.

Value added data – Raw data (see above) which has had value added to it by creating bespoke products. It therefore contains Intellectual Property (IP).Further definitions and background information are presented in Annex 1 which is taken from Annex A of the study Announcement of Opportunity.

An overview of the 'actors' involved in UK public sector data is presented below as created by the UK Location Programme to explore some of the business requirements of the Discovery Metadata Service (DMS), UK Location Programme (2010).

Actor	Definition
User	Someone who uses data.
Data Provider	An organisation that has data that they wish to publish and hold the rights to do so.
Publishing Agent	Service provider for Data Providers who do not wish to publish their data themselves. A Publishing Agent may have many Data Provider clients and may provide a range of publishing services, including data hosting, metadata management and web services. A Data Provider may act as a Publishing Agent for other Data Providers.
Data Publisher	Either a Data Provider (publishing directly) or Publishing Agent.
Service Provider	The provider of a web service for a given dataset. Typically the Data Publisher, but may be a third party, e.g. in the case of transformation services.
Data User	A user of the published metadata for the discovery and evaluation of datasets and associated services; and subsequent data services.
Discovery Service Client	A user of the UKLII Metadata Catalogue, who wishes to build it into an application, e.g. an information portal focused around particular datasets.
Coordination Unit Officer	A member of the Location Information Coordination Unit. Roles include assurance and management reporting.

Table 1. Outline use cases, UK Location Programme (2010).

1. Introduction

Data and information are the lifeblood of the knowledge economy, yet within the UK information is highly fragmented with many datasets and sources. There is duplication of information collection in some cases and harmonisation between datasets at different scales is often lacking. Co-ordination between different levels of government and public authorities is generally poor resulting in incompatible information and information systems. Much information is not re-useable and there are various policy, institutional and commercial restrictions on access to data. What data there is can often be difficult to identify, access, use and re-use.

This independent study investigates the approaches to data policy in the marine sector in relation to the wider usage of marine environmental data with the ultimate aim of long-term sustainability of marine datasets. The focus of the study was specifically regarding data policy and licensing issues related to public sector data, however, private data holdings are also discussed where appropriate. The two work packages undertaken were:

- Summary of the status of legislative and regulatory guidance relevant to data policy
- Audit based on interviews was conducted to review:
  - Best practice
  - Compliance
  - Pricing and licensing
  - The user perspective

The objective was to conclude on the guidance review and audit and to make recommendations on how the *status quo* could be improved. Useful recommendations came out of the interviews that do not directly relate to the remit of this study (e.g. relating to metadata and standards), and these are provided in Annex 6.

The audit interviews were undertaken between April and June 2010 and the report captures the status of data policies for this time period. The study was completed with the political backdrop of the 2010 General Election which took place approximately half-way through the study (6 May 2010) and saw a Labour government succeeded by a Conservative-Liberal Democrat coalition. This change of government naturally changes the UK's data policy and it is important to note that the full impact of this is unclear at the time of writing. Economically the UK was 16 months into a recession and the new government had already initiated the debate on broad reaching cuts across the public sector. These cuts had the potential to impact upon the majority of those interviewed, therefore, potential cost savings to be made from efficient data policies were extremely pertinent and timely.

2. Scope and purpose

See Annex 2 'Statement of Work' from the 'Announcement of Opportunity' (Section 4).

3. Marine data policy guidance review

3.1. Overview

3.1.1　　　　This review covers national and EU legislation related to PSI and the guidance relating to charging and re-use of public sector information from literature and discussions with key UK organisations (OPSI, UKLP, ERFF, and APPSI). It has focused as far as possible on marine data and the charging and re-use of public sector data in this domain. The scope does not allow for the detailed section by section analysis of current law and guidance; partly mediated by the recent reviews of this within the marine sector, (MRAG et. al., 2009). Thus the scope of the review here is offered as a framework analysis and literature search of the relevant policies, legislation and guidance, with an overview of trends.

See Annex 3 for source material for the marine data policy guidance review.

3.1.2　　　　The scope of this review has been from the perspective of MEDIN as a key coordinating body nationally in promoting discovery and access to marine data that seeks to discuss the potential role for MEDIN in clarifying guidance to broadly assist users. MEDIN has recognised the lack of coherence on data exchange, charging and rights management. First we observe that MEDIN is an organisation or rather a network of sponsoring organisations that have come together to pursue the common cause of promoting the sharing of, and improved access to, a range of marine data through a central discovery metadata portal (DMP). MEDIN now wishes to attack some of the ongoing problems faced by data users, which involves in particular trying to make marine datasets more identifiable, accessible and useful as an online resource. Implicit within this must be the desire to supply the right information to the right people at the right time, which is a cornerstone of Government objectives with regard to public sector information (PSI).

3.1.3　　　　A subset of problems in delivering the above is recognition that relevant datasets and sources are fragmented, in different scales, duplicated and incompatible across the UK marine sector and internationally. This is of course a common problem with PSI generally but it represents a fundamental challenge that must be addressed if the overall objective outlined in 1.2. is to be achieved.

3.1.4　　　　It is noted that MEDIN's role is very much as a facilitator, whose rationale is defined, in the first instance, by the sponsoring organisations that have set it up; and secondly, by the funding bodies that have supported its activities and aspirations. The organisations that engage with MEDIN operate under a variety of business models of their own. Within these models a degree of collaboration in linking to DMP has been possible in terms of producing search data results using a common metadata standard. It is noted that MEDIN has "an agreed process, which involves key stakeholders, to approve standards which should then be used by MEDIN partners". Work continues and remains ongoing to subject data sources to metadata analysis so as to bring such data within the scope of future access.

3.1.5　　　　It is implicit within the MEDIN structure that it does not itself hold intellectual property rights (IPR) in the raw data identified by theme. Access to this data is facilitated via searches to MEDIN's central DMP within a network of four Data Archive Centres (DAC):

- British Oceanographic Data Centre (BODC)

- Marine Biological Association (MBA) (Data Archive for Seabed Species and Habitats (<u>DASSH</u>) project)

- British Geological Survey (<u>BGS</u>)

- UK Hydrographic Office (<u>UKHO</u>

3.1.6 Feeding into these DACs will be a web of further providers or networks of providers linked to one another by common interest, as defined by the purpose and function of these organisations. These may reside in both the public and private sectors, whose links may, in some cases, be contractual defining the terms of services to be delivered. At present it is clear that a complex set of IPR pervades such data providers. Whereas some rights, within the public sector, may be dictated by Crown copyright, other providers may acquire IPR by ordinary copyright principles as rights holder or via contractual grant or amendment by licence. It is submitted that such a web of rights must militate against MEDIN's core objectives as each set of IPR will act as a gatekeeper to control what can be done with the data in accordance with the rights holders' entitlements. It is strongly recommended that this key issue be addressed as a first step towards embracing a policy of access and use of this data. Essentially, what needs to be done is subscription by all participating organisations to a set of principles that determine what the terms shall be for data access, use and exploitation. Without this being agreed a functioning model cannot be offered that will be in keeping with the broad strands of Government policy towards exploitation of PSI. A similar approach to this issue, as has been taken with metadata, is necessary, although it is recognised that this is a complex and difficult task. Proposals have been made for a standardised, harmonised and simplified licensing within the UK Location Information Infrastructure (UKLP 2009) and licensing approaches under development by OPSI may help to circumvent some of this complexity. However, where the web of IPR persist adoption of a rights model (such as GeoDRM RM rights management[1]) may be needed to address access and rights to geospatial data and services.

3.1.7 IPR represent a strong set of rights that can control in detail what can be done with data sets. Right holders retain the rights to determine the terms and conditions under which such data may be stored, accessed, exploited and used. Such rights can control the basis upon which a work or data set may be adapted to add value and then distributed. Restrictions of all kinds might be possible, whereby such material may not be reproduced, altered, integrated, published or exploited for financial gain or otherwise. Moral rights will also exist, as laid down by statute. Different components of a data set may belong to different right holders. The consequence of such a web of rights will be, if left alone, to create a log jam that inhibits certainty as to what can be done with such data produced by a search of the DMP. MEDIN needs to address this issue first by endeavouring to secure a set of principles to which all right holders agree when they sign up to participation in MEDIN. It may be that, dependent upon the rights relinquished by this process, different categories of data may arise in terms of the extent to which data may be accessed, shared, have value added

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[1] *OGC GeoDRM Reference Model – The GeoDRM RM provides a framework to manage rights in geospatial information and IPR. http://www.opengeospatial.org/standards/as/geodrmrm*

and then exploited. If too many such categories are created this may of course defeat the object which is to facilitate better access arrangements to the data.

3.1.8   For instance, the MCA Civil Hydrography Programme survey image contains Bathymetric survey maps funded by Maritime Coastguard Agency. These are used for identifying the location of seabed obstructions. The data is taken for quality assurance and product development to UK Hydrographic Office (UKHO) who will turn these into cartographic charts or digital content with legal status. In this instance a MEDIN access model cannot easily be created whereby users of DMP have seamless cost-free access, not only to information about these data sets, but to the data themselves, such as 'Admiralty e-Navigator'. The reason is that UKHO is a Trading Fund agency of the Ministry of Defence and, as such is subject to statutory terms and conditions under Trading Funds legislation regarding exploitation and use of the data, as well as Crown copyright regulation in its capacity as right holder. Nevertheless, and despite these limitations the UKHO focus is on value-add products and has recognised the potential to provide free access to bathymetric data without restrictions on subsequent use. This illustrates the importance of the funding model to the degree of access to at least 'raw' survey data, with greater emphasis on access to 'raw' data at marginal or no cost and with fewer or no re-use restrictions. The UKHO has recently developed an accredited DAC profile meeting the MEDIN framework.

3.1.9   If the rationale of MEDIN here is to "make it possible to 'identify, access and use' more public information" it has to do more than simply understand the "different approaches to licensing and IPR of data as currently applied across the marine sector". Having done that it has to fashion a model that will categorise data sets according to their permitted access conditions, use rights and exploitation restrictions. As an organisation it is likely to be confronted by a range of responses to any attempts to categorise such data in these terms. In some cases Trading Fund operators may be restricted by legislative restraints of the kind just described. In others this may be subject to the broader policy of government towards Crown copyright. Among those right holders not subject to such rules the issue will be contractual and dependent upon the terms MEDIN can successfully negotiate with data providers to open up data not only to access but to use and exploitation, including the possibility of integration with other data sets (mash up) to improve the quality and value of the information.

3.1.10   The problem with this approach is that, in seeking to create such agreements with MEDIN's information providers, there may be further copyright or contractual arrangements cascading down the line to further data sets held or maintained by third parties. This will complicate the matter further, especially where there are multiple rights in the data. The position may be that, while attempting to secure a set of terms and conditions may be desirable, the reality is that the end product may be limited in terms of what can be achieved. In that case MEDIN would have to try to secure as much ground as it could in fulfilment of its primary objectives. Inevitably, there will be some providers and rights holders that cannot subscribe to those terms for legal or policy reasons, because they do not control the decision alone.

3.1.11   The task for MEDIN then is to work out what is feasible in this regard and what it might reasonably expect its partners to sign up to so as to free up at least some parts of the data for the purposes described. As a second limb to this MEDIN must then acquaint itself with the principles

of policy towards access and use of PSI and use those policies to negotiate with other data providers who are subject to those broader policies. In particular, one is referring to policies towards Crown copyright, re-use of PSI and specific regulation in relation to environmental and spatial data. For some operators there may be scope, within these policies, to enter into specific agreements with MEDIN, but this will take time and will involve negotiation. Ministerial support for MEDIN and its objectives may hasten the response of officials or those with responsibilities for the data where such policies apply. Preliminary work will be necessary too, so as to establish what datasets exist and where they reside.

3.1.12 Additional issues must also be considered. Data must be archived and maintained if it is to have longevity and be of use in the future. Archiving is a critical issue and bears a significant cost. Uncertainty as to the ownership and use rights of archived data may inhibit investment by the custodian in that task. The reason is that such investment might be wasted if the right holder chooses to exercise rights in relation to that data that prove inconsistent with the expectations of the archivist. Attention must be paid to this matter in the medium term. In addition there will be issues related to access standards, particularly in relation to the semantic Web, Web 2.0 and 3.0 (in so far as these developmental criteria describe the future scope of the Internet for online exploitation of data). Management of information security and of moral rights must also be taken on board.

3.1.13 It may be that an option for MEDIN to consider for a specific group of 'core infrastructure data' among all of its data themes that represent the bedrock on which all subsequent data provision and development and mash-ups may build. This has been highlighted within the specifications for a marine digital national framework and marine spatial data infrastructure (Osborne 2009) and within the APPSI proposals for open access to 'Core Reference Geographies' as maintained, national information infrastructure (APPSI 2010[2]). One example in the broader sphere is OS MasterMap, which is a continually updated and maintained database for the whole of Great Britain. It contains a variety of information, structured into different product layers, consisting of topography, roads, aerial imagery and addresses. Equivalent data sets within MEDIN might be identified so as to make these available with minimum restraint, so as to encourage an ever deeper understanding of the marine environment. This would, of course, need to be negotiated among all relevant data providers and it might involve cross-departmental approval and agreement with a multiplicity of agencies. However, to achieve the potential here, some change to the current web or rights and restrictions must necessarily be achieved if progress with MEDIN's core objective is to be realised.

3.1.14 One further matter needs to be flagged up and that relates to sharing data across jurisdictional boundaries. It is, of course, implicit within the proposed EU infrastructure for spatial information in Europe (INSPIRE) that such integration takes place for spatial data in its remit. However, INSPIRE does not necessarily make environmental data available for reuse. Outside this category of data, access to marine data may be sought from potential value-added private sector, third sector providers or individuals from anywhere in the world who may wish to develop the data

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[2] APPSI (2010) Annual Report 2009-2010: Realising the value of public sector information.

for any purpose whatsoever. This may not be of direct concern to MEDIN itself, but it may be to data providers who have been invited to sign up to more liberal contract terms if this matter has not been addressed consistent with rights holders' obligations to others or to regulatory requirements. Whilst right holders may be content for some users to access 'their' data freely, they may not wish such terms to be available to all comers. The data provider may, in any case, expect payment for access to offset the cost of maintaining the data sets involved. In other cases concern might arise that such users may be seeking to exploit the data commercially at no benefit to the UK – although this may be a somewhat peripheral issue if the ultimate purpose is to produce a better informed environmental community across national boundaries. It should be said that the open access approach is certainly the one promoted by Professors Tim Berners-Lee and Nigel Shadbolt in their Data.Gov initiative. In this context the development of common standards for sharing such data is critical to the success on multi-national data sharing arrangements.

3.1.15   A brief introduction to the framework policies and guidance governing the distribution and exploitation of PSI in the UK is provided; that acts as a background to the data policy review and the understanding and compliance with guidance of UK marine public sector data providers.

3.2. UK PSI distribution and re-use policies

3.2.1   A general comment is called for here.

The United Kingdom Report on the Re-use of Public Sector Information 2009 Cm 7672 (OPSI July 2009) (Cm 7672) states that:

> The Office of Public Sector Information (OPSI), part of The National Archives, is at the heart of information policy in the UK, setting standards, delivering access and encouraging the re-use of public sector information (PSI). OPSI has responsibility for the management of much of the UK Government's intellectual property and is the regulator of public sector information holders for their information trading activities.

> Through OPSI, the challenge for the public sector is on maximising the value from official information providers that trade in their information. It is important that conditions and processes are in place that enable re-users to access the richness of the public sector's output across diverse areas of operation. This brings with it substantial responsibilities to create the right conditions for unlocking the potential of PSI. These priorities are embedded in OPSI's objectives:

> - to deliver the policy lead on the re-use of PSI across the UK
> - as a regulator to promote high standards of information trading across the public sector under the Information Fair Trader Scheme (IFTS) and investigate complaints under the Re-use of Public Sector Information Regulations
>
> - to license, advise and manage the re-use of Crown copyright material
> - to develop innovative technological solutions and models that support emerging information policy
> - to put solutions and new initiatives into practice that facilitate PSI re-use

OPSI is the co-ordinator of information policy in the UK and is therefore the starting point for assessing policy on PSI.

3.2.2 What is public sector information? This is not actually defined in a single formal sense. In terms of re-use of PSI <u>Statutory Instrument 2005 No. 1515</u> (S.I. 1515) - The Re-use of Public Sector Information Regulations 2005 defines the issue in terms of access to "documents" held by "public sector bodies" that are listed in Reg. 3. In terms of the <u>Freedom of Information Act 2000</u> (FOI Act) this refers to information held by a public authority. There are a different set of definitions of public authorities in Schedule 1 that of course relate to FOI Act requests. The Cabinet Office report <u>Protecting Information in Government</u> (January 2010) indicates that in terms of information security "there are now over 9000 Information Asset Owners (IAOs) in government with responsibility for how information is handled at a business level".

3.2.3 S.I. 1515 implements <u>Directive 2003/98/EC</u> (PSI Directive) on the re-use of public sector information PSI Directive). This applies to all documents made accessible for re-use when public sector bodies license, sell, disseminate, exchange or give out information. This contrasts with environmental regulation (see below) which governs specific requests for information to be provided. Art. 1(2) PSI Directive sets out that:

2. This Directive shall not apply to:

(a) documents the supply of which is an activity falling outside the scope of the public task of the public sector bodies concerned as defined by law or by other binding rules in the Member State, or in the absence of such rules as defined in line with common administrative practice in the Member State in question;

(b) documents for which third parties hold intellectual property rights;

(c) documents which are excluded from access by virtue of the access regimes in the Member States, including on the grounds of:

— the protection of national security (i.e. State security), defence, or public security,

— statistical or commercial confidentiality;

(d) documents held by public service broadcasters and their subsidiaries, and by other bodies or their subsidiaries for the fulfilment of a public service broadcasting remit;

(e) documents held by educational and research establishments, such as schools, universities, archives, libraries and research facilities including, where relevant, organisations established for the transfer of research results;

(f) documents held by cultural establishments, such as museums, libraries, archives, orchestras, operas, ballets and theatres.

The above rules will apply similarly to marine environmental data held by public sector bodies in these situations. That being the case it is clear that some data providers within MEDIN will fall into the category of research establishments or possess 'documents' for which the IPR is held by third

parties, and therefore not be subject to the directive or its implementing regulations. Neither will such participants be governed by Crown copyright.

3.2.4 Underpinning IPR in PSI of the kind, for example, that is regulated by PSI Directive, section 163 of the [Copyright Designs and Patents Act 1988](#) indicates that Crown copyright will subsist in works made by an officer of the Crown. This includes items such as legislation, documents and reports produced by government bodies. Crown copyright will last for a period of 125 years from the end of the calendar year in which the work was made. If the work was commercially published within 75 years of the end of the calendar year in which it was made, Crown copyright will last for 50 years from the end of the calendar year in which it was published.

3.2.5 Fixating, however, upon such definitions is not strictly speaking important in terms of formulating a charging and re-use policy for MEDIN and its partners. In the first instance the issue of access needs to be defined in terms of policy and the complexity of IPR in relation to the objectives that MEDIN has set. Once access policy is defined the next step must be to determine the terms of access and re-use. Within that will be the issue of charging and beyond that the terms of use and exploitation. Cm 7672 reflects upon the fact that "public services are increasingly no longer provided by single departments. Departments collaborate with each other, with local authorities, the NHS, charities and with commercial organisations in order to deliver efficient and effective personalised services". The same must be true of information. When we use the expression PSI we use it loosely as its content may well have been contributed to from a variety of sources both in the public and private sectors. Indeed that is part of the objective of the [data.gov.uk](#) initiative of Tim Berners-Lee and Nigel Shadbolt to "unlock innovation" by freeing up access to "government data". There is a clear recognition now that Government is not the fount of all knowledge and expertise. If there is one thing that the Internet has done it has been to show the value of collaborative thinking expressed in the open editing of services like Wikipedia. Such data portal initiatives as data.gov.uk are not new and many other nations have similar initiatives, especially within the US, Canada with some predating the UK, including OpenDataNI opening the possibility of greater cross-border data sharing. This sharing is promoted further by the concept of Linked Data with semantic web access to data that can easily be reused under non-restrictive, non-commercial licensing arrangements. See further [The Power of Information](#) (Mayo and Steinberg, June 2007). It is not therefore implicit that in releasing PSI in any form that Government requires charges necessarily to follow. That is now more likely to be a policy decision, but one made within the present constraints of the regulatory environment as operating now.

3.2.6 Reg 15 of S.I. 1515 sets out the basis on which a public sector body may charge an applicant for allowing re-use. In addition, section 9 [Freedom of Information Act 2000](#) also sets a fees structure for FOI requests and fee structures also exist for subject access request under [data protection](#) law. S.I. 1515 also establishes use regulation. Regulation 12 allows a public sector body to impose conditions on re-use, but only where those conditions do not unnecessarily restrict the way in which a document can be re-used or restrict competition. Reg. 13 requires that a public sector body must not impose discriminatory conditions on applicants who request re-use of a document for comparable purposes and that where a public sector body re-uses a document itself for an activity outside of its public task it must apply the same conditions to itself as to any other applicant for re-use for a comparable purpose. Finally Reg. 14 prohibits a public sector body entering into an

exclusive arrangement for re-use except where it is necessary for the provision of a service in the public interest.

3.2.7   Of particular importance to MEDIN of course will be the independent set of UK environmental information regulation (EIR) predicated upon Directive 2003/4/EC on public access to environmental information, which includes marine environmental data. Member States must make such information available to any "applicant" requesting it without the applicant needing to state an interest. It applies to information held by as well as for a public authority (i.e. a natural or legal person on behalf of a public authority). Art. 5 states that public authorities may make a charge for the supply of such data provided the charge does not exceed "a reasonable amount" i.e. in most cases the cost of producing the relevant material. Directive 2003/4/EC is implemented in the UK by Statutory Instrument 2004 No. 3391 - The Environmental Information Regulations 2004 and by Statutory Instrument 2004 No. 520 for Scotland. See Reference Guide to the Regulations. It should be noted that the above regulations do not prescribe use restrictions once information has been provided although, presumably, some material may be subject to Crown copyright.

The form and nature of the access to information may have a bearing on the imposition of any charges under the Environmental Information Regulations (EIR) Regs and remains separate from the terms of re-use. Inspection may be free of charge at public offices but charged if supplied in hardcopy or indeed digital format. Recent tribunal cases held by the Information Rights Tribunal [3] raise issues of which regulations apply affecting the ability of public bodies to charge for information (in these cases property search information). In two cases information requests treated under property search regulations (Local Authorities (England)(Charges for Property Searches) Regulations 2008) have been determined that the Councils cannot circumvent the requirements to make information available under the EIR regulation 5(1). This raises issues of both the definition of environmental information within the marine sector and the primacy of EU legislation. There are also restrictions on the use of publications schemes under the FOIA to charge for environmental information even if EIR itself allows for reasonable charges.

3.2.8   In addition, EC Regulation 1367/2006/EC (EC Reg 1367) of September 2006 deals with the provisions of the Aarhus Convention on Access to Information in relation to access to environmental information held by Community institutions and bodies. The latter is broadly defined as "a public institution, body, office or agency established by, or on the basis of, the Treaty except when acting in a judicial or legislative capacity". Similar definitions and principles are applied as found in Directive 2003/4/EC.

3.2.9   With regard to access to environmental data EC Reg 1367 must be read in conjunction with Regulation 1049/2001 of May 2001 regarding public access to European Parliament, Council and Commission documents. This is generally known as the "Transparency

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[3] UK Information Commissioner's Office (ICO -.the body set up to hear appeals under *Data Protection Act 1998 (DPA), Freedom of Information Act 2000 (FOIA), the Privacy and Electronic Communications Regulations 2003 (PECR) and the Environmental Information Regulations 2004 (EIR)).*

Regulation". This establishes general principles and limits on access in accordance with Article 255(2) EC Treaty which provides a general right of access to such material upon request by "any citizen of the Union, and any natural or legal person residing or having its registered office in a member state". There are differences however between the Convention provisions and Transparency Regulations regarding collection and dissemination of environmental information which EC Reg 1367 addresses (see further Article 4 of the Transparency Regulation dealing with refusal of access to a document and Article 6 of EC Reg 1367 dealing with the application of exceptions concerning requests for access to environmental information). Here it is provided that "an overriding public interest in disclosure shall be deemed to exist where the information requested relates to emissions into the environment".

