

Marine Environmental Data and Information Network (MEDIN)

Short Annual Report for 2008-09



1 Introduction

1.1 MEDIN is a collaborative and open partnership, established in April 2008, working to improve the management of marine data and information, and provide better access to the UK's marine data resources. Sponsors include government departments, research councils, environmental and conservation agencies, trading funds and commercial organisations. It operates under the auspices of the Marine Science Coordination Committee, and reports to that body.

1.2 MEDIN aims to establish a coordinated framework for managing marine data and information, with the following key objectives:

- A single point of access to all relevant marine data and information.
- A robust network of definitive integrated Data Archiving Centres (DACs).
- The provision through the DAC network of priority data sets to underpin UK and EU legislative and obligatory requirements, for monitoring and marine planning, in line with INSPIRE principles.
- Facilitation of full data flow to the DAC network for all government sponsored contracts in the marine and coastal zone environment.
- Coordinate input to the development of international data commitments and drivers that may influence marine data management in the UK.
- Improving mechanisms to facilitate international data exchange (including contributing to global data bases).
- Develop and maintain new/existing MEDIN resources that support improved access to marine data (data catalogues and inventories, data products, services, guidelines and tools).

1.3 MEDIN recognises that the funding support from the major government sponsors is based upon the expectation that MEDIN will provide improved access to and management of data sets required to meet key drivers, which include:

- The UK Marine Monitoring and Assessment Strategy, which in turn addresses the reporting for more than 40 national and international obligations including OSPAR, Water Framework Directive and other marine environmental directives, Conventions on Biodiversity.
- The UK National Assessment of the Marine Environment, Charting Progress 2, which is in preparation and due to be completed in 2010. MEDIN is working closely with the implementation team to identify priorities.
- Supporting the functions of the National Marine Management Organisations (and other equivalent devolved bodies). The England MMO is due to become fully operational in 2010. It is anticipated that the implementation of equivalent bodies in the other devolved authorities will run to a similar timescale.
- Preparation for preparing the first Characterisation Report under the Marine Strategy Directive, due in 2012.
- Support for implementation of the INSPIRE Directive.
- Support for the development of the UK Location Programme

2 Highlights in 2008-09

Key MEDIN achievements:

2.1 The establishment of a network of MEDIN accredited marine Data Archive Centres (DACs) (currently comprising four DACs) to provide management of marine data according to agreed best practice standards. This brings a significant core set of marine data into the coverage of the MEDIN network.

2.2 The first upload of new key data sets into the MEDIN DAC network. We anticipate a significant increase in similar initiatives in 2009-10 now that the MEDIN DAC network is formally established. Together with application of the data clause (see below) this will ensure that a flow of data is established to ensure all key UK marine data sets are securely managed and widely accessible.

2.3 The production of the MEDIN discovery metadata standard. This is the first essential step to improving the reuse of datasets. This MEDIN standard complies with other international initiatives including ISO and INSPIRE.

2.4 Establishing MEDIN as providing the accepted common approach by which access to UK marine data and information can be improved. This includes the acceptance that MEDIN will play a key role in developing the marine component of the UK Location Programme.

2.5 The development of a "Data Clause" (covering applications of standards and provision for archival) to be incorporated in negotiations for contracts involving the collection of new data. Adoption of this data clause would ensure that all such new data would subsequently be widely accessible and properly managed.

Key Events:

2.6 MEDIN has been working to a background of a changing policy environment in 2008-09. Key events have been:

2.7 The publication of the Marine and Coastal Access Bill in December 2008

2.8 Development of plans to establish new bodies to be responsible for marine management and monitoring

- Marine Management Organisation for England
- Marine Scotland
- Northern Ireland Environment Agency

MEDIN will play a key role in supporting the implementation of the Marine and Coastal Access bill, and the functions of the new bodies, in terms of providing access to data and information, and management of new data sets collected

2.9 The compilation of data, and preparation of chapters for "Charting Progress 2".
MEDIN is working with Charting Progress partners to provide an audit trail for all the data sets used and to review management arrangements for these data.

