

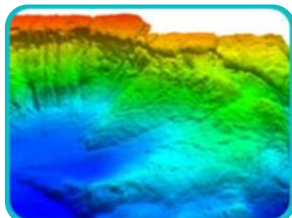


Annual Report

2023-2024

'measure once, use many times'

Highlights of the year



Access to marine datasets

We provide a single place to find marine environmental data. In March 2024, the MEDIN portal described and provided access to over 17,800 marine datasets, owned or managed by over 600 public and private sector organisations. *Read more on page 18.*



Data managed by specialists

We coordinate a network of specialist Data Archive Centres (DACs) that provide long-term, interoperable access to UK marine data. Our data centres are working towards an international accreditation called Core Trust Seal and by March 2024, 6 of our DACs had achieved this accolade. *Read more on page 14.*



Marine data standards

We provide a standardised way for the UK marine community to describe the data they collect. This year, our suite of online training that explains how to use our metadata standard and data guidelines received international accreditation from the Institute for Marine Engineering, Science and Technology (IMarEST). *Read more on page 16.*



Marine policy

We provide expert advice to government departments and agencies, supporting the UK Marine Monitoring and Assessment Strategy (UKMMAS) community. This year we pushed for data management plans to become mandatory for all marine data collection activities across the UKMMAS community. *Read more on page 28.*



Interoperable systems

We provide opportunities for the UK marine community to benefit from the interoperable systems we supply. This year we shared our catalogue of UK marine information with Ocean InfoHub, the digital infrastructure for the UN Ocean Decade. *Read more on page 21.*

Performance

2023-24 was the final year of the Marine Environmental Data and Information Network's (MEDIN) five-year (2019-24) [Business Plan](#). MEDIN is strengthening and evolving as the leading authority on the management of marine environmental data, albeit with a reduced level of funding, down from £763K per year before 2011 to £524K in the last year.

Our Key Performance Indicators (KPIs) show some areas of significantly increased performance, as well as helping us identify some areas that may benefit from more focus in the future. In particular, this year we saw increases of:

- 150% in the number of organisations registering for our newly accredited training course.
- 86% in the average number of unique visitors to the MEDIN portal per month, and a 70% increase in the average number of pages viewed per month. The MEDIN portal is one of our key outputs, providing a wealth of information about datasets collected or owned by over 600 different UK organisations and it is fantastic to see this level of uplift in the number of users for the second year running.
- 28% in the number of people receiving news and updates from MEDIN via our social media presence.
- 25% in the number of national and international conferences, workshops and webinars with participation from MEDIN and our Data Archive Centres (DACs) – a standout year for MEDIN reaching global audiences.

As noted in previous years, 95% of datasets available from our DACs are accessible online and seven of our DACs now provide online access to over 85% of their data holdings. This year some of our DACs saw a significant decrease in the number of requests for data (e.g. 59% decrease at the British Oceanographic Data Centre), whereas others saw a significant increase in the number of requests for data (e.g. 65% increase at DASSH). We have not seen such differences across our DACs previously and it will be interesting to explore the underlying reason for this.

In 2023, we celebrated 15 years of MEDIN, noting our key milestones and celebrating the achievement of providing access to over 17,500 datasets owned or managed by more than 600 organisations. As well as taking time to reflect on past achievements, we spent time this year consolidating our stakeholders' requirements into an ambitious new [Business Plan](#)¹ to cover the next five years, 2024-2029.

MEDIN's reputation has continued to grow. This year our work to submit high-quality metadata to the UN Decade digital infrastructure Ocean InfoHub saw MEDIN as the largest single contributor. This is another example of MEDIN providing an international lead in this field and saw MEDIN recognised as a '*shining example of global metadata exchange*'.

MEDIN's current Business Plan was developed around 3 strategic goals, which encompass MEDIN's vision for all UK marine data to be Findable, Accessible, Interoperable and Reusable (FAIR). MEDIN has defined seven Key Performance Indicators (KPIs) based on these strategic goals. 2019-20 provided the baseline, towards which we compare the KPIs for subsequent years. The KPIs are listed below.

¹ https://medin.org.uk/sites/medin/files/documents/Business_Plan_2024_2029_final.pdf

Strategic Goal A: MEDIN delivers its vision for all of the UK marine community

by providing tools and services beneficial across the wide spectrum of the marine data community and the full data lifecycle; ensuring widespread archiving and open access to high-quality data to enable maximum use and security and providing integration and coordination of services.

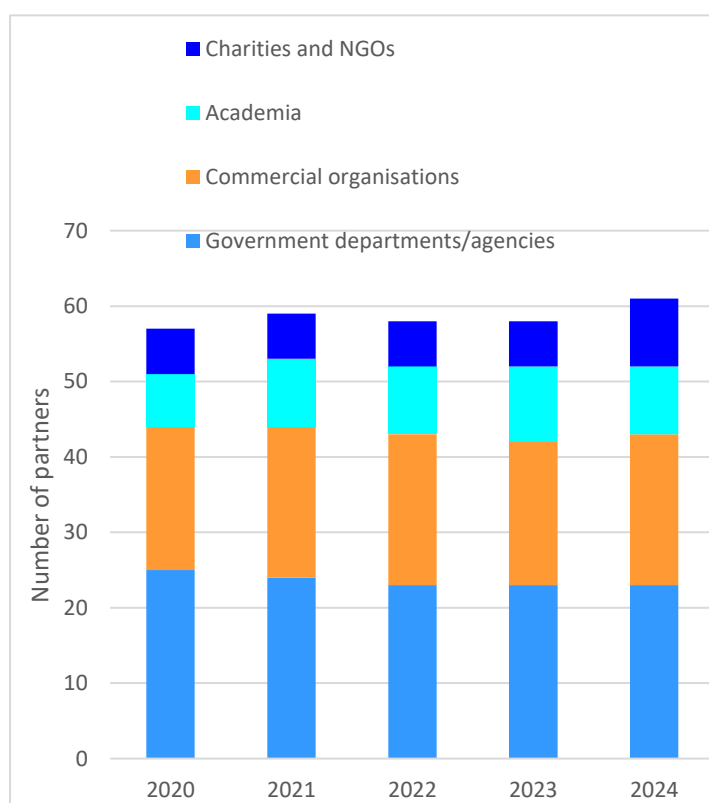
We have 2 Key Performance Indicators that measure progress against this goal:

KPI 1: Number of active MEDIN partners

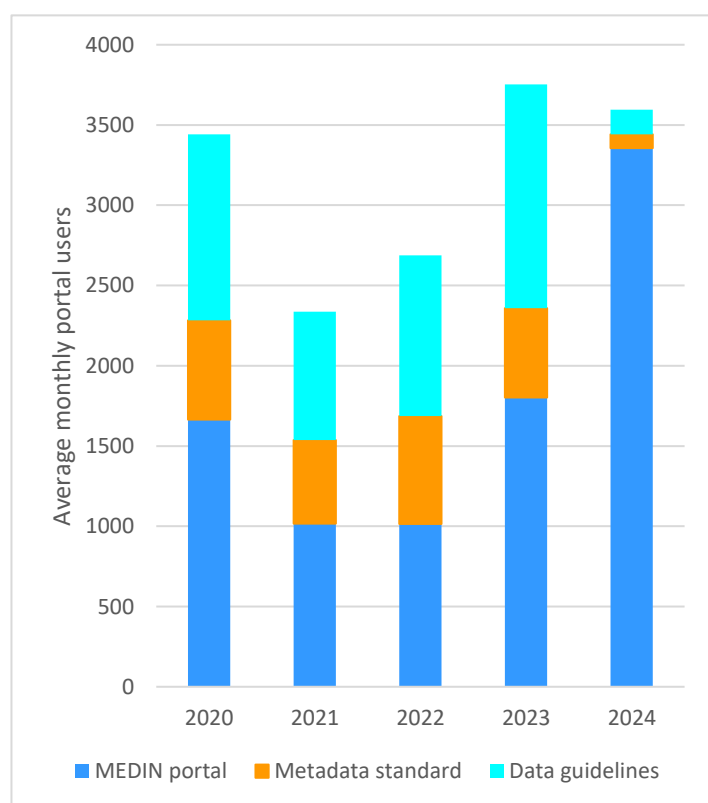
KPI 2: Number of users of MEDIN tools and services

How did we perform this year?

61 partner organisations



3596 users²



² We have not yet identified a robust way to capture the number of users of the Data Archive Centres, so this metric greatly underestimates the number of users of MEDIN tools and services. Nevertheless, it is useful to compare the change over time of the metrics we can measure.

Strategic Goal B: MEDIN delivers the technical infrastructure required to ensure UK marine environmental data are Findable, Accessible, Interoperable and Reusable (FAIR) by providing: a coordinated network of marine Data Archive Centres, a single portal to access all UK marine data, and standards, tools and services to support the UK marine community.

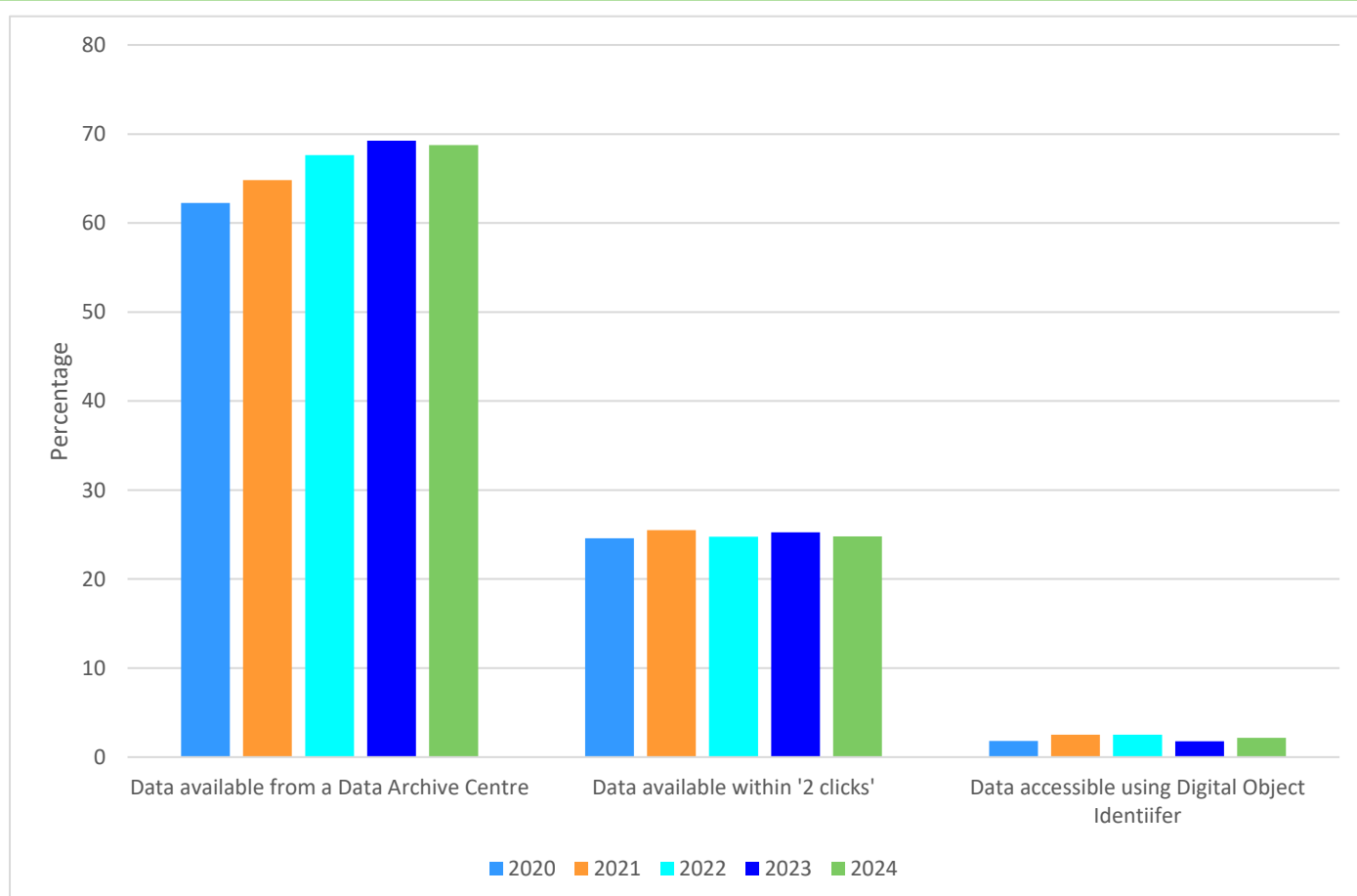
We have 2 Key Performance Indicators that measure progress against this goal:

KPI 3: Summary of access to data described in the MEDIN portal

KPI 4: Number of requests for data at MEDIN Data Archive Centres

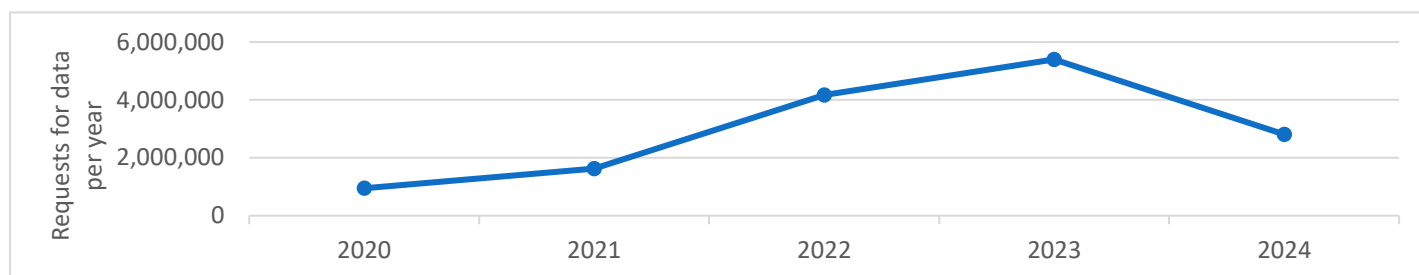
How did we perform this year?

69% data available from accredited Data Archive Centres

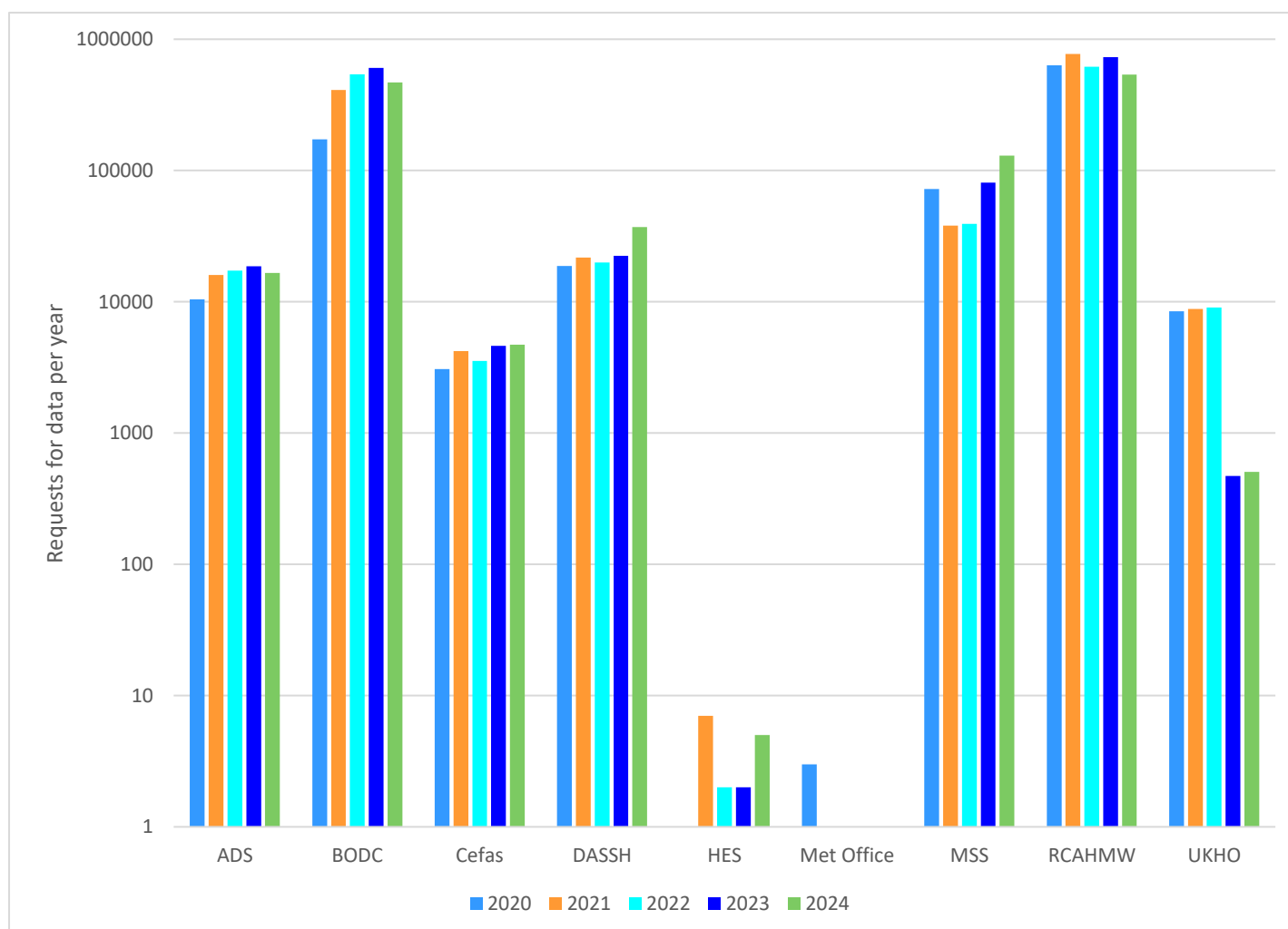


The percentage of data within the MEDIN portal that are available: from accredited Data Archive Centres; online; within '2 clicks' of finding them on the MEDIN portal and with a Digital Object Identifier

2.8 million requests for data. Nearly 3 times that of 2020



The total number of requests for data from all of the MEDIN Data Archive Centres between 2000 and 2024.



The number of requests for data in 2020, 2021, 2022, 2023 and 2024 at each MEDIN Data Archive Centre. Note the logarithmic scale on the y-axis.

Strategic Goal C: MEDIN delivers an open and constructive data management

culture fostering global collaboration and partnerships; addressing skills gaps; providing training and education.

We have 3 Key Performance Indicators that measure progress against this goal:

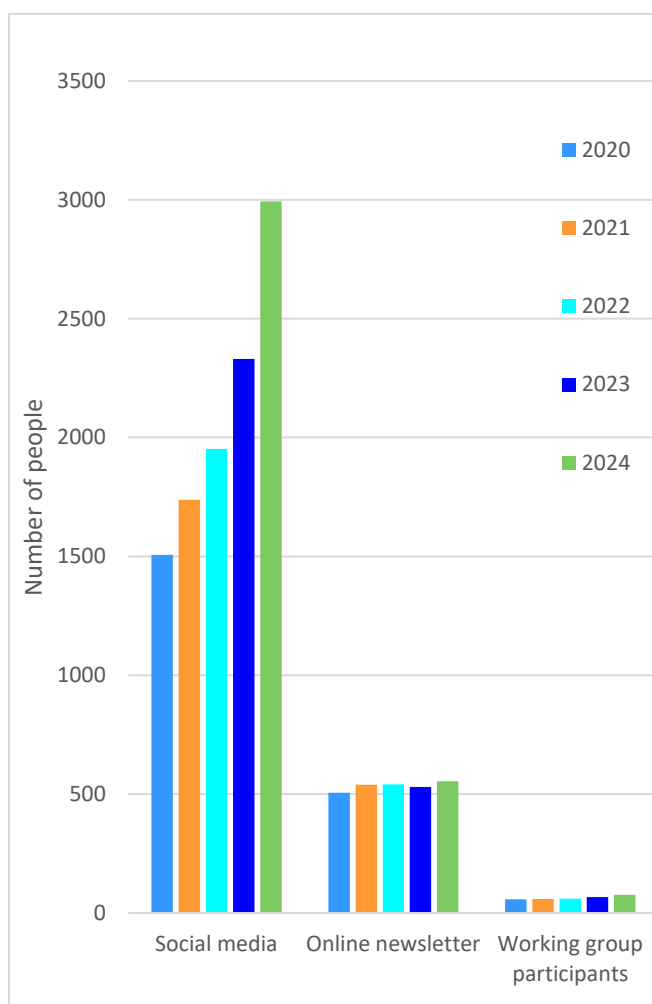
KPI 5: Number of people receiving regular MEDIN updates

KPI 6: Number of organisations receiving MEDIN data management training

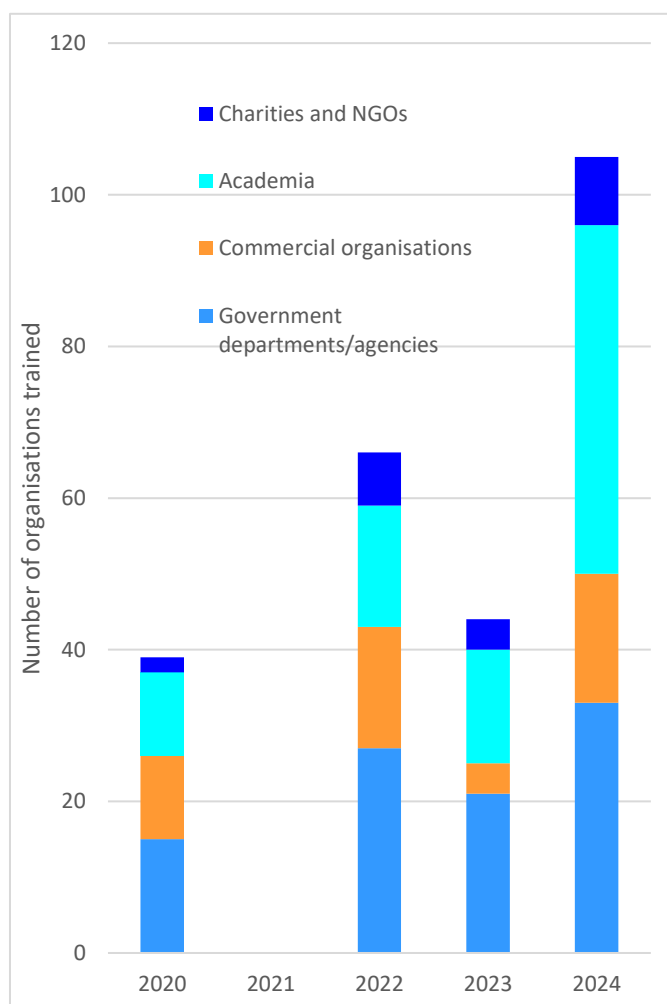
KPI 7: Number of national and international conferences or trade fairs where MEDIN is represented

How did we perform this year?