3.2.10 It should be noted that following the passage of the Lisbon Treaty Regulation 1049/2001 will be revised. See further: http://register.consilium.europa.eu/pdf/en/10/st05/st05461.en10.pdf and the background Proposal for a regulation regarding public access to European Parliament, Council and Commission documents (Brussels, 30.4.2008 COM(2008) 229 final). The scope of this report does not permit detailed analysis of this proposed revision of Regulation 1049/2001. However, it may amend the existing legal framework and must therefore be flagged up.

3.2.11 An additional sphere of regulation that must be noted is Directive 2007/2/EC of March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE Directive). This is relevant as marine environmental data may qualify as spatial data i.e. "data with a direct or indirect reference to a specific location or geographical area". INSPIRE creates a framework for spatial information that can be shared and used for public tasks that may have an impact upon the environment. This includes oceanographic features, sea regions and other spatial data themes of relevance to MEDIN. Further EU measures dealing with the implementation of network services (Commission Regulation (EC) No. 976/2009) set out in Art. 11 INSPIRE and metadata implementing rules (Commission Regulation (EC) No. 1205/2008) have since been introduced.

3.2.12 Transposition of INSPIRE into UK law took place with Statutory Instrument 2009 No. 3157 – The INSPIRE Regulations 2009. These regulations and the associated implementing rules aim to ensure that, between 2010-2019, the progressive establishment of data and metadata standards for the UK will take place, covering the 34 themes identified. These will be consistent with the rest of Europe and assist the joining up of such data across Europe and the ability to share location based data more quickly and easily. The INSPIRE regulations define public authorities (taking the FOI 2000 definitions) and their responsibilities in relation to the creation of metadata for spatial data in their charge. Restrictions are placed on charges for public access for 'discovery' or 'view' services as defined, unless relevant to the maintenance of the spatial data sets or services involved. Some limitations on access apply.

3.2.13 It is clear that to the extent that MEDIN partners or sponsors have responsibilities for qualifying spatial data, as public authorities they must apply the INSPIRE regime to such data, both in terms of compliance with metadata requirements and access and charging policies regarding this data.

4. Data policy audit

4.1. Methodology

The data policy audit was conducted with 28 organisations (27 of those face-to-face) and those interviewed were primarily 'data policy' and 'operational' employees. The organisations interviewed were:

- ABP marine environmental research Ltd. (ABPmer), Claire Brown
- Advisory Panel on Public Sector Information (APPSI), Grazia Zaffuto
- British Geological Survey (BGS), Helen Glaves, Bob Gatliff, Patrick Bell, Rob Smith
- British Maritime Technology (BMT), Robin Stephens, Jerry Stanley and Michael Starling
- British Oceanographic Data Centre (BODC), Juan Brown and Lesley Rickards
- BP, Colin Grant and Dave Bingham
- Countryside Council for Wales (CCW), Monica Jones and Donna Muirhead
- Centre for Environment, Fisheries & Aquaculture Science (Cefas), Dave Morris
- Department for Environment, Fisheries and Rural Affairs (Defra), Phillipa Swanton and Carol Hrynkiewicz
- Environment Agency (EA), Miles Gabriel and Chris Jarvis
- English Heritage, Martin Newman and Nick Seal
- Environment Research Funders' Forum (ERFF), now Living with Environmental Change, LWEC, Beth Greenaway
- Fugro GEOS, Louise Ledgard and Mark Calverley
- Joint Nature Conservation Council (JNCC), Paul Robinson and Steve Wilkinson
- Marine Biological Association (MBA) (The Data Archive for Seabed Species and Habitats (DASSH) project) /, Jon Parr and Becky Seeley
- Marine Scotland, Jens Rasmussen
- Maritime and Coastguard Agency (MCA), Rob Spillard and James Findlay
- Met Office, Jon Turton and Nick Benson
- Marine Management Organisation (MMO), Mike Osborne
- Natural England, Ian Saunders and Hannah Ross
- Northern Ireland Environment Agency (NIEA), Claire Vincent
- SeaZone, Andrew Iwanoczko
- Shell, Graham Feld
- Scottish Natural Heritage (SNH), Alan McKirdy
- The National Archive (TNA) / Office of Public Sector Information (OPSI), Marcia Jackson and Jim Wretham
- The Crown Estate, Martin Brazier, Jamie Moore and Chris Boyce
- UK Location Programme (UKLP), Keith Murray
- UK Hydrographic Office (UKHO), Tony Dent

2 staff were interviewed on average but no limit was placed on the number required to answer the questions. 47 individuals were interviewed. The private companies interviewed were ABPmer, BP, BMT, Fugro GEOS, SeaZone and Shell. The interviews were based on the questionnaire in Annex 4.

The interviews were recorded and transcribed solely for the purpose of analysis. Some interviewees provided documentation which detailed their policy and licence terms and conditions.

4.2. Differences in approach to policy

Within the UK public sector marine data fraternity a variety of business models exist. They range from Ministerial Departments (e.g. Department for Environment, Food and Rural Affairs (Defra); Ministry of Defence (MoD)), Next-Step Executive Agencies (e.g. CEFAS) to Trading Funds (e.g. UKHO; Met Office, both MoD trading funds). In addition there are numerous Non-Departmental Public Bodies (NDPB's, e.g. NERC, Environment Agency and the Marine Management Organisation), Research Institutes and Charities (independent non-profit making organisations). Each business model type has broadly similar policies which result in different approaches to data use, sharing and re-use accordingly. The main differences in approach are between public bodies that undertake commercial activities (e.g. the Met Office, UKHO and BGS) and those that do not (e.g. Cefas, JNCC and Natural England).

During the audit it became apparent that it is important for the data / information worker to understand the status of the organisation they are dealing with when trying to acquire data and the associated obligations under which the organisation operates. This determines the access rights to data, access limitations and licence terms (e.g. Crown Body data is Crown copyright). The classifications referred to in this report are as follows:

Business model type	Organisation name
Ministerial Departments	Defra, Marine Scotland (both Crown bodies) and NIEA (Department within Department of the Environment (DOE))
Commercial Public Body	The Crown Estate (Crown body)
Next-Step Executive Agencies	CEFAS, TNA (OPSI)* and MCA (all Crown bodies)
Executive Agency Trading Funds	UKHO and Met Office (both Crown bodies and MoD trading funds)
Non-departmental Public Bodies (NDPB's)	EA, MMO, SNH, English Heritage, CCW, JNCC, Natural England, AFBI and APPSI
Research Institute (Research Council Body)	BGS and BODC

* Merged in 2006.

Table 2. Organisation Types and Classification

Non-public sector organisations who also supply public sector data are:

Business model type	Organisation name
Charities (independent non-profit making organisations)	MBA (DASSH project)

Table 3. Non-public sector organisations who also supply public sector data

In summary the relevant data policies for these organisation types were:

Business model type	Summary data policies
Ministerial Departments	(Defra, Marine Scotland, NIEA) Public Task activities only, noting that Defra do not supply data directly but fund data related activities. All data is public domain (subject to exceptions and exemptions) with no-charge. Licence terms are 'Crown copyright' and 'Click-use'.
Commercial Public Body	(The Crown Estate) Licence terms are 'Crown copyright'.
Next-Step Executive Agencies	(Cefas, TNA (OPSI), MCA) Public Task activities only. All data is public domain (subject to exceptions and exemptions) with no-charge. Typical licence terms are 'Crown copyright' and 'Click-use', with bespoke variations. Cefas also undertake commercial activities.
Executive Agency Trading Funds	(UKHO, Met Office) Public Task and commercial activities. Required to generate income. Public Task data is public domain (subject to exceptions and exemptions) with no-charge with typical licence terms such as 'Crown copyright' and 'Click-use'. Commercial activities are subject to bespoke licences and related charges at market rates.
Non-departmental Public Bodies (NDPB's)	(EA, MMO, SNH, English Heritage, CCW, JNCC, Natural England, APPSI, AFBI) Public Task activities only, fully funded, not required to generate income. All data is public domain (subject to exceptions and exemptions) with no-charge. There are some exceptions (e.g. within EA, AFBI) that are referred to later in the review. Typical licence terms are 'Crown copyright' and 'Click-use', with bespoke variations.
Research Institute (Research Council Body)	(BGS, BODC) Typical licence terms are 'Click-use' and NERC data policy, with bespoke variations for commercial licences. Some public domain data.
Charities (independent non-profit making organisations)	(MBA, DASSH project) Data holdings are public domain with no-charge and private with charges. Typical licence terms are 'Crown copyright' and 'Click-use' for public data with bespoke variations for private data holdings.

Table 4. Summary of the relevant data policies for organisation types

When referring to data that organisations share and re-use it is important to make the distinction between raw and higher level, value added products (see glossary). Raw data is the basic dataset which has been processed to be clean, calibrated and standardised. Raw data is the format that public sector data typically takes and forms the basis of any analysis or reprocessing. Value-added data has had value added to it by creating bespoke products from the raw data, which can result in it containing Intellectual Property (IP) which can require a specific licence with associated charges for

re-use, depending on the organisation's policy. For example, the Met Office undertake Public Task activities which includes the provision of raw or basic data to the public and as a Trading Fund it is also permitted to trade in value added products for commercial purposes. The organisations interviewed who have value added products also include Defra, EA, BGS, UKHO and BODC.

Departments, Next-Step Executive Agencies, Non-departmental Public Bodies and Research Institutes

For all but the Executive Agency Trading Funds and Charities (for a small percentage of data holdings which are private or commercially sensitive), the policy on data use, sharing and re-use is one of no-charge and standard licensing, with the general ethos of making these data as widely available and easy to access as possible. The degree to which this is achieved is discussed in Section 4.3. 'Description of data sources and access policies'. When data requests cannot be automatically dealt with by a web portal and requires manual interaction by staff, charges to recoup staff time (as per EIR regulations and published Schedule of Charges) are permitted.

Executive Agency Trading Funds

Executive Agency Trading Funds undertake Public Task and commercial activities and the challenge for them is to clearly differentiate between the two and not overlap them. When Public Task data requests cannot be automatically dealt with by a web portal and requires manual interaction by staff, charges to recoup staff time (as per regulations (EIR) and published Schedule of Charges) are permitted.

The Public Task and commercial activity relationship is in constant flux as commercial data often becomes Public Task over time as more advanced commercial products become accepted as 'the norm'. Public Task data benefits from such commercial activities and improves the public offering. Trading Funds rely on commercial revenue streams to fund Public Task activities to minimise the amount of Government funding required, therefore, commercial activities are charged at market rates and undertaken in open market conditions.

Charities

Charities are typically funded to complete their data sharing and re-use activities. Public domain data is provided for no charge and made as widely available as possible. When Public Task data requests cannot be not automatically dealt with by a web portal and requires manual interaction by staff, charges to recoup staff time (as per regulations and published Schedule of Charges) are permitted. If a data holding is not public then discussions are held with the data owner to agree licence terms and costs.

Private companies

Private companies have no obligations in terms of providing data to public sector bodies but data sharing does occur. Public sector data requirements are followed as per contractual requirements.

Table 5 summarises the general policies for the various types of organisation when acting as a data provider. When an organisation acts as a publishing agent on behalf of another body (e.g. a DAC publishes data for some Government departments and executive agencies), then any obligation to publish data / metadata can be delegated.

Organisation Type	Public Task	Commercial	Standard public data licence with no charge or minimal data handling charge	Commercial licences with market rates
Ministerial and Non-Ministerial Departments	Yes	No	Yes	No
Next-Step Executive Agencies	Yes	No*	Yes	No
Executive Agency Trading Funds	Yes	Yes	Yes	Yes
Non-departmental Public Bodies (NDPB's)	Yes	No	Yes	No**
Research Institute	No	No	Yes	Yes
Charities	No	Mainly no	Yes	Mainly no
Private companies	No	Yes	No	Yes

* Cefas also undertake commercial activities.

** Some exceptions (e.g. within EA) that are referred to later in the review.

Table 5. Summary of the general obligations and policies for the various classifications of organisation.

Government data policy initiatives

The previous administration ran a number of initiatives and studies to improve data sharing and re-use:

- The Power of information, Mayo and Steinberg (2007)

- Making Public Data Public (takes forward the Power of Information Taskforce's report)

- Putting the Frontline First: Smarter Government, HM Treasury (2009)

- Cross Cutting Review of the Knowledge Economy' report, HM Treasury (2000)

A key result of these has been Ordnance Survey (OS) releasing certain data for free with the public having more access to OS maps from 2010 as part of a Government drive to open up data to

improve transparency. Such data relates to electoral and local authority boundaries, postcode areas and mid-scale mapping information. Similar initiatives have been observed from other public bodies which have been followed by other organisations such as BGS and UKHO and this trend is anticipated to continue.

4.3. Description of data sources and access policies

4.3.1. Data sources

Table 6 presents the public marine environmental data sources, data sources considered, datasets available, access policies, pricing and compliance with standards for those organisations audited.

Organisation	Data sources	Description	Key public datasets available	Access policies	Compliance with standards
ABPmer	Not applicable, private company.				As a consultant the data is not theirs. Compliance for the data sent back generated for public bodies depends on the client's requirements. Work to INSPIRE metadata standard. Work to MEDIN guidance but not officially compliant.
BGS	http://www.bgs.ac.uk/data/databases.html BGS and NERC surveys.	Marine geology.	Borehole samples; discovery metadata; data from other sources; National Archive of Geological Photographs; Lexicon of Named Rock Units; PalaeoSaurus database; National Geoscience Record Centre (NGRC).	Online access to most data with download facility. Data viewer. Licences available online.	Working to be compliant with INSPIRE. FOI, EIR, MEDIN and Information Fair Trader Scheme (IFTS) compliant. Conform to SeaDataNet / Geo-Seas Common Data Index (CDI) service. Accredited as a MEDIN DAC for Marine geophysical/geological data.
BODC	http://www.bodc.ac.uk/	A national facility for preserving and distributing marine data.	Physical, biological and chemical oceanographic data.	Automated online system. They have data from many different sources with many different access conditions which an automated system manages. Users can construct their own dataset and search on area, time, user, producer etc. Any data request whether it mentions EIR or not is treated as an EIR request. The National Tide Gauge and Sea Level Facility (NTGSF) has a 3 month lag due to processing it into the required format.	Working to be compliant with INSPIRE. FOI, EIR and MEDIN compliant. Accredited as a MEDIN DAC for Oceanography data.
BP	Survey contractors	Marine geophysical and geotechnical, ecological and metocean.	Not applicable, private company.	Case by case basis. Data submitted to System of Industry Metocean data for the Offshore and Research Communities (SIMORC) scheme.	Petroleum Operations Notice (PON) PON 9 &14. PON 9 requires that metadata associated with surveys is reported to DECC. SIMORC scheme uses ISO19115 metadata standard. Data provision requirements of 'The Offshore Petroleum Activities (Conservation of Habitats) Regulations 2001'. The International Association of Oil & Gas producers (OGP) produces guidance on metadata.
CCW	http://www.ccw.gov.uk/about-ccw/foi--eir-information/on-line-information-request.aspx	Welsh Government's statutory advisor on sustaining natural beauty, wildlife and the opportunity for outdoor enjoyment in Wales and its inshore waters.	Datasets covering protected sites include information on: SSSI; SAC; SPA; Ramsar; MNR; Heritage Coasts; Biospheric Reserves; Biogenetic Reserves.	Online access to most data with download facility. Data viewer. Licences available online.	Working to be compliant with INSPIRE. FOI and EIR compliant. Work to MEDIN guidance but not officially compliant.
Cefas	http://www.cefas.co.uk/data.aspx	Marine environmental and ecological.	Sea temperature and salinity trends; WaveNet - Real time wave data; Monitoring the health of our seas - Real time data from automated in situ instrumentation;	Online access to most data with download facility. Data viewer. Licences available online.	Working to be compliant with INSPIRE. FOI and EIR. Work to MEDIN guidance but not officially compliant. They would like guidance stating that as an executive agency what they could charge for certain datasets, what is free (EIR), on request (FOI) and for re-use (OPSI). Until that is clear, they won't know whether they are

Organisation	Data sources	Description	Key public datasets available	Access policies	Compliance with standards
			OIE centre on aquatic animal diseases; Fisheries information - Information on fish stocks; Fisheries Science Partnership - fishing catches, stocks; DAPSTOM - fish stomach records.		100% compliant or not.
Defra	http://www.defra.gov.uk/evidence/statistics/environment/index.htm	Marine environmental, fisheries.	National statistics on marine environment and fisheries. Environmental noise maps.	Data accessed via agencies in the Defra family according to their policies.	Working to be compliant with INSPIRE. FOI and EIR compliant. Not IFTS as they generally do not trade in data. No commercial activities. Data made available to others for use and re-use.
English Heritage	http://www.pastscape.org.uk/ www.english-heritage.org.uk/professional/archives-and-collections/nmr/spatial-data	Marine archaeology National Monuments Record (NMR) up to 1945. MEDIN study by EH to research and create records for post-War shipping losses to be completed in October 2010.	Maintain a record of maritime heritage in terms of shipwrecks (including protected wrecks), underwater archaeology, submerged archaeological sites, aircraft wrecks and general finds.	Online access to most data with download facility. Registration required. Licences available online. They provide data through Defra via MAGIC (particularly marine designated historic wrecks) and SPIRE (Defra's shared spatial information services).	Working to be compliant with INSPIRE. FOI and EIR compliant. Metadata is to UK Gemini 1, and are looking at conforming to UK Gemini 2. Conform to Monument Inventory Data Standard (MIDAS) Heritage which is the documentation standard for historic environment. MIDAS controlled vocabularies meet with Inscription which is maintained by the Forum on Information Standards in Heritage (FISH).
Environment Agency	http://www.environment-agency.gov.uk/homeandleisure/37793.aspx http://www.geostore.com./environment-agency/	"What's in your backyard?" portal. General environmental information. Data download portal called 'DataShare' (see geostore link).	Bathing water quality, seabed sediment quality.	Online access to most data with download facility. FOI/EIR/ROSPI email address online for single point of contact request National telephone helpline. Data viewer. Licences available online. They operate an 'Approved for Access' (AfA) procedure which approves data for release in advance.	Working to be compliant with INSPIRE. FOI, and EIR and IFTS compliant. Their metadata has been developed in-house and is ISO 19115, UK Gemini 2 and INSPIRE compliant.
Fugro GEOS		Not applicable, private company.			Working to be compliant with INSPIRE.
JNCC	http://www.searchnbn.net/ http://www.searchmesh.net/	Natural environment and seascape for the UK. Special Areas of Conservation, all Special Protection Areas and Ramsar sites. SACs and SPAs have specific subsets which are SACs with marine components and SPAs with marine components.	National Biodiversity Network (NBN), seabed habitats, Marine Recorder (species)	All data barring normal exemptions under EIR is publicly available. They are not restrictive unless there is reason to be so as protected area boundaries derived from OS line work. If it is solely owned by JNCC then it is freely publicly available for re-use of any kind. Data is provided via a File Transfer Protocol (FTP) site.	Plans in place to be INSPIRE compliant. Compliant with FOI, and EIR and NBN.
Marine Scotland	http://www.scotland.gov.uk/Topics/marine/science/	Marine environment and ecological.	Aquatic animal diseases; fisheries information - Information on fish stocks; fishing catches. Some	Some data available directly on website. Website is on the marlab.ac.uk domain, which is being migrated	Working to be compliant with INSPIRE. FOI and EIR compliant. Work to MEDIN guidance but not officially compliant. Adopted a joint code of practice for research oriented projects. e-Government Metadata

Organisation	Data sources	Description	Key public datasets available	Access policies	Compliance with standards
	MSInteractive http://www.marlab.ac.uk/ http://www.frs-scotland.gov.uk/Delivery/Information_resources/information_resources.aspx		hydrographic data.	to the Scottish Government website	Standard (eGMS) compliant for Scottish framework for Government applications. Have applied to MEDIN for DAC accreditation for Fisheries data.
MBA (DASSH project)	http://www.dassh.ac.uk/ http://www.mba.ac.uk/informationResources.php Public sector surveys, private, academic, charities and volunteers.	Biodiversity.	Benthic survey data of both species and habitats.	Online access to most data with download facility. Data viewer. Licences available online. Data also located on NBN Gateway http://www.searchnbn.net/ .	Working to be compliant with INSPIRE. Compliant with FOI, EIR and MEDIN. Operates as per public sector organisations. Accredited as a MEDIN DAC for marine species and habitats data.
MCA	http://www.mcga.gov.uk/c4mca/mcga07-home/shipsandcargoes/mcga-shipsregsandguidance/mcga-dqs-hmp-hydrography/survey_data_availability.htm Pan-government Hydrographic Data. See UKHO below.	Safety of Life at Sea related data	Bathymetric data (held by UKHO).	Data passed to UKHO DAC for access. The MCA are very keen to get data back in exchange for providing it. An example of good data access following Government funded research is the JIBS (Joint Irish Bathymetric Survey) between MCA, Irish Marine Institute and NIEA (and other partners). http://www.marine.ie/home/services/surveys/seabed/JIBS.htm . The survey data was used to update UKHO Admiralty Charts.	Working to be compliant with INSPIRE. Work to MEDIN guidance but not officially compliant. National Audit Office undertake a data handling audit.
Met Office	http://www.metoffice.gov.uk/services/public.html Meteorological, climate and atmospheric.	Meteorological, climate and atmospheric. Operate data collection systems on 9 buoys and 5 light vessels around the UK. Maintain a fleet of 350 Voluntary Observing Ships that	Public Weather Service (PWS); forecasts,	3 ways to access PSI; broadcasting; web / mobile; and wholesale. PWS list of services available. Increasing amounts are being made available through web / mobile technologies. Cabinet Office require more of the data behind the visuals to be made available. The licences are online. Defra request that if something is produced for them e.g. climate	Working to be compliant with INSPIRE. FOI, EIR, World Meteorological Organisation (WMO), IFTS and PSI Directive compliant.

Organisation	Data sources	Description	Key public datasets available	Access policies	Compliance with standards
		operate globally and make either manual or automated met observations. Deploys drifting buoys and floats in support of the global drifting buoy and Argo float programmes. The Met Office receives data from ships, buoys and floats operated by other countries as part of the WMO Global Observing System; the quantities of marine data coming in are substantial (~40,000 reports/day).		data, that it is disseminated as widely as possible. Commitment to the Cabinet Office that the new PSI terms and conditions relating to anything you can download from the web will be live from the 1st of May 2010.	
MMO	http://www.marinemanagement.org.uk	Undertakes management of the marine environment for the UK (except Scotland) including: marine planning; fisheries; protecting the environment; and marine works and licensing.	None at present.	Still to be determined but plans to make the data and information that supports decision making freely available.	Working to be compliant with INSPIRE. FOI and EIR compliant.
Natural England	http://www.naturalengland.org.uk/publications/data/default.aspx	Natural environment and seascape for England.	Designations including SPA and SAC.	Online data for download from their 'Nature on the Map' website. Registration required (name, organisation and email). Commercial users must declare their intentions, mostly because of the OS data component. Click 'accept' before downloading. They also supply data to MAGIC and JNCC (via UKSeaMap 2010 for example) to publish online.	Working to be compliant with INSPIRE. FOI and EIR compliant.
NIEA	NIEA website and MERMAN.	Water quality and microbiology for rivers and inshore waters. Bathing water data. Marine sediments and shellfish data.		All data is freely available. Open data policy and make as much as they can available. Most data is available on the website.	Working to be INSPIRE compliant. FOI and EIR compliant.
SeaZone	http://www.SeaZone.com	Marine and coastal zone spatial data including HydroSpatial; Digital	Not applicable, private company.		Adopting the INSPIRE specification as part of its HydroSpatial product specification.

