

# Marine Environmental Data and Information Network (MEDIN) - Work Programme for 2010-2011

## 1 Progress in 2009-10

Important progress has been achieved by MEDIN in 2009-10.

- The MEDIN DAC network is now operational and, through the allocation of £240,000 funds to ten data projects, major marine data sets are now available to the UK marine community, and data upload processes have been established between MEDIN partners and the DAC network.
- Key standards for discovery metadata and data guidelines have been developed and are being adopted by the marine community
- The final part of the MEDIN Framework, a single central search capability for UK marine data, the MEDIN marine discovery portal, is close to completion and will be online within 2 months.
- Work has begun on improving key reference data sets.

## 2 Summary of plans for 2010-11

The 2010-2011 MEDIN Work plan will address the priorities identified by MEDIN partners (See Meeting Paper P6) and will include:

- Expand coverage of the MEDIN DAC network to include (provisionally): fisheries, meteorology and heritage data.
- Establish data flows into the network through pilot projects with partners and wider implementation of the data clause.
- Continue developments of standards, including guidelines for geophysical benthic surveys and noise data.
- Full implementation of the MEDIN discovery portal, and development towards full coverage of UK marine data sources
- Continue support for MMOs and equivalent bodies, for UK Location Programme, and Implementation of European Marine Strategy Directive and INSPIRE.
- Develop a 3 year work plan and business case for 2011-2014. A key aspect will be to establish a long-term sustainable funding model for MEDIN and for the DAC network.

More details are provided for each work stream in section 4

We have indicated where deliverables directly contribute to the Key Performance Indicators agreed by the Executive Team:

- KPI 1: Availability of > 2000, representative, metadata records.
- KPI 2: Completion of six pilot data submission projects.
- KPI 3: Report with recommendations for DAC funding Model
- KPI 4: Medium to Long-Term Priorities Plan referenced against top level priorities
- KPI 5: Business Plan for 2011-2014

### 3 Funds Available to MEDIN for 2010-11

Provisionally £763,048 will be available to fund MEDIN activities in 2010-11, as follows:

MEDIN Sponsorship income (Table 1):	£763,000
Carried forward (provisionally) from 2009-10:	£140,048
MINUS funds diverted to support DASSH*:	-£125,000
<b>Funds available:</b>	<b>£778,048</b>

*\*Pending discussion at MEDIN Sponsors' Board*

Based on this a provisional allocation across work streams has been made:

WS1 (DACs):	£180,463
WS2 (Standards):	£96,634
WS3 (Web Portal and Services):	£133,080
WS4 (International Coordination):	£27,177
WS5 (Resources and Applications):	£85,766
WS6 (Communications):	£87,986
WS7 (Management):	£132,303
<b>Total</b>	<b>£743,408</b>

More details are provided for each work stream in the following pages.

Sponsor Name	Funding
DEFRA: Department of Environment Food and Rural Affairs	£250,000
NERC: Natural Environment Research Council	£168,000
Scottish Government	£150,000
DECC: Department of Energy and Climate Change	£50,000
Met. Office	£20,000
Countryside Council for Wales	£20,000
The Environment Agency	£20,000
Marine Management Organisation	£20,000 (To Be Confirmed)
Maritime and Coastguard Agency	£15,000
The Crown Estate	£10,000
Ministry of Defence	£10,000
HR Wallingford	£10,000
UK Hydrographic Office	£10,000
The Joint Nature Conservation Committee	£5,000
Northern Ireland Environment Agency / Agri-Food Biosciences Institute	£5,000
<b>TOTAL</b>	<b>£763,000</b>

**Table 1 – Table of MEDIN Sponsors for 2010-11**

## 4 Work Plan for 2010-11

### 4.1 WS1 Comprehensive network of Data Archive Centres

The main objectives for the DACs work-stream in 2010-11 are

- To continue to build the DAC network as an operational capability accessible to all UK Marine organisations.
  - *Establish data flows into the MEDIN DAC network from partners through pilot projects.*
  - *Ensure ongoing flow of new data into the MEDIN DAC network through implementation of the “Data Clause” in new contracts for data collection.*
- To widen the coverage of the MEDIN DAC network to incorporate fisheries and marine meteorology data, and to consider suitable arrangements for marine heritage and contaminants data.
- To engage with the commercial sector and support pilot projects to bring key data sets from this sector into the MEDIN DAC network
- To develop strategies for managing complex data sets, higher level products, and large volume geophysical data sets within the MEDIN DAC network.
- To develop long term plans for a financially secure MEDIN network of marine Data Archive Centres.

