

# ICES DIG REPORT 2017

ICES SCIENCE COMMITTEE

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## Report of the Data and Information Group (DIG)

22–24 May 2017

ICES Headquarters, Denmark



**ICES**

International Council for  
the Exploration of the Sea

**CIEM**

Conseil International pour  
l'Exploration de la Mer

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## Executive Summary

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The Data and Information Group (DIG) met in Copenhagen 22–24 May 2017. 13 participants represented 12 institutes in 8 different countries. A further 10 members of staff from the ICES Data Centre attended all or parts of the meeting as well.

DIG focussed on 3 main topics this year: (i) Promoting awareness of ICES Data and Data Centre solutions, (ii) Receiving an update from, and providing advice to the ICES Data Centre, and (iii) Adopting a Data governance Framework for improved oversight of ICES Data products' strengths and weaknesses.

To promote awareness of data related activities within the ICES community, DIG will be submitting a proposal for a session at the 2018 ASC. The proposal will be of an alternative format that will open up participation, and make the topic of data more approachable to a wider audience.

Further, DIG is also submitting a resolution to host a workshop in May 2018. This workshop will follow the format of a hackathon, focussing on ICES data products, and developing showcases for how to use ICES data and services to create new data visualisations, potentially cutting across data collections.

DIG received an update on the activities and development projects that the data centre is involved in, and the new products in the pipeline. These presentations stimulated a wide range of discussions and advice on data management issues between DIG and the Data Centre. This year, two specific recommendations were made to the Data Centre on encouraging the use of push web services, and the development of a fixed version data production for seabed litter data. In addition, a text data mining tool developed by the Data Centre was seen as a potential support to DIG activities and progress in adopting a data governance framework.

This was the first year in which DIG was working towards a data governance framework and reporting model after receiving positive feedback from SCICOM. This year, activities focussed on evaluating the format, and creating oversight of how the framework will assist in achieving greater integration across the ICES Data portfolio.

Specifically, DIG carried out an exercise in locating data across multiple systems to answer broad/integrated questions, and located a number of strengths and weaknesses around how data systems are presented. Generally speaking, individual systems are highly competent at providing expert level insight to data, but less good at facilitating more generalist access, or to locate data across multiple systems.

DIG also did an initial trial of using a data governance framework to evaluate performance in specific data collections, and compared this approach to other metrics-based approaches such as accreditation and quality management frameworks.

Overall DIG and members of staff from the ICES Data Centre are now positive and confident that a governance framework and evaluation format can be adopted for ICES data products. This will help provide more structured reporting to SCICOM and ACOM when relevant.

The exercise did however also identify that formation of governance groups is necessary to deal with the largest data collections. Specifically, DIG is setting up a governance group for the DATRAS portal to implement this reporting framework.

Following inter-sessional activity to finalise details, it is envisaged that the evaluation format will be ready at the next DIG meeting and the first evaluations will follow thereafter.

## 1 Opening of the meeting

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The Data and Information Group (DIG) met in Copenhagen 22–24 May 2017. 13 participants represented 12 institutes in 8 different countries. A further 10 members of staff from the ICES Data Centre attended all or parts of the meeting as well (See List of participants).

DIG is an operational group with the mission “To provide ICES with advice on all aspects of data management including data policy, data strategy, data quality, technical issues, and user-oriented guidance”.

## 2 Adoption of the agenda

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DIG directly supports ICES Strategic goals 4 & 5 for “Underpinning Science and Advance through data and information services”:

- Goal 4: Promote the advancement of data and information services for science and advice needs
- Goal 5: Catalyse best practises in marine data management, and promote the ICES data nodes as a global resource.

The terms of reference for DIG 2017 were:

- a) Review priorities on the Data Centre action list
- b) Provide guidance and feedback to the ICES Data Centre
- c) Advise on other data regulations and their impact on ICES Data Strategy, ICES Data Policy
- d) Propose ad-hoc groups (governance, workshops, training, etc.) related to specific topics, and/or datasets, to facilitate improvements related to data issues to SCICOM, ACOM, SCICOM SSGs and/or EGs, and review the outcome of those ad-hoc groups
- e) Promote new technologies and data management infrastructure development (e.g. IODE/JCOMM/ICES Clearing house, data citation, training)

The full agenda is included in Annex 2, Agenda.

DIG will report to SCICOM during the ASC 2017 meeting and the SCICOM Mid-term meeting in March 2018. DIG does not report directly to ACOM, and although ACOM members have previously attended DIG Meetings, there was no representation this year.

The main topics covered during DIG 2017 where:

- Promoting awareness of ICES Data collections and tools (Strategic goals)
- Update from ICES Data Centre (ToR a +b)
- Adopting a data governance approach (ToR d +e)

ToR c) was discussed as well, but as the ICES Data Policy is not due for review until 2019, this is primarily a monitoring and observation activity for DIG in the interim.

## 2.1 Follow-up on recommendations and actions

### 2.1.1 Recommendations

No recommendations to DIG applied. DIG has no recommendations to other groups. Generally speaking, it is not surprising that DIG does not receive many recommendations since the primary interface for data management in ICES is of course the data centre. Instead, DIG focusses its work on the advisory capacity for both all working groups and committees across science and advice and the data centre.

### 2.1.2 Actions from 2016 DIG meeting

Nr	Action	Adressed to	Action before	Status
	Review and update water sample data guideline according to HELCOM suggestions	<i>Else Juul Green</i>	1 September 2016	Complete
	Compare the (more recently written) MEDIN Guidelines with the ICES Data Guidelines	<i>Lesly Rickards</i>	1 September 2016	Complete, see section 3.1
	ICES Data Type guidelines with minor or no changes: add contact address, add date stamp, and publish	<i>Taco de Bruin, Lesley Rickards, Hjalte Parner, Else Juul Green</i>	1 November 2016	Complete, see section 3.1
4	ICES Data Type Guidelines needing review/serious update: select reviewers and facilitate reviewing process	<i>Taco de Bruin, Lesley Rickards, Hjalte Parner, Else Juul Green</i>	1 February 2017	Complete, see section 3.1
5	Follow-up on Guideline policy document	<i>Taco de Bruin, Lesley Rickards</i>	1 January 2017	Complete, see section 3.1
6	Collaborate with WGZE on ASC 2017 session proposal	<i>Ingeborg de Boois, Lena Szymanek, Carlos Pinto, Peter H. Wiebe</i>	1 August 2016	Complete, proposal accepted
7	Screen ASC sessions on options for DIG/Data Centre contributions	2017 ASC: <i>David Currie, Ingeborg de Boois, Carlos</i>	1 February 2017	Complete, one contribution by ICES Data Centre planned
8	Further develop idea for an interactive poster session at ASC (2017 or 2018). Discuss: 'interactivity', potential topics, possibility for a sole poster session, check potential problems with internet connections needed.	<i>Ingeborg de Boois, Malin Werner, Jens Rasmussen, Neil Holdsworth</i>	1 August 2016 (2017 ASC), 1 April 2017 (ASC 2018)	Complete, see section 3.2