Organisation	Data sources	Description	Key public datasets available	Access policies	Compliance with standards
		Survey Bathymetry; Charted Raster and Charted Vector.			
SNH	http://www.snh.gov.uk/publications-data-and-research/environmental-data/	Natural environment and seascape for Scotland.	Species, habitats, special sites (Sites of Special Scientific Interest, National Nature Reserves, Special Protection Areas etc.), landscapes, wild land, access, recreation, geology and landforms.	SNHi data portal called 'Natural Spaces'. Application on website called 'About Scotland's Nature' where records are displayed. Follow 'proactive publication' principle as per Scottish Government's lead.	Working to be compliant with INSPIRE. FOISA (FOI Scotland Act) and EIRS (EIR Scotland) compliant.
The Crown Estate	http://www.thecrownestate.co.uk http://www.offshorewind.co.uk/	Crown Estate assets	Lease and asset boundaries.	Enquiries email on website and online download. Registration is required for online downloading. Data is only allowed internal business use and is not for resale.	Working to be compliant with INSPIRE. FOI and EIR compliant. Work to INSPIRE and MEDIN metadata standards.
UKHO	http://www.ukho.gov.uk/ProductsandServices/Pages/Home.aspx	Global bathymetric products and various navigational products for the professional marine and commercial marine markets. These include tidal and wreck information, obstructions, cables and pipelines. Some products for the leisure sector.	Bathymetric, multi-beam back-scatter, wrecks, tidal predictions.	As per INSPIRE, FOI, EIR and PSI Directive. They are the DAC for bathymetric data.	Working to be compliant with INSPIRE. FOI and EIR compliant. Accredited as a MEDIN DAC for bathymetry data.
UKLP	http://data.gov.uk/	All types of 3rd party data for land, air and sea as per the UK Government'S INSPIRE requirement.	All types of 3rd party data for land, air and sea.	As per INSPIRE, FOI, EIR and PSI Directive. Online only.	Working to be compliant with INSPIRE. FOI, EIR and PSI Directive compliant.

Table 6. Data sources and access policies

Access policies and how they are applied

In addition to the access policies outlined in Table 6, this section contains more detail on operational responses related to data policies.

Table 7 summarises how regulations processes regarding data access are being applied at the operational level.

Organisation	Operational processes
BGS	The Central Enquiry Service does the initial fielding of enquiries. They re-route to one of two places: if a licence is needed and their main concern is what they can do with the data licence, it will go to the IPR team. If the issue is more 'how much is it going to cost?' it will go to the Digital Data Team. They send the enquirer an application form (also available for download from the BGS website, along with examples of BGS's standard licence templates), which is signed and returned. All enquiries are held on an auditable database. BGS does not police individual data use under licence, but is proactive in reviewing the proposed use of its datasets by potential customers and reactive when a suspected case of breach of licence terms is discovered.
BODC	Any data request whether it mentions EIR or not is treated as an EIR request. They have an enquiry service and an Enquiries Officer. Direct requests are received by the phone and email. NERC has someone responsible for FOI requests. A database is used to administer requests. EIR / FOI training is also part of the induction procedure.
CCW	EIR requests are passed to the Partnership Knowledge and Communications Group and managed by the Access To Information (ATI) member of staff. If requests for data are not clear a questionnaire form is sent. The ATI liaises with the lead officer if required. There is quarterly reporting to line managers, weekly support from the Group Head and Board involvement if required. They have a metadatabase online.
Cefas	Do not have a coherent single GIS function but each division has its own GIS (e.g. fish, environmental and aquaculture). There are no core common datasets. Attempts to centralise it have been attempted before. They have a dedicated person for EIR and FOI. Sometimes enquiries don't always come via this person so reminders are sent out. The FOI and EIR regulations are on the inter and intranet. All enquiries notified under those regimes are stored, monitored and reported according to the legislation. A Quality Manager mainly runs the Joint Code of Practice. Every five years there is a Defra funded science audit where they look at the science side.
MBA (DASSH project)	DASSH website (its own URL) for downloading data, or sending a data request. Users can access the MEDIN metadata or view the data through the NBN website. Searching on the MEDIN portal returns metadata and link to the DASSH website. They have a DASSH coordinator whose responsibility is to oversee all operations.

Organisation	Operational processes
Defra	The individual responsible for data licensing and services is the designated contact for FOI, EIR data requests and licence issues including matters related to contractors activities such as data requirements.
	General enquiries come through the DEFRA website or helpline and a general email address for geographic information enquiries.
	EIR, FOI and record management are the responsibility of the Knowledge and Information Records Management Program.
	Shared Spatial Information Services (SPIRE) is their spatial data repository. It includes the commercial data and also non-commercial data and is only accessible to the DEFRA family, and not to the wider community. Other members of the Defra network use it including Natural England. There is quite a range of business layers from the Defra network. SPIRE has a portal for viewing the metadata and certain datasets can be downloaded. Data management is done by Infoterra on their behalf and they coordinate what goes in and one of the main activities they complete is ensure data suppliers maintain the data and metadata.
	The organisational structure of the Strategy and Evidence Group (SEG) is: director of the data sharing programme with a deputy director, who is responsible for whole of the data sharing programme. Under the deputy is someone responsible for data policy and services and at the same level someone looking after Defra network data sharing. UKLP is part of this. There is a data architect; someone responsible for data licensing and services. There is a Geographic Information (GI) coordinator who works on the data sharing review. The Environment and Resource Group works with SEG on marine specific issues as required.
Environment Agency	They have an FOI officer. Regions have their own staff that deal with FOI/EIR requests. For data pricing a flow chart is used with the pricing table to assess what level of pricing and licence should be applied. This is used by all regional offices and training is given to all staff to ensure that it is applied consistently. Records are kept of changes made.
	They have an FOI/EIR/ROSPI email address online for single point of contact request. This is received by the FOI officer in the Data Sharing Team. The regions have staff who can deal with such queries and they are trained accordingly. If they cannot deal with an enquiry they pass it up to the Data Sharing team. There is no specific customer database, and records are held locally. The data sharing team is trained annually. They have an internal team of lawyers if more complicated issues arise, and regional legal advisers. There is a move towards removal of the regional computer drives to a central store, but regional data is not necessarily coordinated; although they are looking at records management standards (e.g. photos and geo-tagged photos as an example). Where feasible EIR / FOI requests data are made available online to reduce response times. This is in line with the PSI requirements to improve access mechanisms.
	They are piloting a Web Feature Service (WFS) for data dissemination at present but they are aware that making this available for many users could become very expensive. For example, the web offer for the flood map is limited because of the risk of misinterpretation or use of old data. WFS would be as solution to this issue but costly to implement for circa 500 authorities.

Organisation	Operational processes
English Heritage	A nominated person deals with FOI requests is based in the records management section. They provide help and advice and work closely with colleagues to ensure compliance. Briefings are held about FOI and there is intranet guidance. An in-house legal team is available for support. Commercial customers are dealt with via an Enquiry and Research Services, as do more complex requests. Monthly updates are made to the online data.
Fugro GEOS	Enquiries are passed to the consultancy division.
JNCC	General requests for data are treated as EIR requests and responded to accordingly. These are not logged, they automatically happen. Formal EIR requests, complicated requests (e.g. sensitive ones) which are not easy to deal with are dealt with and tracked by a specific administrator. Requests which escalate are dealt with by the management board. They have a contractual arrangement with an external legal team and Natural England can also provide legal support. Internal audits identify areas that need more focus.
Marine Scotland	Library and communications staff deal with FOI requests. They initially contact the public programme directors to identify data sources. A data manager is responsible for all of Marine Scotland sites. A centralised catalogue of all data is not yet in place. The Director of Science oversees all activities. Legal support comes from a legal department in the Scottish Government. Compliance with INSPIRE and metadata is monitored by a quality manager (for all of Marine Scotland sites) who conducts joint code of practice audits annually. Marine Scotland has a set of scientific programmes and each of those has a programme director and below that sits a number of themes or groups.
MCA	Requests for raw data are passed on to UKHO. Requests for seabed texture sheets or wreck information are less straightforward because they have not been decreed
Met Office	A FOI Manager has been designated to coordinate all FOI enquiries. For specific data requests there is a Central Climate Unit (ccu@metoffice.gov.uk) which includes the provision of marine data. Specific information can be extracted from their global databases. They are trying to move to a situation where individuals can download much more data directly from the web in a shopping basket way, with a Click-use licence. They recognise they have other datasets that could be on the web and improvements in efficiencies are possible e.g. reducing repetition in extracting data. Making more basic datasets available via the web would meet a lot of non-commercial enquiries.
MMO	The Head of Data and Knowledge Management oversees the Data and Knowledge Management Team. The team is comprised of a Data Assurance Officer, a Data Officer

Organisation	Operational processes
	and a GIS Officer. A Chief Information Officer provides a supporting role.
Natural England	A team of specialists work on FOI / EIR. FOI / EIR requests are tracked, given a reference number which are used at the start of any email thread. An Enquiries Service forwards enquiries to the Geographic Services Team. Government enquiries are sent directly into the Marine Data Specialist's email inbox.
	Internal and external audits conducted on data management. An external audit on geographic information and INSPIRE compliance was conducted by Aberdeen University.
	The Commercial and Innovations team deal with potential commercialisation of data.
NIEA	Enquiries come in by mail, telephone (dedicated water information line) and the website. They have an FOI / EIR officer who registers such calls. These are signed off by the Head of the Water Management Unit. All staff are trained on FOI / EIR on induction.
TNA (OPSI)	Standard mailbox on The National Archives website.
SNH	SNH have an INSPIRE Implementation Group and an information management unit. A senior member of staff is dedicated to EIRS, FOISA, Data Protection Act and INSPIRE. FOISA email address online. FOISA requests also come into the 43 area offices and these are dealt with locally or escalated if required. They have a licensing officer. The Head of Strategy and Communications hears EIRS & FOISA appeals with the support of the Head of Information Management. There is a formal EIRS / FOISA appeals procedure. They have an internal FOISA micro site for staff training. They have a Marine Coastal Environments Unit.
	Internal audits on information management are completed.
The Crown Estate	2 Staff are trained on FOI and EIR, with procedures and relevant policies. Internal audit on an annual basis. Requests come in via the communications team, generic inquiries and e-mails and are diverted to these staff who log and track them. The legal team are involved if required. Online FOI training course available for all staff.
UKHO	The Intellectual Property and Licensing Department oversees related processes. They have an established process for dealing with FOI requests with a set of rules and procedures. The FOI requests are normally dealt with by the recipient and an advisor is available if required.
	Telephone or website queries are dealt with by the relevant team. This is often decentralised with a split between granting the licence and supplying the data. Licences are always granted by the intellectual property team. The supply of the data is done by the part of the organisation that creates that data. Free licences can be handled online.
	UKHO have an information asset register.

Table 7. Summary of how regulations processes are applied at the operational level

Below are specific organisational details regarding access policies and operational processes.

BODC

BODC and other NERC bodies (including BGS) follow NERC's data policy.

BODC hold datasets which contributors will only allow distribution of for academic purposes.

When people register online BODC make a judgement as to whether they are commercial or academic based on their web address. A look-up table states the access rights. Some organisations request that before data is provided that they are informed as to who wants it on the grounds that the data owner might like to work with them. Certain data owners are concerned that giving data to certain organisations might result in the generation of poor quality information.

The Enquiry Service is an important aspect of BODC's data service as some people experience difficulty finding data online, understanding data and also need to make more bespoke enquiries.

BP

The PON 9 guidance regulations state that after a certain period of time BP has to share their 3D and 2D seismic exploration data to anybody who requests it. These data are held in the National Hydrocarbon Data Archive (operated by BGS under an agreement with DECC) which absolves their responsibility of retaining it indefinitely thereafter. With seismic data releases they are obliged to pass on copies of data at the cost of providing the copies.

Data is also shared with 'UK Benthos Database' as required under the Offshore Chemicals Regulations 2002. They are also required to provide copies of their habitat assessment reports and monitoring surveys to Marine Scotland.

Cefas

Cefas have a Data Management Policy, Information Security Policy, Electronic Records Management Policy and an information asset register.

If somebody wants more WaveNet data than can be downloaded from the website they can visit Cefas and access the database directly.

EA

The EA are not in agreement with supplying all of their data to a DAC but they would supply metadata. This is in line with their policy not to supply it all to other Defra agencies.

They are concerned about their data being supplied by third parties as their flood mapping portal was illegally displayed on a third party website and it showed an old dataset. They would entertain alternative versions of sharing EA data / tools if it directly linked to their website data.

There are some limitations to supply based on exemption criteria, (e.g. environmental damage, security and data management) but these are limited.

JNCC

Some survey data, including benthic data, are flagged as not for dissemination. These data are not owned by JNCC, they just hold a copy of the information.

MBA (DASSH Project)

When obtaining data, getting agreement from an organisation on what can be used for commercial organisations is probably the biggest sticking point and can be complicated to resolve. Ticking the

'commercial' box before a download does not always convey the intended use of the data as answers are not always 'black and white'. Data holders are often concerned about what they plan to do with these data. More communication is required to explain the intended use as users sometimes do not intend to directly sell it can be used a means to an end to solve a problem.

Marine Scotland

Marine Scotland does not serve data directly from their website or have a public facing data centre. They submit large quantities of data to data centres such as the BODC or to the International Council for the Exploration of the Sea (ICES).

Regarding fish farms there is very often a conflict between commercial interest and public concerns. Contentious requests for information are often received and a balance is struck between not thwarting competition and at the same time protecting public interest and environmental issues. It is sometimes possible to anonymise data and release it, however, Vessel Management System (VMS) data cannot be shared by Marine Scotland.

Data is evaluated in advance as being for release it under FOI / EIR. These data come from Marine Scotland Compliance (formerly Scottish Fisheries Protection Agency) and are only used anonymously and aggregated before being included in any working group reporting of activities.

MCA

The MCA's bathymetric data is available from the UKHO DAC. The MCA requested additional DAC functionality to obtain personal details when downloading data to allow for monitoring of data usage and exchange if the organisation has data holdings.

Under the MCA's Civil Hydrography Programme a bathymetric data Memorandum of Understanding was established in 2008. Natural England has used a large amount of these data for Special Area of Conservation (SAC) designation. These are data which they would not have had access to before because they did not have the funds available to be able to purchase it from SeaZone. This saved them considerable costs and resulted in a superior dataset and better evidence to be able to put these sites forward to DEFRA.

Met Office

From the Met Office perspective they have a much clearer line now between what is Public Task and what is Trading Fund commercial for exploitation. This has been separated in terms of accounting as well. Basic data and information, raw data, is clearly on the public side and value added bespoke products, which has IP added to it, on the other side. In the medium to long-term this approach benefits the public.

4.3.2. OPSI IFTS members

The OPSI Information Fair Trader Scheme (IFTS) sets and assesses standards for public sector bodies that trade in data. It requires them to encourage the re-use of information and reach a standard of fairness and transparency. The following interviewed organisations are members of OPSI IFTS:

- BGS
- EA

- Met Office
- TNA (OPSI)
- UKHO

Members are required to carry out re-use activities following key principles:

- Maximisation
- Fairness
- Transparency
- Simplicity
- Innovation
- Challenge

More details on IFTS are provided in section 4.4. 'Understanding of best practice within the sector'.
A full list of members can be seen on the [National Archives](#) website.

4.4. Understanding of best practice within the sector

A requirement of the audit was to ascertain the level of understanding within marine data organisations in respect of best practice initiatives. In particular the following are considered important and interviewees were questioned directly regarding their organisation's knowledge and experience of them:

- INSPIRE
- UKLP
- MEDIN
- FOI / FOISA (FOI Scotland Act)
- EIR / EIRS (EIR Scotland)
- OPSI IFTS

Interviewees were also prompted to flag other initiatives which were relevant to their data practices. Table 8 presents a summary of the responses and specific comments on best practice initiatives.

	Best Practice Understanding (none, low, medium, high)						
Organisation	INSPIRE	UKLP	MEDIN	FOI	EIR	OPSI IFTS	Others
ABPmer	Medium	None	High	Not asked	None	None	Metadata; Gemini & ISO 19115
BGS	High	High	High	High	High	High	UK Gemini metadata Geo-Seas Common Data Index (CDI)
BMT	Medium	None	Low	Not asked	None	None	
BODC	High	Low	High	High	High	Low	Inter-governmental Oceanographic Commission (IOC) data policy (based in part on WMO Resolution 40). International ICES. International Council for Science (ICS). NERC environmental data centre requirements. Work to Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM) guidance. JCOMM is led by the Inter-governmental Oceanographic Commission (IOC) of UNESCO) and the World Meteorological Organization.
BP	Low	None	Low	None	None	None	PON 9 & 14, OGP, DECC guidance for EIA
CCW	High	Medium	High	High	High	None	UK Gemini metadata, National Biodiversity Network
Cefas	High	Low	High	High	High	None	Joint Code of Practice (JCOP)
Defra	High	High	Medium	High	High	High	
English	High	High	High	High	Medium	None	MIDAS Heritage documentation standard for historic environment

	Best Practice Understanding (none, low, medium, high)						
Organisation	INSPIRE	UKLP	MEDIN	FOI	EIR	OPSI IFTS	Others
Heritage							
Environment Agency	High	High	High	High	High	High	
Fugro GEOS	High	None	High	Medium	Medium	Medium	Climate Forecasting standard, IHO standards, WMO (Ocean Data Standards), Quality Assurance of Real-Time Oceanographic Data (QARTOD), OGC.
JNCC	High	High	High	High	High	High	UK Gemini metadata.
Marine Scotland	High	None	High	High	High	Medium	eGMS compliant for Scottish framework for Government applications. ICES.
MBA (DASSH project)	High	Medium	High	High	High	None	National Biodiversity Network
MCA	Medium	Low	High	Low	Low	Low	
Met Office	High	High	High	High	High	High	WMO
MMO	High	High	High	High	High	Medium	Defra GI network, ISO standards, Digital National Framework.
Natural England	High	High	Medium	High	High	None	UK Gemini, MetaGenie and Intra-governmental Group on Geographic Information (IGGI).

Organisation	Best Practice Understanding (none, low, medium, high)						
	INSPIRE	UKLP	MEDIN	FOI	EIR	OPSI IFTS	Others
NIEA	High	None	High	High	High	None	Marine Environment Monitoring and Assessment National database (MERMAN).
SeaZone	High	High	High	-	None	None	
Shell (metocean)	None	None	None	None	None	None	Global Telecommunications Service (GTS) for sharing met data.
SNH	High	Medium	High	High	High	None	Member of SEARS (see SNH sub-section below).
The Crown Estate	High	Medium	High	High	High	Low	
TNA (OPSI)	High	High	None	High	High	High	
UKHO	High	Low	High	High	Low	High	
UKLP	High	-	High	High	High	-	

Table 8. A summary of the understanding of best practice within the sector

Annex 5 contains supplementary information on organisation's understanding of best practice within the sector.

Figure 1 presents a summary of the responses and specific comments on best practice initiatives.

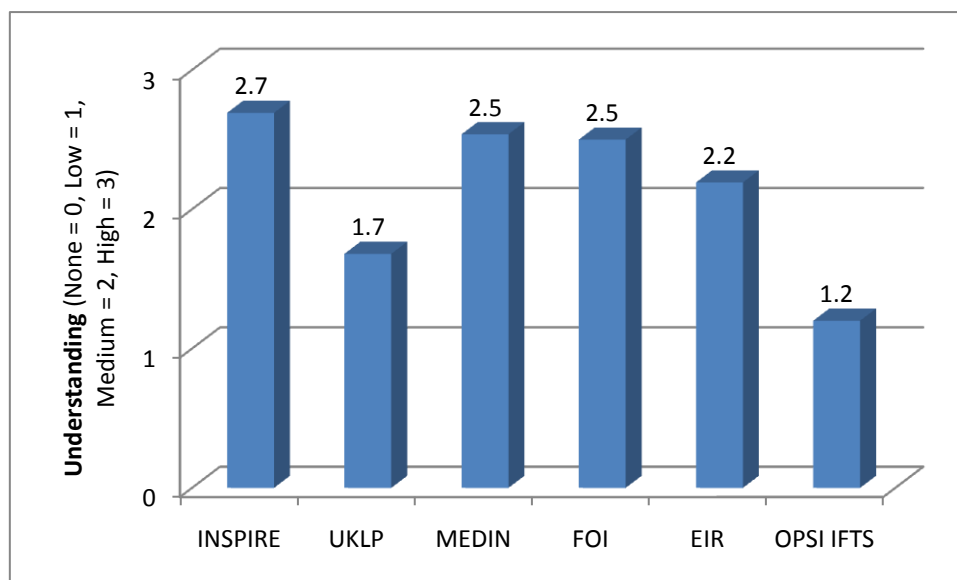**Figure 1. A summary of the understanding of best practice within the sector**

4.5. Pricing and licensing of data

The principal licence types are:

- Click-use licence (OPSI)
- Click-use licence (data.gov.uk)
- Standard in-house licence for free PSI data
- Standard in-house licence for commercial data
- Bespoke in-house licence(s) for commercial data

A summary of pricing and licensing is presented in Table 9.

Organisation	Pricing	Licensing	Licence content source
BGS	No charge for much of its Raw Data. No differentiation between different commercial organisations or academic (i.e. all commercial licensees treated consistently; all academic licensees treated consistently). Data licence fees have three components: standard data prep charge; standard licence admin charge; a variable data use charge, which they have cost calculators for to ensure they are consistently applied. Licence renewal fees are simple: the same as the initial licence fee minus data prep charge (subject to user requirements remaining unchanged). NB - NERC is reviewing its charging policy.	The licence template on the web is used for the majority of datasets. The one or two exceptions are for data which incorporates third party IPR (e.g. the BGS/HPA Radon Potential dataset and DigBath 250 dataset – these datasets have separate licence terms).	OPSI legal team reviewed BGS's internally drafted licence templates and recommended a few changes, which were implemented by BGS.
BODC	For the General Bathymetric Chart of the Oceans (GEBCO) they distribute a CD ROM (a product, not data) with searching software (£99 for academic and £230 for industry) on behalf of the GEBCO community. The National Tide Gauge and Sea Level Facility (NTGSF) data are free 3 months after collection. Marginal cost rates are applied if required within 3 months (£300 / request plus £75 / series). These are internally defined rates.	Licence states that data cannot be passed on to anybody else; it is for your own purposes. The licence basically states that BODC they would prefer that the data is used only for the specific purpose. Scientists have sole use of scientific data for the first two years. This has not been tested in Court but the EIR states that originators have the right to first use. 1 core licence template is slightly modified for commercial and academic purposes.	In-house licences.

Organisation	Pricing	Licensing	Licence content source
	Current meter and wave data for industry and commercial purposes is charged for (£300 / request plus £75 / series. Request such as 400 current meters is not charged at £75 x 400 instead a sensible rate is calculated. Data requests which are not NERC origin are referred to the owners to clarify charging rates. Typically it is not worth the effort and it is free. No charges for large project CD ROMs. NERC is reviewing its charging policy for all data / products.	Licences and terms and conditions are online.	
CCW	No charge for much of the data. Can charge to cover photocopying costs etc. for FOI and EIR requests if it exceeds £25. The rates are set at £25 an hour. No charges for data re-use.	Confidentiality agreements are required for certain sensitive locations. Most licences are re-use. If a potential licensee was interested in a sensitive feature then restrictions are added to the licence. The timeframe for such licences can expire much sooner for these and that information is returned. They typically veer towards re-use licences, even if it is not being re-used. It is much easier to just have one licence. Non-CCW solicitors are consulted for changes in clauses. A click- use licence can be downloaded for corporate layers (protected sites etc.). Habitats and species are not included in this.	Thought to have been derived from 'click use' originally with some internal changes.
Cefas	They charge "reasonable administration fees". ~40% of income is non-Defra. Anything that DEFRA pays for is given away for free such as WaveNet,	Free or commercial confidence. Their licences state copyright terms. They are not strictly commercial licences.	Unknown.

Organisation	Pricing	Licensing	Licence content source
	Smart Buoy, the coastal service temperature networks, etc. They do not sell a lot of data. Most of it the data is paid for by DEFRA and the rest is commercial confidence.		
Defra	Do not charge for data.	They end up owning the IPR of most of the data that comes from the projects they fund, but even then they will not necessarily own the IPR, because, for example, if it is based on OS data then they claim joint ownership at present. Their licence is based on OS's. They have two licences for OS: one for organisations completing research projects for them where they are contracted to Defra. Under this agreement they have another licence which allows them to give OS data and derived data to organisations that are doing work which affects Defra's policy so they can hand out data but it is usually for specific projects. Defra recognise the need to add some Defra terms and conditions around these because the OS licence is Crown copyright so they don't have to do anything else from a Crown copyright perspective. This review was planned to start in August 2010. A licence is being considered for Defra to exchange data with EA. At present each body has its own licence terms and conditions, because they are not Crown copyright. For certain datasets bodies such as BGS can give Defra the IPR. The new Pan-Government Agreement (PGA) that was negotiated	Based on OS's.