£177,088 is provisionally allocated to this Work Stream, as follows:

Core Team Staff costs (87 days):	£48,463
Travel and workshop costs:	£7,000
Funds for contracted work:	£125,000
Total	£180,463

The £125,000 allocated for contracted work is provisionally assigned as follows:

1. £30,000 to support pilot data archive projects with partners.
2. £20,000 available to DACs to support MEDIN specific tasks.
3. £20,000 to support the expansion of the coverage of the DAC network.
4. £20,000 for developing strategies for managing complex data sets with the MEDIN DAC network.
5. £35,000 to support projects which engage the commercial sector.

*Initial DAC WG Deliverables table to be modified following DAC WG meeting*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b> Review DACs Requirement List, update and publish Hold DACs meeting Start first data submission pilot projects Complete outstanding DAC archival projects carried over from 2009-10		KPI 2
<b>Q2</b> Fisheries DAC meeting Start further pilot projects Three to Five year forward look for DACs		KPI 2 KPI4, KPI5
<b>Q3</b> Generate web pages on how to submit data to DACs Submission from Met DAC for accreditation DAC WG meeting / Inshore Fisheries Workshop		
<b>Q4</b> Completion of Data submission pilot projects Production of DAC publicity material DACs Work Plan for 2011-2012 DAC Report for 2010-11		KPI 2 completion

## **4.2 WS2 Standards for data and metadata**

2.1 The main objectives for the standards work-stream in 2010-11 are to continue to develop and maintain standards and guidelines for data and metadata to ensure data can be easily located and re-used. These standards will be developed to be consistent with guidelines and implementation rules as they emerge from INSPIRE and other relevant national and international standards initiatives. MEDIN standards work will also support developments within the UK Location Programme. Specific activities for 2010-11 are:

- To develop, approve and publish data guidelines for Noise, Phytoplankton and Leisure and Recreation.
- To carry out practical reviews of existing data guidelines.
- To hold a workshop if deemed necessary to consider requirements for multi-beam echo sounder data, and (in cooperation with WS1) engage all relevant UK partners to develop a common strategy for processing and archiving these data.
- To develop further tools to support the generation of MEDIN format metadata from GIS and other applications.
- To encourage widespread adoption of MEDIN standards through the dissemination of publicity material.

£96,634 is provisionally allocated this Work Stream:

Core Team Staff costs (105 days):	£54,634
Travel and workshop costs:	£2,000
Funds for contracted work:	£40,000
Total	£96,634

The £40,000 for contracted work will be allocated to develop and review new standards.

*Initial STDs WG Deliverables table*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b> Hold MEDIN Standards Meeting Complete upgrades to ArcCatalog and on-line metadata generation tools Give MEDIN standards presentation at ISO meeting Agree contract specification for new data guidelines and review of data guidelines Revise Data Guidelines into new agreed structure		KPI 1
<b>Q2</b> Produce and distribute MEDIN standards leaflets Maintain Discovery Standard Let contracts to review existing and derive new Data Guidelines Three to Five year forward look for STDs work		KPI 1  KPI4, KPI5
<b>Q3</b> Revise Data Guidelines in light of reviews Hold workshop if necessary on multibeam echosounder data. Hold MEDIN standards meeting		
<b>Q4</b> Production of Geophysical Survey Data Guidelines STDs Work Plan for 2011-2012 STDs Report for 2010-11		

### 4.3 WS3 Web Portal Products and Services

The main objective for this work-stream in 2010-11 is to establish and consolidate a single central search capability for UK marine environmental data, through the MEDIN Marine Discovery Portal. Additional web catalogues and services will also be supported. Specific activities for 2010-11 are:

- Maintain and develop the MEDIN Marine Discovery Portal

*The discovery portal will be delivered by the contractors in April 2010, and reviewed and tested by a steering group. Once any necessary changes are completed the consolidated operational portal will be available online from the end of May 2010. Initially the portal will be hosted by the contractor and installed at BODC once the computer environment has been prepared.*

- Enhance the flow of metadata records from DACs, aiming to achieve a critical content (> 2000 metadata records) before the end of 2010.