9	Create an inventory of hackathons in the marine scientific field	David Currie, Wim Allegaert	1 September 2016	Complete; see section 3.3
10	Arrange DIG presence at ICES WGCHAIRS	Ingeborg de Boois	1 September 2016	Complete, Ingeborg attended WGCHAIRS in January 2017
11	Address the framework proposal as the standard for DIG work in future to SCICOM (SCICOM@ASC)	Ingeborg de Boois, Neil Holdsworth, Jens Rasmussen	15 August 2016	Complete, no comments by SCICOM
12	Propose new DIG ToR for 2017 to SCICOM	Ingeborg de Boois	15 August 2016	Done, agreed upon by SCICOM. Jens will be appointed as DIG chair from 1 May 2017 for three years

## 2.2 Feedback from and reporting to other groups

### 2.2.1 ICES groups

#### 2.2.1.1 Reports to SCICOM

In September 2016, DIG reported to SCICOM during the ASC. In March 2017, DIG reported to SCICOM during the midterm meeting. The reports can be found at <http://www.ices.dk/community/groups/Pages/SCICOM.aspx>

#### 2.2.1.2 WGSFD

A new [Data Call](#) to member countries for VMS and log book data for fishing activities in the North East Atlantic and Baltic Sea was formulated by the ICES Secretariat with support from the ICES Data Centre and the WGSFD Chairs and sent out early 2017. With this Call, the conditions were slightly changed so that the submitted, sensitive data sets will not be deleted after completion of ICES Advice, but can be securely stored by the ICES Data Centre. This is to address the development of ICES advice addressing additional requests (by EC, NEAFC, OSPAR and HELCOM) to describe fisheries activities and to evaluate the spatial and temporal effects of fishing. Before using the data for such additional advice, permission from all national correspondents will be asked for by the Secretariat. Storing this sensitive data set should not cause major new issues regarding data access and security, because the ICES Data Centre is already storing other similar sensitive data sets (e.g., RDB, InterCatch).

With support from the ICES Data Centre, the quality check routines and reports on the submitted national data were developed further in 2017. Thus, the quality of the submitted data and the advice have been increased.

### 2.2.1.3 WGFASST request on omnisonar format

The omnisonar data format has been reviewed by Jens Rasmussen. This was not a detailed technical evaluation of the HDF5 standard implementation, but rather a comparison of linkage and alignment with the WGFASST metadata standard which was previously reviewed by DIG.

## 2.2.2 Other organisations/projects

### 2.2.2.1 EMODNET meetings

[EMODNET chemistry](#) mainly focusses on making data available for eutrophication and contaminants. In May 2017 the meeting also covered the addition of marine litter data to EMODNET chemistry; beach litter, litter from trawl surveys, microplastics. For litter from trawl surveys the DATRAS derived information will be used. DIG discussed if the data delivery should follow a 'pull' or 'push' scenario. To keep the responsibility of the data at ICES, DIG advises that ICES Data Centre provides a fixed set (date stamp, doi) to EMODNET, moreover because the goal is not to provide real-time projection of data but to provide a product that may be updated once in the project's life-cycle.

The main challenge for [EMODNET biology](#) is to make sure that products are being picked up by the audience.

[EMODNET physics](#) is working towards real-time availability of physical data. Recently, ice coverage and underwater noise have been added to the data collection of this project.

The [EMODNET stakeholder conference](#) discussed i.a. access to VMS across the regions (SCICOM Chair in panel), eutrophication in the OSPAR area;

IODE meeting: [report](#)

[EFARO](#) (directors of European Fisheries Institutes) met 16-18 May 2017 and organised a public seminar on "Smart data collection for the future monitoring of the sea". A written report will become available at [www.efaro.eu](http://www.efaro.eu).

## 2.3 Data Regulations and impact on Data Strategy/Policy (ToR C)

- General Data Protection Regulation ([GDPR](#), Regulation (EU) 2016/679 and repealing Directive 95/46/EC): this regulation will change from 2018 onwards so there are no experiences yet; currently ICES only implemented this regulation with respect to HR data. A DIG subgroup will keep track of the potential impact on the ICES Data Policy. It was also pointed out that as ICES is an international organisation it is not legally bound by EU laws although it must consider their impact on data submitters who are EU members.
- [INSPIRE](#): the last meeting related to the implementation of the INSPIRE regulation took place about a year ago. A marine pilot was started and reported on but it was not accepted by the European Commission. EMODNET has currently the lead for metadata. The related group TGDATA meets 7-8 June at EEA.
- [DCMAP](#): the framework for data collection on fisheries changed in 2017. The impact on the ICES Policy cannot be foreseen. It is to be expected that more data will be uploaded by EU Member States (e.g. acoustic trawl survey data, eggs and larvae) due to the obligation to make data publicly available.

### 3 Promoting awareness of ICES Data collections and tools

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To support ICES' strategic goals of promoting the data nodes and to encourage engagement from the wider user community, DIG worked through several external facing activities and proposals for how to promote awareness and ensuring that information available is of a high quality. DIG covered several subjects at the 2017 meeting:

- Reviewing and updating Data Guidelines, and examining how fully they cover the type of instruments reported in the ICES Oceanographic data collections.
- Creating a proposal for an alternative format open session for the ICES Annual Science Conference in 2018.
- Putting forward a resolution to host a hackathon workshop in ICES in 2018.

All of these activities are focussed on promoting and strengthening the ICES work on publishing and making available data.

#### 3.1 Data Guidelines work

DIG has been supporting work and integration of the ICES data guidelines to the IODE Ocean Data Practises web portal in previous years. This year, information on visitor statistics from the IODE portal was available to DIG to help identify the most frequently accessed ICES Data Guidelines. It was deemed important that the 3 most utilised guidelines should be reviewed – (i) CTD Data collection and processing, (ii) Water Bottle data collection and processing and (iii) Biological plankton data collection and processing. Further, to better facilitate the transfer of data guidelines into the searchable IODE catalogue, a contact person in the ICES Data Centre should be nominated.

#### 3.2 ICES ASC Sessions

A DIG Subgroup reviewed inter-sessional discussions and activity on proposing an alternative form of session to be held at the ASC to raise the awareness and involvement with Data Management in ICES. A proposal was drafted (ASC Session Proposal) and will be submitted to the theme session proposals for the ICES ASC 2018 to be held in Hamburg.

