Chat questions and answers

Introduction

Chairs: Michele Fichaut (IFREMER, France), Dick Schaap (MARIS, Netherlands)

Presentation UN Decade

13:45	UN Decade of Ocean Science for Sustainable Development – new challenges and opportunities to strengthen the international cooperation **Sergey Belov**

From 1: What are the Decade Program proposals related to Marine Data / Digital Ocean?

From Presenter: **@1**, Decade Coordination Unit (DCU) at IOC still evaluating received Calls for Decade Actions. I was not familiarized with the latest list yet. All received and approved Actions will be published at www.oceandecade.org web site soon, I hope. P.S. I am not part of the DCU. I was a part of drafting group from IODE on the data chapter of the implementation plan.

From 2: Is there any data driven business programmes and supports planned by EU/UN that innovative SMEs can benefit? Where we can find them on the WEB?

From 3: Re: UN Decade and Digital Ocean, I am sure he will answer in more detail as he is here, but Martin Visbeck led a proposal on the building of Digital Twins of the Ocean (DITTO) which will hopefully fulfil a lot of the digital elements.

Presentation SeaDataCloud

14:00	The SeaDataCloud project achievements and its wider impact on European marine data management standards, practices and infrastructures **Dick Schaap** and Michele Fichaut

From 1: For all/any speakers: Europe has a tendency to build monolithic data and information resources - how do we balance this with global, distributed but interoperating systems? How do we get smaller-scale digital stakeholders who may not want to / are restricted from pushing data into one or a few hubs?

From 2: How does SDC see cooperation with the global IODE in the future?

From 3: Is there any work in SeaDataNet on bridging the boundaries with other disciplines - e.g. atmospheric, terrestrial? (e.g. mainly in terms of shared models/concepts to facilitate interoperability)

From 4: **@3**, we (SeaDataNet) are involved in an RDA WG on Interoperability of Descriptions of Observable Property Terminologies (I-ADOPT) https://www.rd-alliance.org/group/interoperable-descriptions-observable-property-terminology-wg-i-adopt-wg/wiki/i-adopt-0. Outcomes from this working group and from related activities will be used to improve interoperability with other data systems.

From Presenter: SeaDataNet is a European network of NODCs and pan-European infrastructure mobilising data, tools, and services from a large European community. It has many international

relations and is an active player in the global marine data community. It participated for 6 years in the ODIP projects of Europe with USA, Australia, Canada, and including IODE aiming for wider interoperability. Currently there is a comparable cooperation Europe - China as part of EMODnet. So SeaDataNet is considered by us as one of the cornerstones of the global ocean community and programmes, organising a large part of the European players. Also, having the major synergy with EMODnet, developing European data products, we are in contact with many user communities, which helps to make data, data products, and services more fit for purpose and more FAIR.

From Presenter: SeaDataNet is involved in the ENVRI-FAIR project together with Research Infrastructures from Atmospheric and Biological domains, working together on improving FAIRness and getting more ready for on boarding the European Open Science Cloud (EOSC). Vocabularies and ontologies play an important role in this challenge. Moreover, SeaDataNet will also participate in the new EOSC-FUTURE project as part of the European science clusters, striking a balance with the e-infrastructures, to build a thriving EOSC. This is also the objective of the Blue-Cloud project in which we strive for a blue print for a marine thematic EOSC. The Blue-Cloud is joined by several leading marine infrastructures like SeaDataNet, ICOS, EurOBIS …, and also the Copernicus CMEMS and their WEkEO (DIAS) service.

Session Products: Data products, information and knowledge

Chairs: Sissy Iona (HCMR, Greece), Charles Troupin (University of Liège, Belgium)
14 orals, 25 posters

Presentation 35 – World Ocean Database

14:15	35 - World Ocean Database in 3D: Development, Dissemination, Deliverables **Alexey Mishonov**, Tim Boyer, Ricardo Locarnini, Hernan Garcia, Dan Seidov, Melissa Zweng, Christopher Paver, Olga Baranova, James Reagan, Igor Smolyar and Alexandra Grodsky

From 1: Maybe I can add that WOD is now also in the Cloud and IODE is working on making available technologies to extract from, as well as submit data to WOD. We are also working actively at increasing the number of regular data providers to WOD

Presentation 68 – Time series data products from Australian IMOS

14:33	68 - Time-Series Data Products from the Australian Integrated Marine Observing System **Marton Hidas**, Eduardo Klein Salas, Guillaume Galibert, Sebastien Mancini, Craig Steinberg, Bernadette Sloyan, Michael Hemming, Ana Redondo Rodriguez, Miaoju Chen, Simon Spagnol and Peter Jansen

From 1: Why not use something like ERDDAP that will abstract users from the complexity of multiple netCDF files?

From Presenter: **@1:** we have done some initial experiments with ERDDAP, but we don't have a full server set up unfortunately.

From 2: Do you offer visualization via the threads server?

From 3: Is there any info on quality control done during the process in those gridded products ?