Organisation	Pricing	Licensing	Licence content source
		a year ago sorted out issues related to sharing Defra data which included OS derived data. With the free data that will improve sharing and re-use even more.	
English Heritage	Data is freely available online via a data download site for our mapped data. Textual data available freely online via a website called Pastscape. Charge for staff time to answer enquiries and a priority fee for rapid turnarounds.	Licensing agreement their websites which states that it is only for personal use and research, not to be sold or provided to a third party	Probably internally drafted.
Environment Agency	Pricing structure is available on request. Price depends on the type of organisation use (e.g. public sharing, commercial, value adding reseller). They provide data for no charge online via their 'What's in your backyard?' portal. Flood risk map data is also available online. To be completed. A minimum £10 fee is applied to every FOI/EIR request. Market rates are considered when pricing data as they do not want to undercut commercial prices due to Competition Law.	About 9 licences for every option; public (non-commercial), commercial secure, commercial non-secure, for partial use in publications etc. They have online licences. They can establish data sharing agreements (for free exchange of information with other public sector bodies. The Atlantis Initiative (aim: to provide better, more coordinated information to support decisions on flooding and water-related environmental management http://www.projectatlantis.net/) considered licence rationalisation. It was initiated a few years ago by BGS, Centre for Ecology and Hydrology, EA, Met Office, OS and UKHO. Reducing the quantity of licences by defining a 'common principles' approach was agreed by all but 2 members. This resulted in not reaching consensus on streamlined licensing and no further action has been taken since.	The licences have evolved over time and have been circulated to Defra for approval. They have typically been drafted to meet new needs hence the number of them.
JNCC	Do not charge for any data. Can charge to recover costs for large data requests such as offshore multi-beam data.	Use Crown copyright. Terms and conditions for public data cover their liability. A click-through licence is available online. Licences are provided via an FTP site.	They are aware that the terms and conditions should be reviewed. They were originally drafted by

Organisation	Pricing	Licensing	Licence content source
	There is no charge for accessing data, no covering admin charge and there is no intention of introducing them.	Designation areas are typically produced using OS line work which requires a specific licence. Certain EU project data such as MESH (mapping European seabed habitats) is has restricted access because it is not owned by JNCC (it was a multi-partner project). The download website has its own terms and conditions which are centred around ownership by different organisations. Each organisation chooses the level of restriction to put on the data that they supplied. Projects conducted with charities can also require separate licences due to issues around charitable objectives (fund raising).	a lawyer rather than someone with practical knowledge.
Marine Scotland	If the staff time associated with drawing together the information would exceed £600 the requestor is advised that it will bear a significant cost. Small charges for postage and packaging have been abandoned	Crown copyright. Issued for individual re-use with a statement asking them to advise if they intend to use it for commercial activities. Some data available directly on website such as coastal monitoring. They are available with no terms and licensing, just a download link. Looking at revising this to a click use license. Also considering asking for an email address when data is requested to advise of any problems with the data or updates.	Crown copyright.
MBA (DASSH project)	Data is freely available, which can be a sticking point with some organisations, this doesn't necessarily mean without charging. Most of their data is on the NBN and can be downloaded for free. Data providers have the option that should they want charges to be made they can. For example they have a lot of charities providing data such as the Seahorse Trust and part of their remit is to fund their activities. They	Licensing information is online. Our A 'data permission to use' licence is for data providers. DASSH have another licence for use with contracts, but they have found that most people don't want a ten page document. It just sets out very clearly what is required. This is their default document but they are happy to adjust it if required so that they get the data, rather than not get it at all. It states exactly what they intend to do with the data, dissemination preferences, data protection clauses. There are	Unknown.

Organisation	Pricing	Licensing	Licence content source
	are happy to give their data for free for conservation purposes but if a consultancy wanted to use that data then they consider that a small charge would be appropriate.	tick boxes if data owners want metadata and data archived, disseminated and put on the NBN, or if they just want it to be used within MBA. Some people are only happy for metadata to be provided. There is a terms and conditions and polices document. They have terms and conditions of access and use. This was developed with the NBN. It includes liability, privacy accuracy of information, key concerns of data providers. It essentially says you can look at the data but you need the permission of the data provider if you want to use it for publication or profit.	
MCA	See UKHO.	See UKHO.	See UKHO.
Met Office	No charges for PSI data unless ordered in such volumes and in such a way that there is a cost to compile and deliver it. If data is not PSI then they licence both software and data for non-commercial research purposes for no charge.	New licence terms and conditions at http://www.metoffice.gov.uk/about-us/legal and include Free Licences for PSI (both Unregistered Public Sector Information Licence and Registered Public Sector Information Licence) and Chargeable Licences. The terms of the licence and the prices depend on what they are selling or sharing. Met Office has 2 functions; Public Task and a commercial remit. There are approximately 6 types of licence. 2 new PSI licences are planned; one whereby the user has to register to download; one where they do not have to register. These are Click-use licences with a tick box for receiving marketing material. If it is not PSI then they licence both software and data for non-commercial research purposes for no charge. Commercial remit products which are either completely bespoke	Developed in-house but are mindful of OPSI's suggestions and templates. OPSI and the previous administration urged PSI producers to licence that PSI on very unrestrictive freeware type terms and this is understood and accepted. They haven't used a specific OPSI template but have used something that they consider fits the bill and

Organisation	Pricing	Licensing	Licence content source
		and do not use any of the PSI outputs as a starting point or they use these outputs as a starting point and they have added value or customisation applied to them. They sell and licence these to their defence, government business and commercial customers and other government departments and quangos who want to buy bespoke weather related information.	suits their business.
MMO	No charges for data. Will make the data and information that supports decision making freely available.	Not defined as yet but it will make as much information and data available as it possibly can, subject to third-party permissions and the Data Protection Act. Fisheries information is particularly sensitive.	Unknown.
Natural England	No charge for non-commercial use of their data. For commercial use there is a one-off charge of, £100.	One licence (available online) for their Geographical Commission.	Internally drafted and subsequently updated to capture required changes. Guidance from the board and their lawyers.
NIEA	Charging policy for environmental information. No charges for data only staff time. Staff time up to £600 is free (~24 hours work regardless of grade). Photocopies 10p / sheet if total costs including postage and packaging is >£10.	They do not have a data licence or formal terms and conditions, therefore there are no restrictions on re-use. For larger datasets some generic terms and conditions have been supplied with the data but there is no policy on this.	No licence.
SNH	Online and offline data are 'purpose blind' and free of charge.	Licences conditions vary in relation to the capture scale There are a variety of different grains of resolution because they do not want populations to be threatened. Online licences are presented according to the data type. Users must register for the Natural Spaces portal, but other data are	Internally drafted. External legal support as required.

Organisation	Pricing	Licensing	Licence content source
		available without registering.	
The Crown Estate	No charge for data. Appropriate charges under FOI and EIR as per guidelines.	Crown and third party copyright if relevant. If reproducing contact The Crown Estate. One page dataset licence with terms and conditions.	Internally drafted with legal team support.
TNA /OPSI	No charge for data.	The re-use licences they have are not negotiated licences. The Click-use licences are predicated on the idea that we OPSI published a set of terms and conditions on the website, users read those terms and conditions, they register, and apply for a licence. Once the 'I accept the terms and conditions' is accepted you have got a licence. There is no interaction from the re-use team. Those organisations that operate under a Delegation of the Authority from OPSI develop their own licences and these are regulated to meet the IFTS principles. If a re-user or a potential customer is not happy with those terms and conditions there may be some negotiation. OPSI monitor this and make sure that there is not too much negotiation and change between different re-users. There is a complaints process. The first stage is for them to complain to the body, if they are not satisfied with the response then they can complain to the OPSI IFTS team.	OPSI.
UKHO	XYZ data will be provided free of charge with the release statement 'Conditions of Release'. GSF data will be provided for an administration fee to cover staff time (£100 - £600 max) with the release statement;	UKHO are a significant licensor of data. The bulk of the data that they have in their products is not UK, or public sector data (apart from MCA data). They do not collect any data themselves so they do not own any source data. There is not a consistent set of terms and conditions for releasing	They have taken guidance from OPSI on licence content. Internal and external legal advice is available.

Organisation	Pricing	Licensing	Licence content source
	Backscatter data is stored offline on tapes etc. and this takes longer to extract. The extraction cost will be in the range £500 - £1500.

Licensed data is priced according to purpose.

The vast majority of the licences they grant are free of charge. They have an online re-use licensing system so if it is for non commercial use or if the commercial value is low (the value of the product being created is less than £10,000) then the licence is free.

Approximately 80% of their licences are free of charge. Commercial licences are priced by purpose.

Pricing is and must be conducted in such a way that it is compliant with the PSI directive and the PSI regulations which states that all re-users of the data for a similar purpose must be treated in the same way.

Licensees pay per product they sell.

The pricing structure is complex, however, it is published and is freely available. | private data, it depends on the individual agreements.

Release statement 'Conditions of Release' are provided with bathymetric DAC data. There are 4 main commercial licence types which are licensed by purpose for commercial data: **Navigational licence**; a **Re-use licence** which is non navigational for those (e.g. SeaZone) who are granting their customers (e.g. scientific, academic, other government) the rights to reproduce e.g. creating something that is beyond raw data and then licensing this such as consultants creating site suitability reports; a **Publications and Merchandising licence** for the production of almanacs, cruising guides, books for leisure sailors or decorative products such as coffee mugs, etc.; a **Web licence** which covers use on websites and download to mobile phones etc. ; and a **Value Added Resellers licence** for those who are selling Admiralty products.

UKHO always try to enable our licensees to do what they want to do.

Where appropriate it is made clear that navigational products are not official carriage compliant navigational products which is important for different regulatory and treaty reasons. Carriage compliant products are those that have been sanctioned by Government. The International Hydrographic Organisation (IHO) maintains a list of such products. | |

Table 9. Summary of pricing and licensing

Specific comments on pricing and licensing from interviewees are presented below. An overview of TNA's (OPSI) influential role in these matter is provided in Annex 8.

- There is no such thing as free public sector data; either a project (Government) pays for the data ingestion or a user pays for it. The biggest risk of making data available for free is that it will not be treated as an asset and it will not be maintained. The higher quality of OS mapping compared to maps in Europe would not have happened if that data was freely available.

- Defra have asked data.gov.uk to provide clearer guidance on how they reconcile issues like the data.gov.uk principles with the re-use of public sector information.

- What should organisations be doing when they are encouraged to trade and make a return on the data? Some of Defra's bodies already charge, and others are thinking about charging (presently in discussion with TNA).

- Defra is paying £2.5 million towards making data available at no cost to the user, therefore, they do not have a problem with licensing data when it needs to be licensed. What they do have a problem with is not having an open and transparent pricing model and the ability to match the price to their usage.

- Defra share more data than they licence. They have a data sharing arrangement with the EA which works on sharing datasets with similar value with no charge. Defra consider themself to be good at finding ways of sharing data with other public sector bodies. The issues have been trying to share it beyond the public sector or beyond the PGA and they think that it has caused a lot of frustration in the marine sector because a lot of the bodies are not public sector organisations, they are doing commercial work as well.

- The EA consider market rates when pricing data as they do not want to undercut commercial prices due to Competition Law. Providing Lidar data for free or at very low cost could be seen as taking advantage of a monopoly position. This raises the question as to how this then relates to marginal cost pricing under Re-use of Public Sector Information Regulations (ROPSI) for different users where there are no exemptions to the marginal cost model. There are some charging exceptions where there are MoUs with data exchange mechanisms.

- There have been various attempts to standardise terms and conditions of commercial licences such as the data.gov.uk licences. This has to be done very carefully because it is such a big task for everyone that has to with an existing legacy infrastructure of licences. As a result some organisations have adapted what they are used to working with to something which is much more akin to what current PSI best practice asks for. OPSI have been trying to produce something that will fit every government body, but not every government body is a Trading Fund with a commercial remit.

- A difficulty between Trading Funds and academic partners is that they know that Trading Funds have a commercial and operational remit, being not just a research body, so when they do take such data, academics are very keen for them to confirm that they are only going to use it for research purposes. Effort is made to get as much relaxation as possible so that if they use data for research and it proves to be very useful it can be converted into operational modelling and possibly even commercial uses, which academic bodies are reluctant for them to do. Conversely, if organisations give data away to a university for non-commercial research purposes then they do not expect to see one of their private sector sponsors using that data commercially.

- Academic and research institutions are excluded by the re-use (ROPSI) regulations. They have their own IPR and legal teams who state that due to tight budgets they ought to be generating as much income as possible and they are under pressure to exploit their data. There can be an ease of movement between such public bodies and other academic bodies with data as long as there is this general understanding that it will only be used for non-commercial use, but in certain circumstances guaranteeing that can be very difficult.

- UKHO are working on their licenses and are continuing to develop online chargeable licences. They are making more 'data for free' and making it less transactional and simplifying the procedure regarding how to access and re-use their information. It is planned to be a fully automated, one-stop shop process of viewing the data on the website and obtaining the licence.

- Regulations require UKHO to licence or make available for re-use any data that is copyright or crown database right. This covers more than just the source data, it also covers charting data, publications, tidal data, wrecks data and lights because virtually everything that they have they re-use themselves. The regulations state that if any data is being re-used by anyone (including the holding organisation) then they must make it available for any other re-user on the same terms. Most of their compiled output data is made available for re-use under licence.

- The PSI regulations state that the price UKHO charge must be such that each re-user makes a fair contribution towards the cost of creation of the data, and that they can recover all of the cost of creation of the data plus a reasonable return on investment. This covers the costs of acquiring these data up to the point where they can print a chart or a digital product so it is the acquisition of the data, the verification, quality assurance then the compilation from the source data into the chart product. The rate of return is set by Treasury which is currently 9% return on capital employed. They are covered by separate legislation or Treasury guidance on what they can charge for their products.

- One or two UKHO licences are still on royalty rate which they are gradually phasing out. They have not got detailed costings therefore they do not feel comfortable that they are being consistent.

- For datasets, such as UKHO's wrecks, the question should be asked if it is worth charging for it. The administration costs against the annual return should be considered, as well as potential benefits of it being available for free.

- Public and private sector organisations obtain data from third parties such as SeaZone who hold public datasets. UKHO and MCA advise that SeaZone is used to obtain certain marine data products (namely digital bathymetry and wrecks and vector chart data). It is important to note that SeaZone solutions was a wholly-owned subsidiary of Admiralty Holdings Ltd. until it was sold to HR Wallingford at the end of March 2010. Audit comments received regarding SeaZone pricing and licensing pre-HR Wallingford takeover provide a good example of the issues and perception of such services, namely:

  - The compilation of packages of higher level products.

    - The problem of respecting embedded IPR; and
    - Other sources can provide more accurate data which are less expensive and customers have a higher confidence in what they offer. The sources are often public bodies and the licence costs are less.

  - The need to recoup product generation costs.

    - It is acknowledged that such organisations add value by providing data with other layers and it provides a quick win for obtaining marine data, but the 'value added' charge was considered to be disproportionate;
    - Charges for placing an order and annual licence costs were considered to be unreasonable. For example, a private company was surprised that when purchasing hydro spatial bathymetric data that it could only obtain it on an expiring license basis; and
    - Private consultancies have asked if SeaZone could change their pricing model so that an upfront fee is paid once and customers are advised when they are getting close to it, a Service Level Agreement approach, but they were not able to do that.

- It was commented that people's perceptions of what data costs is skewed by what it costs to collect, however, recouping all collection costs cannot be expected as the data is collected for a purposes which have been reported on and the project has served its purpose. Any additional revenue from these data should only be a small bonus.

- As certain data become of more interest to others then its value does increase but to what level? The perception of value would benefit from regulation. If it has been collected publically it should be available publically. Paying for PSI which has been collected using the public purse does not sit comfortably with taxpayers. This approach does not appear to be fair or be of maximum financial benefit to 'UK Plc'.

- Charges between public sector bodies for these data and financial efficiencies of government are very important for the new administration in relation to deficit reduction measures.

- If data and information are used to support an application, which for example damages an SSSI, then it comes part of the democratic process. If it comes to a public inquiry or it is being dealt with by the local authority, everybody should be in possession of all the facts and data. Such information is seen as a public asset.

- Private consultancies and companies have template agreements for data release. These are invariably drafted internally and approved by legal departments or advisors. A standard set of licences in line with public sector licences would be useful as it would ensure that the correct clauses were included and that all parties involved in data exchanging of any nature would be familiar with the contents. This would reduce the need for repetitive and expensive analysis and approval.

4.6. Markets

This section details existing data market conditions, changing market needs, volumes and opportunities. This is presented by interviewee where information was available.

BGS

Five years ago data would have been delivered on a CD and it would be used on a standalone desktop computer. Now customers require shared access filing to general servers and intranet use and BGS have changed their licence terms accordingly. Also, customers want to use the digital data to create their own images and publish them on websites. Local authorities for example, when they respond to planning applications want to be able to put a flat map on their website for people to view. Their licence did not cover that proposed usage so they now have a clause which states that images can be derived from the licensed data and displayed on websites free of charge, in a non-manipulable (e.g. locked .PDF file) format from which it isn't possible to re-engineer to the source data, for public task/non-commercial research purposes.

Onshore the standard geological scale is 1:50,000 scale and that was always licensed completely. This dataset is now available to view via a Web Map Service (WMS) on the BGS web site for non confidential use (defined at http://www.bgs.ac.uk/about/copyright/non_commercial_use.html). This is completely free which is a major change. The 1:250,000 solid geology and seabed geology is also planned to be available in this manner.

Defra

Defra supply marine data to all, and their SeaZone data to any Defra contractual projects. The marine conservation / Marine Conservation Zone (MCZ) planning outputs go in a separate database but the aim is to make that as freely available where possible including to DACs. In general, broader supply for the outside world will probably be through archive centres.

EA

60% of the data supplied is flood data through FOI. Some bathing water and water framework directive related data (sediment surveys, bathymetry and current profiling) released but this is a small amount. They have provided archive bathing water data to TNA and there is recognition of the need to make more use of the digital archive services. They supply a small amount of species data to NBN, but generally maintain their own records. They have new roles under the [Marine and Coastal Access Act 2009](#) and the Flood and Water Management Act 2010. New EA datasets include the coastal erosion dataset.

MBA (DASSH project)

DASSH supply data to academics, undergraduates, consultancies, public bodies, and the public. 'Marine' is rising up the agenda so there is an increased interest in these data. Marine Protected Areas (MPA) are generating a lot of interest.

The development of offshore technologies and renewable energy is raising interest. Historically, oil and gas development was completed by organisations internally, but with new technologies this is now being contracted out.

MCA

The MCA provide data and information about incidents, shipping movements, cargo manifests through a European wide system called SafeSeaNet.

Met Office

The public and various pressure groups are asking for more data for free and commercial customers themselves want to be able to access more data over the web. At times of severe weather many people go to their PCs to find out information as the public becoming increasingly IT literate. Previously they relied on the BBC news and weather forecasts.

Negotiations with broadcasters are subject to more competition than ever before so they have to rethink the variety of methods by which they obtain public reach for their PSI. Their PWS customer group are beginning to accept that the web is really important and that mobile phone based dissemination is becoming important, for example their iPhone 'app' has been very successful. At the same time they have limited resources, and are likely to be subject to potential spending cuts which will require improved efficiencies.

4.6.1. Market volumes

BODC

Increasing direct delivery from online downloads. The number of direct requests by phone and email (but not through e-delivery) has remained steady for the last ten years at about 650 requests.

3,500 to 4,000 requests a year for NTGSF data; industry is about 35% of this, 15/20% is NERC and the rest is general public. Data is also shared with ICES and other world data centres which do not monitor downloads.

JNCC

From January to April 2010 there were 267 downloads of offshore SACs. The majority of these are by consultancies for EIA work. In general requests for data, automated or manual, has increased.

MBA (DASSH project)

DASSH data enquiries are approximately: 50% consultancy; 25% academic; 20% public sector JNCC / CCW and 5% public. Direct requests also come in from county councils and this is a growing area because of the change in legislation in planning. Local Authorities have taken an interest again in the marine sphere to work out what their responsibilities might be. Terrestrial Local Record Centres (LRCs) might therefore become interested again. The change is more of a perception than a reality as they have planning responsibility down to mean low water (MLW) but in certain circumstance they are going further offshore. The Marine Management Organisation (MMO) will have a bearing on this.

Marine Scotland

In 2009 Marine Scotland responded to 53 data requests. The main areas that they supply marine data to are ICES, BODC and OSPAR.

Met Office

When there is a major weather or atmospheric event and their website gets millions of hits, it is dealt with via an organisation who provide a service that ramps up the ability to take hits at specific times. More and more people are relying on the information on their website to make their plans, to decide if they are going to travel or not.

NIEA

The bulk of enquiries are academic. A recent increase in data requests for marine renewable related enquiries has been noted. Approximately 700 enquiries are made per quarter to the Water Management Unit and over 100 per year are marine related.

UKHO

800 licences a year go through UKHO's system. The majority of these are navigational licensees who for the big players in the unofficial navigational product market. The value is much higher in the professional market than the leisure market. UKHO has a very strong market share in the professional market which is probably 70% plus worldwide. They do not participate seriously in the leisure market, however, they licence the data to the main leisure producers. UKHO are different from most trading funds in the sense that a very small amount of their revenue comes from dealing with the Government. It is about 10% of their sales and consists of supplying the Royal Navy with some commercial products plus some advisory consultancy work. 90% of their revenue is from commercial users and / or licensees. This is very different from OS or the Met Office where about half of their revenue is from selling to the public sector.

4.6.2.   Opportunities

The Crown Estate

There is an increased interest in The Crown Estate data and developer's data related to offshore renewable developments (wind, wave and tidal).

OS

OS has been a particularly risk averse organisation and felt that Defra making the derived data available would undercut their business, whereas Defra have always stated that OS have still got a market to sell base data and in fact if Defra are giving somebody the derived data they are more likely to need the base data to provide the context.

Shell

The need to share meteorological data for CAP 437 (Civil Aviation Authority Offshore Helicopter Landing Areas – Guidance Standards) is presently under discussion. Helicopters incidents last year have resulted in considerable discussion within the industry as to whether organisations are providing and measuring all the data that they should in order to ensure safe helicopter operation.

UKHO

A growing part of UKHO's licensing activity is for the internet for use on websites and download to mobile phones etc. The big growth area at present is in new technologies whether they are navigational or tidal predictions and a lot of them are quite focused at niche areas e.g. websites focusing on divers which provide wreck information. There are broader interest websites for the mariner such as information about marinas and local amenities etc. There are also applications for downloading your route and planning other trips which can be uploaded into other navigational tools.

New technologies are driving growth which otherwise would probably be quite flat at the moment because of the economic situation but some small growth is being observed. The impact of the iPad with a larger screen might change this market further.

5. Initiatives to improve the sharing and re-use of marine environmental data

A number of public sector data sharing portal initiatives exist. To avoid duplication of efforts and inefficient government funding it is important that these activities are coordinated and that each organisation is clear about its remit.

A key benefit of using a data portal is that it allows for data to flow into the archive and be readily accessible. A secure database has benefits over an uncontrolled spreadsheet for example, allowing for the creation of quality assured documents ready for putting into reports. The community can also state methodologies and run the same queries and replicate results. Also, staff turnover can be an issue in terms of the continuity of service which can happen quite frequently and be frustrating to work with. Portals overcome this issue.

MEDIN

MEDIN is promoting the establishment of a network of MEDIN accredited DACs as the recommended places for the archiving of marine data sets to ensure secure long-term storage of data according to a set of best practice principles. These DACs are required to produce and publish metadata records on their data holdings.

The present DACs are:

- Bathymetry – UKHO

- Biodiversity – MBA (DASSH project)
- Geology - BGS
- Oceanographic (physical, chemical, biological and geotechnical) – BODC

and they are all in different states of development and completeness. All are public bodies apart from MBA (DASSH project) which is a charity.

In order to provide assurance to the data provider:

a)   A DAC is required to demonstrate long-term sustainability and

b)   Have a process ready for transferral of data in the case that funding ceases.

The DAC Executive Team is preparing a report with recommendations to ensure sustainable long-term funding for Marine DACs.

Data.gov.uk

The data.gov.uk initiative is being promoted within Government as a way of publishing public data using open standards to make these data more freely and widely accessible. A number of initial trials are underway with test datasets. However, whilst this may prove an effective way of making certain types of public data and information available, it should be emphasised that it remains uncertain at best whether this would be a suitable route for publishing raw data which comprises the vast majority of data held within the MEDIN DACs. More clarity is needed on the coverage and technical approach to be adopted by data.gov.uk before the full implications can be understood. It is planned that data.gov.uk will host the UK national metadata portal as the national link to INSPIRE, and that MEDIN will publish its metadata catalogue to data.gov.uk.