#### 3.3 Hackathon

During the year, documents identifying and detailing the hackathon concept and how it might work in an ICES context had been prepared. These documents were reviewed and further discussed at the DIG meeting. It was generally agreed that a hackathon type event could be beneficial to promote data collections stored at ICES and further explore the use of new and different technologies for integrating and visualising data.

The inter-sessional discussions had focus on a potential event being held during an ASC meeting, but on reflection it was felt that the ICES secretariat would be a very suitable location for hosting a workshop/hackathon to begin with as it would be much less resource intensive and allow participation from ICES Data Centre staff. A resolution has been written to host the workshop **WKINVITED (Workshop on Integration and Visualisation Technology of ICES Data)**. The resolution is included in Annex 6, Resolution for WKINVITED.

## 4 Update from ICES Data Centre

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### 4.1 Presentations of developments

ICES Data Centre presented status and new development projects to DIG (See Annex 2 – Agenda for a list of all presentations).

The update from the ICES Data Centre always stimulates useful discussion and helps identify the areas where DIG can best advise the ICES Data Centre.

Across the presentations, a number of observations and a specific recommendation were made:

- Overall provenance and traceability of data were discussed, following on from previous DIG discussions around persistent identifiers for datasets.
- DIG observed that the ICES Data Centre is focussing more effort on web services. This is seen as a positive development, and for ingestion of Data, DIG recommends that the ICES Data Centre focusses on “push” services that require submitters to actively push content to ICES.
- Presentation of a text mining tool for ICES reports was considered of interest to DIG in terms of locating the working groups that are most closely associated with different data portals and collections. This could potentially be useful for consulting expert groups around data governance aspects. As a start, a DIG subgroup will link the acoustic dataportal working groups to the correct reports, and report the results at the 2018 DIG meeting.
- Virtually all products presented to DIG utilise or enter quality check metrics into the quality management database maintained by the ICES Data Centre. This means that the ICES Data Centre is retaining and expanding the overview of the data quality management within ICES.
- A number of developments are becoming more integrated, pulling or integrating data from other providers as well as several sources within the ICES data collections.
- A lot of developments have potential re-use capability to be deployed for other datasets/uses. However, the request-based nature of the ICES Data Centre’s work can make it challenging to identify and prioritise strategic reuse or integration aspects.

### 4.2 Seabed Litter Data

The ICES Data Centre has been approached by the EMODNet Chemistry project recognising that ICES has led the implementation of trawl survey litter data, and has already defined a standard for this. Keen to avoid duplication of effort in defining such standards, EMODNet is aiming to retrieve the data from the ICES data centre, and this was welcomed by DIG.

The discussion centred on enabling “live” access to submitted data via the DATRAS portal or creating a versioned product of the data to make available for product and assessments. Overall, DIG recommends that the ICES Data Centre prepares a fixed version data product of the seabed litter data to avoid rapid changes and that ICES Data Centre provides a date for data submitters to aim for having their data as complete and quality checked as possible (e.g. set the date for when the data product will be created from submitted data).

Currently, ICES stores seabed litter data within the context of the DATRAS database since the recording of seabed litter is from the trawl surveys stored in DATRAS. However, it was raised that other sources of seabed data is available as well (e.g. video data analysed for and annotated with litter). An on-going action to look into how much “non-trawl” litter data for seabed is available will be carried out inter-sessionally by a DIG subgroup and revisited at the 2018 DIG meeting.

## 5 Adopting a Data Governance Approach

At the DIG 2016 meeting in May, a governance framework approach was proposed. This proposal was an outcome of the wider discussion of how DIG is placed within the ICES community as an operational group, and how it best shapes and makes advice that benefits the community.

There was only little time to discuss the framework in 2016, and with a positive indication from SCICOM meeting, additional time to discuss and shape such a framework was scheduled for the 2017 DIG Meeting.

The purpose of a governance framework is two-fold – it helps measure or categorise progress as well as defining expectations for data portals or collections not just in terms of delivering the initial specialised request, but also the wider, more integrated approach that is becoming increasingly important for the ICES community (e.g. ecosystem approach to issues and regional scale assessments often require multi-disciplinary data sources).

DIG carried out two exercises to look at these challenges, and whether the framework proposed in 2016 will work within the ICES context.

The first exercise was a cross-cutting exercise in locating data within the ICES community and web portal – but attempting to answer broader or more generic questions than what is typically addressed by individual expert groups. This exercise very much leaned towards a non-expert approach, encouraging members of DIG to utilise the information they could locate, rather than what they know from their own field of expertise.

The second exercise utilised experience and expertise within DIG to applying the framework to a single data portal or collection within ICES. The exercise also looked at how the proposed governance framework compares to other approaches (the proposal framework was based around data management topics identified in the Data Management Associations Body of Knowledge- DAMA DMBOK). The proposed categories used during DIG 2017 are listed in the table below:

Topic Area	What is included
Architecture and Governance	Understanding integration and linkage between underlying data, data products and associated working groups in ICES
Data Development	Updates to structures and formats of data either as requirements arising from new use cases or legal requirements
Database Operations	Understanding the ICES responsibilities in terms of maintaining databases versus data coming from outside or other data providers.
Data Security	Ensure that you can enable appropriate access to data and prevent inappropriate access. This also touches on potential limitations on data use and/or further dissemination.

Reference and Master Data Management	Identify the authoritative copies of the master data and understand where shared references codes are used and who maintains and develops these.
Warehousing and Business Intelligence	How data are made available for sharing and integration through presentation within the ICES working community, more broadly on websites, and how different types of users need to interact with the data.
Document and Content Management	How documents, guidelines and other unstructured <sup>1</sup> content relevant to the data are maintained.
Metadata Management	How well data structures and information is profiles via metadata. This links to both legal compliance obligations (e.g. INSPIRE) and improvements in data sharing and citation (e.g. minting DOI for reports, datasets etc.).
Data Quality Management	Consideration of how data quality is managed for the given collection. Responsibilities may be shared between expert groups and data centre, and the key thing is to understand how decisions on quality management are made, and how they align across ICES data handling.

### 5.1 An exercise in cross-cutting data access

DIG initially worked in breakout groups to address 3 different general questions:

- What data does ICES hold in the statistical rectangle 44F1?
- How many different types of contaminants data are stored in ICES data products?
- What is the longest oceanographic time series, and where?

The breakout groups sought to utilise the ICES web site, search engines etc. to address the question. After the exercise, findings and general patterns were drawn together in a SWOT-type analysis. Overall, the findings were very similar between the 3 groups working on answering the questions, although some specific issues were also discussed. The general findings of the SWOT analysis is summarised in the table below.