*The MEDIN metadata scientist will work with the MEDIN DACs and partners to ensure the portal has access to a comprehensive catalogue of metadata covering all major UK sources. Depending on the data theme, organisations should have generated INSPIRE compliant discovery metadata descriptions on their data holdings by December 2010 (bathymetry, information on protected sites, administrative information, geology ) or December 2013 (remaining marine environmental data).*

- Continue to update, expand and maintain the existing web-based marine catalogues and databases:

*UK Directory of Marine Observing Systems  
 UK Tide and sea level catalogue  
 UK Wave data catalogue  
 UK part of European Directory of Marine Environmental Datasets  
 Cruise Summary Database  
 Foreign Cruises in UK Waters*

- Plan and implement further portal and web-service developments as necessary to meet INSPIRE and UK Location Programme Discovery service requirements. *To meet INSPIRE obligations discovery (and view) services providing access to metadata should be operational by October 2011*

£133,080 has been provisionally allocated to this Work Stream, as follows:

Core Team Staff costs (316 days):	£120,080
Travel and workshop costs:	£1,000
Funds for contracted work:	£22,000
Total	£133,080

£12,000 of the funds for contracted work will support further enhancements as necessary to the Discovery Portal and the operational support provided by NERC Data Grid to the portal under a Service Level Agreement with MEDIN.

£5,000 of the funds for contracted work will fund the production of a tool to convert BODC EDMED oracle records into MEDIN portal readable xml records.

£5,000 of the funds for contracted work will go to making available MEDIN metadata

records to the Location Programme GeoPortal via a Web Accessible Folder (WAF) or Catalogue Service for the Web (CSW).

*Initial Portal and Web Services Deliverables table (requires checking by gaev)*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b> Hold MEDIN portal steering group meeting Implementation of steering group recommendations by GeoData Go 'live' of portal		KPI 1
<b>Q2</b> Installation of portal discovery service onto MEDIN virtual server at BODC. Batch tool to generate MEDIN format metadata Metadata from DAC archive projects complete and available Integrate UKMMAS protocols data database with UKDMOS and update with new monitoring programmes Three to Five year forward look for Portal and web services		KPI 1  KPI4, KPI5
<b>Q3</b> Provide CSW (or WAF) service link to UK Geoportal (and hence INSPIRE). User review of Portal functionality.		
<b>Q4</b> Attainment of KPI 1 (2000, representative, metadata records searchable through portal) Portal and Web Services Work Plan for 2011-2012 Portal and Web Services Report for 2010-11		KPI 1 completion

#### **4.4 WS4 International Awareness, co-ordination and delivery to global databases**

WS4 ensures that UK developments are linked in and consistent with international initiatives, and that obligations to provide data to global data bases are met. The main objectives for the International work-stream in 2010-11 are to

- Provide a UK view on European and International initiatives/drivers relevant to MEDIN.
  - Continue to review anticipated requirements from the European Marine Strategy Directive as it becomes transposed into national legislation, and develop recommendations as to how MEDIN can support the UK community in its implementation.
  - Continue to track new guidelines and implementation rules as they emerge from INSPIRE and ensure the MEDIN work streams develop appropriate standards and web services (WS2 and WS3).
- Support UK representation on International Data Working Groups (e.g. ICES Working Group on Data and Information Management, IOC/IODE, EC Marine Observation and Data Expert Group, EU Working Group on Data, Information and Knowledge Sharing (WISE Marine)).
- Inform UK Community of relevant international initiatives
- Provide and support links to Global Data Bases and centres (including real-time data via GTS, and “delayed mode” data)

£27,177 has been provisionally allocated to this Work Stream, as follows:

Core Team Staff costs (40 days):	£23,177
Travel and workshop costs:	£4,000
Funds for contracted work:	£0
Total	£27,177

*International Coordination Deliverables table (requires completion by ljr)*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b>		
<b>Q2</b> Three to Five year forward look for International Coordination		KPI4, KPI5
<b>Q3</b>		
<b>Q4</b> International Coordination Work Plan for 2011-2012 International Coordination Report for 2010-11		

#### 4.5 WS5 Resources and applications development

The purpose of WS5 is to be at the interface between the DAC network and the marine data community, helping to define and develop access to the data, data products and tools users need in order to meet their scientific, engineering, statutory and commercial objectives as easily and efficiently as possible.

In practice WS5 helps MEDIN to:

- Identify, design and develop resource requirements of MEDIN sponsors, providing advice and research, as appropriate, to help them design and develop specifications for resources to meet these needs.
- Consider the resources that MEDIN is well placed to deliver which are of direct relevance to the data needs of the UK's Marine Science and Monitoring and Assessment Strategies.
- Assist in the delivery and monitor the performance of existing and new data resources which may be operated by other MEDIN work streams or an external body (e.g. the MMO) through the continuation of use cases.
- Continue to strengthen reference datasets through the identification of Competent Authorities and provide advice, support and tools to organisations identified as authorities responsible for key data themes (under the INSPIRE regulations or elsewhere).