3624 update recipients



104 organisations receiving training



MEDIN represented at over
40 national and
international events



EMODnet
European Marine
Observation and
Data Network



ICES
CIEM

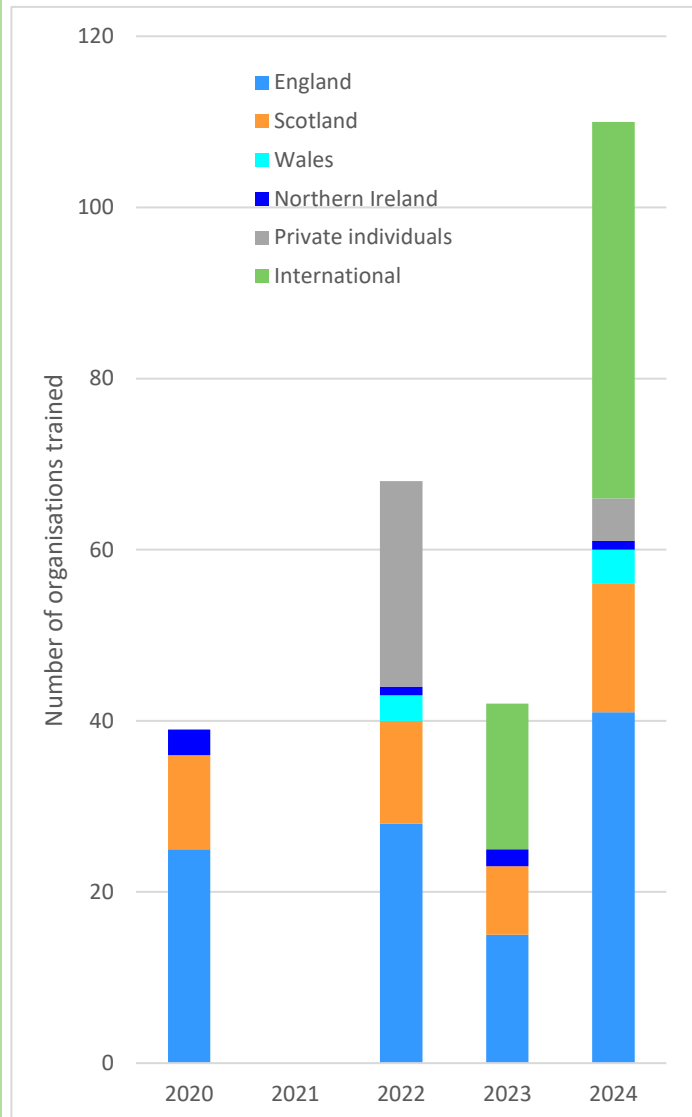


**Ocean best
practices**



**International
Data Week**
A FESTIVAL OF DATA

Amongst many others.



Finance Summary

This year we raised £524,000 in sponsorship for MEDIN, an increase of 1.4% from last year

Available funds

MEDIN is a collaborative initiative that attracts sponsorship from like-minded organisations who recognise the scientific, environmental and financial benefits of providing a coordinated, national framework for managing the UK's valuable and unique marine data resources. £602,092 was available to fund MEDIN activities in 2023-24: £524,000 from the consortium of 15 sponsors, £75,834 carried over from previous years and £2,258³ for specific development projects.

Sponsor Name	Funding level for 2023-24
DEFRA: Department of Environment Food and Rural Affairs	£175,000
NOC: National Oceanography Centre/ NERC: Natural Environment Research Council	£131,000
Scottish Government	£88,000
DESNZ: Department for Energy Security and Net Zero	£30,000
UK Hydrographic Office	£19,000
The Crown Estate	£15,000
Met. Office	£14,000
Cyfoeth Naturiol Cymru / Natural Resources Wales	£14,000
Joint Nature Conservation Committee	£10,000
Maritime and Coastguard Agency	£7,000
AFBI: Agri-Food and Biosciences Institute	£6,000
OceanWise	£5,000
DAERA: Department of Agriculture, Environment and Rural Affairs, Northern Ireland	£5,000
Welsh Government	£5,000
TOTAL available to MEDIN from sponsorship funding	£524,000
Carry over from previous years	£75,8348
Funding for special projects	£2,258
Final Total available for 2023-24	£602,092

Expenditure

MEDIN is split into seven Work Streams (WS), each with its own budget and project manager, to allow efficient delivery and management of MEDIN's programme of work. We spent £568,556 during 2023-24:

- £408,557 on the employment costs of the MEDIN project managers (the MEDIN Core Team) including all individual and organisational overheads
- £7,152 on travel and subsistence costs
- £151,018 on external contract costs required for the operation, maintenance and development of the MEDIN framework
- £1,829 on the externally-funded special projects

³ £23,259 from Defra to fund project 'Solutions to measuring and managing economic risks and Opportunities in Sustainable ocean development (SOS)' and £2,258 from UKRI Arts and Humanities Research Council to fund project 'Unpath'd waters'.

Expenditure category	Expenditure in 2023-24	Work Stream	Expenditure in 2023-24
Employment Costs of Core Team	£408,557	WS1: Data Archive Centres	£116,271
Travel and Subsistence	£7,152	WS2: Standards	£107,567
External Contracts	£151,018	WS3: Portal	£113,698
Special Projects	£1,829	WS4: International Links	£25,931
		WS5: Resources and Applications	£21,453
		WS6: Communications	£54,760
		WS7: Management and Coordination	£127,048
		Special Projects	£1,829
TOTAL expenditure	£568,556	TOTAL expenditure	£568,556

End of year balance

This year we saw an increase in funding from the Crown Estate and Scottish Government. This, coupled with lower than planned expenditure on external contracts along with a planned underspend of ~£234, resulted in a total **end-of-year underspend of £33,636 for 2023-24**.

External expenditure

This year MEDIN spent £151,018 on external contract costs required for the operation, maintenance and development of the MEDIN framework.

Supplier	Item	Cost
BGS	DAC costs 2023-2024	£11,000
BODC	DAC costs 2023-2024	£11,000
DASSH	DAC costs 2023-2024	£13,200
UKHO	DAC costs 2023-2024	£11,000
Met Office	DAC costs 2023-2024	£11,000
Fish DAC CEFAS	DAC costs 2023-2024	£6,600
Historic Environment DAC ADS	DAC costs 2023-2024	£6,000
Historic Environment DAC HES	DAC costs 2023-2024	£5,000
Historic Environment DAC RCHAMW	DAC costs 2023-2024	£5,000
MacKenzie Catering	Meeting Costs	£125
Total WS 1 expenditure		£79,925

DASSH	Standards Working Group Support (April 2023-September 2023)	£4,013
DASSH	Standards Working Group Support (October 2023 - March 2024)	£3,957
MacKenzie Catering	Meeting Costs	£278
HR Wallingford	Update to metadata Maestro/MEDIN Schematron	£9,000
Dell	Docking station for Core Team member	£133
CMS	Advertising MEDIN Workshops	£216
Total WS 2 expenditure		£17,597

Maris	UKDMOS Portal Maintenance (May 2023-May 2024)	£1,500
NOC	Website hosting and support	£5,000
Maris	MEDIN portal and catalogue hosting and maintenance (January 2024-December 2024)	£8,100
MBA / DASSH	MEDIN Helpdesk (April 2023-September 2023)	£6,084

MBA / DASSH	MEDIN Helpdesk (October 2023 - March 2024)	£6,108
Maris	Update to MEDIN portal	£11,000
Namecheap	Domain renewal for medin.org.uk (5 years)	£79
Total WS 3 expenditure		£37,871

MASTS	Registration for Marine Alliance for Science and Technology in Scotland (MASTS) conference	£400
University of Southampton	Catering at MEDIN Open Meeting	£732
Various	Postage and courier costs	£182
IMDIS host organisation	Sponsoring International Marine Data and Information Systems (IMDIS) conference	£3,000
CMS	Advertising MEDIN Open Meeting	£216
Total WS6 expenditure		£4,530

Oceanwise	Representing MEDIN at Productive Seas Evidence Group (PSEG) June 2023	£690
DASSH/MBA	Representing MEDIN at Healthy and Biologically Diverse Seas Evidence Group (HBDSEG) and Chairing Biodiversity Data and Information Group (BioDIG) (April-Sept)	£2,848
DASSH/MBA	Representing MEDIN at Healthy and Biologically Diverse Seas Evidence Group (HBDSEG) and Chairing Biodiversity Data and Information Group (BioDIG) (Oct-Mar)	£2,880
Prof Peter Liss	Chairing MEDIN meetings (Sponsors' Board, Executive Team, Open meeting)	£2,520
Dr Katy Hill	Chairing MEDIN meetings (Sponsors' Board and Executive Team)	£1,680
Ocean and Coastal Futures Ltd	Advertising MEDIN Chair role	£216
University of Southampton	Meeting costs	£119
MacKenzie Catering	Meeting costs	£142
Total WS7 expenditure		£11,095

Governance

Governing Body

MEDIN was established in 2008 as a collaborative, cross-sectoral initiative for the public good. Our governing body, the MEDIN Sponsors' Board, comprises one member from each funding organisation, ensuring each funder has the opportunity to influence our national and international work. The Board is responsible for defining the strategic direction of MEDIN, approving work programmes and budgets. Professor Peter Liss CBE FRS, who has chaired the MEDIN Sponsors' Board since its inception, stepped down from the role in June 2023. Dr Katy Hill, a lead scientist at the National Oceanography Centre, became chair of the MEDIN Sponsors' Board in October 2023. The Board met twice during 2023-24.

Sponsor Name	Sponsors' Board member 2023-24
DEFRA: Department for Environment Food and Rural Affairs	Dr Rohan Allen/Liam Matear
NOC: National Oceanography Centre/ NERC: Natural Environment Research Council	Dr Helen Snaith
Scottish Government	Dr Jens Rasmussen
DESNZ: Department for Energy Security and Net Zero	Saravanan Marappan
UKHO: UK Hydrographic Office	James Carey
The Crown Estate	Chelsea Bradbury
Cyfoeth Naturiol Cymru / Natural Resources Wales	Mark Diggle
Met Office	Jon Turton
JNCC: Joint Nature Conservation Committee	Elly Hill
Maritime and Coastguard Agency	Andrew Colenutt
AFBI: Agri-Food and Biosciences Institute	Dr Matt Service
OceanWise	Dr Mike Osborne
DAERA: Department of Agriculture, Environment and Rural Affairs, Northern Ireland	Aoibheann Rooney
Welsh Government	Shelley Vince
Chair	Professor Peter Liss CBE FRS Dr Katy Hill

Operational Groups

Our Board is supported by an Executive Team, which provides interim guidance and management of our operational work programme between Sponsors' Board meetings. The Executive Team is made up of four sponsor members (DEFRA, NERC/NOC, Scottish Government and a fourth member, currently UKHO, as voted by the Sponsors' Board), three subject experts (the chairs of the MEDIN Working Groups) and the MEDIN work stream managers. Our Executive team met four times in 2023-24.