<b>Strengths</b>	Very large and substantial amount of data held within the ICES portal Many tools and services support the data hosted in ICES Pages on ICES website is search-engine optimised, so return high ranked search results (e.g. a google search)
<b>Weaknesses</b>	Terminology confusion – Data portals and Dataset collections, 2 map portals, 2 metadata portals There is little cross-linkage between data portals or products – each exist in isolation It is hard to find what you are looking for within the ICES website. E.g. “Search Everything” within the website does not include many of the data pages (which are increasingly organised in subdomains that are not searchable) Use of data portals is not intuitive for anyone from outside the expert user community

<sup>1</sup> Unstructured in this context simply means that the content is not part of a relational database – it can still be well organised.

<b>Opportunities</b>	<p>Incorporate user experiences to improve usability</p> <p>Build up linkages between products</p> <p>Reduce the number of steps required to get to data</p> <p>Guided searches and tutorials could be useful resources</p>
<b>Threats</b>	<p>Users get frustrated before locating data – leading to reduced utilisation</p> <p>Negative perceptions or experiences of locating or working with data can linger long after issue has been fixed</p> <p>Workload for ICES Data Centre requires a balanced approach between specialist request, and broader, more strategic integration projects</p> <p>Difficulty in locating or working with data may generate more requests, which in turn generate more work for ICES Data Centre</p>

## 5.2 Evaluating the Governance Framework

DIG worked in breakout groups using members' areas of specialism to evaluate data portals or collections that they were most familiar with as data managers. The proposed framework structure was used to evaluate issues and structure discussions for fisheries data (acoustics data portal and DATRAS), environmental observations data, and comparison with other (accreditation) frameworks. Each breakout group reported back on general findings of applying the framework, and also issues discussed specifically for the data portal/collection worked on.

The overall impressions collated from breakout work and consultation with ICES Data Centre staff was positive. It was considered that the time was right to start adopting a framework approach. DIG has transitioned to an operational group, and there is a large amount of data portals and products. It was generally easy to see how reporting in a more cross-compatible structure will be beneficial.

Concerns were expressed about the volume of work and the time it will potentially take to perform evaluations of data products. But after the breakout groups, it was evident from some groups that the framework can be applied relatively quickly, so initial estimates of the number of assessments done in a DIG meeting could quite likely be increased (especially if these are planned ahead and staff with experience in those areas can attend DIG when the assessments are carried out).

### 5.2.1 Acoustics data portal and DATRAS

The proposed framework has been applied to the ICES acoustic data portal and partly to DATRAS (Annex 8). From that exercise, also more generic issues arose related to more if not all ICES data portals (Annex 7).

Issues arising from the exercise were:

- Currently, there is no standard checklist when new data portals are being developed in ICES.
- The ICES website mentions 'dataset collections' and 'data portals'. The entries lead to different overviews.
- For DATRAS it is advised that DIG installs a governance group following ToR e, proposed participants and task list in Annex 9.
- It is unclear who is responsible for changing the access rights to databases (e.g. RDB) when scientists change jobs and still are active within the ICES community, but may not have rights to access some restricted data? (Formalistically it

is clear, this is the responsibility of delegates. But whether this is a well maintained mechanisms and update process is less clear, and may pose an element of risk to ICES)

### 5.2.2 Environmental and oceanography data

The breakout group for environment and oceanography data did not apply the framework structure as directly as the fisheries data group, but nevertheless identified and discussed a number of issues that fitted within the framework structure.

Some issues were raised/discussed, and subsequently placed in the governance framework categories – rather than using the framework to evaluate. However, this was very much part of the initial evaluation to see how groups would work with the framework. Examples around HELCOM assessments and difficulties in interpreting station dictionary records. These issues would relate to the Master and Reference Data Management category. The subgroup also identified some other issues around the Master Data and Architecture concepts where possible duplication of data may occur on the EMOD-Net level because data are being submitted both via national submitters and ICES, but without a common unique reference.

### 5.2.3 Comparison with accreditation

Another breakout group, familiar with data centre accreditations compared and contrasted the governance framework with external organisations that provided accreditation of data centres. Specifically the Data Seal of Approval was examined in some detail and found to strongly overlap in concepts with the governance framework.

It was noted that increasingly some funding bodies will require data to be committed to the safe-keeping in an accredited data centre as part of the long term curation of data acquired with their funding. Thus, it may be beneficial for the ICES data centre to consider accreditation at some point. The data governance framework will help prepare for such an activity, although some translation of different categories may be required.

There are of course other accreditation and standardisation bodies with which a similar approach could be completed, ranging from ISO accreditation to The IODE Quality Management Framework for National Oceanographic Data Centres.

No firm conclusions or recommendations were made around accreditation at this meeting, but it was recognised that the governance approach will make future accreditation or adoption much easier.

## 5.3 Moving forward with governance framework

The overall positive impressions of adopting a structure for identifying, and evaluating issues for data portals or collections means that DIG will continue with the adoption of this framework. Suggestions for adding in additional wording for clarification will be completed and the framework will be updated accordingly. However, the overarching structure remains similar.

Some additional actions on evaluating the text mining tool developed by the ICES Data Centre to see if it can help identify the main stakeholders/users of certain databases will be evaluated at the next meeting. Further, the creation of the DATRAS governance group will mean that a dedicated group will utilise the governance framework to manage issues of a large, central data collection for ICES (the task of this being too big and specialised for DIG to complete in isolation).



With a number of inter-sessional activities DIG will finalise its approach to using the governance framework at the next meeting, guided by updates, inter-sessional findings, and the outcomes of the DATRAS governance group work.

## Annex 1: List of participants

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## Annex 2: Agenda

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**Monday 22 May 2017**

**13:00 – 13:30:** Logistics, Introductions, Safety.

**13:30 – 15:30:** Actions, Recommendations and inter-sessional activity:

- Actions from 2016 Meeting (Annex 1 : 12 Actions)
- ASC Meeting + Feedback From SCICOM (Ingeborg)
- Recommendations 2016+17
  - No DIG Recommendations
  - Data Centre Recommendations + Priority List (Annex 2) (ToR A)
- Updates from members on other working groups, workshops, and initiatives
  - WGSFD (Christian)
  - Other updates
- Data Regulations and impact on Data Strategy/Policy (ToR C)
  - GDPR – General Data Protection Regulation (changes from 2018 onwards)
  - INSPIRE
  - DCMAP
  - Others?