Overview of existing portals

In summary, there are a number of Government initiatives creating portals to supply marine, atmospheric and terrestrial datasets. The key ones relevant to the marine sector are:

- **data.gov.uk.**
- **MEDIN**.
- Multi Agency Geographic information for the Countryside (**MAGIC**) - key environmental schemes and designations; terrestrial and marine data shown specifically via the 'Coastal and Marine Resource Atlas'. Defra is the custodian of MAGIC with Natural England managing the service under the direction of a cross-government Steering Group.
- **SeaDataNet** – Pan-European infrastructure for Ocean and Marine Data Management
- **Geo-Seas** – a pan European infrastructure project for the management of marine geological and geophysical data
- United Kingdom Directory of the Marine-observing Systems (**UKDMOS**) a searchable metadatabase of marine monitoring conducted by UK organisations. UKDMOS inputs to the UK Marine Monitoring and Assessment Strategy (UKMMAS).
- **The NERC Data Discovery Service**

Defra stated that if they needed to put larger quantities of data on the web they would use data.gov.uk. They presently have a couple of hundred datasets lodged on internal systems (NB - not necessarily marine).

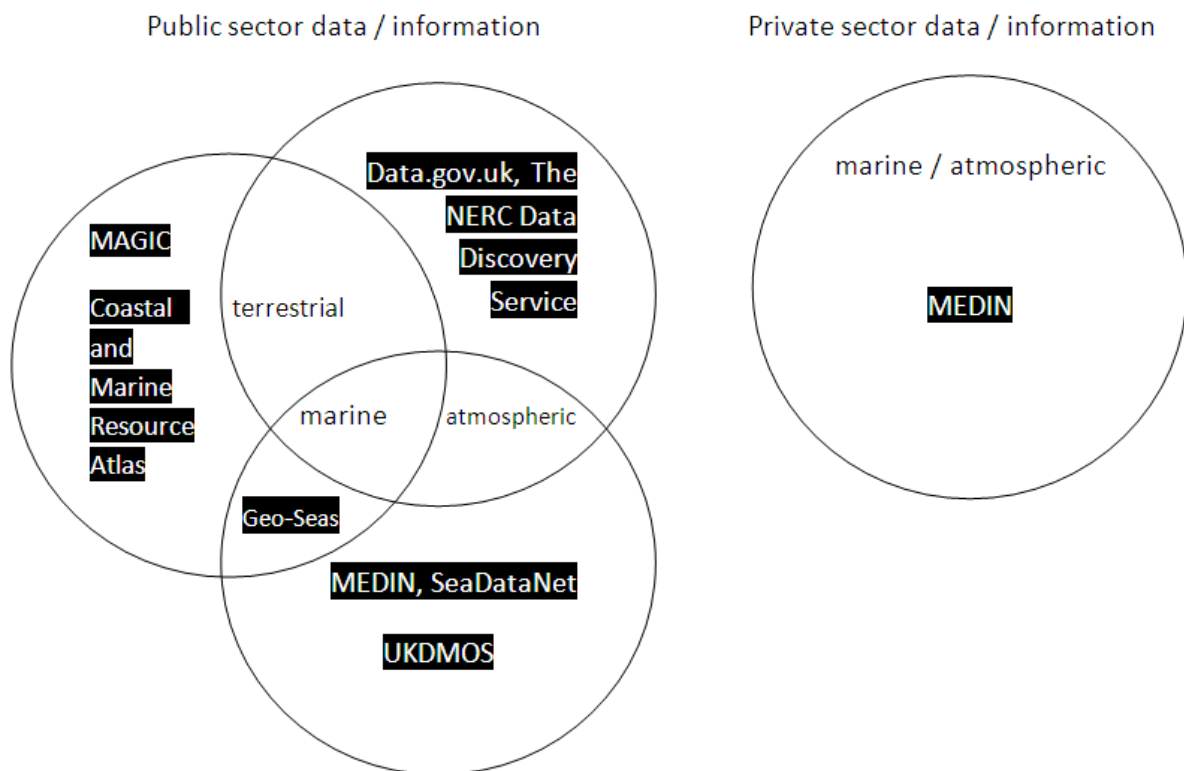The overlap of these initiatives is presented in Figure 2.

Figure 2. Relationship between marine data / information portals for public and private sector data.

Portal rationalisation

Over the course of the next 5 to 7 years the practicalities of complying with INSPIRE are going to raise their heads. This issue of whether there should be one national portal, which is required according to the wording of the INSPIRE directive, and who should be responsible for that national portal arise. Will it end up being the data.gov portal or a series of portals?

Catering for the wider European public is likely to be problematic. For example, the Met Office is a member of the World Meteorological Organization (WMO) and within the WMO there are regional groups such as the European grouping. Would it make sense for the European group to have its own portal for meteorological information only but it is effectively hosting or linking through to the meteorological information being supplied for INSPIRE purposes by all of the European met services? That might be better than trying to put meteorological information, which is so vast in terms of terabytes, onto a national portal which is being built for the 2-dimensional geospatial community. A simpler way forward could be to adjust the ECOMET (the European Commission's group of met services) portal so that it will accept everybody's INSPIRE compliant data and metadata.

Discussions regarding improving the use of marine environmental data are not new and one interviewee referred to first discussing such matters at 'MEDIN forerunner' meeting 15 years ago. The phrase "Collect Once Use Many Times" came from the Marine Data and Information Patnership (MDIP), but it has been a slow to realise process mainly because all of the different government bodies and their related organisations have different structures and working practices. There is frustration and disappointment that it is taking so long to achieve an operational system.

Timescales for achieving an operational system

The UK marine data community are at the beginning of a process of establishing a UK system for efficiently providing marine environmental data and that at the moment things are moving quickly. It is estimated that it will take another 5 years before we will be at the point where data researchers can run a search on an area and get all of the information back. A report about LRCs stated that it took them 10 years to establish themselves within the planning regime on land. LRCs can be set up quickly but can take time to become effective and be fully part of the planning process. MEDIN DACs may be established within that timescale in that the structure is beginning to formulate following a slow process of development. It will be a step change to say we believe in that structure and will build it into the planning process.

6. Issues encountered when trying to comply with guidance

This section presents comments on operational issues encountered by organisations when trying to comply with data sharing and re-use guidance. The comments are from interviewees and are not statements of fact. These include internal issues faced by organisations being compliant and external issues when working with other organisations.

Internal issues

- Data management

  - Not having data manager in the organisation or a centralised data management strategy leaves staff with the responsibility of maintaining and managing their own data.

  - Natural England have an ongoing Geographic Information (GI) rationalisation project which has been running since it was formed from three different organisations. Getting a common understanding regarding this has its own challenges.

  - The main issue for NIEA is data not being centrally managed but being saved on individual desktop computers (networked and backed-up), however, all freshwater data and some marine data is held within their Water Quality Archive. It is recognised that work is required to improve this situation but funding this task is an issue. They are putting as much data as possible into MERMAN to improve data sharing.

  - Within Defra's SPIRE there are some datasets that staff do not know about. Defra recognise this as an issue and are undertaking an information audit which covers all information including unstructured information, to find out what is held and how long it needs to be kept for. They are completing a strategic data sharing review as well to look at how they manage and organise data across the network with their Executive Agencies. This is an independent review aimed at convincing people higher up in the organisation that changes are required.

- Data culture

  - Data management is not an overhead it is part of the science but it is looked on as such. The typical response from researchers regarding data management and metadata is "Go away I'm too busy doing science", but this is an integral part of science. Some organisations share data without associated metadata. Data is the largest legacy for authors not papers. The average number of citations for the average paper is 10 or 15 at most. Papers have their cycle then fade away, but a dataset is forever and available for future use. The IOC is looking at this as a way of freeing up scientific data or data sets that have been collected for scientific research.

  - The level of understanding of data requirements in Defra is quite challenging and significant effort is made to get the message across. They have undertaken publicity about the INSPIRE UKLP data sharing program, internally and externally. Trying to get policy people excited about data sharing is challenging until you get an issue like the OS consultation which is going to cost Defra millions of pounds, therefore senior managers become interested.

  - Defra are effectively policy people, therefore, technicalities of data are not known in great detail. Data and information are extremely important to them as they are an evidence based policy making organisation. They have an evidence program and a policy cycle which requires people to use evidence right from formulation of policy to implementation and monitoring, but unless people are involved in procuring, managing and using the data they tend to assume that data just exists.

External issues

- Data management

  - Data submitted to DACs can be poorly formatted and non-standardised. for example, data can be provided in a spreadsheet and the spreadsheet might not have the correct data in it so the associated report has to be consulted. This is why metadata and standards are so important as it makes a significant difference if data is in the correct form, allowing it to be transferred it easily.

  - It can take a significant amount of effort to go back through metadata and make it INSPIRE compliant. Another issue which can be far more challenging and time consuming is going back through historical data which some organisations have 150 years of. Sometimes, organisations are willing to pay DACs for their data to be input and provide grants for this.

  - Metadata has changed a lot over the years and taken time to stabilise but it still is not stable. This situation causes extensive issues. Regarding computer records, there was a bad period in the 70s, 80s and into the 90s where people were undertaking various activities using different systems and a lot of that data has been lost. 10

years ago when the Marine Life Information Network (MarLIN) started looking at consultancies the state of these data was very poor. Some of the research institutes were the worst examples.

- o There are frustrations with public money funding surveys which are not made available for wider use. Surveys are often undertaken which then sit on a consultancy's shelf and are not available for others to use.

- Formal instructions

  - o Formal instructions regarding INSPIRE compliance would allow organisations to state that they have. An approved report (possibly from Defra), laying out what they have to do with the associated rules would be of great benefit. The technical solutions are not difficult it is the corporate buy-in which will then drive the individual compliance in theory. Organisational drivers need to be bottom-up and top-down.

  - o Cefas have approximately 40 or 50 formal databases, and thousands of individual Excel files. Bringing those data services into line is a large undertaking. Instructions for complying with INPSIRE stating what is required e.g. use the metadata standard 'x' with provision of a metadata creator, are needed. Some organisations are not sure what guidance they should by complying with, which is a big stumbling block. They would like a clearer list of 'what and why' that is 'guidance plus' stating what applies to the following types of organisations.

  - o What is required to be compliant is not clear yet as organisations do not really know what the obligations are going to be or how much the UK is going to do or how much the organisation inspectors will do etc . There is a lack of clarity at the moment and a need for clear articulation of the strategy. For example, do organisations need to be INSPIRE compliant or is Government delivering INSPIRE compliance?

- Guidance

  - o There is a lot of transition regarding metadata in the marine sector. There is feedback from UK and EU level but there is not a bulletin published. The feeling is that more broadly in the community there is frustration in keeping up with developments and changes, which becomes an almost impossible task due to the significant amount of documentation around it. For example, while the MBA were working on their metadata, INSPIRE released a new version of their implementing guidelines without informing others that it was publically available. They now work with online documents to avoid getting out of date on guidance. It perplexes some people, particularly some of the smaller private organisations. There is an overhead associated with keeping up to date with such developments.

- A lot of public sector research is contracted out to research institutes and other organisations including consultancies, and user friendly information on INSPIRE is not available if they wish to work with best practice guidance. The INSPIRE website is not considered to be user friendly or reliable with connection issues sometimes being experienced with pdfs 'hanging'. This is important as agencies should include INSPIRE requirement information in their contracts.

- Natural England stated that it can be difficult to know which central government initiative to follow. The Treasury is keen that value is generated from intellectual property through the Wider Markets Initiative, but the recent Cabinet Office Initiative 'making public data public' requires that data is freely available. Those two initiatives are very much contradictory therefore clarification is required.

- With the benefit of hindsight the alignment of EIR to FOI could have been clearer. For example, referring to 'exceptions' in one and 'exemptions' in the other is inconsistent. Also EIR is not as well written or as clear as FOI. As a result it is a lot harder to justify withholding something under EIR.

- Some organisations have datasets that will be very difficult to make INSPIRE compliant and so might be deleted. More support is required in terms of how to achieve compliance as painlessly as possible. It could also be difficult to know if an organisation has supplied all of its INSPIRE metadata. For example, a published report will probably comprise a series of technical reports which reference internal data files, but these might not have their own metadata entry. A way of defining what your outputs will be is required as is how you will measure 100% metadata compliance.

  A proposed approach would be to state that if you collect raw data it has to have a metadata entry. The issue is where do you draw the line in terms of what is raw data? For example with protected site boundaries with OS derived data the raw data is the aerial imagery which is then digitised, cleaned and it then becomes a derived product. There can be different views about what is "raw data" and what is "analysed or interpreted data". For instance, if a seabed grab strikes hard rock, the raw data actually recorded is 'no recovery'. Some would argue that the translation of this 'no recovery' into an indication of the presence of hard rock at or near the surface requires a interpretation by someone who has an understanding of the fact that the equipment has hit a hard substrate, and hence that that this is not the raw data but interpreted data. Others would, and do, take another view that the assumed presence of hard rock is raw data

- There is a lack of clarity regarding trading funds and their raw and derived products. Definitions of what is publicly owned but only certain bodies can use, or raw data which is open and both the public sector Trading Fund and for others to re-use should be made. It is either an open or closed market and at the moment it is

viewed as being closed. This is considered to be wrong and it probably stems from a lack of clarity or a lack of enforcement around the Trading Fund models.

- Limitations on access

  - A Defra project led by a private consultancy has solely used public data to create national datasets which are formed from the public bodies and local government. Some requests for an entire dataset for certain species would result in partial delivery. Chasing the outstanding data in this case was only responded with confirmation that the entire dataset had been provided when it clearly had not been. This makes data collection very hard work and time consuming, and the approval process had to start again. When reporting these issues back to Defra they assisted and because all of the data providers sat on the steering committee direct contact could be made to resolve these issues. The data sources included Natural England, CCW, EA, and Wildlife Trusts as listed in the project specification. In working with all of these parties the quality of service varied from good to bad.

  - DASSH have seen a lot of tenders where they are listed as one of the sources for obtaining data. They think that there is a frustration higher up in the MEDIN structure that people are going to be expecting a service to get data for multiple disciplines based on polygon searches. Specific direct enquiries can be straight forward but others need more intelligence to provide the right data. There may be frustrations in some public bodies' data being remote and accessing the survey data for a location might not be possible. A significant change in data attitude is occurring and a scaling up of effort is required to locate all of the data in the UK and put quality metadata on it, obtain and QA the data and clarify the licensing. Data cannot be released until it has been properly checked and standardised.

  - The Met Office through MEDIN is working to get more of the data from the research community in real-time or near real-time as forecasting needs data which is less than 12 hours old.

  - For the DASSH DAC some queries cannot be dealt with by the NBN Gateway. You can spatially search on NBN and DASSH but a polygon search requires collating everything for an area. NBN provide a public map but cannot deal with polygons at present. DASSH data is point source, and on their server they can download data by survey, location and by species.

- Poor agreement of 'standards' across Europe

  - EU projects force organisations to work together to the same standard. In such situations all parties are working under EU Directives therefore it should theoretically not be an issue, but it is not the case. What typically happens is that the projects try to develop common standards based on IOC or ICES policy.

- Controlled vocabularies for parameter management

    o One of the complications with Cefas' original metadata system was that it had to comply with Defra's thesaurus, which is extensive. This was succeeded by the requirement to comply with the 'integrated public sector vocabulary' which is even more extensive. The idea was that you need a thesaurus to understand things, a concept which has since been disproved by internet search engines. Wanting perfection before you launch a system can end up with the programme being delayed. Initiatives such as BODC's controlled vocabularies are very important.

- IPR and multiple IPR

    o Natural England has digitised their protected site boundaries which they make available through their website, and those boundaries were digitised from OS features. The final product therefore contains derived data which carries with it OS ownership with specific terms and conditions. This made it complicated for JNCC to send them to the European Environment Agency and the resultant European map of all the protected sites across Europe did not have the UK's. The same issue occurred when working on the World Database of Protected Areas.

    o The Met Office legal team gets involved in complicated, theoretical, principle discussions about IPR relating to data or software usage for operational or commercial activities. By the time that those discussions have been resolved they often find that there has been a whole stream of data that has already come in and the data has completely lost its shelf value because they are only interested in real-time data.

    o For a project studying sea birds on the Isle of Man JNCC put a small amount of money into a NERC project. NERC cited the Baker Report (Creating Knowledge, Creating Wealth - Realising the economic potential of Public Sector Research Establishments), Baker (1999), and their interpretation of it was that any research falls within it, therefore they have got the right to be restrictive over it, which JNCC disagreed with as this was not thought to be in the spirit of the report. This example shows that on occasion any justification can be used to keep data restricted.

    o Regarding OPSI and IFTS, JNCC have been trying to understand why they cannot complete certain tasks that they want to be able to do with other organisation's data. The OPSI guidance and how Trading Funds operate under it is not clear enough or has not been fully implemented. For example, when collaborating with SeaZone, bathymetric fair sheet digitising was completed for areas of interest to JNCC. JNCC met the digitising costs and felt that it would give them some ownership of the resultant data that came out of it, but it did not. The raw data was owned by

UK Hydrographic Office (or whoever the original survey was done by). Despite meeting the digitising costs, SeaZone then licensed it on to others including JNCC. The sheets which JNCC contributed to were only allowed to be used internally.

- o UKHO licence data and supply products but they are not able to supply data. When they supply data it is embedded in products such as digital versions of paper charts. As discussed, very few licences consist entirely of data which they have the rights to licence. For example if they supply a raster chart to a licensee and tell them that they can only reproduce 30% of this chart and the licensee has to look at it and see which 30%, they do not have a technological mechanism to cut out the part that they do not have the rights for. There is no incentive for UKHO to do this because their business is producing the products and it would be a hugely expensive and complex process just to deliver data to licensees. The regulations do not require them to do this and they are not obliged to change formats or make changes or do anything that they were not doing anyway. This is not an ideal state of affairs and they have a clause in their licence agreements stating that licensees must not use their published materials to infringe third party copyright. That enforces this requirement that they only reproduce UKHO's part of the data unless they have got permission for the rest. That is quite difficult to police and is quite a difficult subtlety to understand. Customers could be unwittingly breaching the terms of their licence and this is one of their primary difficulties with being compliant with regulation. They are required to supply it in digital form where it exists but what they are not able to do is to supply only UKHO's data. The new technology world is highlighting potential applications and UKHO spend a lot of time trying to explain these subtleties that just because they have supplied it does not mean that licensees have the right to reproduce it. It is technically possible to resolve this but it is very expensive to do. It is not what they set up to do and it is unlikely that Government will fund it. A covering letter is sent with any licence that UKHO offer that stating that the data contains materials belonging to third party and they are not granting permission to reproduce that material. They make it as clear as they can but it remains a thorn in their side. The bathymetry is fairly straightforward but at the charted data level it is more complicated.

- • Funding

  - o The issue Defra will have along with many other organisations is that there is no new funding for any of the INSPIRE compliance. Organisations will have to look at how they can become compliant as part of their business-as-usual operation. Defra has put the responsibility back to public bodies in their own right.

  - o For the EA, only data which is at the 'top of the pyramid' is provided as INSPIRE data and these are typically national datasets. It is not possible to supply all regional data as there is a lack of funding for this. To be fully compliant for all obligations and for all environmental datasets will require additional funding. Metadata is not always

created for projects which are not specifically planned for data sharing / re-use. Projects are not always designed considering INSPIRE compliancy, however, national data projects are and only datasets which are known to conform are used in the process of creating new data. This sometimes means that higher quality datasets are not used as they have inherent complications in terms of 3rd party data / IPR.

o   All public bodies have issues with their biological data and could do with funding to improve it. Until this is resolved people will continue to work in isolation. MBA know there is a lot of data out there that they cannot supply to DASSH because they do not have the staff resources to do it. Several organisations are concerned about quality assurance (QA) and data going out into the public domain. They are very concerned about putting out erroneous records which has happened in the past. This was a problem for the EA on one occasion when their customer gave data to a third party who used it for another purpose. The data was erroneous and they sued the EA despite the fact that they were not given permission for that re-use. Understandably there is concern regarding potential litigation.

o   It is possible that limitations in public sector spending could result in other bodies considering the Trading Fund model. One interviewee stated that is incredibly important for MEDIN because the DAC model should not be run off a charge and access basis. Funding DACs is the fundament problem to be solved. There are three ways to fund it:

   ▪   Underwrite it; bodies as part of a public duty fund the DACs;
   ▪   Pay on ingestion; add a small cost to the cost of a contract, so it covers the cost of ingesting it into a DACs and it becomes available; and
   ▪   Pay on access; so in other words you charge people whenever they actually go to use it.

The last model is least attractive because it reduces the potential usage of the data. It would be a shame to unravel the good work that the previous administration did around EIR.

Funding to operate the DASSH DAC is an issue that needs a long-term strategy to guarantee the availability of the service. For example MBA's status is an old established research charity and they receive Government money directly through research, through NERC who are a major contributor but they are not a NERC owned organisation. Direct funding from MEDIN is also provided.

- INSPIRE element responsibility

   o   An issue with INSPIRE is that if one organisation is responsible for certain hydrographic elements and, for example, another is responsible for others, should they exchange to make a complete record? The conclusion was that they should not,

(no requirement under INSPIRE at this stage) and that they should focus on their own responsibilities.

- FOI (FOISA in Scotland) and EIR (EIRS in Scotland) requests

  - A small amount of non-compliances with FOI / EIR were reported by several organisations, where the Information Commissioner decreed that data should in fact be released.

  - The main issue in trying to comply with FOI / EIR is the unpredictability of requests and staff commitments. The 20 working day response time can be disruptive when it requires pulling staff out from existing work.

  - Following a large request for data a significant staff input is sometimes required to cost the data supply. This can take a number of staff days time which is not chargeable under EIR and a small team can get overwhelmed. To mitigate this data is typically made freely available on websites, however, some queries are very complex.

  - SNH are involved in difficult FOISA / EIRS cases for requests which are considered to be too large and open ended. That is one of the main grounds that they turn a request down for. The main interaction is then to go back to the requester and ask for it to be narrowed which often results in a request for several parcels of information which amount to the original request.

  - Large (e.g. last 5 years) data / information requests for certain datasets can equate to a significant collection of documentation and each document must be reviewed to remove personal data. This can be extremely time consuming.

- Licensing

  - The regulations, legislation and best practice aimed at making more public sector information available to the public is drafted and policed on the assumption that public sector bodies are not trying to make profits. The Met Office feel that there is a lack of recognition, acceptance and celebration of The Met Office as a commercial supplier of information.
    There is awkwardness about the fact that OPSI has to police this best practice and regulation, because they and the APPSI have made it clear that they do not like the concept of trading funds. The Met Office feels very awkward about the fact that a government body should have two opposite tasks one being public and one being commercial. This is understood from a principle point of view, but successive governments have created Trading Funds for various reasons, mainly that they can plough back commercial profits into infrastructure and PWS in the long run, and not

have to go to Treasury every year and try to compete with larger public concerns like education, policing or health, for money which makes them more self sufficient.

The Met Office find it tiring and frustrating to have to deal with bodies who ignore the fact that they have to keep some material back because of their commercial remit.

o OPSI's Click-use licence is not the same as data.gov.uk's. It is not quite clear which one takes precedence. The OPSI version seems to be more developed.

o There is a general need to gain peoples confidence within public organisations that third parties are not always out to obtain these data and turn it around for commercial gain, and that they genuinely need it and are interested in it to carry out their own activities or to understand how their activities might impact on the environment. The preconception that it will be used for commercial gain results in a reluctance for these data to be supplied. Recognition of the subtleties of the need for data is required i.e. it is commercial but the information is needed to inform a certain stage in the project process.

o Increasingly, Defra projects are beginning to consider depositing the higher level data products (not the raw source data) in SPIRE. To automatically achieve this staff talk to the procurement team to make sure that, for example, when they are buying data for research contracts that some standard terms and conditions are included to ensure that IPR of the data is Defra's so they can use it for other activities. Such issues are not built into business processes at present.

o It is not always clear what data can and cannot be shared by organisations. This would be useful as well as justification as to why certain data cannot be shared so that whenever this issue is raised the whole process of investigating it does not need to be repeated and precedent can be referred to. For example, issues in obtaining AIS data from the MCA was raised by four organisations, in that it is not available. Note that MCA policy is to only provide these data to statutory bodies. This dataset is considered to be extremely important as it informs activities such as planning and environmental analysis of shipping related activities. The release of these data is reportedly being blocked by The Department for Transport (DfT) lawyers. These data are perceived as being PSI due to the nature of their funding and collection by the MCA and the fact that AIS data can be recorded by anyone. The reason for these data not being released is stated as commercial confidentiality of some data fields in the database, security and that the data was in a form that could not be easily used. A version of this dataset for public consumption would be of great interest.

o TNA (OPSI) stated that there are issues with derived data and Public Task which they are working on. The issue with Public Task is that most organisations do not have a clearly defined Public Task, and if they do it is set so wide that it encompasses all of

their activities and there is no difference between their core and their value added activities. OPSI are looking to resolve this issue.