2.10 The publication of INSPIRE Implementation Rules for Metadata.
MEDIN has developed a metadata standard consistent with these rules and so helping its partners comply with INSPIRE requirements

2.11 Creation and development of the UK Location Programme.
MEDIN will play a central role in establishing the marine component of the UK Spatial Data Infrastructure

2.12 The original parent body for MEDIN – the Inter-Agency Committee for Marine Science and Technology has been superseded by a new body, the Marine Science Coordination Committee.

3 MEDIN Organisation

3.1 MEDIN has established a sound system of governance, to provide effective management of the MEDIN programme and to ensure that Sponsors' Funds are allocated in a transparent and rigorous way. Figure 1 provides an overview of the MEDIN organisational arrangements, described below.

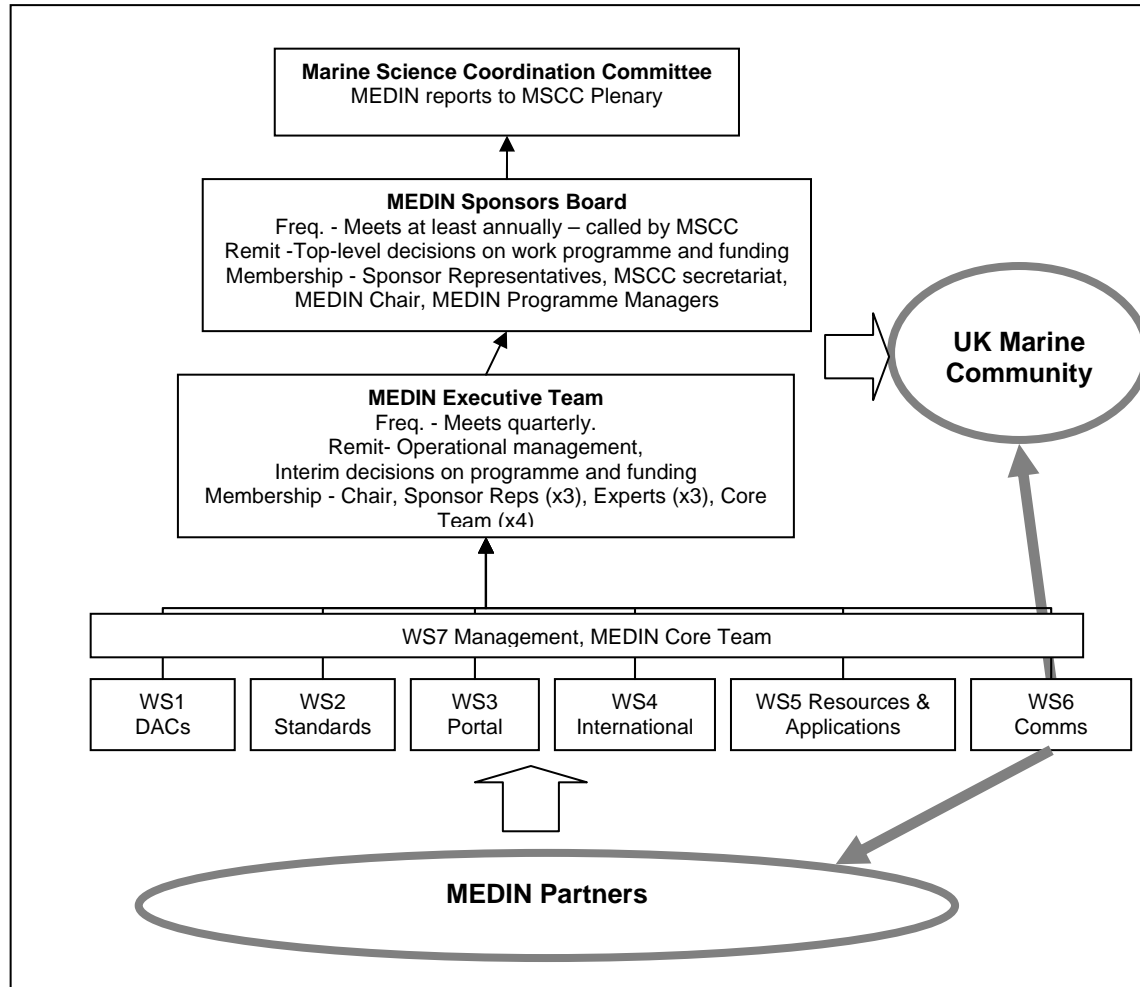


Figure 1: An overview of the MEDIN organizational structure

3.2 The Marine Science Coordination Committee is the parent body for MEDIN and MEDIN provides annual reports to the MSCC.

3.3 The MEDIN Sponsors' Board is the executive body, responsible for approving budgets and work plans. It will meet at least once each year, to be called by MSCC. The current chair is Professor Peter Liss (FRS).

3.4 The MEDIN Executive Team meets quarterly, with the remit to provide interim guidance and management of the MEDIN work programme between Sponsors Board meetings.

3.5 The MEDIN work programme is carried out within seven work streams (See Figure 1). Work stream leaders have been appointed and are responsible for the management and planning of the work stream activities.

3.6 A MEDIN core team of five staff is hosted the British Oceanographic Data Centre, which provides administrative and logistic support to MEDIN. The MEDIN core team provides project management, leadership for six of the seven work streams and secretariat support.

4 MEDIN Work Streams

4.1 In this section we provide short summaries of the activities of the seven MEDIN Work Streams in 2008-09.

4.1 WS1 Network of Data Archive Centres

4.2 The aim of this work stream is to establish a network of *MEDIN accredited* marine Data Archive Centres (DACs) which will provide secure long-term storage for marine data. These DACs are not directly managed by MEDIN, but have committed to managing data according to set of best practice procedures established by MEDIN.