Engaging with users remains a problem whilst there are few visible and tangible benefits to users. However, with the launch of the portal, through WS5 MEDIN plans to seek the views of users commencing at the Partner Meeting on 1 Sep. At that time the results from the reference data projects will be available and views on how to proceed will be sought.

Following and depending on the outcome of the partner meeting on 1 Sep, it is proposed to send a questionnaire to use case participants requesting their views of existing MEDIN resources and what resources they would like to see in the future. To start this process, the WS5 co-chairs recently considered the types of resources required to support the marine data community. These are summarized below.

Governance	A data policy and management framework within which all requirements, supporting documents and outputs fit.
Acquisition	Register of standards for survey and analysis, identifying and helping to address gaps and inconsistencies. Code book(s) within WS2.
Quality Assessment	System of data control and assurance and a means to demonstrate requisite QA has been undertaken. System of certification, assigning confidence levels as being addressed by UKMMAS and NMBAQC for example.
Exchange / Sharing	Specifications for exchanging data. Model licence based on Government guidelines (including Defra's Data Sharing Project).
Discovery	Metadata creation, publication and access by users (portal discovery service).
Evaluation and Use	Methods of evaluating available data, view, transformation and download services. Model or shared services for common or re-use. This is future work once the foundations of MEDIN are in place.
Products	Creation of data products for reference (and other) layers. Guidance on their support and maintenance.
Compliance	Help with compliance issues – EIR, FOI, RPSI, INSPIRE etc.
Interoperability	Registries, content strengthening, content harmonization, linked data.

It is accepted that many of the above are already been addressed either within other MEDIN work streams or elsewhere e.g. within UKMMAS. Where this is the case, the goal is to ensure that the effort is aligned with the needs of users and users are able to access and benefit from the resources available.

#### Key Activities (2010 – 2011)

##### Overall

1) Questionnaire based on perceived user needs to revalidate user requirements and validate new emerging requirements based on the main areas above. Review existing resources on MEDIN portal in terms of how these meet users existing expectations and requirements and identify any major gaps.

##### Metadata

1) Identify use cases to evaluate metadata creation tool. E.g. MMO local office creates metadata to submit with monthly statistics return using tools available on MEDIN website so that metadata can be uploaded onto MMO systems and thence published more widely. Liaise WS2 & 3.

##### (Raw) Data Delivery

1) Scoping study into how users will be able to access actual data in the future using examples of existing best practice (e.g. BODC, BGS), whether there is scope to pool / share resources within the marine community of wider (INPISRE Services).

2) Scoping what other services do users require e.g. geodetic transformation, user customisation, on the fly products etc, again taking into account the availability of such services within wider government.

##### Data Products

1) Consider how data products are created and maintained from raw data and how these are accessed and managed.

2) Strengthen reference datasets through use cases identifying issues e.g. users by-passing competent authorities, replication, lack of interoperability, support and maintenance, licensing.

3) Identify and engage with competent authorities so that they are aware of MEDIN, its goals and resources available to them (Dec 2010)

4) To undertake the above in collaboration with the MMO, Marine Scotland, The Crown Estate etc in the context of meeting the needs for marine planning.

£85,766 has been provisionally allocated this Work Stream, as follows:

Core Team Staff costs (20 days):	£11,766
Travel and workshop costs:	£4,000
Funds for contracted work:	£70,000
Total	£85,766

The £70,000 for contracted work will be used to support further projects to strengthen key reference data sets, selected use cases, and initiatives as required to support the functions of the MMO and equivalent devolved bodies.

*Resources and Applications Development Deliverables table (requires completion)*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b>		
<b>Q2</b> Three to Five year forward look for Resources and Applications Development		KPI4, KPI5
<b>Q3</b>		
<b>Q4</b> Resources and Applications Development Work Plan for 2011-2012 Resources and Applications Development Report for 2010-11		

#### 4.6 WS6 Communications: Outreach, forums, publicity

The main objectives for the communications work stream in 2010-11 are to continue to build on publicity activities undertaken in 2009, to hold a themed forum and a partner's meeting, and to publish articles in magazines to promote MEDIN. In particular the publicity of MEDIN will increase once the portal has been populated. The website will also continue to be maintained and developed as required. It is expected that MEDIN partners will also contribute to promoting awareness of MEDIN.

