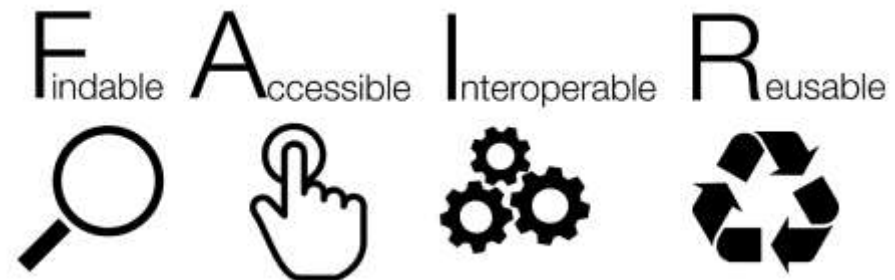


# Life's not FAIR...but data can be!

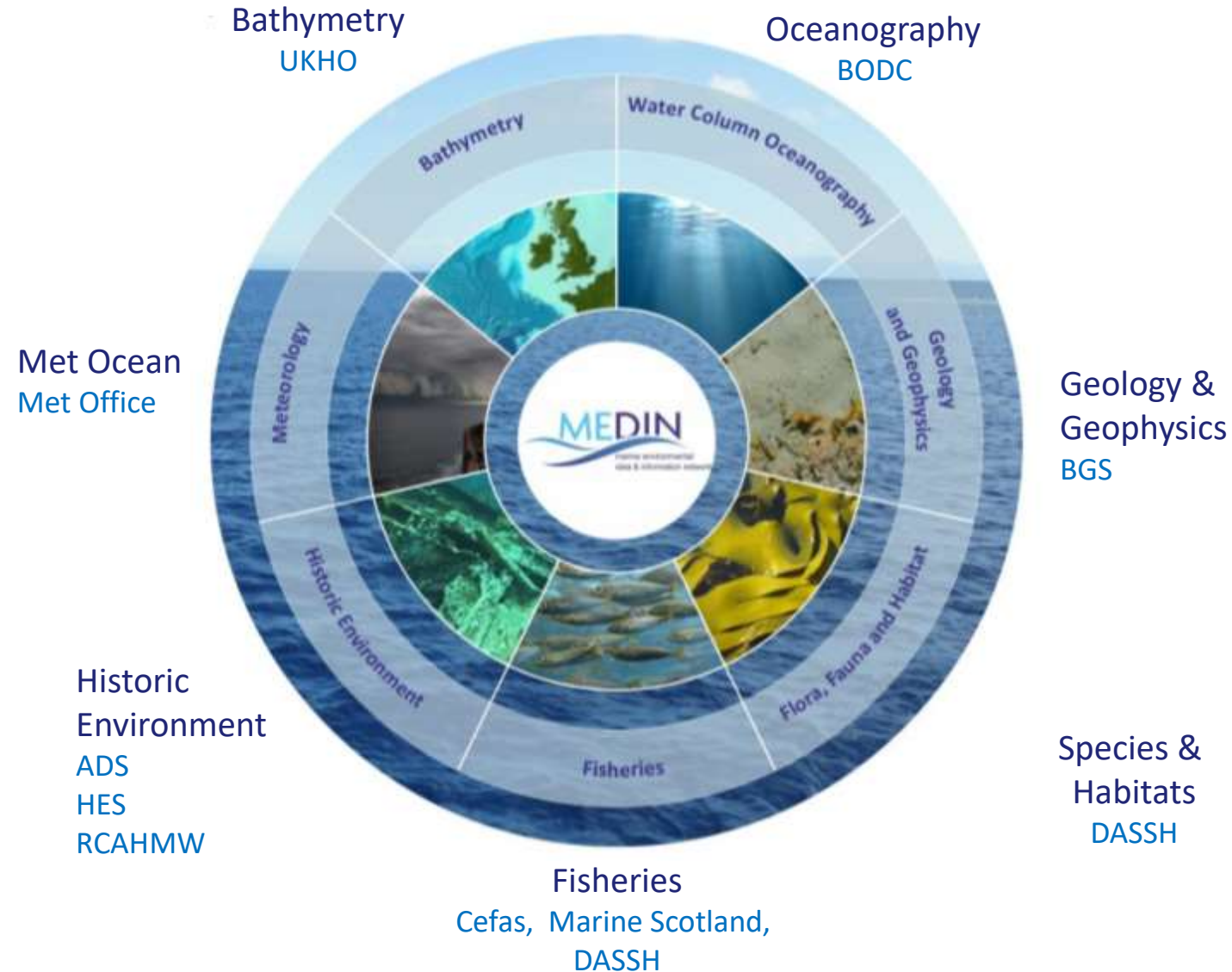
How the DAC network are rising to the challenge