4.3 The main achievement in 2008-09 was the accreditation of the first four DACs into this network:

- British Geological Survey (BGS) –geophysical and geological data.
- British Oceanographic Data Centre (BODC) – water column oceanography data.
- DASSH –Marine Species and Habitat data.
- UK Hydrographic Office – for bathymetry data



4.4 The MEDIN accreditation process has been proposed to the UK Location Programme as an example of best practice.

4.5 The first new data have been bought into the MEDIN DAC network in 2008-09 specifically as a result of MEDIN support. This was carried out by DASSH under the initiative “Broadening and simplifying MEDIN engagement”. We anticipate a significant increase in similar initiatives in 2009-10 now that the MEDIN DAC network is formally established.

4.6 Discussions have been held with the DEFRA administered Marine Aggregates Levy Sustainability Fund, to investigate how data collected under this initiative to be archived within the MEDIN DAC network. Initial effort will be focussed on data from Regional Environmental Characterisation Surveys in 2008-09. Informal agreement has been established between the MEDIN DACs as to which DAC will be responsible for managing which data sets from these surveys.

4.2 WS2 Standards for Data and Metadata

4.7 Standards are essential to support the location and evaluation of marine data sets, to provide guidelines for the generation and preparation of data according to recognised standards and best practice, and to help partners meet their obligations under the INSPIRE directive. This aspect of MEDIN activity aims to establish, promote, document and provide guidance for standards for data and metadata to cover an expanding range of data types.

4.8 The production of the discovery metadata standard, achieved in 2008-09, is the first vital step to improving the reuse of datasets as they will be able to be discovered more easily using the MEDIN portal. The MEDIN standard complies with other international and UK initiatives as far as possible and so it will be easy for MEDIN to establish links to other portals as they may be developed. Although the standard is technical in nature it is a crucial cog in the wheel and a significant step towards being able to fulfil MEDIN aims.