Executive Team member	Sponsor/Expert member	Executive Team member	MEDIN work stream member
Liam Matear (DEFRA)/ Dr Rohan Allen (DEFRA)	Sponsor member since 2023 Sponsor member 2022-2023	Dr Clare Postlethwaite	Since 2012
Dr Helen Snaith (NOC/NERC)	Sponsor member since 2023	Dr Richenda Houseago-Stokes	Since 2023
Dr Jens Rasmussen (Scottish Government)	Sponsor member since 2019	Dr Helen Snaith	2022-2023
Laura Hewson (UKHO)/ James Cooke (UKHO)	Sponsor member since 2023 Sponsor member 2017-2023	Dr Gaynor Evans	Since 2008
Dan Lear (MBA)	Expert member since 2020	Charlotte Miskin-Hymas	Since 2017
Graeme Duncan (JNCC)	Expert member since 2019	Roseanna Wright	Since 2018
Dr Mike Osborne (OceanWise)	Expert member since 2008	Colm Walsh	Since 2021
Professor Peter Liss CBE FRS	Chair 2008-2023		
Dr Katy Hill	Chair since 2023		

The seven MEDIN work streams are project managed and supported by the MEDIN Core Team - seven part-time staff employed by the National Oceanography Centre within the British Oceanographic Data Centre. In addition to project management, the MEDIN Core Team provide leadership for the work streams and secretariat as well as administrative support to MEDIN. The MEDIN Core Team met monthly in 2023-24.

Core Team member	Work Stream (WS) role
Dr Helen Snaith/Dr Richenda Houseago-Stokes	Lead on DACs WS
Roseanna Wright	Lead on Standards WS
Colm Walsh	Support to Standards WS
Dr Gaynor Evans	Lead on Portal, Products and Services WS
Dr Clare Postlethwaite	Lead on International; Resources and Applications; Management and Coordination WS
Charlotte Miskin-Hymas	Lead on Communication WS and support to International WS
Paul McGarrigle	Administrative Support
Dr Clare Postlethwaite	Coordinator since 2014

Working Groups

Our partners help deliver our strategic goals by participating in our working groups, which met regularly throughout 2023-24.

DAC Working Group	Standards Working Group	Portal Steering Group	Communications Working Group
Archaeology Data Service (ADS) British Geological Survey (BGS) British Oceanographic Data Centre (BODC) Centre for Environment, Fisheries and Aquaculture Science (Cefas) DASSH Department for Environment, Food and Rural Affairs (DEFRA) Historic Environment Scotland (HES) Marine Directorate of the Scottish Government (previously Marine Scotland) Met Office Royal Commission for the Ancient and Historic Monuments of Wales (RCHAMW) The Crown Estate NatureScot United Kingdom Hydrographic Office (UKHO)	BGS BODC Cefas DASSH Joint Nature Conservation Committee (JNCC) Natural Resources Wales (NRW) Scottish Association for Marine Science Nature Scot The Crown Estate UKHO Plymouth Marine Laboratory (PML)	DASSH Marine Scotland NRW OceanWise UKHO Edinburgh Parallel Computing Centre (EPCC) ABPmer	ADS BGS BODC Cefas DASSH HES Historic England Institute of Marine Engineering, Science and Technology (IMarEST) Marine Scotland National Oceanography Centre (NOC) OceanWise Scottish Environment Protection Agency (SEPA) Sussex-Inshore Fisheries and Conservation Authority (IFCA) The Crown Estate UKHO
Dan Lear (Marine Biological Association) Co-chair since 2020	Graeme Duncan (JNCC) Co-chair since 2019	Dr Gaynor Evans (MEDIN) Chair since 2008	Charlotte Miskin-Hymas (MEDIN) Chair since 2022
Dr Helen Snaith (MEDIN) Co-chair 2022-2023 Dr Richenda Houseago-Stokes (MEDIN) Co-chair from 2023	Roseanna Wright (MEDIN) Co-chair since 2019		

Parent Body

MEDIN no longer has a parent body. The Marine Science Coordination Committee (MSCC), which was dissolved in December 2022, was previously the parent body for MEDIN. Our governing body, the MEDIN Sponsors' Board, is responsible for providing strategic direction for the network and, throughout 2023-24, have explored alternative ways to provide direct links with government. We have successfully secured one such route via the Coast and Oceans Applied Systems Thinking (COAST) committee.

Administrative Body

The management and operation of MEDIN is administered by the National Oceanography Centre (NOC), on behalf of the MEDIN Sponsors Board.

Network of Data Archive Centres

This year over 2,000 datasets were added or updated in the MEDIN portal

The MEDIN Data Archive Centres (DACs) provide the cornerstone for long-term management of UK marine data and the 'collect once, use many times' philosophy. Each DAC provides expertise for their designated area of activity, applying best practice in the field of data management and archiving data from disparate source organisations, who are able to free up resource for other activity. Together, the DACs form a coordinated network that supports the reuse of data, helps to avoid duplication of primary data-gathering efforts and contributes to the drive towards making data Findable, Accessible, Interoperable and Reusable (FAIR). Currently 69% of the data accessible from the MEDIN portal are considered "archive quality". In other words, they are managed, quality controlled and disseminated by one of our accredited Data Archive Centres.

Our DACs provide

- Secure, long-term curation of key marine data sets, according to best practice and to relevant national and international standards, as demonstrated by their accredited status.
- Clear, searchable information on their data holdings by the generation and publication of metadata on the MEDIN portal.
- Open and easy access to their data, wherever possible.
- The first point of call for expertise in the management of marine data.

The DACs cover a wide spectrum of data within the marine environment, including bathymetry; fish and shellfish, fisheries, aquaculture and related samples; the historic environment; marine geology and geophysics; marine species and habitats; marine meteorology; water column oceanography. This network provides users from across the marine community with secure, long-term data archiving supported by domain expertise.

We provide direct access to UK marine data

We promote open and easy access to marine data. Our DACs continue to develop their systems and processes to make it as easy as possible to access the data they manage. This year we continued to improve direct access to data, whereby a user can access data from the MEDIN Portal within '2 clicks'. More than 95% of datasets available from our DACs are accessible online and seven of our DACs now provide online access to over 85% of their data holdings. 36% of the data held in our DACs are available to download or use within '2 clicks' of finding them on the MEDIN portal, without needing to register, login or carry out additional searches.

We move to international accreditation

The decision was taken in 2019 for MEDIN to transition to the Core Trust Seal (CTS), an internationally-recognised standard, as the required accreditation for MEDIN DACs. During this year, two of the DACs - DASSH and BODC - have been successful with CTS accreditation. CTS is a natural extension of MEDIN accreditation and allows our DACs to broaden their international reputations, further highlighting them as approved, trusted repositories. During the year the cost of CTS accreditation has increased significantly. A review of alternative accreditation schemes was undertaken within the Natural Environment Research Council (NERC) Environmental Data Service, of which BODC and BGS are part, and shared with MEDIN. The finding was that CTS is currently the most suitable accreditation scheme, but that MEDIN should review the alternatives available again over the next three years.

We improve the user experience when submitting data

Increasingly, the data being collected and submitted for archive within MEDIN are cross-discipline and cross-DAC in nature. For a contributor, interacting with each DAC separately can be both time-consuming and counterproductive. During this year, the DACs have continued to develop and strengthen a triage process for archiving multidisciplinary datasets. This provides a clearing house and single point for data to be submitted to the DACs and is operated by DASSH on behalf of MEDIN.

MEDIN accredited Data Archive Centres

ADS	Archaeology Data Service
BGS	British Geological Survey
BODC	British Oceanographic Data Centre
Cefas	Centre for Environment, Fisheries and Aquaculture Science
DASSH	Archive for Marine Species and Habitats Data
HES	Historic Environment Scotland
MO	Met Office
MDSG	Marine Directorate, Scottish Government
UKHO	UK Hydrographic Office
RCAHMW	Royal Commission for the Ancient and Historical Monuments of Wales

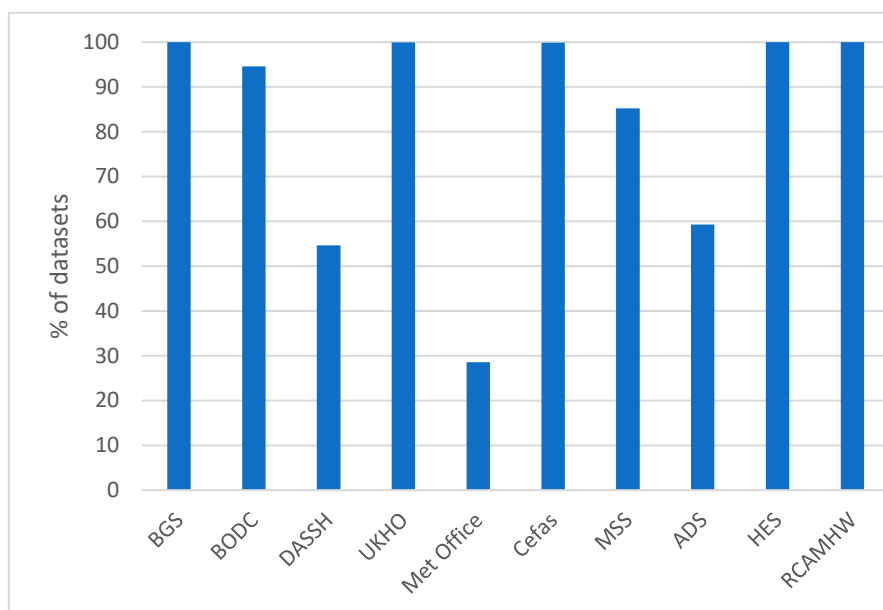


Figure 1: Percentage of each Data Archive Centre's datasets accessible online.

Challenges and opportunities

This year, our DACs noted some financial challenges that they will face in coming years. In particular, the funding for the water column oceanography and marine geology and geophysics DACs (BODC and BGS) from the NERC Data Centre National Capability evaluation and commissioning process is not inflation proofed, which will bring challenges. Furthermore, two components of the Historic Environment DAC (HES and RCAHMW) are funded through the Scottish and Welsh Governments respectively. However, funding for 2024/25 has been cut by 11% across the historic environment sector. This may have an impact in the next reporting year.

Standards for marine data and metadata

This year our internationally recognised training workshops were accredited by IMarEST.

UK marine environmental data are collected or managed by over 600 different organisations. Our metadata standard and data guidelines are the backbone of our vision for all UK marine data to be Findable, Accessible, Interoperable and Reusable (FAIR). By providing consistent, standardised ways to describe datasets, we make sure that the wealth of UK marine data can be easily found, accessed and reused.

We ensure marine data can be found

We developed the MEDIN Discovery Metadata Standard to ensure all relevant information about a marine dataset is readily available, to allow a potential user to make an informed decision about whether it is pertinent. MEDIN keeps the Discovery Metadata Standard and tools up to date to reflect updates to national (GEMINI) and international (EU INSPIRE and ISO) standards and working practices. Our two tools for creating MEDIN-compliant discovery metadata are Metadata Maestro and the MEDIN discovery metadata editor. Metadata Maestro downloads remained low this year (30 downloads, which is comparable to the previous two years) but is not surprising as the tool has not been rereleased for several years, so existing users did not need to download an updated version. In 2023-24, roughly two thirds of downloads were from the private sector, a quarter from academic organisations and the remainder from government (including devolved administrations and arms-length bodies), and Non-Governmental Organisations (NGOs). Non-UK users accounted for roughly 7% of downloads for 2023-24 and all were from commercial organisations. The MEDIN discovery metadata editor, a tool hosted by DASSH on behalf of MEDIN, had 80 new registrants in 2023-24, bringing the total number of users to 1259; 94 of these users actively updated metadata records using the tool in 2023-24. DASSH recorded 566 new records created in the online MEDIN metadata editor in 2023-24, a large increase from 341 in 2022-23, breaking the downward trend from the previous 4 years.