**15:30 – 16:00:** Coffee Break

**16:00 – 17:00:** Break-out groups. Gather up from actions and outcomes, discuss and identify if actions needs to continue, or if recommendations needs to be made:

- Guidelines (Actions 1,2,3,4)
- DIG at ASC sessions (Proposals for formal + alternative sessions) (Actions 6,7,8,9)
- Hackathon

**17:00 – 17:25:** Plenary. Summary of breakouts. Written summary from each group for report (ToR A).

**17:25 – 17:30:** Recap Actions, Recommendations from today + Brief look at tomorrow's programme.

**Tuesday 23 May 2017**

**09:00 – 12:00:** (including a coffee break): Update from ICES Data Centre

*Assessment support tools 9:00 – 10:15*

<b>Tool</b>	<b>Timing</b>	<b>Presenter(s)</b>
Transparent Assessment Framework (TAF)	20 mins	Colin Millar, Arni Magnusson
Stock Assessment Graphs and Stock DB	20 mins	Carlos Pinto, Mike Drew, Colin Milar
Regional Estimation System, the new RDB!	15 mins	Henrik Kjems Nielsen
Acoustic data portal	15 mins	Hjalte Parner

*Coffee and Tea break 10:15 – 10:30*

*Assessment support tools (continued) 10:30 – 11:00*

<b>Tool</b>	<b>Timing</b>	<b>Presenter(s)</b>
OOPS! We did it again	10 mins	Periklis Panagioditis
Vulnerable Marine Ecosystems portal	5 mins	Anna Osypchuk
Impulsive Noise register	15 mins	Carlos Pinto, Neil Holdsworth

*In the pipeline (continued) 11:05 – 12:00*

<b>Tool</b>	<b>Timing</b>	<b>Presenter(s)</b>
Reports data mining	10 mins	Carlos Pinto
Bycatch (of protected species)	5 mins	Carlos Pinto
DATRAS development plan and data harvesting pilot	10 mins	Vaishav Soni
SMHI data harvesting pilot	10 mins	Carlos Pinto
SmartDots (otolith annotations)	10 mins	Carlos Pinto
Monitoring Stations (dictionary)	15 mins	Marilynn Sørensen, Mehdi Abassi

**12:00 – 12:30:** Plenary Discussion of Data Centre Update (ToR B)

**12:30 – 13:30:** Lunch break

**13:30 – 14:00:** Marine Litter Data and EMODNet Chemistry data submission

**14:00 – 15:00:** Introduction & then Break-out. Locating data in ICES. Use what we know to examine how well we can locate and tie data together within the ICES online “ecosystem” of data.

**15:00 – 15:30:** Presentations from break-out groups

**15:30 – 16:00:** Coffee break.

**16:00 – 16:30:** Plenary discussion of findings from break-out groups. SWOT type analysis.

**16:00 – 16:30:**

**16:30 – 17:15:** Data Governance and evaluation in ICES. Discussion of the Basic Model for future DIG work & Reporting (Section 10.2 in last years’ report)

There are 7 key datasets in ICES:

1. Biological Community

2. Contaminants and Biological Effects
3. Eggs and Larvae
4. Fish Predation (Stomach Content)
5. Fish Trawl Survey inc. marine litter
6. Historical Datasets
7. Oceanographic

Discussion of this approach and if it can be used to identify governance needs and activities.

Identify sub groups to discuss general framework and/or specific data collection considerations Wednesday Morning.

**17:15 – 17:30:** Recap of Actions, Recommendations and outputs from today. Status on report sections

**Wednesday 24 May 2017**

**09:00-9:30:** Plenary discussion of governance framework and formation of breakout groups.

**9:30–11:30:** Breakout groups on governance discussion.

**11:30 – 12:30:** Plenary discussion of findings and approach. Evaluation of readiness to use this approach for reporting to other groups and SCICOM in this year/next year/longer term.

**12:30 – 13:30:** Lunch Break

**13:30 – 14:30:** Recap of

- Actions
  - Recommendations
  - DIG Meeting at ASC 2017
- Next year's meeting dates

**14:30 – 15:30:** Break-out groups to address ad-hoc issues and report-writing

- Social Media update for ICES Communications team

**15:30 – 16:00:** Coffee break

**16:00 – 16:30:** Plenary from ad-hoc subgroups (if necessary)

**16:30-17:30:** Final report writing + close.

### Annex 3: DIG terms of reference for the next meeting

The **Data and Information Group** (DIG), chaired by Jens Rasmussen, United Kingdom, will meet in Copenhagen, Denmark, 30 May – 1 June 2018. The terms of reference for the meeting will support the DIG mission: **To provide ICES with advice on all aspects of data management including data policy, data strategy, data quality, technical issues, and user-oriented guidance:**

- a) Review priorities on the ICES Data Centre action list;
- b) Provide guidance and feedback to the ICES Data Centre
- c) Advise on other data regulations and their impact on ICES Data Strategy, ICES Data Policy
- d) Propose ad-hoc groups (governance, workshops, training, etc.) related to specific topics, and/or datasets, to facilitate improvements related to data issues to SCICOM, ACOM, SCICOM SSGs and/or EGs, and review the outcome of those ad-hoc groups
- e) Promote new technologies and data management infrastructure development (e.g. IODE/JCOMM/ICES Clearing house, data citation, training)

DIG will report by 1 July 2018 to the attention of SCICOM.

#### Supporting Information

Priority	The Data and Information Group provides ICES with solicited and unsolicited advice on all aspects of data management including technical, data policy and data strategy and user oriented guidance. This operational group flies the flag for ICES in setting standards for global databases. It also provides an important interface for oceanographic, environmental, and fisheries data management in ICES, and promotes good data management practice.
Scientific justification	a), b), c), d), e) are direct results of DIG's main priority: The Group provides ICES with solicited and unsolicited advice on all aspects of data management including technical, data policy and data strategy and user oriented guidance
Resource requirements	The resource required to undertake additional activities in the framework of this group is negligible
Participants	The Group is expected to be attended by some 15–30 members, with good international and topical coverage.
Secretariat facilities	Meeting facilities, organization and facilitation of WebEx meetings (frequency and participants depending on topics to be discussed. Participation of ICES Data Centre
Financial	No financial implications.
Linkages to advisory committees	ACOM
Linkages to other committees or groups	As Data is an important topic for most groups under SCICOM and ACOM, this group links to a large number of groups, although often indirect.
Linkages to other organizations	There are linkages with relevant international bodies and programmes like PICES, GOOS, SeaDataNet/SeaDataCloud, EMODNet, etc., with emphasis on IOC and its Working Committee on International Oceanographic Data and Information Exchange (IODE), OSPAR, and HELCOM.