4.3 *WS3 Web Portal, Products and Services*

4.9 A priority for MEDIN is to establish a web portal that allows users to: rapidly identify data or derived information products for a particular geographic area and/or by a particular data theme (e.g. temperature), assess relevance of data to their need through reviewing the associated metadata, and provides a clear route to access the actual data and products of interest

4.10 A prototype Marine Discovery Portal was developed in 2006 and provides a basic marine data search capability. However, it is clear that a higher level of functionality is required, and MEDIN is committed to developing this. JNCC were awarded a contract in 2008-09 to conduct a review of MEDIN Portal User Requirements. The recommendations of this report are providing the basis for the specification for the next generation portal build, in 2009-10.



4.11 *The UK Directory for Marine Observing Systems (UKDMOS)*, developed by BODC for UKMMAS, is now managed and the content updated by MEDIN. This portal contains content specifically related to marine monitoring programmes carried out by UK agencies. It provides UKMMAS members with key information on monitoring programmes to allow them to coordinate with other partners and so make most effective use of their resources.



4.4 *WS4 International Awareness, coordination and data delivery to global databases*

4.12 It is essential that developments in the UK are linked in to key initiatives and developments in Europe and the international field.

4.13 In 2008-09 MEDIN has provided support for UK input to INSPIRE (the European directive underpinning the development of a European Spatial Infrastructure), to WISE marine (the Marine component of the Water Information System for Europe), and provided the UK focus for input to the development of EMODNET (the European Marine Observation and Data Network), and to IOC and ICES Data Policies.

4.14 In addition MEDIN has carried out the regular transfer of FRS CTD (temperature/salinity/depth) data to the Global Telecommunication System (GTS) in near-real-time. In October 08, the 500th CTD profile was sent to GTS.

4.5 *WS5 Resources and Applications Development*

4.15 This work stream operates as a Working Group which has a wide cross sector membership. The objective is to take an overview of how well the MEDIN framework and resources are meeting key user needs. Workshops and other forums are used to identify issues, monitor performance and user satisfaction, and to specify user requirements for further MEDIN resources and applications.

4.16 Two workshops have been held in 2008-09 which focussed primarily on the

provision of marine reference information. Key providers have been identified and user requirements established. Further work will aim to support the creation and maintenance of the component data layers by appropriate organisations.

4.17 WS5 also supports the maintenance and updating of catalogues by MEDIN on the Oceannet website (tides, waves, moored current meters, and cruise data base)

4.6 WS6 Communications: Outreach, forums, publicity

4.18 MEDIN continues to publish Marine Data News (MDN), to which submission of articles remains open to all organizations. In 2008 three issues of MDN were published and distributed to over 500 subscribers.

4.19 A complete website redesign was undertaken in 2008-09, and the new site became live in April 2009. There will continue to be a restricted area providing password controlled web pages for the Underwater Sound Forum and UKMMAS HBDSEG.

4.20 MEDIN attended a number of events, including Geomatica 2009 in Cuba, and sponsored the Coastal Futures 2009 meeting in January



4.7 WS7 Management, Planning and Coordination

4.21 Work Stream 7 covers the management, planning and coordination activities as provided by the core team based at BODC, with the support of the MEDIN Executive Team. This includes the organisation of MEDIN Executive Team meetings, quarterly and annual reporting, and the production of an annual Work Plan.

4.22 Additional activities involve the consolidation of the MEDIN partnership, as described in Section 6.

5 Financial Summary

5.1 Sponsorship funds totalling £635,000 were received in 2008-09. £408,408 were spent as detailed below:

- Staff Costs £281,410
- Travel Costs £12,295
- Contracts, bought in services £114,702

£239,653 was carried forward to 2009-10. This under-spend resulted from a late start of MEDIN activities in the 2008-09 Financial Year.

6 Consolidation of the MEDIN framework.

6.1 A sustainable network for the management of marine environmental data and information if the UK marine community as a whole agrees to common principles for data management and access.

6.2 Thus MEDIN has developed a Partnership Agreement which defines these principles and is asking partners to sign up to them. This will necessarily require some, perhaps all, partners to change internal data procurement, handling and

management practices.