TNA are working particularly with the big Trading Funds on derived data which is an intellectual property issue. This occurs in 'data mashing' when data is taken from multiple organisations to develop a new dataset. This is a particular issue for boundary definition shapefiles which caused JNCC issues when sharing data for a European Community project. For example, if you take a public sector organisation such as UKHO or OS, they produce data, some of that data is mashed, linked, joined with some other data to produce another product by 'Company A', then a third party comes along and says that they would like to use that product. They have to not only go to 'Company A', but back to OS and UKHO and it goes down an information chain, so every person in that chain has to go back which becomes unworkable quite quickly. It is particularly an issue with mapping data because mapping data underpins lot of other data. To make sense out of some data you need to know the location or boundaries, property, roads, rivers etc. Getting OS terms and conditions at various stages of the in the process makes it difficult for those involved.

o   Data sharing arrangements set up with other public sector bodies can vary in their nature. Some arrangements with certain bodies are not covered by any written terms, others are covered by written terms which work well in practice, and others are awkward to negotiate.

6.1. Critical comments about public sector organisations

Comments were made by organisations involved in the audit regarding specific issues that have been encountered. These comments were noted with the sole intention of flagging perceived problem areas, and have been passed to MEDIN. They are summarised below:

- Inconsistent data access policy application by different offices in the same organisation.

- Some public sector organisations have attempted to restrict the access to data.   Some of these organisations are alleged to be outside the scope of the re-use of public sector information regulation (ROPSI).

- Tension caused by NDPBs and Research Institutes applying aspects of the Trading Fund policy model approach.

- Information generation funded through the government is not always made available to the public. This was perceived to not be through lack of willingness, but through a lack of process.

- Public data to be available in an internationally recognised standard that is ready to use. Some formats are not easy to harvest.

- Public bodies not operating under ROPSI regulations when they should. For example inappropriately restrictive licence terms and cost for data release are considered to be high.

- Regional structure of public bodies not supporting a centralised data management policy resulting in a focus on national datasets but less so regional ones.

- Data management being driven by terrestrial interests and it can be hard to encourage such organisations to use particular marine standards or work towards them.

- Complicated licensing structures making agreement difficult by the price depending on the intended use and the predicted resultant profits. Sometimes these aspects are simply unknown. This issue is caused by the slightly different business models.

- PSI data not being free of charge in some cases, and why there is concern about what it will be re-used for.

- Disparate organisations can make locating the right person in the appropriate region difficult. Not having a Data Manager can result in a poorly coordinated system. High turnover rates of staff in agencies are also an issue which results in datasets being forgotten. Also, when personnel change the staff can have different drivers. This results in inconsistency in the service provided.

- Staff not knowing how to deal with complicated requests for data such as point data being displayed in an online Geographic Information System (GIS). This is different to most other data types which are typically gridded for public outreach activities.

- data.gov.uk is perceived as inappropriately attempting to combine data for FOI requests (expenses etc.) and environmental information and data. It was proposed that the two are kept separate because one 'super' IT project covering all data for the UK is too ambitious. It was suggested that when the previous administration were talking about making data available to the public, it was not referring to environmental data.

- Organisations hold onto their data because it is powerful. Such organisations state that they will engage in sharing it and acknowledge that it is very important but they do not take that extra step and share it. There are organisations with really good data flows and organisations with poor data flows. There is no consistency.

- It was not thought to be right for one government department to be paying another one for data.

- Difficulties with organisations being unrealistic about what they could re-sell their data for to a government organisation. Private companies having to compete with the UK public

sector and work with data from them. Questions have often been asked regarding the fairness of 'playing fields' of public body data supply and consultancy.

- Organisations should always have a raw data set for a parameter and declare it. It was suggested that the policy should be that if the raw data is deleted then the next level up the processing scale becomes the raw data which is available for free.

- The definition of raw data is perceived as being a grey area. To most people it is calibrated data that has not been analysed further. To some of the trading funds it is thought that they consider it to be the data without any calibration.

- Trading Funds and NDPBs should be making money from the value add and if they have collected the data then they already have an advantage over the rest of the market.

- The split between bodies for datasets such as environmental designations across different locations (England, Wales, Scotland and Northern Ireland) requires time to be spent harvesting data to create national datasets.

- A concern of the private sector was that with mainly Trading Funds becoming DACs with Government backing, these would be looking to compete with the private sector.

7. Conclusions

The conclusions of the data policy guidance review and the data policy audit are presented separately below.

7.1. Data policy guidance review

a)   From the review of guidance relating to charging and re-use of public sector information and discussion with key groups a number of conclusions may be related to MEDIN's objectives. However, the implications of the review do not necessarily need to be actioned through MEDIN, where the role of guidance has the potential to more broadly influence the marine community and marine data sharing policy and re-use. There is extensive guidance available and position statements on Public Sector Information re-use and reviews of the value of commercialisation of marine data. Nevertheless, the situation has been evolving rapidly with data sharing initiatives for Government data through such programmes as Making Public Data Public and INSPIRE requirements, initiatives to release raw and processed data by public bodies and the increasing use of contract clauses with private sector survey companies and developers to grant access to data mean that the situation is increasingly complex.

b)   MEDIN's objectives have been evolving and are perhaps now increasingly aligned to also encompass marine data to meet operational requirements (marine planning etc) as well as promoting data sharing i.e. long-term management of marine datasets; improved access to authoritative marine data held in the network etc.

c)   Whilst MEDIN remains a focus for the marine community data sharing and distributed data management there is potential for wider use through a distributive framework proposed by the 'sharing innovation initiative' of data.gov.uk. The issue remains that many datasets have re-use limitations through IPR and copyright outside the public sector information. MEDIN may focus on comprehensive discovery and search through its portal rather than worry about the re-use and commercial exploitation of data. However, effective recording and presentation of the re-use and commercial terms becomes important to exploitation, whether charged or freely accessible, and even within simplified licensing regimes (such as Creative Commons type) there is still a demand for attributions.

d)   Where re-use is an issue i.e. the user wants to incorporate the data in other data sets or use the data to develop new techniques and build upon the knowledge base, there will clearly be issues of IPR to resolve. Such potential constraints promote the need for MEDIN (or others) to seek to draw up a set of principles that establish the terms upon which all its participants supply information about data through the MEDIN Portal (and to the DACs). Without such there is danger of a reduced value of environmental information that affects both the data and the value of the DACs themselves. Such principles might seek to modify copyright positions to permit access and re-use on communal terms, including charging policies.

e)   DACs already have a role in data quality assessment and format conversion for archival management, but providing data through the MEDIN portal there will need to be quality assurance built in; otherwise the integrity of such data may be compromised and the original objectives of the whole exercise undermined accordingly. Generally, MEDIN does not engage directly with data accreditation or assurance but rather the MEDIN accreditation process for DACs, provides some measure of quality assurance, although this may not extend to securing quality assurance from within the data suppliers. Although outside the scope of this programme there is a need to address this issue alongside access and re-use.

f)   The reality of marine data managed within DACs is that different categories of data are likely to emerge with differing access constraints, from free access and exploitation through to restrictions for academic use, for consultation and through to commercially confidential data. These differences will largely stem from different IPR and confidentiality requirements, yet the overall objectives of data sharing and knowledge development by the MEDIN community need to be maintained as far as possible. There will be organisations that cannot contribute to liberal access agreement, unless policies change – such as for Trading Funds. Private sector participants might take the same view in order to secure their IPR on behalf of shareholders, although the use of liberal access and publication clauses applied to developers through lease and licence agreements has greatly broadened access – if not re-use terms. Other data may be subject to confidentiality agreements and restrictions of that nature that do not permit full disclosure of data.

g)   For MEDIN to advance access and re-use of data across the marine community following from this review it appears to need:

- to test the boundaries of constraints amongst its members to evaluate how far they would wish to go in IPR negotiations in terms of access, exploitation and charging arrangements for the data in question;

- to evaluate the potential for a more open stance similar to the new 'creative commons' licensing policy announced by OPSI in January 2010; and

- to assess policy related to access to data through the MEDIN portal were licensing and remuneration for rights holders to be provided whilst seeking to develop and maintain the simplest access to the datasets controlled by MEDIN's participant community.

7.2. Data policy audit

From the data policy audit a number of conclusions emerged that relate to both the access to data and metadata, re-use and the charging policies applied. MEDIN in seeking this review has taken a neutral stance as regards charging for data and related policies and primarily is seeking clarification of current understanding and adopted practices. These conclusions are in part being addressed by some of the MEDIN actions or proposals:

a)   Interoperability of data and metadata within and between organisations needs to be improved. Common standards, policies and agreements would help achieve this. This would result in improved efficiency of these organisations when exchanging data and make it easier to work with combined multi-origin datasets. A pan-government agreement (PGA) could push this forward. It was found that there was scope for improving sharing and re-use of data by standardisation of the following; reducing the variety of licences, providing licence templates to simplify data sharing and re-use, and providing contract templates to achieve standardised data generation. For example, reducing dataset projection transformations would save on re-projecting time.

b)   There is variation in data policies between public sector organisations and a lack of standardisation of policy and licence terms and conditions. They are all broadly similar within the business model types, but a lack of a centralised approach was noted with each organisation having typically derived their own documentation. Adopting common licence terms e.g. based on Creative Commons would achieve the same result and is simpler.

c)   The implementation of data policies varies between organisations and whilst the availability of PSI data is improving it requires significant effort to get to the generally expected levels. It was considered that the INPSIRE Directive will improve this situation, but only from the perspective of data access and view rather than necessarily data re-use. There is frustration regarding the lack of detail of organisation's INSPIRE requirements and a practitioner's guidance from UKLP is required, as the implementing agency for INSPIRE. There is still a level of ignorance of the implications and benefits of INSPIRE and the breadth of the data coverage and duty to submit data. Accelerating progress and clarifying strategy were called for.

d)   In the last 2 years, policies regarding the UK's marine and terrestrial environmental data have seen a relaxation of licence terms in some circumstances and there are examples of improved PSI data sharing and re-use (e.g. OS OpenData), however, some examples to the contrary were found. Most notably these were related to the Trading Funds (UKHO and the Met Office). The signs are that in general, access to data is improving and changing significantly, and this ongoing trend is encouraged.

e)   In general, from the discussions held there is a strong desire within the marine data community to share / re-use data when appropriate, although the terms and constraints have been less well articulated. The will is there and the situation is improving with advances in technology helping this situation.

f)   Most public bodies interviewed could improve how they inform the public and private companies as to what data is available for no charge, minimal charges or under a commercial licence. In general, guidance on websites regarding obtaining data, and who to contact regarding it was poor in the case of the larger more disparate organisations.   Some simple measures could improve this situation. A lack of clarity of when this applied to certain data was found to confuse and sometimes frustrate those trying to obtain these data when perceived blockages to data were not fully explained. There should be clear distinction between products for specific markets and public access to data.

g)   Paying for raw PSI data collected using the public purse does not sit comfortably with many people. Do limitations on data re-use imposed in order to generate revenues outweigh the potential maximum financial benefit to 'UK Plc' by lifting restrictions?

h)   To meet the data requirements of INSPIRE and re-use regulations, significant effort is required to get existing data into the required format. For most organisations this needs to come from existing budgets as no additional funding is available. This situation could increase the time taken to become fully compliant. High quality data which requires months of effort to get it up to the INSPIRE standard could be achieved by Government funding, however, it is more pragmatic that organisations will meet product specifications once these are defined, and make historic datasets INSPIRE compliant only if required to do so.

i)   Data from academia including NERC funded research (which is funded publicly) is not always readily available for sharing and re-use despite grant conditions stating that data must be uploaded to a DAC. The PSI regulations specifically exclude research organisations, thus it largely remains up to data policy of funding organisations to introduce clauses for sharing data, albeit after a period of exclusive use.

j)   There are at least four Government funded data portals which deal with marine data either in existence or being formed at the time of writing (MEDIN, MAGIC, UKDMOS and EOFF). There are many other marine project level portals (MESH, EMECO, MALSF GIS etc). These portals fulfil differing data management requirements, adopting differing standards, access policies and delivering against different policy and legislative drivers. It is not possible to enforce standardisation across these different projects as they meet different objectives and require differing metadata. The important data policy-related issue will initially be promoting greater interoperability to ensure that data searches can search distributed across data stores, but with a longer-term goal of achieving greater harmonisation of standards, if not consolidation. This aim is important in improving access for the user, simplifying accesses constraints and reducing the potential duplications.

k)   The funding of the chosen portal model and associated support must be secure to ensure that a long-term and well-maintained service is available. Present shorter-term funding is a risk to realising such a portal and service. Sustainability and maintainability of data is key, as is a clear strategy. Efforts should be made to ensure that funding is guaranteed. Developing a national marine data policy would help in achieving this.

l)   The 'public use of public data' initiatives providing simpler licence arrangement for certain classes of PSI data through the OPSI and data.gov.uk are seen as broad-scale initiatives that are targeted at IT developer rather than sector users. This initiative seeks to leverage re-use of PSI and reduce barriers to re-use, but is little used by the marine sector. If data.gov.uk holds all of the data

there is risk of duplication, contradictory information, out of date data and an inability to meet demand (e.g. during bad weather or volcanic ash events for meteorological data). It is considered that data.gov.uk is unlikely to be able to replace all other metadata portals which address the needs of specific sectors and which maintain both PSI and private sector data, and does not function as a data archive or management organisation. Importantly, sector portals support the detailed functionality and metadata content required by the user community, which is lacking within data.gov.uk. However, it is important to see how the interaction between these portals and data.gov.uk would operate in practice to benefit the marine data user community.

m) There is widespread acceptance that improved access to data and metadata are needed to enhance standardisation across the sector and ease re-use. Interoperability and adoption of standards, particularly of metadata and increasingly of data specifications and formats can ease re-use from the technical perspective. Transparent and straightforward documented re-use policies that meet the PSI regulations are a minimum, but more liberal policies and simplified licensing are increasingly seen as leveraging the value in PSI data and meeting public expectations.

n) Such extensions of the access and charging policies are within the say of public bodies where the PSI does not have third party IPR, but there remain barriers to distribution for private sector data and where IPR restricts distribution under PSI regulations. However, policies around commissioning and licensing of seabed activities provide a potential mechanism that has been used widely in the last few years to open access to otherwise closed archives.

o) Improving the marine sector's appreciation of metadata is required. Emphasising the importance of creating metadata when surveying and in post-processing will improve the quality of metadata for the data life cycle. Standardisation of metadata as much as possible to make the requirements more easily understood and instilling the importance of data being interoperable will improve the uptake. The more metadata that can be created when generating data, the less effort will be required by third party organisations such as DACs creating it. It is also noted that DACs will probably need to do some work on supplied metadata to generate standardised forms, but this effort can be minimised.

p) General guidance and strategic planning for marine environmental data users from a single source such as MEDIN is widely acknowledged as being an important function by the community. It is important to recognise that some organisations do not solely deal with marine environmental data, therefore, consideration needs to be made of wider needs to avoid a fragmented approach. A 'family tree' stating who is doing what and how it links together would be of benefit.

q) Awareness of the regulations and guidance within organisations varies, largely on the basis of the extent of their engagement with PSI and distribution of information. There is much user ignorance of the distinctions between FOI, EIR and PSI particularly in terms of the distinctions between access and re-use. There is also a lack of clarity of the Information Asset Register (IAR) and the value of these in enabling identification of the available data. Waivers and exclusions to Crown copyright and Exemptions of Public Bodies for charging above the marginal costs are also complex to unravel for any particular dataset or information, especially where there is tradeable information within PSI organisations. In particular, those that were not directly engaged with OPSI IFTS tended not to be aware of it. The scheme is voluntary for non-Crown Trading Funds, but its objectives of accrediting Public Sector bodies in transparent and fair use of public sector information and offers clarity to those using the data services of these organisations. Wider awareness of IFTS (particularly knowing which organisations are members) across the community would be beneficial so that the obligations on members are understood. This will make dealings with IFTS members more informed

and ensure that data is shared as required. This aims to provide clarity to the user on the licensing and advice on charging for data, where there are exceptions to marginal cost pricing etc.

r)   The role, activities and work undertaken by the UK Location Programme and OPSI is not fully understood by those who work with public sector data. There is scope for more exposure in general. For example, being aware that complaints can be made to OPSI if it is thought that an organisation is not complying with IFTS, as well as providing support to make sure that your systems are compliant.

s)   Re-use across Government departments is not within the scope of the PSI regulations. It is generally considered not to be right that different parts of Government are competing with each other regarding data. The public are unlikely to accept Government departments charging each other for data.

t)   There is a lack of clarity regarding trading funds and their raw and derived products. Definitions of what is publicly owned but only certain bodies can use, or raw data which is open and both the public sector Trading Fund and for others to re-use should be made. It is either an open or closed market and at the moment it is viewed as being closed. This is considered to be fundamentally wrong and it probably stems from a lack of clarity or a lack of enforcement around the Trading Fund models.

u)   OS licence restrictions are limiting the re-use of OS derived data.

v)   As a Non-departmental Public Bodies (NDPB) the EA's pricing structure appears to be significantly different to other NDPBs.

w)   In some organisations there can be an internal issue in terms of getting the full engagement of senior management regarding the importance of metadata and making datasets interoperable, to ensure that this issue is addressed across the organisation.

8.   Recommendations

The recommendations are ranked from 1 to 5 with 1 being low priority and 5 being high. Ranking values are based upon the authors' opinion based on comments during interviews. Those ranked 3 to 1 are in Annex 7. Ranking has only been completed for the data policy audit.

8.1. Access policies

a)   Putting a pan-government marine data plan in place will lever the importance of marine data management. Rank = 5.

b)   Organisations to declare what data they hold is PSI (Public Task) on an asset list with INSPIRE compliant metadata. This might usefully be the extension of the Information Asset Register and co-ordination of information relevant to Freedom of Information Act (2000) Publication Scheme compliance and the Environment Information Regulations. Common standards should be used to present such IAR and related information so that interoperable searches can be generated. If all of an organisation's data is PSI then this should be clearly stated. Equally, other information that is produced (either in raw form or post processed) that is deemed to fall outside these publication or re-use obligations needs to the identified. Raw public data has no intellectual property rights. It is important to clarify who is adding value and what that value is. For example, if data is not PSI, such

as MCA Automatic Information System (AIS; ship track and other information) data, then a record is available of the reasoning so that every time this issue is raised the process of investigating it does not need to be repeated. Rank = 5.

c)   Investigation to be completed into the most efficient and cost effective method of improving access to and disseminating marine (and other data theme types). There must be many sector-specific organisations like MEDIN focussing on themed data, is this the most efficient way to work or is the data.gov.uk approach a better model? Coordination of similar activities is paramount. This is probably a UKLP or LWEC task. Rank = 5.

d)   There is a need to make clearer the correct contacts for obtaining data and for data specific records of licence terms where there are restrictions beyond a simple licence condition (i.e. third party rights). Despite metadata records of the data distributor, these may not reflect the current position of the contact unless metadata is updated. Also, if the data is passed to DACs with existing metadata and the DAC then becomes the point of contact, then the original contact details might be lost. In the larger disparate organisations this can be problematic and issues such as time taken to locate the right person, and senior staff not being involved in the data release process when they should have been. This could be done from a web page with a generic contact email. This would also ensure that internal procedures for approval of data release are channelled through the correct individuals. Rank = 5.

e)   The provision of no charge, freely available, quality assured national datasets e.g. bathymetry and wrecks, would be of great value to the public and private sector alike. These 'core geospatial data' have been highlighted by the APPSI as essential components to leverage use of thematic data. The key themes for core geospatial data may be similar to those promoted by the INSPIRE annexes, including oceanographic features, administrative boundaries etc. For example, in some cases, rather than purchasing a SeaZone licence, publically available bathymetry datasets serve their purpose but they are not the UK's official dataset. Also, some public datasets, such as wrecks, are only available from SeaZone which significantly limits usage. UK public bodies and companies should be using UK datasets. It is possible that with more raw data being made available that numerous bodies might process the same data for similar processes but end up with slightly different outputs. This should be coordinated to avoid such an outcome and duplication of efforts. For example, if the MMO requires a seasonal sea surface temperature map based on the last 10 years of BODC records who produces the temperature map? Who is going to maintain it? If multiple organisations require these data layers then collaborative funding could realise it and it then becomes publically available for no charge as opposed to selling that map repeatedly on the justification of the value add. Rank = 5.

f)   When data management personnel change the incoming staff can have different drivers. This results in inconsistency in application of policy and hence the services provided. Increased effort must be made to ensure that policy is clearly defined and is transparent for all involved. A common way of working would ease the flow of data. Rank = 4.

g)   The process for raising issues in obtaining data from public sector organisations should be made clear to the whole community, e.g. AIS data from the MCA. There is need for greater awareness of the OPSI role in supporting unlocking of PSI, or in supporting application of the regulations and the escalation process of the APPSI. Issues relating to the sensitivity of some of the

related data could be acknowledged by providing a scaled down but definitive version of these data, with justification as to what could not be provided. Rank = 4.

8.2.   Operational approaches

a)   Making existing datasets INSPIRE compliant will require significant resources and effort which is a big issue for some organisations. Support, guidance and tools for expediting this process would be valued. Rank = 5.

b)   Many data researchers would prefer as few portals as possible to find and obtain data and formats which are ready for re-use rather than an excel spreadsheet or a pdf for example. This is obviously complex as one user may want completely different products and formats to another. In the absence of such a portal a clearer explanation and interoperation of existing portal initiatives is needed. The coordination and potential consolidation of existing portal initiatives should be considered. This could potentially be undertaken by the UK Marine Science Co-ordination Committee and the UK Location Strategy group. Rank = 5.

c)   Make it a contractual requirement for contractors to post data to MEDIN DACs or similar. Rank = 5.

d)   To reduce repeat extracting of datasets from an organisation's database, hold standard extracted basic underlying datasets centrally either by the organisation for future dissemination or by a central government portal. This will make more data available to pick up 'off the shelf' without going to the counter and 'asking' for it. From large datasets individuals can then extract what they need. Rank = 4.

e)   It would be beneficial for data enquiry web pages to request standard information regarding the user and the intended use of the data. At present they can be basic, therefore, a better structure would help all involved; the requestor would be able to better explain their intended usage and the provider could make a more informed analysis of the query and deal with it appropriately. Recording who and for what purpose data is downloaded can feed back into service provision and improve interfacing, but the use of personal data needs to be notified to the downloader. Rank = 4.

8.3.   Best practice initiatives

a)   That a single common metadata standard, probably INSPIRE compliant, is used across the sector a far as is practicable. Changing metadata standards once adopted is extremely costly and time consuming. The adoption of MEDIN metadata is a central component of the data submission policy, but needs wider dissemination and support to encourage the wider marine data community to adopt this as a minimum requirement. Rank = 5.

b)   Work with the European Commission and its working groups setting metadata and data descriptions and to ensure that they are complementary to standards that members of the WMO already have and use, which would avoid a lot of cost and duplication. A potential solution would be the development of metadata translator software between common standards. Rank = 4.

8.4.   Pricing and licensing

a)   Pan-government terms to avoid ongoing unrealistic charges for licensing their data to other government organisations. Rank = 4.

b)   Marginal costs should be compared across marine public sector organisations by OPSI to see if they are comparable and consistent. The basis for calculating marginal costs should be transparent and equitable between organisations; the IFTS appears to offer an approach, through its audit methods, to encourage consistent approaches between organisations. The charging for data also may need to consider competition law where a commercial organisation may sell equivalent products. However this issue is only likely to occur for products generated outside public task and for derived products rather than raw data, which are still liable for access under Re-use of Public Sector Information (RPSI) regulations. Rank = 4.