## Annex 4: Recommendations and actions

### Recommendations

RECOMMENDATION	ADRESSED TO
1. DIG recommends that ICES Data Centre focuses efforts on push-oriented webservices where data originators have to actively push content to ICES. This ensures traceability and retains a degree of control and responsibility at the data submitter level.	ICES Data Centre
2. DIG recommends that Marine Litter data from trawl surveys are turned into a fixed version data product for use by EMODNet Chemistry to create products rather than a dynamic web service access. This fits better with ensuring data quality checks are completed and that data products and assessments are created from a known version of the data.	ICES Data Centre

### Actions (in *Italics*: focal point)

Nr	Action	Adressed to	Action before
	Update framework text following additions mentioned in General issues on ICES data governance following the governance framework, and suggestions for improvement of the framework	<i>Ingeborg de Boois</i>	September 2017
	Investigate if Data mining of ICES library tool is useful to specify relations between ICESgroups and the dataportals those groups use. Specific task: to link the acoustic dataportal working groups to the correct reports. Furthermore, the ICES database use by the various ICES Integrated Ecosystem Assessment groups may be investigated	<i>Sjur Ringheim Lid, Ingeborg de Boois, David Currie, Jens Rasmussen, Carlos Pinto</i>	November 2017
	Install a DATRAS governance group, consisting of DIG representative ( <i>Ingeborg de Boois</i> ), WGBIFS, IBTSWG, WGBEAM representatives (tbd), ICES Data Centre ( <i>Anna Osypchuk, Vaishav Soni</i> )	<i>Jens Rasmussen, Ingeborg de Boois, Neil Holdsworth</i>	July 2017
	Sort out how access restriction is organised when a scientist changes jobs leading to different access permissions to restricted data	<i>Ingeborg de Boois, Neil Holdsworth</i>	July 2017
	Consider how to best Combine 'dataset collections' and 'data portals' at ices.dk/marine data	<i>Jens Rasmussen, Neil Holdsworth</i>	Thoughts/ideas ready for the agenda of next DIG Meeting
	Create standard checklist for the development of new ICES data portals	<i>Jens Rasmussen, David Currie, Hjalte Parner</i>	December 2017.
	Circulate IODE Meeting report to DIG Members	<i>Lesley Rickards</i>	Completed during meeting



Arrange an ICES Data Centre contact person for the guidelines shared with IODE Ocean Data Practises	<i>Neil Holdsworth,</i> <i>Taco de Bruin</i>	July 2017
Advance review of CTD, Bottle, and biological plankton guidelines – locate experts to review,	<i>Taco de Bruin,</i> <i>Hjalte Parner,</i> <i>Lesley Rickards,</i> <i>Else Green, Ruth Lagring,</i> <i>Friedrich Nast</i>	Next DIG Meeting, May 2018
Complete resolution for forming WKINVITED and follow up on arranging Workshop and promoting it	<i>David Currie, Sjur ringheim Lid</i>	Workshop proposal for May 2018
Take forward proposal for alternative ICES ASC session at ICES ASC 2018 in Hamburg	<i>Jens Rasmussen,</i> <i>Malin Werner,</i> <i>Christian von Dorien, Ingeborg de Boois</i>	September 2017 + ongoing if agreed
Intersessional group to monitor GDPR implementation and potential impact on ICES Data Policies	<i>Taco de Bruin,</i> <i>Christian vo Dorien</i>	Report next DIG Meeting, May 2018
Intersessional evaluation of effort required versus benefit of storing seabed litter data recordings from non-trawl survey sources (e.g. Video data)	<i>Helge Sagen, Neil Holdsworth</i>	Report next DIG Meeting, May 2018
Intersessional discussion/investigation of provenance and traceability. Can data be traced back to the originators? Both on metadata and record level. Also include considerations on DOI reference integration.	<i>Jens Rasmussen,</i> <i>Neil Holdsworth,</i> <i>Representative from VLIZ (to be confirmed),</i> <i>Friedrich Nast</i>	Report next DIG Meeting, May 2018
Build and maintain a list of issues, considerations and potential changes to ICES Data Plan and Policy to aid in the next review (2019)	<i>Jens Rasmussen,</i> <i>Neil Holdsworth</i>	On-going. List on Sharepoint by August 2017.

## Annex 5: ASC Session Proposal

<b>Proposer's Name:</b>	<b>Jens Rasmussen</b>
Proposer's Institute (and contact details):	Marine Scotland
Proposer's Email:	J.Rasmussen@marlab.ac.uk
Proposer's Telephone:	+44 1224 295 440
Short Title:	Data's Den: Show us your best tools to process and present data
Name and email of theme session convener 1:	Jens Rasmussen (J.Rasmussen@marlab.ac.uk)
Name and email of theme session convener 2:	Ingeborg de Boois (ingeborg.deboois@wur.nl)
Name and email of theme session convener 3:	Malin Werner (malin.werner@slu.se)
Name and email of theme session convener 4:	
Description:	<p>This is the opportunity for you to present your existing or planned excellent software, app or other tools that is either innovative in solving a data problem, makes (data) life easier or makes data available to a wide audience.</p> <p>It could be either existing material that you'd like to share with a wider audience, or a (well developed) idea and you are searching for support or help in getting it further developed.</p> <p>Grab your chance to win a fixed amount of time and resources from the ICES Data Centre in getting your product flying, or get connected to people that can help you further.</p> <p>The show will be in front of a large ASC audience so even if you don't win, you might create enough interest so that many experts will ask you for more details about your innovative approach during the subsequent poster session.</p> <p><b>Rationale and aims:</b></p> <p>First, we would like to give innovative approaches the chance to get feedback. And the lucky winner can get needed support so that they can developed the next important step.</p> <p>Improved dissemination of existing, running products (for example by the ICES Data Center) that are very good but not so well known. By this event, they could find new users – and thus the ICES community could gain from knowing these good pieces of software. Beyond these more concrete goals, this exercise will also demonstrate the important role of data and data tools in the ICES network.</p> <p><b>Set up:</b></p> <p>8-10 ideas/tools/apps/... related to data will get the chance to present their idea during a very short presentation (2 minutes)) followed by a 3 minutes rigid question and answer session. The presentation format is up to you, but provide information on your format when handing in your proposal (e.g. live demo, oral presentation, ...). Questions</p>