6.3 MEDIN has also developed a “Data Clause” which it recommends for implementation by partners during the tendering process and/or contract negotiations for projects involving the collection of new marine data. The principle is to establish a enforceable contractual agreement with respect to standards to be used, data licencing and ownership, and arrangements for archiving. This should ensure the flow of all new marine data into the DAC framework.

6.4 MEDIN is also leading the development of a UK Marine Data Policy Statement outlining a 13 point plan for achieving best practise in line with EU and UK Directives and programmes.

6.5 A sub-group has been tasked by the MEDIN Executive Team to specify the terms of reference for an independent review of the approaches to data licencing and IPR as applied by major data holders in the marine sector. This will feed into ongoing work at OPSI and the UKLP which are considering future approaches to IPR, Licensing and Geo-Rights management (which is a key element of INSPIRE)

7 Conclusions

7.1 Important progress has been achieved by MEDIN in 2008-09.

- A solid organisational basis for MEDIN has now been established, with rigorous and transparent procedures put in place for the use of Sponsor Funds
- The MEDIN DAC network has been established to ensure the secure long term archival of important marine data, with the accredited MEDIN DAC meeting an agreed set of requirements.
- The first MEDIN standard has been established, for Marine Discovery Metadata. This will support improved searching for marine data sets archived.
- MEDIN has been accepted by the UK marine community as the route to improved management of UK’s marine data resources.

7.2 In 2009-10 the focus will be on widening the coverage of the DAC network, developing new standards as appropriate and, critically, engaging with MEDIN partners and the marine community to ensure that data starts flowing into the DAC network and that the standards are being adopted.

7.3 The objectives for 2009-10 are:

- The accreditation of two further DACs, for fisheries and meteorological data.
- The archival of a large volume of highly important marine environmental data into the MEDIN DAC network, data that were previously not accessible by the wider community.
- A significantly enhanced MEDIN discovery portal for marine data.
- Continued development of key standards, in particular those required for evaluation metadata, in line with INSPIRE requirements and in parallel with developments under the UK Location Strategy.
- Close working arrangements between MEDIN and the new organisations being established to manage the UK’s marine environment.
- Continued delivery of UK data sets to global data bases.

7.4 Together, these developments will ensure that MEDIN partners and the wider community will begin experience real benefits, in terms of easier access to an increasing range of marine data and information.