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Annex 1 – The regulatory framework and its interpretation

(Annex A from the study Announcement of Opportunity)

The Regulatory Framework

The regulatory framework in which ALL these Public Sector Information (PSI) providers operate consists of the following:

EU *Environmental Information Regulations* (EIR) came into force in 2004 and encourages access to data and information relating to the environment but does not legislate for how the data supplied may be re-used.

The *Re-use of Public Sector Information Regulations* (ROPSI) came into force on 1 July 2005 in response to an EU Directive and are administered by the Office for Public Sector Information (OPSI). They are based on the principles of fairness, transparency, non-discrimination and consistency. The PSI Regulations extend to most parts of the public sector and has the following objectives:

- Identify what material is available for re-use

- Establish clear charging for information and the basis of the charges

- Ensure prompt turnaround of applications, enabling re-users to get their products to market quickly

- Ensure transparency and fairness of terms and conditions

- Establish a robust and fair complaints process.

The regulations allow public sector bodies to make their information available to be re-used by any applicant making a request for re-use in accordance with the regulations. However, it is not compulsory for public sector bodies to allow re-use. The regulations can be found at http://www.opsi.gov.uk/si/si2005/20051515.htm

The Advisory Panel on Public Sector Information (APPSI) role is:

- To advise Ministers on how to encourage and create opportunities in the information industry for greater re-use of public sector information;

- To advise the Director of the Office of Public Sector Information and Controller of Her Majesty's Stationery Office about changes and opportunities in the information industry, so that the licensing of Crown copyright and public sector information is aligned with current and emerging developments;

- To review and consider complaints under the Re-use of Public Sector Information Regulations 2005 and advise on the impact of the complaints procedures under those regulations.

The EU Infrastructure for Spatial Information in Europe (INSPIRE) Directive of 2007 facilitates the greater sharing of and access to spatial information based on national infrastructures across Government at the local, regional, national and EU level and will involve:

- Providing catalogues that allow users to identify what information is available [metadata]

- Ensuring that information from different sources can be integrated [this will require information to adhere to common standards]

- Providing online services such as discovery [find out what data exists], view [to see what the data looks like] and download [to obtain the data]

- Having licensing arrangements that allow information to be shared, accessed and used

- Monitoring mechanisms to demonstrate that the information is being made available.

The UK Location Programme (UKLP) focuses on joining up and integrating information from public sector sources within a consistent reference frame embracing specific core reference datasets. This will enable greater sharing and use across the public sector and beyond. It will underpin policy delivery and operational decision-making, drive out costs in data capture, drive re-use and service delivery across land, sea and air benefiting the citizen and community, public sector service providers, policy makers, information suppliers, the third sector and the private sector and thereby stimulate increased efficiency, supporting economic development and protecting and sustaining the UK environment through geographic knowledge.

Issues surrounding interpretation of regulations

Within the **EIR,** the guidance around access to data, charging and licensing as well as onward use is quite vague. For example, it is not compulsory for public sector bodies to allow re-use. As a result there is considerable variation across the public sector on both of these areas. At the extremes, this results in organisations that hold data collected with public money both charging for access to the data themselves and any products derived from them.

The **INSPIRE Directive** states that "public authorities supplying spatial data and services may licence them to, and / or require payment from the public authorities for such services…" and that "Where charges are made these shall be kept to a minimum to ensure necessary quality…together with a

reasonable rate of return on investment, whilst respecting the self financing requirements of public authorities supplying such datasets and services".

The **2008 Review of the PSI Regulations** concluded that whilst there is clear evidence of a greater knowledge of / and re-use of PSI, there is evidence that some providers are still restricting or refusing access to information. OPSI will therefore be undertaking a more proactive approach to PSI re-use through greater stewardship of PSI providers in the UK, at all levels of Government. Whilst the development of the Information Fair Trader Scheme [IFTS] has had significant benefits in unlocking PSI, there is a clear need for the PSI Regulations to be tightened.

The OPSI **Information Fair Trader Scheme (IFTS)** provides a published supervisory framework that supports the delivery of effective re-use strategies across PSI providers. Click-use is the term used to describe OPSI online licences for the re-use of Crown copyright and Public Sector Information.

The Environmental Research Funders Forum (ERFF) Environmental Data Initiative seeks to encourage the sharing and re-use of environmental data and to ensure all participants have a "transparent and well publicised data policy which balances open access with economic and societal pressures".

Raw versus value-added data: There is much confusion and lack of understanding as to what constitutes "raw" or "non special" public sector information (otherwise known as un-refined information) and what constitutes "value added" or "special" public sector information (otherwise known as refined information). This reflected in how information is made available and at what cost and how an organisation views its data in terms of the regulatory framework (as described above).

Derived products (either using the raw data or sources that are themselves derived from the raw data) are a particularly controversial area. Joint IPR and / or ownership is generally recognised as irrelevant as the important issue is the "rights" given to the licensee to use that data. A particular area of difficulty for licensees to understand is that of "copy derived" and "non copy derived" data.

Copy derived means that the derived data set includes a copy of the original information as a whole or any substantial part of it (as defined by Copyright legislation and case law) or that the derived data set can be reverse engineered to create a copy of the original information or any substantial part of it.

Non-copy derived means that the derived data set does not include a copy of the original information as a whole or any substantial part of it (as defined by Copyright legislation and case law)

or that the derived data set cannot be reverse engineered to create a copy of the original information.

Current Models: Within the public sector there is a mixed model, with a market economy emerging around the use of some data source with certain bodies charging varying fees to other sections of government and the commercial sector to access data they hold. It is argued that this approach ensures that data remains current and allows for improving the quality of the data available through revenue generated from this activity, as well as limiting the costs to the taxpayer. However, some opinion is that such an approach can lead to limited access and use, including by academia and public sector bodies, as well as opinion that the charged model is overall less efficient for either government data costs or indeed for the UK economy as a whole.

Organisations operating as Trading Funds are required by Treasury to generate a return on capital employed; (ROCE) whilst others are vote funded and operate with available funds authorised by Treasury at regular spending reviews. There is scope for conflict here as central Government is promoting open access to environmental data on one hand but on the other hand requiring others to make a commercial return.

Annex 2 – Statement of Work

(Section 4 from the study Announcement of Opportunity)

Pre amble

Fit for purpose data and information, which is the most current available, is essential to underpinning evidence based decision making and enabling Government to deliver on its policy objectives for the UK's marine environment and coastal zone. Ensuring the most productive use of existing and new data and information is a key aim of the UK Marine Monitoring Assessment Strategy (UKMMAS) and the emerging Marine Science Strategy.

Marine data and information exists in many forms and is acquired, managed, manipulated, and used by a wide range of public and private sector organisations. The manner by which these organisations are funded varies significantly as do the commercial and other interests that these organisations place in the use and re-use of data.

The Requirement

The purpose of this contract is, working within the current mixed funding model to generate an independent and balanced picture of the situation with regard to approaches within the Marine Sector to charging for access to data and licensing / charging for re-use. The intention is to identify any areas of the current legislation or guidance that are unclear and provide a balanced view of the issues to allow government to take / make the necessary judgements and steps to improve access to data overall.

The legislative framework has already been well described elsewhere (Hodgson et al., 2008[4]). The contractor will be expected to be familiar with this background. The review will focus instead on the guidance for the UK around the implementation of this legislation, particularly around whether it is clear or where further work is needed. The review will be focused particularly on the use of the data / information within the public sector but also consider private sector use. Consideration of the long term economics (particularly in relation to levels of revenue to government through tax) are outside of scope but the review should document the costs of the current situation as far as they can be determined.

As preparatory work the contractor should familiarise themselves with the work carried out by MEDIN on the costs and business models for the Data Archiving Function (this includes the

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[4] Legal Aspects of Marine Environmental Data, Report for the European Commission, Maritime Affairs, November 2008. (http://ec.europa.eu/maritimeaffairs/study_lamed_en.html)

accreditation reports from the MEDIN DACS (BGS, BODC, DASSH and UKHO, and the DAC funding review carried out by Geodata Institute).

1. <u>Guidance Review</u>

- Independently review the current guidance underpinning both charging and the re-use of public sector information and data with specific focus on marine data.

- Liaise with OPSI to clarify any points and ensure there is a clear understanding of work being undertaken and OPSI's view on how the current framework should be operating

- Liaise with ERFF and UKLP to ensure this work complements and feeds into activities planned by them.

- Liaise with members of APPSI, as necessary, to advise of the scope of the review

2. <u>Data Policy Audit</u> – Through a series of interviews undertake a detailed audit of a cross section of the MEDIN community including the four current DACs (BODC, DASSH, BGS and UKHO), a section of public sector data users / providers (including as a minimum DEFRA, JNCC, MMO, CEFAS, EA, Natural England, CCW, Marine Scotland, Northern Ireland Environment Agency) and a representative sample of the private sector (including ABPmer, BP, Shell, Fugro, BMT) to review:

(a) <u>Best Practice</u> - to ascertain the level of understanding within the marine data organisations in respect of best practice initiatives. In particular the following are considered important:

- Infrastructure for Spatial Information in Europe (INSPIRE)

- UK Location Strategy and delivery Programme (UKLP)

- MEDIN

- PSI; EIR; OPSI IFTS

(b) <u>Compliance</u>

- Report on the level of understanding, interpretation and response to obligations placed on marine data organisations by the EU Directives relating to Public Sector Information Re-use (PSIR); Environmental Information Regulations (EIR) and the UK OPSI Fair Trader Scheme (IFTS).

(c) Pricing and Licensing - the following elements need to be investigated and reported on:

- How the organisation responds to the conditions laid down in (b);

- The organisation's policy on licensing its information (scope and limitations); its pricing of such data to users and the onward framework it has in place for its re-use;

- The organisation's terms and conditions for the release of data; any restrictions placed upon its release and reasons for doing so. This should explicitly consider the impact of the policies of other data providers / holders on the desired accessibility of derived products;

- How current regulations being interpreted in practise at the organisational level and

- The markets in which marine data is being supplied by the individual organisation.

(c) The User Perspective

- The report must consider how the application of different licensing conditions then impacts on the user of such information, in terms of

    o The accession and internal use of data

    o The preparation and dissemination of derived products.

Annex 3 – Source material for the marine data policy guidance review

The following are useful primary source material for study in connection with Section 3 'Marine data policy guidance review'.

Access to Public Sector Information

Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information
Official Journal L 345, 31/12/2003 P. 0090 - 0096

Statutory Instrument 2005 No. 1515 - The Re-use of Public Sector Information Regulations 2005

- PSI Regulations: How To Comply - practical help on how to meet the obligations
- PSI Regulations – Guidance Notes
- Guide to the Regulations for Central Government (Word - 141 KB)
- Guide to the Regulations and Best Practice (Word 141 - KB)
- Procedures for investigating complaints arising under the Re-use of Public Sector Information Regulations 2005 (Word - 126 KB)
- Guidance for the Information Industry - benefits that the Regulations will bring (PDF - 88 KB)
- Guidance for the Public Sector - systems needed to comply with the Regulations(PDF - 90 KB)

Crown Copyright

- Standard Licences - practical advice on licences
- Copyright and Licensing Arrangements - practical advice on copyright notices
- New Creative Commons licence – see http://www.opsi.gov.uk/ and http://data.gov.uk/
- Publishing guidance

Environmental Information Regulation

Statutory Instrument 2004 No. 3391 - The Environmental Information Regulations 2004

Statutory Instrument 2004 No. 520 Environmental Information (Scotland) Regulations 2004

Statutory Instrument 2009 No. 3157 Environmental Protection Public Sector Information The INSPIRE Regulations 2009

Infrastructure for Spatial Information in Europe

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

of 14 March 2007 establishing an Infrastructure for Spatial Information in the European Community (INSPIRE)

Commission Regulation (EC) No 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as regards metadata Text with EEA relevance

[Freedom of Information](#)/[Data Protection](#)

[Freedom of Information Act 2000](#)

[Freedom of Information (Scotland) Act 2002](#)

[Data Protection Act 1998](#)

[Information Commissioner UK](#)

Policy documents & resources

[Public Sector Information](#)

[United Kingdom Report on the Re-use of Public Sector Information 2009 Cm 7672 OPSI July 2009)](#)

[Information Fair Trader Scheme](#)

[Information management](#)

[Information matters: building government's capability in managing knowledge and information](#) (Knowledge Council, November 2008)

[Managing Information Risk – A guide for Accounting Officers, Board members and Senior Information Risk Owners](#) (The National Archives October 2008)

[Ordnance Survey](#) and Location data

[Policy options for geographic information from Ordnance Survey Consultation](#) (December 2009 - Department for Communities and Local Government)

[Policy options for geographic information from Ordnance Survey: Consultation - Government Response](#)

[Announcement on wider access to data from Ordnance Survey and its role in INSPIRE](#)

[Place Matters: The Location Strategy for the United Kingdom](#) (Communities and Local Government/ Gi Geographic Information Panel) November 2008

Trading Funds

[Models of Public Sector Information Provision via Trading Funds](#) (Cambridge University, February 2008)

[Trading Fund assessment](#)
Smarter Government

[Putting the Frontline First: Smarter Government](#) Cm 7753 (HM Treasury, December 2009)

[Getting on with Government 2.0](#) (Report of the Government 2.0 Taskforce, Dec 2009 Australia)

Annex 4 – Interview questionnaire

Question number	Question
1	What is the level of understanding within the organisation regarding best practice initiatives including (as a minimum) INSPIRE, UKLP, MEDIN, EIR; OPSI IFTS.
2	What is the degree of compliance of the organisation in relation to obligations placed upon them from EU directives relating to the re-use of public sector information, EIR, and OPSI IFTS.
3	Please provide pricing and licensing information including:
3.1	How the organisation responds to the obligations above;
3.2	Licensing policy including price;
3.3	Terms and conditions of data release including restrictions on use;
3.4	How regulation's processes are being applied at the operational level;
3.5	Who you are supplying marine data to and market opportunities, volumes;
3.6	Any issues encountered by your organisation when trying to comply with guidance.

Annex 5 – Understanding of best practice within the sector

This annex contains supplementary information on organisation's understanding of best practice within the sector in relation to Section 4.4.

In terms of data management, it is in an organisation's interest to manage data well with compliant metadata and in an interoperable way. Data is an asset and facilitates future usage.

In some organisations there can be an internal issue in terms of getting the full engagement of senior management, regarding the importance of metadata and making datasets interoperable, to get the process addressed across an organisation.

BODC

BODC consider that quality metadata will not always be generated regardless of efforts to achieve this, especially from academics. The only way to do it successfully is to do it with people who are doing it all the time i.e. data centres. Survey organisations can inform some metadata but it needs the extra input of specialists. The concept of interoperability is not always in peoples' minds and the drivers on survey staff (if not contractually bound) or scientists are typically to publish papers or completing a job as cheaply as possible. The IOC has its own data policy regarding the free exchange of data and metadata. It is a fairly straightforward document which can be interpreted in different ways, but the bottom line is if you are collecting data as part of an IOC programme then that data and metadata will be made freely available.

BODC pointed out that NERC used to insist if researchers did not fulfil all of the conditions of a NERC grant that they would withhold funding with one condition being making these data freely available. This requirement has loosened up but is likely to be reinforced.

Cefas

Internally, the importance of metadata needs to be reinforced and for specific projects such as WaveNet, Smart Buoy and the coastal service temperature networks, the metadata could be improved.

There is no reason why government funded researchers need to finish their work before they publish their data; if you have a data set and there is a facility for placing it with someone else or with your organisation, then it should be placed there while the research continues. Even a metadata entry that states that these surveys are being completed informs people and then they can suggest collaborating. Science is about inherently good metadata and data management is about sharing. The typical perception is "it's my data and my career".

Cefas have a new record management system being rolled out with the objective of being able to find a full traceable path for all final data to the source. When it comes to licensing it will provide information on providence and ownership.

A Code Book exists for entering metadata which ensures that metadata captures all of the required data details.

Defra

They have re-negotiated their SPIRE contract with IBM and there is a raft of standards they have to be compliant against. A repository of standards and policies are now part of the contract. They have an assurance team who look at every application they develop to make sure it is compliant with the various policies and standards. Defra is the policy owner for the EIR, and the policy lead for INSPIRE. Defra will be accountable for INSPIRE because if the UK does not comply and they are taken to the European Court or fined then they are accountable. There is a monitoring and reporting part of the directive which means that Defra have to report back to the commission on an annual basis to say which datasets the UK is making available.

EA

Best practice includes their 'Approved for Access' (AfA) procedure which is a process where every dataset is assessed for access / re-use and tagged accordingly (e.g. secure, non-secure). This removes the need for various individuals to assess whether or not data can be released and ensures a consistent, centrally managed approach.

JNCC

The conservation agencies (Natural England, the Countryside Council for Wales and Scottish National Heritage) came together to draft guidance on the legislation across the agencies. This included implementation guidance and a framework to make the judgments, so that they become more consistent.

MBA (DASSH project)

Because MEDIN provides a combined approach of being compliant to INSPIRE and GEMINI2, it is considered that if you follow MEDIN guidelines then you comply with all of the requirements, and that brings in efficiencies with users having one website to visit for information. In essence the standards are the same but they differ in vocabularies and for certain fields which can be confusing.

DASSH / MBA are heavily involved with the National Biodiversity Network (NBN) who offer guidance and best practice, and publish material covering what to do with Local Record Centres (LRCs), access to biodiversity data, and licensing. The data that they are permitted to upload goes onto the NBN Gateway (a portal initiative) and the required metadata is more detailed than the MEDIN metadata standard. None the less, it is considered to be a great national resource which is used by many different people the closest thing to a one stop shop for species data.

NBN data is linked to the Ocean Biodiversity Information System (OBIS) and Global Biodiversity Information Forum (GBIF) which are global bodies, and to EuroBIF.

The Marine Environment Change Network (MECN) is a Defra funded project which aims to bring other long-term data series together.

DASHH effectively works to the public sector standard and to be a MEDIN DAC they have to meet the MEDIN criteria.

A lot of biological bodies work under different funding models (see Table 4). For example the Scottish Environment Protection Agency (SEPA) and NIEA / Agri-Food and Biosciences Institute (AFBI) have different data roles to the EA. Obtaining data from SEPA is straightforward as they request that MBA put it on the DASSH website. Even within the UK there are very different models for agencies doing the same role. AFBI agreed that there would be a fisheries database but because of the devolved responsibilities this has ended up with Cefas and Scottish Government data (which is Fisheries Research Services data) .They are all in different states in how they manage their data and because they do not have common policies they cannot share data that easily. Because they are very separate and must focus on their area of the UK, they do not think too much about interoperability which means you cannot obtain fisheries data at that level. These data are also sent to ICES which is a data collection requirement so it can be achieved. DASSH are considering a combined DAC or a virtual DAC for this purpose, so although it is an issue it is not an insurmountable one. The main issue was public bodies buying into it and this stopped it functioning properly. Obtaining agreement and interacting is difficult.

Marine Scotland

For research oriented projects Marine Scotland have adopted a joint code of practice which is a requirement for all new research projects since 2007. An element of that is to report on data holdings.

Marine Scotland have a number of different database systems; one for fisheries management data. Most of that strictly follows ICES data formats because that is the key delivery area for these kinds of data.

Met Office

Although INSPIRE talks about Geospatial information it is essentially about 2-dimensional information. They have been concerned for a long time that it does not really cater for the number of dimensions and amount of live and time-based information that they deal with and they have been very concerned to try to keep the obligations for producing data and making it easily accessible to a minimum in terms of cost.

They have also been very keen to point out to the European authorities and to the UK Location Strategy partners that whereas INSPIRE focuses on member states and assumes that things are all done in a different way by each member state, the Met Office are in fact part of the WMO. Meteorological organisations know no national or international boundaries and data is already being shared, and made available in standard formats between national meteorological organisations. So their other main concern has been to try to work with the European Commission and its working groups setting metadata and data descriptions and standards to be in line with standards that members of the WMO already have and use, otherwise this could entail a lot of cost and duplication to align systems with an alternative. They are frustrated that the INSPIRE working groups have gone with International Standards Organisation (ISO) standards throughout and have not accepted despite the wording of the directive that where there are international standards in place such as WMO then those should be accepted anyway. WMO is looking to develop consistent international standards to be compatible with European INSPIRE standards and regulations.

The Met Office tend to only use the data that they get in a standard WMO format because it goes automatically into the operational databases and then it is automatically available to the models for assimilation, so almost all of the data they get is data that is collected by the Met Services.

MMO

The MMO are implementing a Data Agreement and Strengthening Programme to identify and talk to suppliers of information and data and work with them to improve that data. They have a budget for this to the extent of providing third-party support or paying organisations to re-engineer their systems and data in a form that then leads to more efficient data management.

Defra, as part of the Chief Information Office Directorate (CIOD), have set up a number of shared services. One of them is Information Technology (IT) but the one pertinent to the MMO is data. There is also SPIRE and there are number of services that run from it; SPIRIT which is a web map viewer which is available to the Defra family; and the MAGIC website.

Public sector organisations must comply with the Marine Framework Strategy Directive (MSFD).

Legally Mandated Organisations (LMO) under INSPIRE must know what data they have and create and publish metadata for those datasets.

SNH

Scotland's Environment and Rural Services (SEARS) is a partnership between nine public bodies aiming to improve the experience among land managers by working together to provide an efficient and effective service.

The 'one door any door' principle provides easy access to information and advice from SEARS partners. There is a requirement to share data, resources, and to work together.

They aim to provide a consistent and responsive service, so SEARS partners will operate a common and transparent customer care standard and SEARS staff will have knowledge and experience beyond their normal organisational boundary.

The SEARS partners are:

- Animal Health
- Cairngorms National Park Authority
- Crofters Commission
- Deer Commission for Scotland
- Forestry Commission Scotland
- Loch Lomond and the Trossachs National Park Authority
- Scottish Environment Protection Agency (SEPA)
- Scottish Government Rural Payments and Inspections Directorate
- Scottish Natural Heritage

TNA (OPSI)

TNA (OPSI) is a member of The Location Council and has representatives on the UK Location Programme Board. They have been involved from the start of INSPIRE making sure that the re-use policies in the directive and Re-use Directive (European Directive on the Re-use of Public Sector

Information (PSI), EU Directive 2003/98/EC) mesh and when transposed into legislation in this country that this also meshed. They input in implementing the entire EIR Directive.

TNA (OPSI) deal with particular policy issues such as EIR, particularly how they inter react with re-use. They are not involved with data sharing or access. They support other government policy departments such as Defra, Communities and Local Government (CLG), Ministry of Justice (MoJ), but also support local government in the more practical aspects of implementing the policy. However, not a lot of their work is in regard to marine data.

OPSI IFTS was introduced in 2002. It came out of the 'Cross Cutting Review of the Knowledge Economy' report, HM Treasury (2000). It was introduced to regulate the information trading activities of the Crown and Government Trading funds such as OS, The Met Office, and UKHO. It was introduced because of concerns about the licensing and pricing activities of these organisations. Members and volunteer organisations work to the following 6 principles:

- Maximisation
- Fairness
- Transparency
- Simplicity
- Innovation
- Challenge

The organisations involved are listed on the OPSI website (soon to be updated to the TNA website). 1 member is strictly marine namely UKHO and parts of BGS, OS and EA also deal with marine data. If they are a Crown body and if they operate under a Delegation of Authority, which allows them to do their own licensing, such as UKHO and OS, then they have to join IFTS and they are regulated accordingly. There is a distinction between 'data sharing' between parts of the public sector and other parts of government and 're-use'. IFTS is principally about re-use.

The PSI Regulations (written by TNA / OPSI) refers to the term 'Public Task' where re-use and data sharing between organisations and between public sector bodies is acceptable as long as it is within both of those bodies' Public Task. As far as data sharing is concerned, there is nothing to stop sharing data in the PSI Regulations and the only thing that would stop data being shared would be if it was restricted in any way such as personal data or sensitive protected data. This aspect is covered in the 'Data Sharing Review Report', Thomas & Walport (2008).

If issues are found within the marine organisations who have signed up to IFTS they are recommended to be corrected. These are available on the OPSI website (published reports). This covers conformity and shows what OPSI think is working well.

Organisations can use OPSI as a sounding board, but their real role is to go in and make sure that that system is operating as it should and that it is not countering any of the principles of IFTS. They are willing to be involved as systems are being developed to make sure that it is conforming to the principles of IFTS, rather than introducing a very expensive system with problems.

IFTS verifications are carried out at 3-4 year intervals, depending on the nature of the organisation's activities.

BGS have a quarterly forum which OPSI sit on which brings together their data users and data providers.