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	<p>will be asked by a panel made up of three experienced ICES representatives/Experts and two young smart, award-winning scientists.</p> <p>An additional number of projects that were not elected for the event, might be given the chance to present their ideas as a poster (or demonstration during the poster session).</p> <p>The event invites contributions on proven concepts, running software and well-developed ideas with respect to the following topics:</p> <p>Data compilation: developments in integration of data, combined presentation of data from multiple sources, data mining;</p> <p>Visualisation of results, combining data from different origins (e.g. methodologies, strata, geographical regions);</p> <p>Calculation of derived variables based on data from multiple sources;</p> <p>Organise interdisciplinary data compilation: collaboration over different scientific fields, understanding common issues from different perspectives;</p> <p>The use of automated devices: automated calculations from automatic measurements, and automatic data integration</p>
Expected participation:	Members of ICES working groups using and integrating data from different sources, ICES Data Centre, scientists worldwide involved in automated marine data collection, data compilation from different sources.
Linkages to ICES Strategic Plan:	The proposed event will have strong linkages to the two data related goals 4 and 5 of the ICES Strategic Plan, and thus supporting also the Goals 1, 2, 3. Following an ecosystem approach, innovative or alternative data compilation strategies and approaches are required that provide insights on different scales of ecosystem functioning together with data that meets the required standards both qualitatively and quantitatively.
Linkages to ICES Steerings Groups and/or Advisory Committee (if relevant):	The session is proposed by DIG (SCICOM).
Linkages to ICES Strategic Initiatives and/or ICES action areas on Aquaculture and the Arctic:	(Ideas for) tools related to aquaculture or arctic data are explicitly welcomed in this session.

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## Annex 6: Resolution for WKINVITED

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The **Workshop on Integration and Visualisation Technology of ICES Data (WKINVITED)**, chaired by David Currie\*, Ireland, and Sjur Ringheim Lid\*, Norway, will be established and will meet in ICES Headquarters, Copenhagen, Denmark, 28–30 May 2018 to:

- a) Improve the knowledge of ICES data sets within the ICES community and improve the community's skill in using these data sets.
- b) Create tools and scripts that can be used by the ICES community to improve integration and visualisation of their data.

**WKINVITED** will report by 31 July 2018 for the attention of DIG.

### Supporting information

Priority	The aim of WKINVITED is directly linked to goal 4 and 5 of the ICES Strategic Plan by promoting the usage of ICES data and information services and sharing best practice methodologies for data exploitation.
Scientific justification	<p>Data is vital to the work of ICES and the tools and methods used to access that data are constantly being developed and improved. There is a need to inform the ICES community about these developments. Whilst there are structured training courses available within ICES these tend to be focussed on specific subject areas, such as Stock Assessment methods. This workshop will provide a novel training method by running a data hackathon – this is an activity where groups of people collaborate for a short time (typically 1 or 2 days) in a specific location to build products. This has the advantage of the attendees learning by building a tool or product in a subject area they are interested in. The outputs of the workshop will be focussed on the visualisation and integration of ICES data sets since these topics are relevant to the whole ICES community.</p> <p>Terms of Reference:</p> <p>TOR a)</p> <p>ICES has an increasing number of data sets available and the methods of accessing those data sets are also increasing in number. There is a need for the ICES community to keep up-to-date with these data sets and access methods but this can be difficult for individual users to do. A workshop taking the form of a hackathon will provide a forum for a variety of ICES scientists to engage in peer-to-peer learning whilst being supported by ICES data centre specialists.</p>

Scientific justification (continued)	<p>TOR b)</p> <p>The graphical presentation of data makes analyses more immediately accessible and understandable to scientists, administrators, and the public. WKINVITED will produce open source scripts and tools that will improve the graphical presentation of ICES datasets. The technical outputs of WKINVITED will be uploaded to Github (Open Source code management platform).</p> <p>The overall theme of the workshop will be to produce tools or scripts that will integrate and visualise ICES data sets - within that broad theme there will be a number of more specific suggestions that the workshop attendees can work on. These will include: improving the visualisation of spatial data in ICES databases (e.g. FISHMAP); the scientific history of a statistical rectangle; and text mining of ICES documents so that they can be linked with structured ICES data sets. Further suggestions of topics will be requested from the wider ICES community before the workshop.</p> <p>The participants will be divided into teams and their outputs compared to each other – the best product will receive a small prize. The participants will orally present their work to the DIG committee on the first day of the DIG meeting (30 May 2018).</p>
Resource requirements	A 2-day workshop to work on TORs, produce technical outputs and report on the workshop's output.
Participants	~30 people divided into 4-6 teams
Secretariat facilities	<p>ICES HQ meeting room and facilities</p> <p>ICES Data Centre staff time. Estimated:</p> <ul style="list-style-type: none"> <li>• 5 person-days to produce example scripts to access a number of different ICES data sets. These will be provided to the participants before the event.</li> <li>• 4 person-days to provide support during the workshop</li> </ul> <p>Website to publicise the workshop</p>
Financial	1000 DKK for prizes
Linkages to advisory committees	SCICOM, via DIG
Linkages to other committees or groups	Directly to DIG. Indirectly to the majority of ICES groups that work with data.
Linkages to other organizations	

## Annex 7: General issues on ICES data governance following the governance framework, and suggestions for improvement of the framework

Topic Area	What is included	General comments/questions on ICES data governance	Comments on the framework
General Comments on Datasets		Who should be contacted for fundamental database decisions? If no governance/steering group is put into place, ICES Data Centre contacts DIG chair and arranges a subgroup to decide on prioritising	Add 'user management' in Data security  Add 'versioning' in Data development and Reference and Master data management
Architecture and Governance	Understanding integration and linkage between underlying data, data products and associated working groups in ICES	An overview of the relation between groups based on data products may be useful. Data mining of ICES library tools may help to get a first overview in relations.	
Data Development	Updates to structures and formats of data either as requirements arising from new use cases or legal requirements	How does 'between portals' and 'within portals' feedback loop on e.g. format updates take place? (cf. vocab.ices.dk; where to create an overview of data formats)	
Database Operations	Understanding the ICES responsibilities in terms of maintaining databases versus data coming from outside or other data providers.	Most issues are clearly defined in the ICES Data Policy.  What if no new data have been added to a database? How long will 'old' databases will be maintained and how to prevent losing data because technology has improved? –for Data Policy update 2020	
Data Security	Ensure that you can enable appropriate access to data and prevent inappropriate access. This also touches on potential limitations on data use and/or further dissemination.	In general it is well-defined and restricted access can easily be arranged.  How are e.g. job changes in relation to access restrictions arranged?  Whose responsibility it is to mention job changes?  A list (overview) of data submitters for all data	

Topic Area	What is included	General comments/questions on ICES data governance	Comments on the framework
		portals/databases available to the ICES community would be useful.	
Reference and Master Data Management	Identify the authoritative copies of the master data and understand where shared references codes are used and who maintains and develops these.	Clearly defined in the ICES Data Policy.	
Warehousing and Business Intelligence	How data are made available for sharing and integration through presentation within the ICES working community, more broadly on websites, and how different types of users need to interact with the data.	Combine 'dataset collections' and 'data portals' into one category to prevent inconsistencies	Change title into "Data Discoverability"
Document and Content Management	How documents, guidelines and other unstructured <sup>2</sup> content relevant to the data are maintained.	No standard (written) procedure on document management in relation to launching new data portals.	
Metadata Management	How well data structures and information is profiles via metadata. This links to both legal compliance obligations (e.g. INSPIRE) and improvements in data sharing and citation (e.g. minting DOI for reports, datasets etc.).	No standard (written) procedure on metadata management to launching new data portals.	
Data Quality Management	Consideration of how data quality is managed for the given collection. Responsibilities may be shared between expert groups and data centre, and the key thing is to understand how decisions on quality management are	Applying 'new' checks to 'old' data; how to make sure that all data will be accepted if information has not been collected or cannot be improved retrospectively. This is a responsibility of the ICES working groups	

<sup>2</sup> Unstructured in this context simply means that the content is not part of a relational database – it can still be well organised.