From 4: How Oceanographic data of southern Ocean can be available using ocean gliders

From Presenter: **@2**: The data are accessible on our THREDDS server and can be accessed using the OPENDAP protocol. Not sure if that's what you mean? I don't know of any direct visualisation functionality within the THREDDS server.

From 2: **@Presenter**: we also have a thredds server (for model data) and there is a viewer available (Godiva):
https://data.geomar.de/thredds/godiva2/godiva2.html?server=https://data.geomar.de/thredds/wms/20.500.12085/a3b523be-dc00-479a-8706-0b6b74c759d5/BSIOM_ERA5forcing_1d_20200101_20201231_oce_SAL.nc

Presentation 94 – Ocean InfoHub project

15:00	94 - The Ocean InfoHub Project **Lucy Scott**, Tobias Spears, Peter Pissierssens, Arno Lambert and Pier Luigi Buttigieg

From 1: Regarding the training we are using the OTGA eLearning Platform since the lockdowns started over 1 year ago. All our training courses have been held fully online since then
I will give a presentation on OTGA tomorrow

Presentation 27 – EMODnet chemistry overview

15:08	27 - EMODnet Chemistry: progresses and challenges along the path to the European marine litter data management **Matteo Vinci**, Eugenia Molina, Elena Partescano, Alessandra Giorgetti, Alessandro Altenburger, Alexia Cociancich and Erik Geletti

FROM 1: Question: What classification system does EMODnet Chemistry use for the types of litter/debris? Is there a link to this?

From Presenter: Hi **@1**, I can send you the link to our guidelines that clarify what you are asking

From 1 : Thanks - of interest as UN Environment has asked us to develop some semantic resources for SDG 14.1.1 - would be good to sync. We were directed to focus on GESAMP, but these other systems can likely be reconciled with a bit of semantic harmonisation

From 2: Is there any link or alignment with the future IMDOS in terms of data management, data formats and metadata?

From Presenter : here the link with the general info about Marine Litter data management: https://www.emodnet-chemistry.eu/marinelitter

here beach and seafloor trawlings detailed guidelines:https://dx.doi.org/10.6092/15c0d34c-a01a-4091-91ac-7c4f561ab508

here more details about microlitter:https://www.emodnet-chemistry.eu/repository/Proposal-EMODnet-TG-ML-Micro-Litter-Data-Gathering-03062020.pdf

In our guidelines beside the format description there is a status of the art analysis

From 3: @Presenter- do you also register the best practices used for collection and creation of a data set?

From Presenter: @3: yes, we are doing this by submitting our guidelines in OBP

From Presenter : @2, EMODnet Chemistry took active part to the IMDOS paper and we should continue to be in this process also for future developments

Presentation 100 – EMODnet bathymetry overview

15:16	100 - EMODnet Bathymetry - High Resolution Seabed Mapping – increasing the resolution of the digital bathymetry for European seas **Thierry Schmitt,** Dick Schaap, George Spoelstra, Benoit Loubrieu, Cecile Pertuisot, Martin Verlaan, Sandra Gaytan Aguilar, Ricard Campos and Knut Hartmann

From 1: You mentioned several "agreed" standards/methods - what is the process and where is the

From Presenter: @1: Bathymetric data are acquired and qualified againt International Hydrographic Organisation standards (specifically Special Publication S44). Note that nearly half of the consortium originates from National Hydrographic organisation, while other data providers are generaly originating from research institutes.

From 1: @Presenter- many thanks. Is that included in some sort of provenance metadata on your data products?

Presentation 93 – Blue-Cloud demonstrator

15:24	93 - Blue-Cloud Demonstrator: A machine learning approach to derive plankton biomass and diversity products from the Global Ocean **Patricia Cabrera**, Viviana Otero, Gert Everaert, Raphaëlle Sauzède, Renosh Pannimpullath-Remanan, Hervé Claustre, Julia Uitz, Alexander Barth, Charles Troupin and Lennert Schepers

From 1: @Presenter - Comment - An EOV is only valid when it is ratified by the GOOS BioEco Panel. We have only just begun to discuss BlueCloud's products on the GOOS BioEco Panel.
If many products all claim to be generating EOVs without close alignment with/co-development of the GOOS Specification sheets, we're not going to be creating a very healthy digital ecosystem.
Hoping that our early discussions with Lennart et al. will improve the situation.

From Presenter: @1 Thank you for your comment. Indeed we are looking into the GOOS specification sheets to see how we can contribute with the results of our demonstrator.

From Presenter: @1, what do you mean by "operations layer (GOOS et al)"? and would it be useful to set up a meeting to discus how we can contribute to the improvement of the spec. sheets?

From 1: @Presenter - yes, a chat would be good. We did initiate some communication with Ward and Lennert, which I'll pick up on. It would be good to systematically connect BlueCloud's work to the GOOS BioEco Panel digital strategy. Operations here is roughly about the infrastructures that innovation (science etc) feeds into, defined in the FOO.

From 2: Visit the Blue-Cloud website to learn more about this demonstrator: https://bit.ly/3d97hKI

From 3 : Is it possible to estimate uncertainty in your derived products e.g. countered maps of copepods

From 4: @3, so yes, as Charles mentioned every interpolated value has an associated uncertainty with it.