We ensure marine data can be reused

MEDIN offers a suite of 30 data guidelines to help the marine community collect all relevant information to make data reusable. The system we use to record metrics from our website changed this year, so we are unable to meaningfully compare the frequency of downloads this year to previous years. We no longer include users who decline cookies when browsing our website in our metrics. The MEDIN data guideline for Grab and Core data was the most downloaded guideline this year, followed by the guidelines for bathymetry and data derived from video (Figure 2). Interestingly, the new metric gathering tool indicates that six guidelines saw no downloads this year, including AIS, Cetacean image, Leisure and recreation, seismic, sediment and rock characteristics, and timed search. This stagnation could be attributed to the lack of recent updates, suggesting that users may continue to utilise previously downloaded versions, rendering the download count an imprecise measure of user engagement.

The MEDIN discovery metadata standard was downloaded at least 85 times during 2023-24. The MEDIN standard maintains compliance with UK GEMINI v2.3. The number of downloads of MEDIN resources underestimates the number of users, as existing users may only download resources if they have been updated.

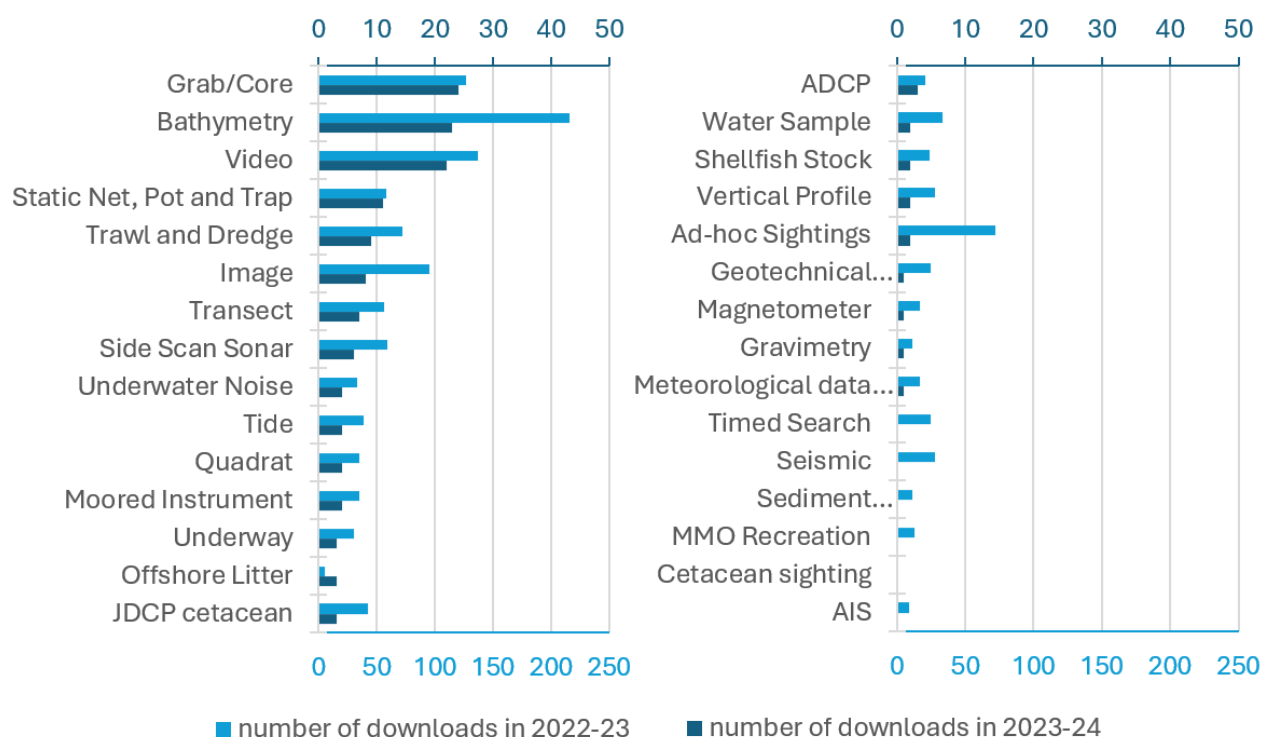


Figure 2: Number of downloads of each of the MEDIN data guidelines in 2023-24 (dark blue) and 2022-23 (light blue). Due to the change in metrics and numbers not being comparable to previous years, the series have been plotted on different axis.

We improve UK marine data management

In 2021, MEDIN launched an innovative online workshop, enhancing our outreach and educational programmes. This initiative facilitates widespread adoption of our metadata standards and data guidelines within the marine sector. The comprehensive online course, available on the OceanTeacher Global Academy platform, provides a foundational understanding of data governance and MEDIN, including controlled vocabularies, application of MEDIN data guidelines and the creation of MEDIN-compliant discovery metadata. Additionally, the course includes general data governance modules, courtesy of MEDIN sponsor OceanWise. Throughout 2023-24, we provided four online workshops in partnership with OceanWise, offering consistent data management training to the marine community. These sessions have been instrumental in promoting the adoption of MEDIN data guidelines and the discovery metadata standard, both within the UK and internationally, showcasing MEDIN as a model data governance framework. This year, we were pleased to welcome 137 participants from 109 organisations, a significant increase from the 93 attendees from 45 organisations in the previous year. The breakdown of attendees included 44% from academic institutions, 31% from government agencies and arm's length bodies, 16% from commercial entities, and 9% from charities and NGOs. Notably, international participation grew to 51 attendees from 43 organisations, up from 18 the previous year, reflecting the global reach of the OceanTeacher platform. Of the 61 UK-based organisations that attended, 67% were based in England, 25% in Scotland, 6% in Wales and 2% in Northern Ireland.

A major achievement this year was successfully achieving IMarEST Continuing Professional Development (CPD) accreditation for our online training course. The accreditation serves as a testament to the course's quality and relevance in fostering expertise among professionals engaged in marine data management and governance. This endorsement is set to have a positive impact on participants. Professionals completing the course will now earn CPD points, enhancing their professional profile and demonstrating their commitment to keeping up with industry advances. This recognition also positions the course as a valuable resource for organisations seeking to invest in the continuous development of their marine data management personnel.

To further enhance our training offerings, we conducted a consultation, gathering 41 responses from the marine community. The insights gained will inform the development of our training materials, ensuring they continue to meet the evolving needs of MEDIN users in the most effective manner.

Web portal, products and services

This year we made it easier to find marine data by updating our portal

Effective online tools are key to providing users with access to marine data. The MEDIN discovery metadata portal is by far the most comprehensive online catalogue of UK marine environmental data available. We meet the needs of the marine community in finding marine data and information with two main tools: the MEDIN portal and the UK Directory of Marine Observing Systems (UKDMOS). Our users access UKDMOS to discover information about sustained monitoring programmes undertaken in the UK and access the MEDIN portal to search for actual data. The two search interfaces are distinct, allowing users to interrogate the metadata to answer different questions.

We develop our tools to make finding data easier

This year we commissioned the latest upgrades to the MEDIN portal, which provides access to 17,887 discovery metadata records (as of 31st March 2024). These developments were driven by users' feedback and recommendations. Users are now able to:

- ✓ Pre-load and categorise map reference layers to enable better searching by data types and variables.
- ✓ Find parent and child metadata records.
- ✓ Take advantage of 'you may also like these data' suggesting related metadata records.
- ✓ Now view species names in italics.
- ✓ Search by ICES rectangles.
- ✓ View the 'How to use the MEDIN portal' tutorial video.
- ✓ Receive results based on weighted ranking.
- ✓ Export data collections by CSV on the portal homepage.
- ✓ Add the new MEDIN portal widget to their own website.
- ✓ Use enhanced JSON-LD formatted metadata records for machine-to-machine downloading.
- ✓ Search for non-spatial data in the MEDIN portal.

A wide view of records, advanced search and searching with the geographical bounding box is now default. We have amended icon designs and made changes to button hover texts to help users, new and returning, get the most out of using the portal. There is a new internal reporting system of MEDIN portal metrics for the MEDIN core team.

We support more people to find marine data

[Portal](#) usage has fluctuated this reporting year (Figure 3) with peaks in activity in June, July and October, alongside a continuing trend of increased portal usage. The average number of unique visitors to the MEDIN portal per month has increased by over 80% compared to last year and the average number of pages viewed per month has increased by 70%. For comparison, portal usage since January 2018 is shown below and shows the extent of the spikes. Going forward, as part of the latest tranche of developments, the new portal metrics reporting pages will provide more insight into user behaviour on the portal.

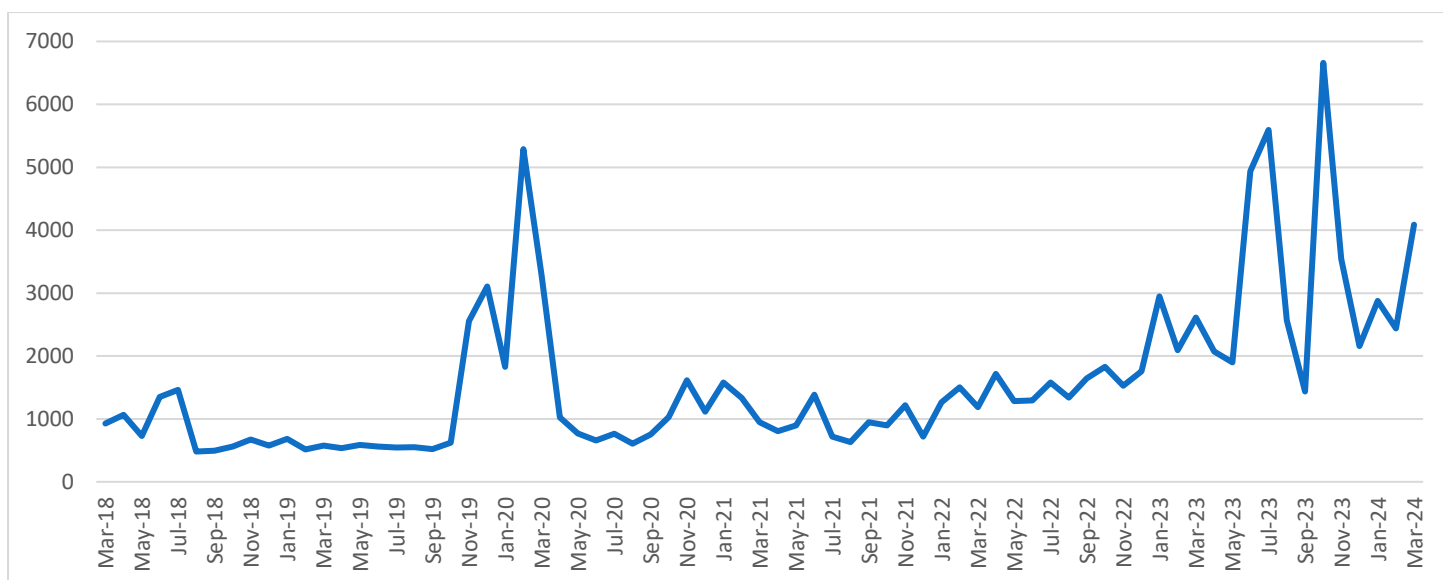


Figure 3: MEDIN Portal web traffic (Unique monthly visitors per month) from March 2018 to March 2024 (Source: AW Statistics).