Topic Area	What is included	General comments/questions on ICES data governance	Comments on the framework
	made, and how they align across ICES data handling.	submitting data to a database, in collaboration with ICES Data Centre	



## Annex 8: Issues on ICES acoustic data portal governance following the governance framework, and suggestions for improvement of the framework

Topic Area	What is included	Acoustic portal	DATRAS
General Comments on Datasets		Are different approaches used for different regions?	Different approaches/formats/products for different surveys  Install governance group; at least WGBIFS, IBTSWG, WGBEAM and ICES Data Centre representation
Architecture and Governance	Understanding integration and linkage between underlying data, data products and associated working groups in ICES	Integration of data from different on a cruise basis.	Link from the acoustic data portal to Working Groups to Working Group reports leads to too much (and so a number of irrelevant) Expert Groups.
Data Development	Updates to structures and formats of data either as requirements arising from new use cases or legal requirements	How to organise feedback to DATRAS CA from Acoustics biological data formats?	
Database Operations	Understanding the ICES responsibilities in terms of maintaining databases versus data coming from outside or other data providers.	Clearly defined (ICES Data Policy); applies to all data portals.	
Data Security	Ensure that you can enable appropriate access to data and prevent inappropriate access. This also touches on potential limitations on data use and/or further dissemination.	'Browse submissions' contains a 'Delete' button. What happens when people do not have access?  Appoint data submitters to acoustic data portal as now everyone can (re)submit any data.	Clear list of data submitters  Public access to data at the lowest aggregation level.

Topic Area	What is included	Acoustic portal	DATRAS
Reference and Master Data Management	Identify the authoritative copies of the master data and understand where shared references codes are used and who maintains and develops these.	Reference codes: reference codes and format maintained and defined by WGIPS/WGBIAS, advice by ICES Data Centre on consistency within vocab.ices.dk Relate to master data?	Master data available via data submitters; data submitters are not allowed to submit other data than their own.
Warehousing and Business Intelligence	How data are made available for sharing and integration through presentation within the ICES working community, more broadly on websites, and how different types of users need to interact with the data.	Google search: no result. Ices.dk → dataset collections: no result Ices.dk → data portals: Acoustic trawl surveys	
Document and Content Management	How documents, guidelines and other unstructured <sup>3</sup> content relevant to the data are maintained.	Survey protocols in SISP manuals; selection presented on Acoustic trawl survey data portal. No acoustic data appear on 'data submissions' page although submissions have taken place.	
Metadata Management	How well data structures and information is profiles via metadata. This links to both legal compliance obligations (e.g. INSPIRE) and improvements in data sharing	Metadata available at metadata portal for the dataset, not yet for the individual surveys.	

<sup>3</sup> Unstructured in this context simply means that the content is not part of a relational database – it can still be well organised.

Topic Area	What is included	Acoustic portal	DATRAS
	and citation (e.g. minting DOI for reports, datasets etc.).		
Data Quality Management	Consideration of how data quality is managed for the given collection. Responsibilities may be shared between expert groups and data centre, and the key thing is to understand how decisions on quality management are made, and how they align across ICES data handling.	Responsibility for format at WGFAS, for submission in WGIPS and WGBIAS.	

## Annex 9: DATRAS Governance Group

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**Aim(s) of the group:** the main goals of the group are:

1. Elaborate the framework on the governance of DATRAS
2. Oversee and advise on the interpretation and prioritisation of recommendations from expert groups addressed to DATRAS
3. Align DATRAS over the different surveys
4. Provide a platform for end user feedback to the DATRAS system

**Tasks:** the DATRAS governance group will have the following tasks:

Related to goal 1:

- a. Discuss and fill in the DIG governance framework for DATRAS (trawl survey data as well as litter data)
- b. Provide suggestions to ICES Data Centre for implementation of the improvements

Related to goal 2:

- a. Based on the compilation of recommendations from other expert groups and committees, with a focus on synergy and coherence of similar requests for products and services.

Related to goal 3:

- a. Align DATRAS input formats for the surveys where possible
- b. Align QC and QA protocols between the surveys where possible
- c. Align DATRAS CA input format with Acoustic data portal biological data format where possible
- d. Align products for the DATRAS surveys where possible

Related to goal 4:

- a. Seek and collate feedback from end users of DATRAS via interaction in working groups and committees, targeted questions, through the ICES websites, or feedback given directly to the Data Centre
- b. Provide responses to the end user feedback, and create recommendations to the relevant entities if a follow-up action is appropriate and practical

**Participation:** the governance group will consist of a DIG representative who will chair the group, (Ingeborg de Boois), representatives from ICES Data Centre (Anna Osypchuk, Vaishav Soni), and data-submitters from different surveys in DATRAS, representing all ICES survey planning groups delivering data to DATRAS: WGBIFS (tbd), IBTSWG (Finlay Burns), WGBEAM (Wim Allegaert).

**Meeting frequency:** the DATRAS governance group will meet max. 4 times a year by Skype.

**Resources:** the participants representing WGBIFS, IBTSWG, WGBEAM are requested to attend max. four Skype meetings (1.5-2 hours per meeting) per year. Preparation time for each meeting will be about 2 hours. The chair as well as the Data Centre representatives may have to spend more time due to reporting responsibilities and implementation of solutions.

**Installation period:** the governance group will be installed for maximum three years (starting 1<sup>st</sup> July 2017). If the goals are met within less time, the group can be dismissed if agreed by DIG chair and ICES Head of Data.

**Reporting:** The chair of the governance group will report at least twice a year (mid-February and mid-September) by email to the chairs of DIG, WGBIFS, IBTSWG, WGBEAM, SSGIOEM and WGCHAIRS (=ACOM chair), and to ICES Head of Data. The chair of the governance group presents the activities and progress of the governance group during the annual DIG meeting. The representatives of the respective survey planning groups present the progress of the governance group at their respective annual meetings.