Specific requirements for publicity resources have been identified in WS1 (informational material on using the DAC network) and WS2 (a leaflet on MEDIN standards).

£87,986 has been provisionally allocated to this Work Stream:

Core Team Staff costs (130 days):	£57,986
Travel and workshop costs:	£15,000
Funds for contracted work:	£15,000
Total	£87,986

*Communications Deliverables table*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1</b> Edition of Marine Data News Publish articles in on-line newsletters and magazines on MEDIN portal and standards Edit and maintain website To establish MEDIN representation on MSCC communications sub-group, through Mike Osborne.		
<b>Q2</b> Organise and hold MEDIN partners meeting Edition of Marine Data News Visit organisations to promote MEDIN and discuss further sponsorship Three to Five year forward look for Comms		KPI4, KPI5
<b>Q3</b> Edition of Marine Data News Produce more publicity material as required (specifically DAC information) Publish articles in on-line newsletters and magazines on MEDIN portal and standards		
<b>Q4</b> Edition of Marine Data News Give presentation and host stand at Coastal Futures Edit and maintain website Comms Work Plan for 2011-2012 Comms Report for 2010-11		

#### **4.7 WS7 Management, planning and co-ordination**

The main objectives for the management and planning work-stream in 2010-11 are

- To continue to widen active participation in MEDIN across the whole marine sector – engage new sponsors and partners. In particular work to engage the commercial sector.
- To continue to promote the use of the data clause by all partners. Monitor the effectiveness of the clause by establishing that data under these contracts has been delivered to a DAC prior to the contract being finished. Establish the use of the data clause in licence agreements (such as FEPA).
- To progress the review of Data Policy as applied across the UK marine sector.
- To work with UKMMAS to define how MEDIN can contribute to improve the information available on pressures and activities in the UK marine environment. Lack of reliable information on pressures is a key issue identified in the preparation work for Charting Progress 2.
- To continue to represent the marine sector within the UK Location Programme, and to ensure developments are coordinated across UKLP and MEDIN.
- To develop a plan and business case for the next phase of MEDIN: 2011-2014.
- To review options and recommend a long term sustainable funding model for MEDIN and the DAC network.
- To hold four Executive Team meetings and at least one Sponsors' Board.
- To report to and engage with the Marine Science Coordinating Committee as required.

£132,303 has been provisionally allocated to this Work Stream, as follows:

Core Team Staff costs (140 days):	£97,303
Travel and workshop costs:	£5,000
Funds for contracted work:	£30,000
Total	£132,303

*Management and Planning Deliverables table*

<b>Deliverable</b>	<b>Status</b>	<b>Commentary</b>
<b>Q1 (Apr-Jun 2010)</b> Hold MEDIN Sponsors' Board Quarterly Progress Report Contract Report on Marine Data Policy Finalise and Publish MEDIN Priorities Document Finalise MEDIN 2010-11 Work Plan		
<b>Q2 (Jul – Sep 2010)</b> Report on Data Archive Centre Funding Models MEDIN Business Plan for 2011-2014 Develop Information Strategy for recommendation to the Marine Science Coordination Committee Hold MEDIN Sponsors' Board (poss Q3) Quarterly Progress Report		<b>KPI 3</b> <b>KPI 4</b>
<b>Q3 (Oct – Dec 2010)</b> Hold MEDIN Sponsors' Board (if not Q2) Report on Medium-Long Term Priorities Users Review Quarterly Progress Report Report on the effectiveness of the Data Clause Pressures Workshop in coordination with UKMMAS		<b>KPI 5</b>
<b>Q4 (Jan-Mar 2011)</b> Quarterly Progress Report Annual Report for 2010-11 Work Plan for 2011-2012 Hold MEDIN Sponsors' Board		

## Annex 1. INSPIRE Deadlines

The relevant deadlines for the implementation of the various aspects of INSPIRE are as follows:

- Depending on the data theme, organisations should have generated INSPIRE compliant discovery metadata descriptions on their data holdings by December 2010 (bathymetry, information on protected sites, administrative information, geology ) or December 2013 (remaining marine environmental data).
- Discovery (and view) services providing access to these metadata should be operational by October 2011.

By supplying metadata in the MEDIN format organisations affected by INSPIRE will be meeting both these obligations.

Note also that INSPIRE requires that data download and transformation services should be available by June 2102. The implementation rules governing these services have not yet been finalised.