For UKDMOS ([UK Directory of Marine Observing Systems](#)), there has been a decline in usage over this financial year (Figure 4). In the Business Plan 2024-2029, published this year, there were recommendations to instigate a discovery process for engaging with stakeholders to find out how a directory of UK monitoring activity should look and fulfil users' needs. This process will begin in FY 2024-2025.

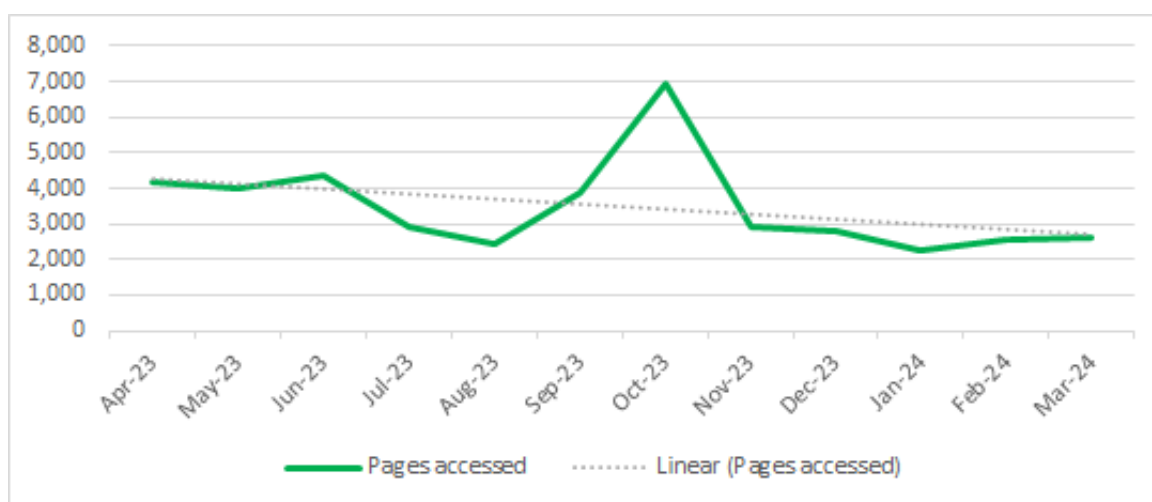


Figure 4: UKDMOS web traffic (total page views per month) from April 2023 to March 2024 (Source: AW Statistics).

We provide technical support for our users

The MEDIN Metadata Helpdesk at DASSH is on hand to help metadata suppliers having technical difficulties generating metadata. This financial year it received 44 requests for assistance, with a total of 150 follow-up email correspondences. The Helpdesk continues to be a service in constant use.

International awareness and coordination

This year we shared UK marine metadata with the UN Ocean Decade

The UK marine environment is a small part of an ever-changing global system that crosses national boundaries and influences (and is influenced by) conditions in distant regions. UK scientists and decision makers rely on marine data from global databases, as well as national ones, in order to take a wider view of our marine environment. It is therefore crucial that UK marine data can easily flow to global databases and that our Data Archive Centres keep their systems linked in, aligned to and interoperable with international data management initiatives. The key international drivers for ensuring a transparent and efficient flow of marine data are shown below (Table 1). Many of these international drivers inform UK legislation for the marine environment.

International	European
OSPAR Quality Status Reports	Marine Strategy Framework Directive
United Nations Convention on the Law of the Sea	Water Framework Directive Assessment of Ecological and Chemical Status
United Nations Sustainable Development Goals	Common Fisheries Policy Annual Assessment
	Habitats and Birds Directive reporting
	INSPIRE Directive compliance
	European Environment Agency State of the Environment Reporting ⁴
	Copernicus Marine Environment Monitoring Service

Table 1: The key international drivers for ensuring a transparent and efficient flow of marine data.

We facilitate international knowledge exchange

During 2023-24 we acted as a hub for promoting global developments in interoperability to the UK marine data community. We did this by facilitating knowledge exchange between UK experts and international initiatives such as the **International Council for the Exploration of the Sea (ICES) Data and Information Group (DIG)**, and the **Intergovernmental Oceanographic Commission (IOC) International Oceanographic Data and Information Exchange (IODE)**.

MEDIN actively participated in the ICES DIG Annual Meeting in May 2023, in addition to shorter interim meetings that took place during September 2023 and February 2024. MEDIN was also well represented in numerous DIG Working Groups set up to progress aspects of DIG responsibility outside of these core meetings. Key areas of engagement included continuing the coordination of ICES data guidelines, ensuring that these resources remain relevant and available to the wider ICES community. Elsewhere, contributions included helping to draft an ICES Data Preservation Plan to support ICES CoreTrustSeal re-accreditation and developing an ICES Data Profiling Tool, used to evaluate completeness of supporting information accompanying data sources, products and applications submitted to ICES.

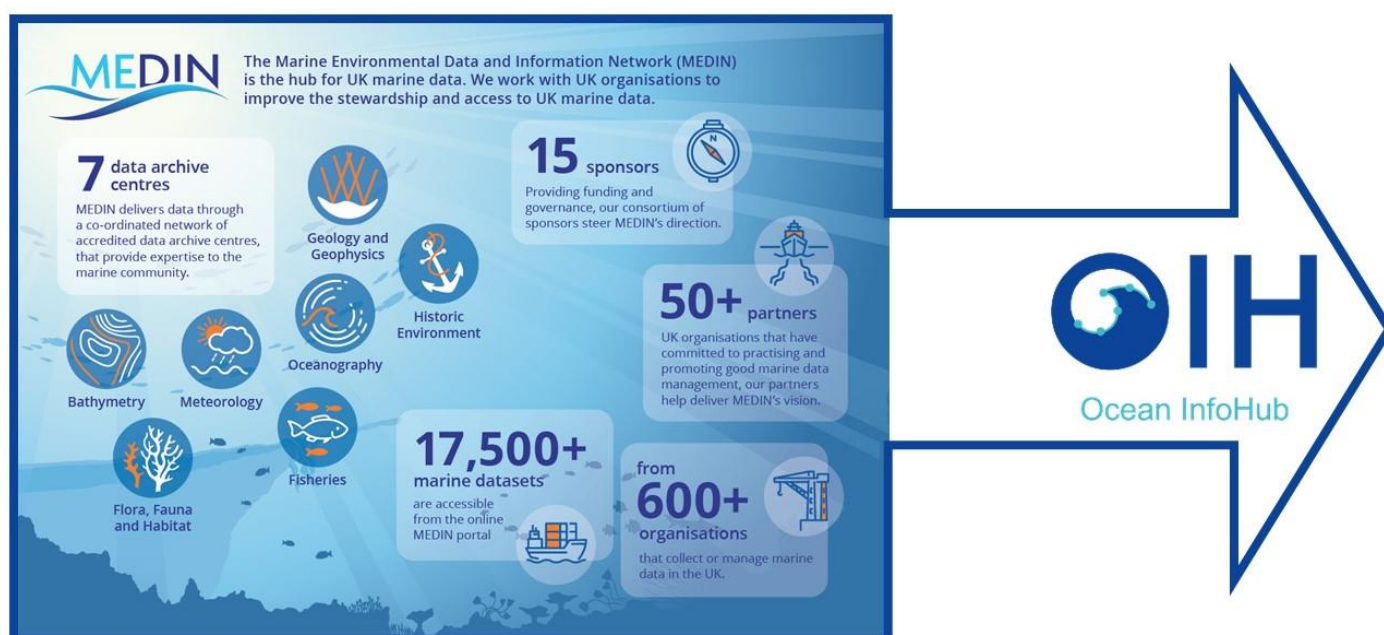
⁴ UK is no longer a member of the European Environment Agency

Whilst there was no IODE Committee meeting during the 2023-24 reporting period, MEDIN DAC BODC contributed to delivering an IODE OceanTeacher Global Academy (OTGA) training course on implementing a Quality Management Framework (QMF), which took place during January 2024 in Oostende, Belgium.

We deliver data to international systems

This year, MEDIN joined a global federation of partners which constitute the Ocean Data and Information System (ODIS; odis.org), coordinated by IODE of UNESCO's IOC. Our catalogue of UK marine data and information is now discoverable and actionable across all ODIS partners and users, allowing portals like IODE's Ocean InfoHub to deliver it to new users. This capability is key to interoperating with the emerging digital infrastructure for the UN Ocean Decade. Just like MEDIN, albeit with an international scope, the ultimate goal of ODIS is to coordinate action and capacity to improve access to ocean data and knowledge. MEDIN's catalogue of discovery metadata is now discoverable in the Ocean InfoHub web portal, with MEDIN contributing the greatest number of datasets globally to date.

MEDIN's continual innovation and participation in international frameworks was summarised by Dr Pier Luigi Buttigieg (Chair of the IODE's Ocean Data Information System): *"MEDIN is an exemplary model of national data exchange and coordination. Its operations provide a trusted and professional interface for ODIS and other international systems, representing the UK with clarity and comprehensiveness."*



We reach global audiences

This has been another standout year for MEDIN reaching global audiences with MEDIN and its Data Archive Centres contributing to over 40 national and international conferences, workshops and webinars, including those named below.

National and international conferences, workshops and webinars

Computing Applications and Archaeology (CAA) 2024. Auckland, New Zealand.

10th EuroGOOS conference – October 2023 – Galway, Ireland

8th Tides, Water Level and Currents Working Group (TWCWG8) - February 2024 - online

Advancing FrontTier Research In the Arts and hUManities (ATRIUM) kick-off meeting. Berlin, Germany

UK DNA Working Group - Inverness

Argo – Various Project Meetings

B-CUBED hackathon – March 2024 – online

Birds of a feather Research Data Alliance (RDA) meeting on vocabularies - March 2024 – online

Blue-Cloud 2026 2nd General Assembly - November 2023) – online/Rome, Italy

Crowd Sourced Bathymetry Working Group 14 – August 2023 - Kartverket, Norway

Data Quality Working Group – International Hydrographic Organisation (IHO)

E-SurfMar Annual Meeting. Online, April 23.

EUMETSAT Destination Earth (DestinE) workshop – July 2023 – Darmstadt, Germany

European Global Ocean Observing System (EuroGOOS) Tide Gauge Task Team Annual Meeting – November 2023- online

European Marine Observation and Data Network (EMODnet) Biology Annual Meeting (Romania, April)

EMODnet Bathymetry Full Meeting – September 2023 – Brest, France

EMODnet Jamboree and Open Conference 2023 – November 2023 – Brussels, Belgium

EMODnet Workshop: Data Management in Offshore Licensing Procedures - Feb 2024 – online

FAIR-EASE meeting and EOSC Symposium talk – September 2023 – Madrid, Spain

European Open Science Cloud (EOSC) Winter School – January 2024 – Thessaloniki, Greece

GEOTRACES – Various Project Meetings

International Association for the Physical Sciences of the Oceans (IAPSO) Tidal Analysis Workshop – November 2023 – Liverpool, UK

International Council for the Exploration of the Sea (ICES) Annual Science Conference

ICES Data and Information Group (DIG) – May 2023 - online and Copenhagen.