People can only use and re-use data if they know what is available hence the need for asset lists. Public bodies are required to create these under the PSI Regulations to state what information can be re-used. Public sector organisations must identify what is available and what information assets they hold with supporting metadata. As well as being an INSPIRE requirement it is also a requirement under 'Data Handling Procedures in Government', Cabinet Office (2008). TNA will assess all other requirements to ensure that there is no duplication of asset lists on other organisations websites such as data.gov.uk. The OPSI Information Asset Register is a list of information resources held by the UK Government. The overall direction OPSI are travelling in in terms of licensing public sector information is to simplify the whole process. A deadline of Oct / Nov 2010 has been set to sort out the derived data issue, but with the new administration that may well change. New ministers may decide that this is immediately resolved, and TNA / OPSI might not need to worry about derived data or Public Task. Since April 2010 a lot of OS data has become available including the boundary data, so the issue might not still be relevant. There is an awful lot of data with no restrictions on re-use.

UKHO

Regarding metadata standards, UKHO flagged a potential problem with the data.gov portal. It is probably not an issue because the INSPIRE metadata is in XML but data.gov.uk want a richer syntax called 'Resource Description Framework – in – attributes' (RDFa) which is a standard from the World Wide Web consortium. Instead of identifying Uniform Resource Locators (URLs) to identify documents, RDFs identify individual items of data via this metadata standard which the government wants everybody to use.

Annex 6 – General marine data working notes and other issues

This annex contains notes and other issues relating to general marine data working which were raised during the data policy audit but were not in the scope of the study i.e. they were not directly related to policy and licensing issues. They are provided for general interest and are considered to be useful points and feedback.

Access policies

Private Companies

Private companies have no obligations in terms of providing data to public sector bodies but data sharing does occur. For example, ABPmer and the Associated British Ports (ABP) wider group share data with UKHO in return for discounted UKHO products. ABP are not obliged to submit bathymetric data, it is a mutual arrangement (bilateral agreement) driven by UKHO wanting the latest data. This is on a voluntary basis with a documented agreement. This is the only data type which is shared by ABP. UK Dredging (another subsidiary of the ABP Group) doesn't provide data to UKHO unless they are specifically asked to.

BP is not required to share their bathymetric data unless for PON 9 or The Offshore Petroleum Activities (Conservation of Habitats) regulations, but they are aware that larger site surveys might be of interest to others.

A large amount of privately collected marine environmental data is not widely shared, used or re-used and an example of this is benthic data which is a key data type which is collected by ABPmer. Sharing arrangements do not exist with other DACs such as DASSH. It is common for data to not get passed to a DAC as a matter of course and remain within the organisation. Some of these data are commercially sensitive, but if it is not then there is a case to argue for making it more widely available. The 'UK Benthos Database' could potential be used for this (see Section 4.3.2).

Private consultancies tend not to own data as the client is the data custodian. Sharing metadata and data with a DAC or other data repository is incumbent on a data manager to get metadata and data in order to release, which for a commercial organisation is an overhead that there is not presently a mechanism to fund. If data formats were standardised then data could be more easily shared which would reduce this overhead, however, this still requires effort to be made to be achieved. All government contracts now require that this is done and that the appropriate metadata is provided to a known standard and the data is provided to the appropriate DAC, or alternatively provide the metadata to the appropriate DAC.

Operational Issues

MBA

Regarding accessing academic data, this could be improved if a clear system was provided regarding how to lodge data. Presently there are a lot of academics who work in a relatively isolated manner and hold onto their data because they need to publish from it. Interestingly, there are good models in academia in the genetic community where sharing data has become the norm to the point where you can't publish a genetics paper until it has been proven to the journal that your data is stored in a

widely accessible archive. For biological studies, journals would publish a dataset and register it. There have been similar calls to register data, so that people registering these data get the benefit of that, for example, academics need to publish to get their work acknowledged for their funding and potential further funding. Ecological academics tend to hold on to data. It is arguably down to NERC to set requirements and lodge data in an archive centre.

The same can be said for EIA, where DASSH recognise differences between the terrestrial and the marine sector. Land EIA data goes to Local Record Centres (LRCs) but only because that is in the model. A marine EIA completed to fulfil legislation is often undertaken by a private contractor and DASSH can't access that data without the permission of the contractor. The EIA and Environmental Statement (ES) reports are available but not the data. For example, it is known that there are protected species mapped at various locations but these data are not available because the data is privately owned. The typical view of consultancies is that they have fulfilled their contractual obligations. The Crown Estate have also produced reports but not released data. If it was stated that all EIA data must be archived it would be one of the single biggest improvements, and possibly not that difficult to put in place. The Collaborative Offshore Wind Research into the Environment (COWRIE) portal goes some way to achieving this. Sometimes EIA reports aren't accessible as they are delivered as a hard copy and if staff move offices they are often disposed of. For example, DASSH did some work for the Aggregate Levy Sustainability Fund (ALSF) and they had to photocopy reports as there was only one hard copy of it. Increasing digitisation is improving this situation. Another issue is that documents held by consultancies might not still be held by them as they don't always have long life spans and they are only obliged to hold data for a certain amount of time. Obtaining the raw data is even more problematic. MEDIN partners have stated that they will put in a clause for any survey contracts stating that the data must come into a MEDIN archive centre, however, the problem with it is that it isn't clear enough in terms of how this is done. There has been discussion of a best practice document, a step by step guide on how to do it from collect to supply. The result would be easier and reduced DAC effort as it would seamlessly be transferred fulfilling wider use criteria. Standardisation reduces everyone's costs. For example, CCW and TCE developers using many contractors, these data would be provided in the same format eliminating the transformations between projections which is time consuming.

Historical datasets are really important but there are not funding streams available to convert them into a digital format. An impact of this is that developers are more likely to just use what data exists and not invest in developing historic datasets. Also, contractors usually work to quite short timescales and they do not have time to spend on data reworking. They need to be able to download data in an interoperable format and spend their time analysing it.

Databases require ongoing management and this is particularly true for species databases due to historic taxonomic issues. Over time, species' names change i.e. what was thought to be a certain species was not and people also call the same species different names. MBA specialise in managing this type of issue. This point emphasises the fact that data archives should be maintained by competent organisations.

Met Office

The Met Office have an issue with direct.gov.uk because of the premise that the public want to go to one site to be able to access any type of government data, but statistics show that particularly at

times of severe weather their site gets more hits than direct.gov. When there is heavy snowfall or when airspace is closed because of volcanic ash for example, their website can withstand demand (millions of hits) and they have advised direct.gov that if they tried to take all of the Met Office data as well and act as a portal then the site would fall down. They would prefer that the direct.gov portal pointed back to their website.

Understanding of best practice within the sector

There can often not be continuity regarding data policy within an organisation or across organisations. It has been siloed to the point that that people can go and collect data one day with one organisation and another organisation has collected data very shortly afterwards. There are initiatives to try and resolve this such as the Civil Hydrography Programme survey coordination initiative.

It was commented that the people who will gain the most from this study are the public bodies themselves because they either hold or collect data which is similar for their different directive obligations. There does not seem to be much linking between them, for example, collecting water samples for certain analysis and taking additional readings at the same time rather than conducting another survey.

ABPmer

ABPmer looked at sending benthic data to National Biodiversity Network (NBN) but the spreadsheet that data was required to be converted into was considered to be so onerous that it would have taken up a large amount of time to complete. As a commercial organisation this was not feasible.

Regarding locating information and guidance on regulations, it would be very useful to know what they key requirements are to inform clients as to which documents they should be referring to. MEDIN would be a logical provider of such information. This is also relevant to people within public bodies to understand how such information is disseminated for operational application. It is important to pitch this at the right level (manager and technical level). When drafting technical specifications of work, templates with standard text would ensure that data is collected and managed appropriately, interoperability is improved and general understanding increased.

MBA (DASSH project)

DASSH activities cover the interface of the subtidal and terrestrial and there still is not a good correlation between OS maps and hydrographic charts. This is a big issue for their work in the intertidal zone. Efforts to try and match these have been going on for long time. Mapping the intertidal zone is a priority for designations of Special Area of Conservation (SAC) and conservation zones. This is difficult without sensible maps especially if the designations covers sub, intertidal and terrestrial. They only have a general understanding of what UKLP are doing about combining the different zonal types of data.

One of the issues with the NBN portal is that the display of the data is terrestrially based so there are no marine maps, which results in marine data appearing as a blue square which is not ideal. They also work in OSGB which is not particularly useful.

MBA

Public bodies should have a clear policy in place to ensure that metadata is recorded for every public body project with a metadata entry on the national system. 10 years down the line no one could know what has happened in a regional office. People move on, upwards and sideways. Until there is a proper audit trail we will not be fully aware of what has been done. If it becomes habit and part of requirements it will become the norm. This could have all been sorted out a long time ago if at the top of Government they said it will be this way from now on. Data and metadata would have ended up in these places. The will is required to force it through. Defra just want to get to the data. They don't want people saying that we can't give you a definitive answer because we haven't got the data. There are therefore caveats in the advice that they are being given. What Defra really wants is answers.

MMO

The MMO would like to see some form of quality assurance certificate associated with data which states what quality assurance has been completed on the data stating that suppliers have complied with all of the relevant and appropriate quality assurance and quality controls.

Pricing and licensing of data

Cefas

They would like guidance stating that as an executive agency what they could charge for certain datasets, what is free (EIR), on request (FOI) and for re-use (OPSI).

Private companies

Private consultancies and companies have template agreements for data release. These are invariably drafted internally and approved by the legal departments. A standard set of these would be useful as it would ensure that the correct clauses were included and that all parties involved in data exchanging of any nature would be familiar with the contents and not require repetitive and expensive analysis and approval.

Recommendations

Access policies

c)   All government contracts now require that appropriate metadata is generated to a known standard and the data is provided to the appropriate DAC, or alternatively provide the metadata to the appropriate DAC. It should be ensured that this requirement is included in all government contracts, and where possible do this for private contracts.

d)   Organisations who are required to make more datasets accessible via the web and who have limited resources to do so themselves should use portals like MEDIN / data.gov.uk to increase the dissemination of marine data and remove the need for many individual organisation portals. An incentive for academics to share their data could be the requirement to cite data as is done for final papers and thesis themselves. This would raise the profile of the research and the specific researcher(s) which can be used as leverage for further or increased funding claims. Data from academia including NERC funded research which is funded publically is not always readily available

for sharing and re-use despite grant conditions stating that data must be uploaded to a DAC. The success of this approach should be investigated and measures taken to improve it if necessary.

Operational approaches

a)   EIA data should be put into the public domain in addition to the EIA report. Consultation is required on what might need to be added to the PON 9 requirements to define something that is already produced and agree what is sensible to pass on.

b)   Clarification on the appropriate DACs and data sources for organisations that hold multi-disciplinary datasets. A clear distinction policy is required to avoid duplication and provide quality assurance.

c)   Public bodies either hold or collect data which is similar, because they have to for their different directive obligations. Improving the linking between them, for example, collecting water samples for certain analysis and taking additional readings at the same time rather than conducting another survey. More centralised coordination of activities as per the Civil Hydrography Programme (CHP) would be beneficial and could result in cost savings. The marine industry is good at stating what has been completed but there is limited information regarding planned surveys and future intentions. Metadata and shapefiles for future survey plans could be provided to the coordinating body? Investigations are being conducted by Defra (a coordination report has been commissioned) into whether a new database is required for such planning, but seems likely that existing databases could modified to achieve this. MEDIN or another organisation could take ownership of this task.

d)   The input of historical data into a DAC is very time consuming due to the state of the data. For example, data can be provided in a spreadsheet without the correct data in it so the associated report must be analysed. This is why metadata and standards are so important. It is recommended that this situation is improved by an industry wide effort to standardise data and metadata and to change the culture of peoples attitudes towards data, and arguably to develop this attitude at the school, college and university level.

e)   It can take a long time (months) to go back through metadata to make it INSPIRE compliant. It is recommended that tools to speed up this translation process are made developed and made available.

f)   Old datasets require significant reworking to get them into INSPIRE compliant formats and it is suggested that metadata is posted on these data and it is stated that the data needs thorough processing to become available. Requests for these data could be collected and organisations are put in touch with each other to get it digitised if one party cannot afford to.

g)   For non-INSPIRE compliant, high quality and interest datasets which are nationally significant datasets, it is recommend that the government funds the updating of these data into the required formats.

h)   Regarding accessing academic data this could be improved if a clear system is provided regarding how to lodge data records. It is recommended that academia is educated on standards and process to achieve this. Advancements in IT should make this easier to facilitate.

i)   MEDIN partners have stated that they will put in a clause for any survey contracts stating that the data must come into a MEDIN data archive centre, however, the problem with it is that it is not clear enough in terms of this is how you do it. There has been discussion of a best practice document, including a step by step guide on how to do it from data collection to supply. Recommend that this is finalised.

j)   A support service to be provided to public sector organisations to monitor advise on INSPIRE compliance e.g. recording the datasets affected; present compliance level; guidance on what else needs to be done; progress validation.

Best practice initiatives

a)   We are presently in a state of transition regarding metadata. There is feedback from UK and EU level but there is not a bulletin published on metadata developments. This would be useful. For the marine community an up to date summary of the status of metadata on the MEDIN website for example would be very useful.

b)   A lot of public sector research is contracted out to research institutes and other organisations (consultancies). It is important that agencies include that information in their contracts.

c)   Feedback to INSPIRE that their website could be more user friendly for operational use by managers and technicians and that a lot of the time it doesn't work very well with connection issues sometimes being experienced. Note that the MEDIN website provides user friendly translations of INSPIRE implementation guidelines.

d)   To implement a community wide Data Agreement and Strengthening Programme to identify and talk to suppliers of information and data and working with them to improve that data.

e)   A view is that the only way that quality metadata will be generated successfully for people who generate it all the time i.e. data centres to create it.

f)   General request for MEDIN guidance to be simpler and clearer to understand. Guidance is often found to be full of acronyms. It is felt that the technical staff working on MEDIN are possibly not ideally suited to conveying the message to the sector. Clarification on what each data portal is for   would be welcomed. Avoiding double or multiple data submissions to these portals would be preferred.

g)   Private companies do not presently share metadata and data with a DAC or other data repository as they are not obliged to and there is an overhead that there is not presently a mechanism to fund. If data management procedures and hence data formats were standardised then data could be more readily shared which would reduce this overhead. This could potentially be achieved by incorporating it into ISO quality systems such as the ISO 9001:2008 quality management system.

h)   Private consultancies have looked at sending benthic data to NBN but the spreadsheet that data has to be converted into was considered to be so onerous that it would have taken up a large amount of time to complete. This is not feasible for commercial organisations. 'Linked data' could provide a solution to this, therefore, guidance on achieving this and the format etc. is required. Data

could then be collected and processed data in the correct format to begin with, negating the need for transforming into other formats.

i)   Public bodies should have a clear policy in place to ensure that metadata is recorded for every public body project with a metadata entry on the national system. 10 years down the line no one could know what has happened in a regional office. Move away from reliance on individuals and explore options for changes in government best practice.

j)   Issues relating to creating a UK fisheries database have arisen due to the devolved responsibilities. Cefas, AFBI and Scottish Government data are all in different states regarding data management, and because they do not have common policies they can't share data that easily. Because they are separate and complete tasks for their area of the UK they do not focus on interoperability. Recommend standardisation of policies and data.

k)   Making it a requirement to fill in metadata at all levels as part of the projects. Once it is known where data is and it is in the public domain, getting hold of it is much easier. The MEDIN portal is helping with this. We could quite soon be in a position where we have a really good idea of what data is out there. An initiative to help find out what marine environmental data exists which is not necessarily INSPIRE compliant could take the form of a 'data amnesty'. The first stage is generating metadata, quality assuring it comes later. The data clauses in contracts should be very explicit.

l)   Some organisations experience an internal issue in terms of getting the full engagement of senior management, regarding the importance of metadata and making datasets interoperable, to get the process addressed across an organisation. Recommend producing a document for such grades to communicate the importance which includes indicative costs to the organisation to become INSPIRE compliant.

m)   Before drafting MEDIN standards check that guidance has not already been created. For example, MEDIN guidance has been created when the MESH project had already created it. This can also lead to conflicting guidance if two slightly different versions exist. A list of guidance would allow for checking this.

n)   MEDIN perhaps has an audit role to set up a quality assurance certification scheme that it could then audit.

o)   When raw bathymetric data is sent to the UKHO by the MCA it is binned and processed for the single purpose of use in charts. UKHO typically take the shoalest depth when binning, therefore, when these data are used for modelling (for example, working out the ruggedness of the seabed) or habitat mapping it cannot easily be used. Before it is stated that these data can be used for other purposes the processes which these data have been subjected to must be understood. Data biased or aliased towards a certain purpose can makes it less useful for another purpose. The raw dataset needs to be generated, clearly stated as such, QA'd and signed off and then made available for sharing and re-use.

p)   Regarding standardisation of the design of data portal websites or areas of websites; if agreement could be made on good way of making data accessible (some websites are better than others at achieving this) then this knowledge could be shared? Websites can be built for the organisation and the providers of data rather than the users of data.

Matters for discussion

The following matters were mooted during the data audit as proposals and recommendations for future developments in marine environmental data dissemination:

a)   There are two options for UK marine data management: 1. That key competent data providers maintain the DACs and the associated datasets because such organisations have relevant knowledge and expertise of their subject area. Having a single organisation for all data with multiple organisations passing data to them e.g. data.gov.uk would not work. 2. An alternative is servers from competent bodies being linked through the internet e.g. Linked Data / Semantic Web.

b)   Defra would be very keen to know whether what has happened to OS is going to have any implications for UKHO and therefore marine data. If OS have to make their data available free for use and re-use does that mean that UKHO will have to? It is perceived that a big proportion of what Defra pay to SeaZone is actually royalties that go back to UKHO. How the work being done by OS will impact on trading funds would be of great interest to the marine community.

c)   One interviewee stated that DACs should always be government organisations as it is core government data. Control is required to make sure that they are working to government standards.

Annex 7 – Recommendations ranked 3 to 1

The recommendations were ranked from 1 to 5 with 1 being low priority and 5 being high. Those ranked 5 to 4 can be found in Section 8, those from 3 to 1 are below.

8.   Recommendations

8.1.   Access policies

a)   That limitations on academic information being used for commercial activities are relaxed for public bodies by improving the understanding of what these data will be used for and the public benefits of doing so. Rank = 3.

b)   For PSI there ought to be a standard set of procedures across all of government. It is recognised that OPSI and the Cabinet Office have proposed this and Trading Funds have been trying to comply with it. Such procedures should recognise the commercial aspects of Trading Funds. Rank =3.

c)   Guidance to clarify the overlap in compliance with regulations i.e. ROPSI, EIR, INSPIRE to state that if you are compliant with one are you compliant with others. A matrix would be a useful way of presenting these relationships. Rank = 3.

d)   To add marine spatial planning as an objective for UKHO's corporate plan the question should be raised with Secretary of State for Defence. The Secretary of State for the Environment should potentially become involved to advocate this change. Rank = 3.

e)   Provide a classification of the business model status of the organisations for the data / information worker for acquiring data including the associated obligations under which they are required to operate. Centrally held by TNA (OPSI) and listed or linked from MEDIN and data.gov.uk websites. Rank = 2.

8.2.   Operational approaches

a)   Small or poorly funded organisations would be benefit from a centralised data portal system that they could lean on to reduce the data queries that they deal with by pointing to the portal. Rank = 2.

8.3.   Best practice initiatives

a)   A standardised data policy or small set of policies to allow for differences in the nature of the organisations for all public bodies would benefit all organisations and those trying to obtain data. Such a document would be well understood with less effort spent on scrutinising multiple policies. This is planned within UKLP. Rank = 3.

It is important to pitch information and guidance on regulations at the right level (manager and technical level). It would be very useful to know what the key requirements are to educate those involved in marine data as to which documents they should be referring to. For example, for data

security the Suffolk Matrix was produced which defines the security level of data compliancy for different regulations (see cabinet office website). A list of drivers behind the obligations would be useful for management discussions. Rank = 3.

8.4.   Pricing and licensing

a)   Review the way that OPSI use the scheme to regulate not only PSI but also Crown copyright. Rank = 3.

b)   If a public body cannot state that data it is not going to be used for commercial purpose then bodies involved should agree a way forward which might require OPSI involvement. Rank = 3.

c)   Public bodies and most private consultancies and companies have template licences which are invariably drafted internally and approved by the legal departments. A standard set of these would be very useful as it would ensure that the correct clauses were included and that all parties involved in data exchanging would be familiar with the contents and not require repetitive and expensive analysis and approval. It could be based on the data.gov.uk Click-use licence with a single licence and minor deviations from it as required. The faster the data.gov licensing terms converge with the OPSI Click-use licensing terms, the more clarity organisations would have to release data. Rank = 3.

d)   If a complicated licensing process has been resolved between a Trading Fund and research body / institute / university then the process and arrangement i.e. precedent, should be available to save others from repeating the enquiry process. Rank = 2.

Annex 8 – TNA (OPSI) Overview

TNA (OPSI) provide templates and information for licensing PSI:

- Standard licences
- Copyright and licensing arrangements
- Licensing income allocation
- Licensing Forum

TNA / OPSI have dual roles regarding licensing. Either the re-use team will licence it on behalf of other Crown bodies since this is now opened up to any public sector body, or organisations are given a Delegation of Authority in which case they are regulated by the IFTS team and organisations develop their own pricing and licensing models. There is a move away from chargeable licensing which started on 1st April 2010 when their exceptions policy came in.

Most of the information licensed from TNA is undertaken by means of the 'Click-use' licence which is still a transactional licence for the time being, and it works by having two versions of the Click-use licence where;

- the information is just being re-used free of charge to registered users who have access to a whole range of core government information absolutely free of charge.

- Value-added version; the government's impression of charging can be divided into 3 categories:

  o Core government information; produced by public offices and TNA could be re-used free of charge, by the main Click-use licence.

  o Information produced by Trading Funds which could be charged for but subject to them being regulated by IFTS.

  o Recognition that some government departments who are not Trading Funds could develop value added material, which was not necessarily part of their public task, which they could charge for.

This approach is tied into the Wider Markets Initiative (WMI) which was licensed by OPSI. For example, for a Home Office product what has changed is that they do not do value added licensing anymore, the departments can put together a case for charging and they do the licensing themselves subject to IFTS. Trading Funds are exempt from this as they are ring-fenced under the guidance hence they can charge.

Those organisations that operate under a Delegation of the Authority from OPSI develop their own licences and these are regulated to meet the IFTS principles. If a re-user or a potential customer is not happy with those terms and conditions there may be some negotiation. This is absolutely discouraged because OPSI want to make sure that those licences are fairly applied across the piece. There has to be some flexibility within that because users may have different requirements, but they push their members to have standard licence terms that are published on their website so that

everybody knows upfront what they can and cannot do with that data. OPSI monitor this and make sure that there is not too much negotiation and change between different re-users. OPSI also have a role that if somebody is not content with the licence terms and conditions there is a complaints process. The first stage is for them to complain to the body, such as BGS or UKHO, stating that these terms are unfair or "we want to use these data you are not making it available", or "I don't understand this it is unclear". If they are still not satisfied with the response then they can complain to the OPSI IFTS team who will investigate.

TNA / OPSI have worked with The Cabinet Office to develop standard, non-transactional licence terms for data.gov.uk. Depending on the policy of the new administration, they suspect that that is going to be the likely way forward, in other words there will be a set of licence terms and conditions held on data.gov.uk. Departments will hold their own datasets on their websites and link to the central terms and conditions. This is the arrangement that they are outlining at the moment. The approach of organisations with Delegated Authority creating licences following central procedures is not expected to continue. The tension here is funding as UKHO and BGS are charging for their data.

It is worth noting that the Conservative Party's technology manifesto stated that they were looking in terms of having legislation about a 'right to data'. This implies, and it was just a sentence in their manifesto, that departments, unless they have got issues around personal data, will be obliged to allow access and re-use of it. This could potentially change the need for complicated licences from UKHO for example. The PM released a letter on 31 May 2010 which outlined data policy which refers to the 'right to data' which is a promising signal.

Recent initiatives under the previous administration, such as Making Public Data Public and Smarter Government, have led to much of OS's data becoming available for free that was charged for before with quite heavy restrictions on what you could and could not do with the data. That has been the thrust over the last few years and it is expected to carry on. This is speculation on TNA's behalf following general trends.