Dan Lear  
MBA/DASSH & MEDIN DAC WG Co-Chair



# Strategic Goals

A	<p><b>MEDIN delivers its vision for <i>all</i> of the UK marine community</b> by providing tools and services that are 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 to provide integration and coordination of services.</p>	<p><i>Adoption and organisation</i></p>
B	<p><b>MEDIN delivers the technical infrastructure required to ensure UK's marine environmental data are Findable, Accessible, Interoperable and Reusable (FAIR)</b> 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.</p>	<p><i>Technical infrastructure</i></p>
C	<p><b>MEDIN delivers an open and constructive data management culture, fostering global collaboration and partnerships, addressing skills gaps, providing training and education.</b></p>	<p><i>Community and education:</i></p>



**Findable**



**Persistent Identifiers (PIDs)**

iD

**Rich metadata**



**Indexed data repositories**



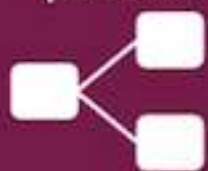
**PIDs in metadata**



**Accessible**



**Standard communications protocol**



**Open, free protocol**



**Authentication, where necessary**



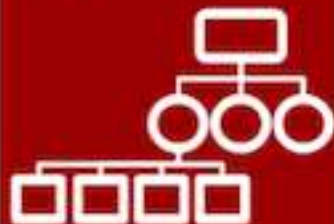
**Metadata is always available**



**Interoperable**



**Vocabularies**



**Vocabularies are FAIR**



**Linked metadata**



**Reusable**



**Metadata have multiple attributes**



**Usage license**



**Provenance**



**Community standards**





# MEDIN High Level Objectives



Strengthen and formalise the process for archiving multidisciplinary datasets.

Develop a DAC-wide approach to provenance tracking.

Include persistent identifiers for dataset submissions, enabling linked data usage.

Define an API structure for all DACS to adopt.

All DACs to provide Open Geospatial Consortium (OGC) compliant view and download services.

Horizon scanning for new technology approaches.



# Historic Environment DACs

- Natural Language Processing and Named Entity Recognition for metadata enhancement
- Using key reference vocabularies via the Forum for Information Standards in Heritage (<https://www.heritagedata.org/> )
- Using BGS Offshore marine WMS to generate marine geology based on location of dataset in the OASIS system (<https://oasis.ac.uk/>)



## Sensor Web Enablement (SWE)

The NERC Vocabulary Service (NVS) -  
<https://vocab.nerc.ac.uk/about>



### Search for a term in a vocabulary collection

Enter search string using % as wildcard if required. Example: chlorophyll%sediment. Vocab ID Search

Identifier  Preferred label  Alternative label  Definition  Exact match  Case sensitive [toggle advanced options](#)

A01	A02	A03	A04	A05	B02	B03	B04	B05	B06	B07	B09	B11	B12	B20	B21	B22	B39	B75	B76	C00	C10	C16	C17	C18	C19
C30	C31	C32	C33	C34	C35	C36	C37	C38	C39	C40	C41	C43	C45	C46	C47	C48	C59	C60	C61	C62	C64	C67	C71	C72	C75
C77	C86	C87	C88	C89	C96	C98	D01	E01	E02	F02	G01	G02	G03	G04	G05	G06	G07	G08	G09	G10	G11	G12	G13	G14	G15
G17	G18	G20	G21	G22	G23	G25	G26	G28	G29	G30	GBX	GGB	GGS	GGT	GS1	GS2	GS3	GS4	GS5	GS6	GS8	GS9	GSA	GSB	GSC
GXM	H01	H02	H03	H04	H05	H06	HA2	I01	I02	I03	I10	I11	I12	I13	I14	I15	L02	L03	L04	L05	L06	L07	L08	L10	L11
L12	L13	L14	L15	L18	L19	L20	L21	L22	L23	L24	L26	L27	L30	L31	L33	L34	L35	L36	L37	L38	M01	M03	M04	M05	M06
M09	M10	M11	M12	M13	M14	M15	M16	M17	M18	M20	M21	M22	M23	M24	M25	M26	M27	MVB	N01	N02	N03	N04	N05	N06	OO1
OG1	P01	P02	P03	P04	P05	P06	P07	P08	P09	P10	P11	P12	P13	P14	P15	P17	P18	P19	P20	P21	P22	P23	P24	P25	P26
P27	P28	P29	P30	P35	P36	P37	P38	P64	Q01	R01	R03	R04	R05	R06	R07	R08	R09	R10	R11	R12	R13	R15	R16	R19	R20
R21	R22	R23	R24	R25	R26	R27	RD2	RMC	RP2	RR2	RTV	S01	S02	S03	S04	S05	S06	S07	S09	S10	S11	S12	S13	S14	S15
S18	S19	S20	S21	S22	S23	S24	S25	S26	S27	S28	S29	S30	T01	T02	V12	V22	V23	W01	W02	W03	W04	W05	W06	W07	W08
W09	W10	W11																							