ICES DIG – September 2023 – online

International Data Curation Conference – February 2024 – Edinburgh, UK

International Data Week (Including Research Data Alliance (RDA)) – October 2023 – Salzburg, Austria

KubeCon + CNFCCCon – March 2024 – Paris, France

MARine Coastal BiODiversity Long-term Observations (MARCO-BOLO) General Assembly (Netherlands, February)

Marine Data Exchange 10th Anniversary event at The Crown Estate, London

Marine Alliance for Science and Technology for Scotland (MASTS) annual science meeting, Glasgow

Ocean Best Practices workshop, online

Ocean Biodiversity Information System (OBIS) Global Steering Group – Korea - March

Ocean Business

Oceanology International

Offshore Energy Technology 4.0

Project Tangaroa: Potentially Polluting Wrecks. The Governance & Regulatory Framework for PPWs

Roaring into the Future of Research (ROR) - August 2023 - online

Scottish Marine Energy Research (ScotMER) Symposium

Ship Observations Team

University of Southampton Careers Day

Welsh Marine Evidence Conference

Resources and applications development

This year we enhanced the MEDIN portal with the addition of easy-to-use reference layers

Our users require access to a broad range of marine data, services and products, in addition to the raw data that forms the core of MEDIN's activities. We work closely with UK marine data holders to encourage and help them deliver on their data sharing and publishing objectives. This includes the role of the Data Archive Centres in delivering data products and services.

We facilitate access to reference data

The [MEDIN portal](#) provides access to a range of data, services and products. This year, our upgrade to the MEDIN portal provided us with the opportunity to give reference layers much more visibility (Figure 5). Map reference layers are available to users to provide contextual information when searching for data types and variables in the MEDIN portal. The reference layers are now categorised using a controlled vocabulary for parameters (the NERC Vocabulary [P23](#)), making it much more intuitive for users to find what they need. The reference layers are also pre-loaded and easily searchable from the MEDIN portal home page. We have developed a new MEDIN portal reporting tool and are looking forward to using these metrics to see which new features of the MEDIN portal people are using and where to focus future development.

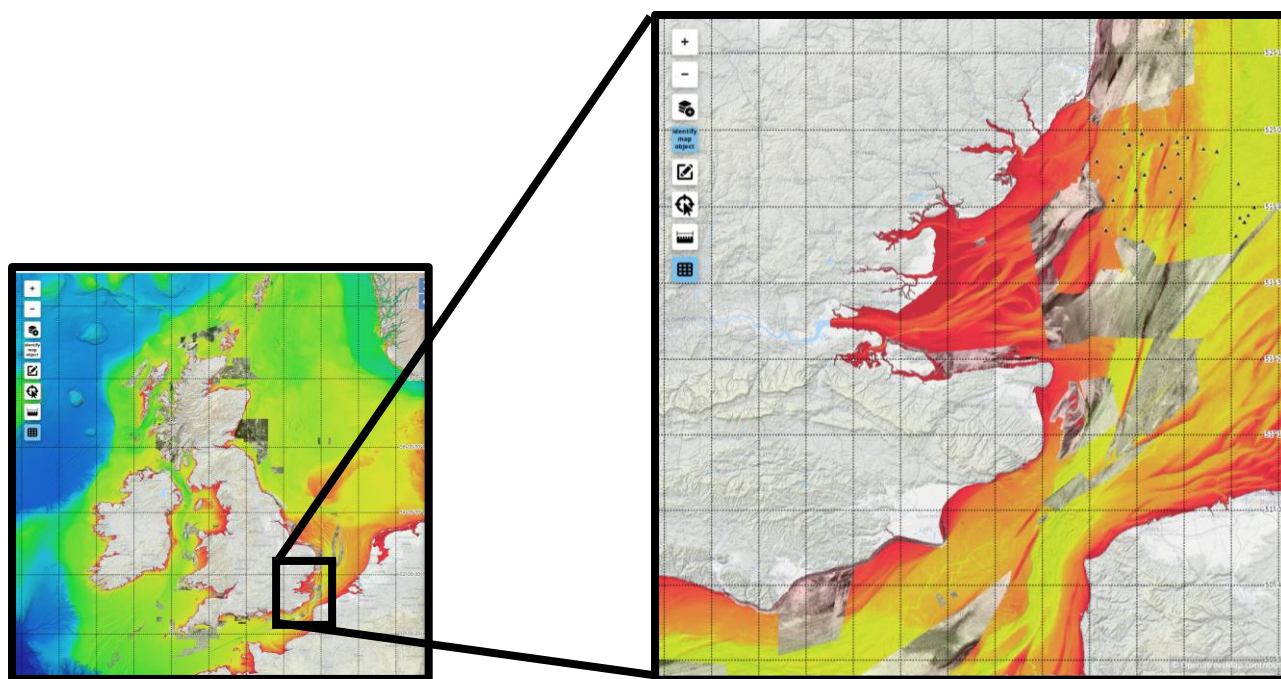


Figure 5: The search interface of the MEDIN portal displaying three overlaid reference layers demonstrating how they can provide additional context to a search. Geotechnical sample locations are shown as dots, backscatter images are shown in black and white while bathymetry is displayed using a rainbow colour scale.

We horizon scan for innovative technology

This year we continued our horizon-scanning exercise so that we can support the UK marine community adapt to advances in technology and new initiatives. We capture community input in an [open forum](#) and invite additional input throughout the year to inform future MEDIN development work. This process was particularly important this year, as it provided insights for our new Business Plan.

Communications, outreach, forums and publicity

This year we raised awareness of MEDIN across all our user groups

The UK marine community is a large and varied group of organisations spanning government departments and agencies, academia, commercial and industrial partners, and non-governmental organisations, to name a few. It is only by working together that we can realise the full financial, scientific and environmental benefits of sharing our marine data. By bringing together the different sectors of the UK marine community, we share knowledge through different channels and provide opportunities for MEDIN Sponsors and Partners to communicate to audiences they may not otherwise be able to access. Communication with these varied stakeholders is key to developing a network that serves all our partners.

We raise the profile of MEDIN in the marine community

The MEDIN Communications Working Group continues to share knowledge, exchange marine data management communication ideas and progress the MEDIN vision for communication. A total of 15 different organisations from around the marine community attended MEDIN Communications Working Group meetings this year.

National conferences and events are efficient ways to promote MEDIN services and resources and share marine data knowledge with a targeted audience. In April 2023, we held a hybrid MEDIN Open Meeting entitled “Enhancing the national framework for sharing UK marine data.” With 159 people expressing interest in the event, we had over 70 people from 39 organisations join us for the day-long meeting held in Southampton and online. The discussions from this meeting fed directly into the new MEDIN Business Plan for 2024-2029. Read the full report [here](#)⁵. In addition to hosting our own events, we also participate in key national conferences. We hosted a trade stand and presented at the Marine Alliance for Science and Technology for Scotland (MASTS) Annual Science Meeting. Our presentation at the online Offshore Energy Technology 4.0 conference highlighted our relationship with The Crown Estate and commercial organisations. We also get involved with outreach events. For example, the Welsh Marine Evidence Conference, where we presented collaborative work with Welsh Government, Natural Resources Wales and the University of Bangor.

We reach new audiences

MEDIN uses multiple online platforms to promote services and marine data news around the globe. X (formerly Twitter) followers have continued to increase this year, albeit at a slower rate to 1919. It should be noted that all X follower and engagement metrics have reduced since 2023 and metrics are no longer available to view for MEDIN on a free profile. Our follower count on LinkedIn has increased steadily, allowing our content to reach a wider global audience. As of March 2024, there are a total of 564 followers of the MEDIN profile page as well as 227 followers of the MEDIN Business page on LinkedIn. The total number of followers of MEDIN social media is now 2710. LinkedIn is clearly becoming the faster growing platform for MEDIN and we are monitoring the metrics and user engagement to ensure that MEDIN content is viewed and interacted with as much as possible, despite the changing media environment. Our aim is to increase audience and engagement to generate more visitors to our website, more registrations for our training events and more awareness of marine data management best practice.

⁵ https://medin.org.uk/sites/medin/files/documents/MEDIN_Open_Meeting_Report_2023final.pdf

We share marine data knowledge

This year, we published the first edition of the Data Archive Centre (DAC) Special Marine Data News. This was received by 528 subscribers and opened 395 times. The DAC special edition included highlights from accredited MEDIN DACs from 2023. Three regular editions of Marine Data News, our free online newsletter, were also published to an average of 555 recipients. Between April 2023 and April 2024, Marine Data News subscribers increased by 23 to 564. Published in July and December 2023 and March 2024, Marine Data News has an international readership. Figure 6 shows the locations that the newsletter was opened most frequently for each edition published this year.

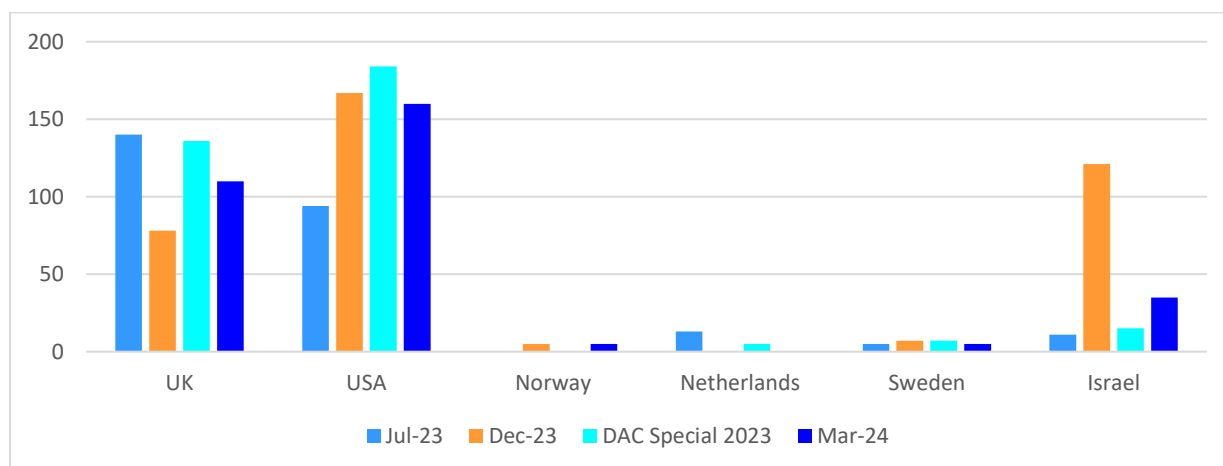


Figure 6: Bar chart showing the location that each edition of Marine Data News was accessed from during 2023-2024.

Our website, www.medin.org.uk, continues to be a major source of information and resources for our users. There were a total of 22,137 page views between April 2023-2024, with most sessions coming from England (>4300), with Scotland and the Netherlands close behind. There are a few spikes in website usage throughout the year in page views (plot not shown) - the highest being on October 13th when the website had over 4,000 users on one day, which coincided with the Ocean Best Practices workshop where MEDIN presented recent work. This year, most of our website users reached the website using Google, with just over 2000 users reaching the website directly, with a variety of other webpages and links also leading users to the website (Figure 7).