Organisations Active in MEDIN

ABPmer	Marine Environmental Consultancy, (www.abpmer.co.uk)
AFBI	Agri-Food and Biosciences Institute (Northern Ireland), (www.afbini.gov.uk/)
dBERR	Department for Business, Enterprise and Regulatory Reform <i>Sponsor</i> , (www.berr.gov.uk/)
BGS	British Geological Survey, <i>Accredited MEDIN DAC</i> (www.bgs.ac.uk)
BODC	British Oceanographic Data Centre, <i>Accredited MEDIN DAC</i> (www.bodc.ac.uk)
CEFAS	Centre for Environment Fisheries and Aquaculture Science, (www.cefasc.co.uk)
CCW	Countryside Council for Wales (www.ccw.gov.uk). <i>Sponsor</i>
DASSH	Data Archive for Seabed Species and Habitats, hosted at MBA. <i>Accredited MEDIN DAC</i> . (www.dassh.ac.uk)
DEFRA	Department for Environment Food and Rural Affairs. <i>Sponsor</i> (www.defra.gov.uk)
EA	Environment Agency, <i>Sponsor</i> . (http://www.environment-agency.gov.uk/)
EDINA	Unit of Edinburgh University. Provides GI services for academic Community, (www.edina.ac.uk)
English Heritage	(www.english-heritage.org.uk)
Finding Sanctuary	A project aiming to create a network of Marine Protected Areas of the South West Coast of England. (www.finding-sanctuary.org/)
FRS	Fisheries Research Services. (www.marlab.ac.uk) <i>Now Marine Scotland Science</i>
Geodata	Consultancy based at University of Southampton, specialising in environmental data management. (www.geodata.soton.ac.uk)
HR Wallingford	Marine consultancy. <i>Sponsor</i> (www.hrwallingford.co.uk)
IMAREST	Institute for Marine Science and Technology. (www.imarest.org.uk)
JNCC	Joint Nature Conservation Committee. <i>Sponsor</i> (www.jncc.gov.uk)
MBA	Marine Biological Association (Pilot DAC through DASSH). (www.mba.ac.uk)
MCA	Maritime and Coastguard Agency. <i>Sponsor</i> (www.mcga.gov.uk)
MOD	Ministry of Defence. <i>Sponsor</i> (www.mod.uk)
NERC	Natural Environment Research Council, <i>Sponsor</i> (www.nerc.ac.uk)
SAMS	Scottish Association for Marine Science (www.sams.ac.uk)
Scottish Government	<i>Sponsor</i> (www.scotland.gov.uk)
SNH	Scottish Natural Heritage (www.snh.org.uk)
SeaZone	Commercial Company delivering marine GI products. <i>Sponsor</i> (www.seazone.com)
SEPA	Scottish Environmental Protection Agency. (www.sepa.org.uk)
SSMEI	Sustainable Scotland Marine Environment Initiative. (clydeforum.org/SSMEI/) and (www.nafc.ac.uk/Marine_Management/General/SSMEI/)
UKHO	United Kingdom Hydrographic Office. <i>Sponsor, and MEDIN Accredited DAC for Bathymetry data -pending UKHO board decision</i> (www.ukho.gov.uk)
Wessex Archaeology	(www.wessexarch.co.uk/)

Glossary

CCO	Channel Coast Observatory. (www.channelcoast.org)
CTD	"Conductivity, Temperature, Depth" – shorthand for a standard water column profile measurement of temperature and salinity against depth
DAC	Data Archive Centre
ECOOP	European Coastal sea Operational observing and forecasting system (see http://www.ecoop.eu)
ERFF	Environment Research Funders Forum
GI	Geospatial Information
GTS	Global Telecommunications system
Humboldt	An EU project working towards harmonisation of spatial information
IACMST	Inter Agency Committee on Marine Science and Technology (www.marine.gov.uk)
ICES	International Council for the Exploration of the Sea
INSPIRE	Infrastructure for Spatial Information in Europe, EC Directive (inspire.irc.it/)
IOC	Intergovernmental Oceanographic Commission
IODE	International Oceanographic Data and Information Exchange
ISO 19115	International Organisation for Standards, standard for metadata for Geographic Information – standard for metadata
IT	Information Technology
MDIP	Marine Data and Information Partnership (www.oceannet.org/mdip)
MEDAG	Marine Environmental Data Action Group (www.oceannet.org/medag)
MMO	Marine Management Organisation.
MOTIIVE	Marine Overlays on Topography for Annex II valuation and Exploitation. EC Framework 6 Project (www.motive.net/)
OSPAR	International Commission for the Protection of the Marine Environment of the North-East Atlantic (www.ospar.org)
SEA	Strategic Environmental Assessment
SeaDataNet	EC framework programme to establish a European infrastructure for Ocean and Marine Data Management (www.seadatanel.org/)
UKDMOS	UK Directory of Marine Observing Systems – an initiative under the UK Marine Monitoring and Assessment Strategy to provide information on marine monitoring programmes.
UK Gemini	UK standard for metadata for Geographic Information
UKMMAS	UK Marine Monitoring and Assessment Strategy. The UK government led programme to coordinate marine monitoring necessary to meet government objectives of a clean, healthy, safe, productive and biologically diverse marine ecosystem (see www.defra.gov.uk/environment/water/marine/uk/science/monitoring.htm)
UNICOMARINE	Biological Consultants in the Marine Environment
WISE	Water Information System for Europe, a joint initiative between the European Environment Agency and the European Commission.
WMO	World Meteorological Organisation
WORMS	World Register of Marine Species