Vocabulary collection selector: hover on the coloured cells to see the collection's title and click to select. Note that the codes and the colours have no meaning but related vocabularies tend to be given a code starting with the same letter.

SensorML

Sensor Model Language - sensors and sensor systems to provide relevant metadata

SOS

Web Service and API to enable queries on observations, metadata, representations of observed features

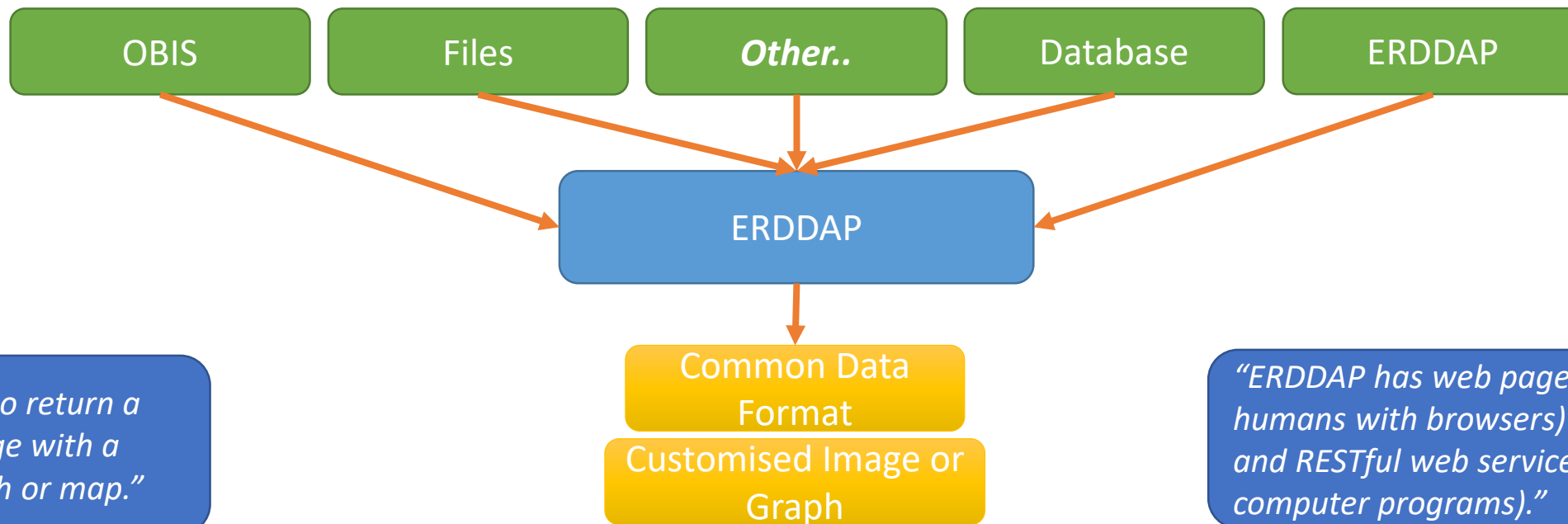




## ERDDAP

<https://coastwatch.pfeg.noaa.gov/erddap>

*"middleman between you and various remote data servers"*



*"ERDDAP can also return a .png or .pdf image with a customized graph or map."*

*"ERDDAP has web pages (for humans with browsers) and RESTful web services (for computer programs)."*