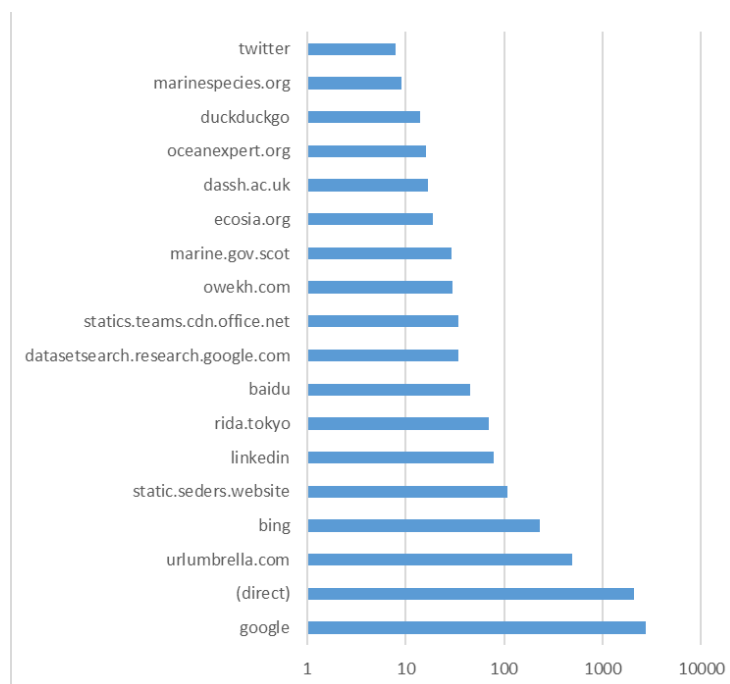


Figure 7: Bar chart showing the source of active users on the MEDIN website. Note the logarithmic scale.

Management, planning and coordination

This year we published an ambitious new Business Plan, reflecting the views of the marine community

The seas and coasts surrounding the UK have a complex range of stakeholders who manage, monitor, explore, conserve and sustainably exploit the marine environment. We seek to provide tools and services that support all UK users of marine environmental data. This requires significant coordination to address the (sometimes conflicting) requirements of our users. This work stream provides our partners with overarching coordination, alignment and oversight of marine data management activities in the UK. Long-term strategic planning, annual operational planning and reporting, project and financial management, all essential for the success of MEDIN as a collaborative endeavour, are also covered by this work stream.

We celebrated 15 years of MEDIN

In April 2023, MEDIN celebrated fifteen years since its inception and took the opportunity to reflect on some key milestones (Figure 8) at our annual Open Meeting. The success of MEDIN over the last fifteen years can perhaps best be measured through the broadening and strengthening of the partnership. Going from an initial group of four Data Archive Centres sharing 800 datasets on the newly launched MEDIN portal in 2010, to a mature network that shares over 17,500 datasets owned or managed by more than 600 different organisations across sectors in 2024, is a remarkable feat.

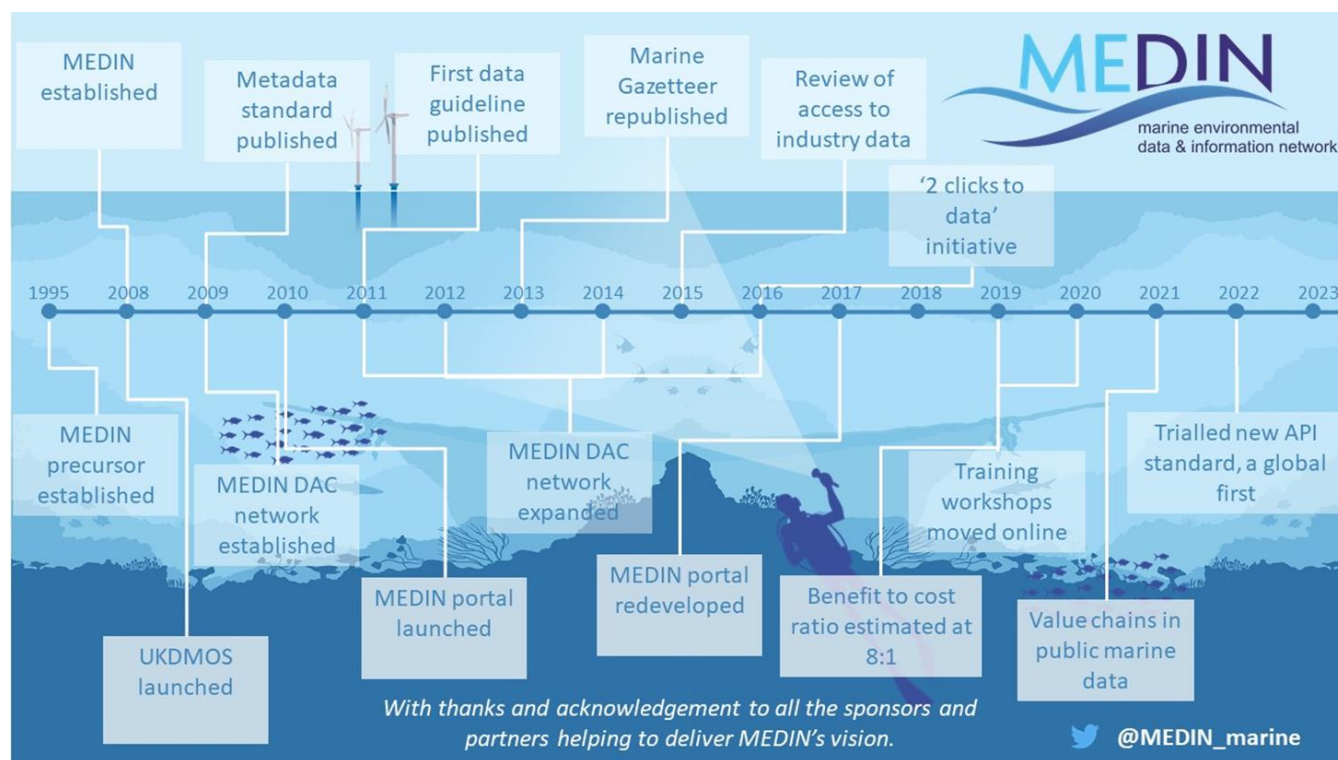


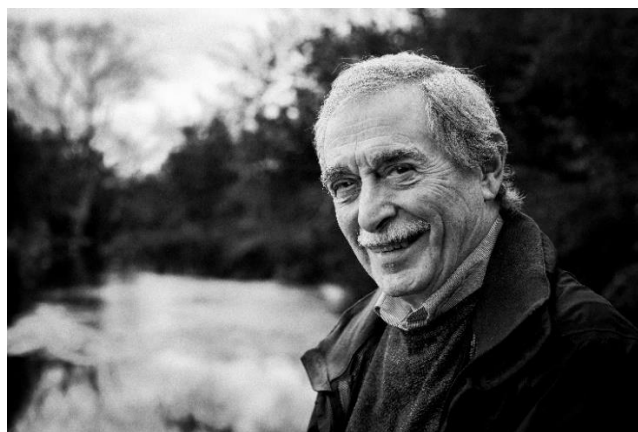
Figure 8: Schematic showing key milestones for MEDIN from 1995 to 2023.

We support policy

MEDIN provides ongoing support and expertise to the UK Marine Monitoring and Assessment Strategy community. This year, we asked the Marine Assessment and Reporting Group (MARG) to mandate the use of Data Management Plans for all data collection activities within their remit. This is a key component of the UKMMAS data strategy but is not yet uniformly applied across all UKMMAS organisations. MARG and the associated Policy Leads Group (PLG) requested evidence that a more coordinated approach is required as well as a summary of the benefits and pitfalls that this development would address. MEDIN will work with our partners to provide this evidence to continue to support our policy partners to improve management of the UK's valuable data resources.

We welcome a new Chair and thank our outgoing Chair

This year, our Sponsors' selected Dr Katy Hill as the new Chair of MEDIN. Katy is a Lead Scientist at the National Oceanography Centre focusing on ocean research infrastructure. Katy's career has a strong strategic element and she is regularly called upon to provide expert advice to the UK Government on ocean issues. Katy is actively engaged with international marine data initiatives, including the UN Ocean Decade Data Coordination Group and the World Meteorological Organisation Advisory Group on Ocean (WMO AG Ocean). With extensive networks across both academic and policy sectors, both nationally and internationally, Katy brings new strategic insight to MEDIN. Katy's tenure as MEDIN Chair will be for five years, aligned with the MEDIN Business Plan schedule.



Shortly before Katy started in the role, we bid a fond farewell to Prof Peter Liss, who stepped down as the Chair of MEDIN in June 2023 to focus on a role elsewhere. Peter has long been a strong and enthusiastic advocate for providing a systematic and coordinated way to manage the UK's valuable marine data resources. Peter chaired MEDIN for over 15 years and was also heavily involved with MEDIN's predecessors, the Marine Data and Information Platform (MDIP) and the Marine Environmental Data Action Group (MEDAG). *"MEDIN is a fantastic cooperative venture with many sponsors providing the resource and even more partners helping in the vital work of making marine data easily available to the host of organisations and individuals who utilise its services. I have been proud to chair MEDIN over the years and see it develop and provide a vital service to the marine community."* Peter Liss, July 2024.

We expand our network

Our partners commit to best practice marine data management and contribute in-kind resources to delivering our vision. This year we welcomed The Society of Maritime Industries, Seawilding and the University of Portsmouth as new partners. Like all our partners, their logos are now displayed on the MEDIN website. Representatives from these companies have been invited to join our Working Groups and are included in our communications with our partners. See the [full list of our partners](#) and contact enquiries@medin.org.uk if you are interested in sponsoring or partnering MEDIN.

Challenges and opportunities

This year we continued to review our governance structure and our links to government. The MEDIN Sponsors' Board requested that we approach the Coast and Applied Systems Thinking (COAST) Committee to highlight the need for cross-governmental and cross-sectoral groups such as MEDIN to have direct links into government. COAST members agreed that MEDIN could bring items to COAST for a cross-government steer but would not offer formal governance mechanisms for such groups. We will continue to review whether this proves effective.

We look to the future

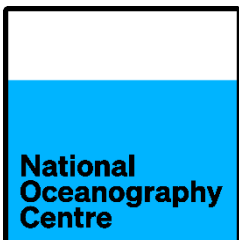
As we approached the end of a MEDIN Business Plan period, a small group of stakeholders from across the network⁶ worked with some of the MEDIN project managers to consolidate our stakeholders' requirements into an ambitious [Business Plan](#)⁷ to cover the next five years. By analysing our strengths and weaknesses alongside the opportunities and threats faced by the network, we have framed MEDIN's high-level objectives within the evolving marine data landscape. Recognising that the predicted sponsorship income to MEDIN will not be sufficient to deliver on the full ambition of our new Business Plan, we commit to proactively seek capital and research investment for specific development projects to enhance the capability of the network.

⁶ From Defra, Cefas, UKHO, Central Digital and Data Office, JNCC, TCE, MBA

⁷ https://medin.org.uk/sites/medin/files/documents/Business_Plan_2024_2029_final.pdf

With thanks to our 2023-2024 sponsors

and our 60 partner organisations working with us to
deliver MEDIN's vision



A list of all our 60 partners is available at <https://medin.org.uk/about/sponsors-and-partners>