*"ERDDAP returns data in the common file format of your choice. ERDDAP offers all data as .html table, ESRI .asc and .csv, Google Earth .kml, OPeNDAP binary, .mat, .nc, ODV .txt, .csv, .tsv, .json, and .xhtml. So you no longer have to waste time and effort reformatting data."*

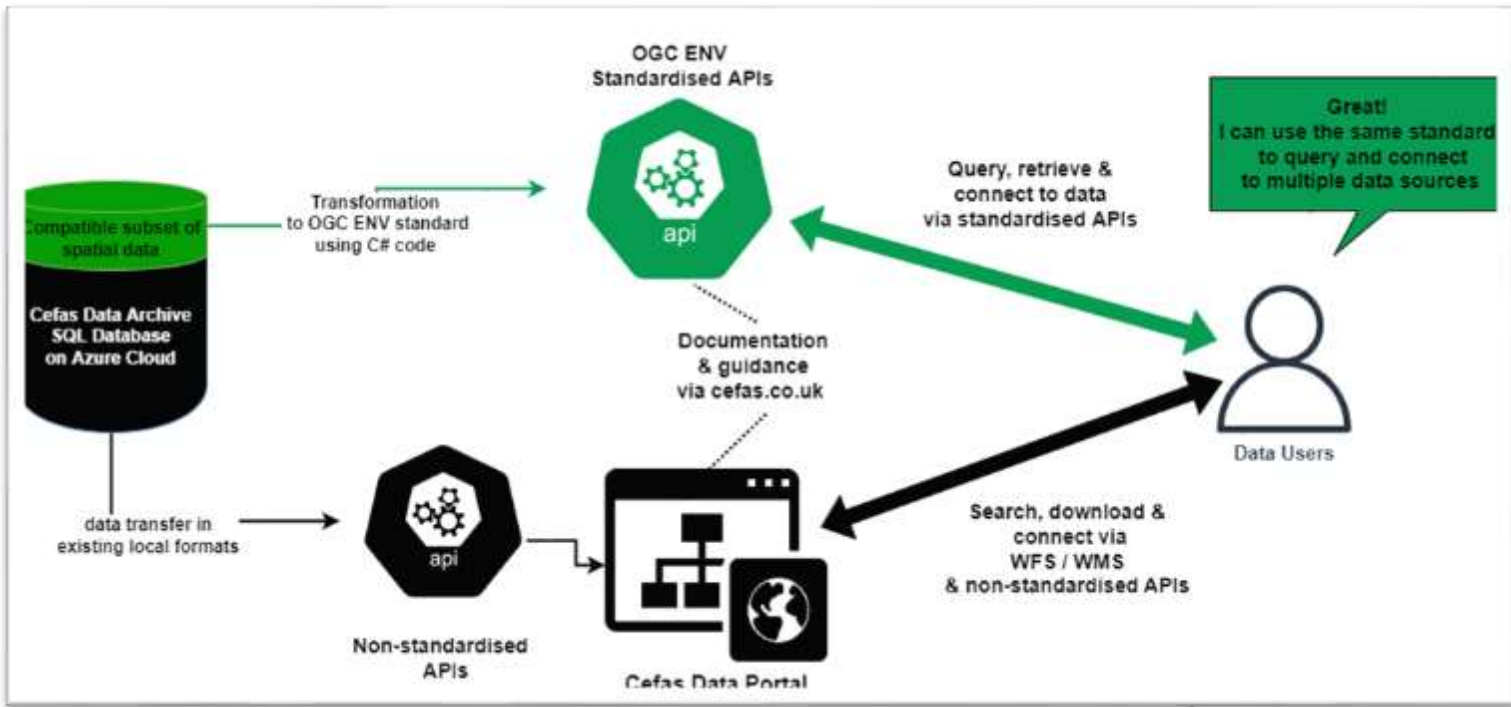




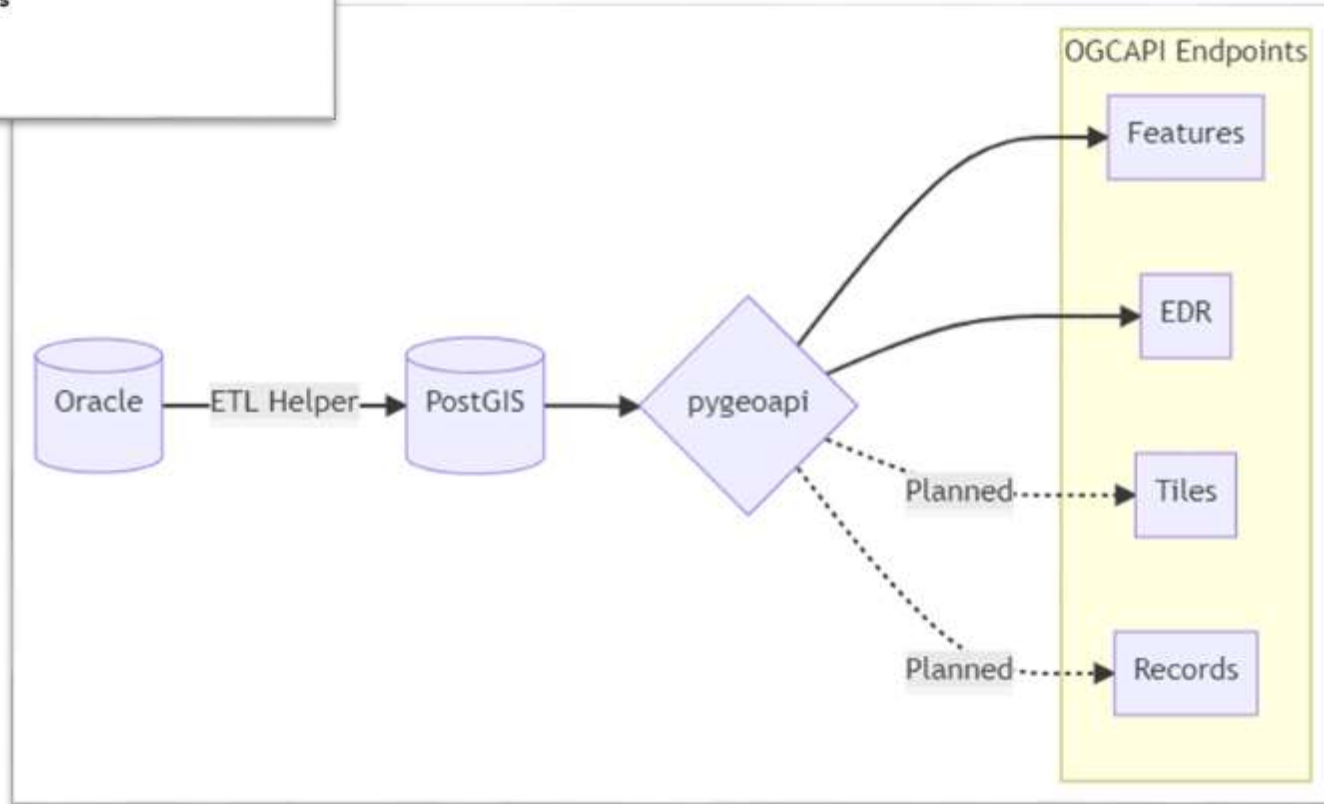
**OGC  
APIs**

**Building Blocks  
for Location**





**Deliverable 1.** Implementation of the OGC EDR API standard including a public facing URL to the API.



# Other Outputs

Technical Report

Recommendations

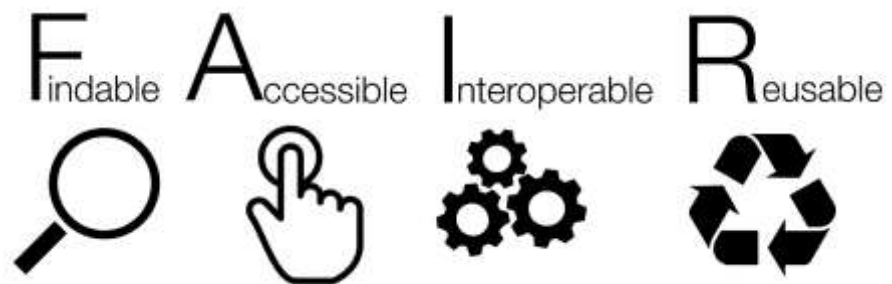
Cross-DAC workshop







Thank you for your attention



Dan Llear

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[@danlear](https://twitter.com/danlear)