From 5: Why nutrients in Zooplankton EOV products but not for Phyto EOV products ?

From Chair: Do you expect the neural network approach applied for the NE Atlantic to be also applicable to other regions of the world ocean, without too many adaptations of the tool (data sets etc)?

From Presenter: @Chair Yes, the workflows are available publicly to users in the Blue Cloud Virtual Lab. The scripts are written to be reusable and applicable to other regions with minor adjustments.

Presentation 140 – SeaDataCloud T and S climatologies

15:32	140 - SeaDataCloud temperature and salinity climatologies for the European marginal seas and the Global Ocean **Simona Simoncelli**, Christine Coatanoan, Volodymyr Myroshnychenko, Örjan Bäck, Helge Sagen, Serge Scory, Nadia Pinardi, Alexander Barth, Charles Troupin, Kanwal Shahzadi, Paolo Oliveri, Reiner Schlitzer, Michele Fichaut and Dick Schaap

From Chair : WOA18 does not contain all SDC data. Do you believe that any differences between the two products are because of the data differences or because of the different interpolation methods, or both?
@Presenter, also same question than the one we did to Alexey: "When you find outliers in the dataset, can you report to the data originators?"
From Presenter: @Chair the differences between WOA and SDC regional products are related to different QC procedures that are more area specific, this allow to represent coastal features in riverine influence zones.
@Chair WOA and SDC also use different data types, interpolation techniques

@Chair in SeaDataCloud regional experts report the detected outliers to the data providers thanks to the full metadata description annexed to each data collection. EDMO code identify the originator, while ODV keeps track of all data anomalies, whose flags are modified

From Chair : @Presenter thanks, it is a really good to know that products also help to improve the original data

Presentation 91 – The genesis of the ICES portal

15:40	91 - To patch, rebuild, or to build new? The genesis of the ICES portal **Carlos Pinto**, Mehdi Abbasi, Anna Osypchuk, Joana Ribeiro and Neil Holdsworth

From 1: Hi **@Presenter**, How many microservices were implemented for the new ICES portal?

Presentation 90 – the PORTO interface

15:48	90 - The concept of featured data services in the PORTO interface **Aldo Drago, Audrey Zammit**, Adam Gauci, Anthony Galea, Joel Azzopardi, Raisa Galea De Giovanni, Gianfranco Calise, Giuseppe Ciraolo, Salvatore Aronica, Rosario Sinatra, Elisabetta Paradiso and Fulvio Capodici

From Presenter: URL of the PORTO interface is www.capemalta.net/porto-online

From 1: Do you have examples of users and their applications

From 2: @Porto team: what sort of interoperability measures are taken to link your holdings to international systems? Grazzi ħafna

From Presenter: We use JSON and XML based web services.

AS one of the oldest partners in SeaDataNet and previous projects we follow international standards to manage our data. We also participate in EMODnet data ingestion

From 2 : @Presenter - many thanks - would be very good to see those measures and standards prominently displayed on your web interface. PORTO Online is mainly intended for harbour masters and navigation for planning sea transportation and especially entry/exit of large ships in ports

Presentation 95 – The CYCOFOS new web GIS

15:56	95 - The CYCOFOS new Web GIS **Elena Zhuk** and George Zodiatis

From Presenter : URL of the CYCOFOS interface is http://cycofos.orioncyprus.org/cycofos.html. The CYCOFOS data are available

From 1: When will CYCOFOS show more than 2 parameters combined

Presentation 130 - GeoERA-MINDeSEA best practices

17:13	130 - Are the pan-European seas a promising source for critical metals supply? GeoERA-MINDeSEA Marine Data and Information Management Best Practices **Trevor Alcorn**, Xavier Monteys, Javier Gonzalez, Iker Blasco and Ana Lobato

From 1 : @Presenter - solid stuff - is the versioning inclusive of checksums or equivalent?
Also, do you expose any records via schema.org?

Thanks **@Presenter** would be happy to engage, particularly to link this resource up to our UNESCO-IODE Ocean InfoHub/ODIS initiative (see Lucy Scott's presentation)

From Presenter : https://www.w3.org/TR/dwbp/

MINDeSEA : https://geoera.eu/projects/mindesea2/

Presentation 19 - Recommendations for biological data products

17:21	19 - Supporting the essential - Recommendations for the development of accessible and interoperable marine biological data products **Dan Lear**, Peter Herman, Gert Van Hoey, Lennert Schepers, Natalie Tonné, Marina Lipizer, Frank Muller-Karger, Ward Appeltans, Daniel Kissling, Neil Holdsworth, Martin Edwards, Ellen Pecceu, Henrik Nygård, Gabrielle Canonico, Silvana Birchenough, George Graham, Klaas Deneudt and Joana Beja

From 1 : What level of detail do you think you need in your helixes e.g. industry?

From Presenter : @1 - We're mindful you can't "please all the people, all the time" - but industry engagement specifically does prove challenging. We have started the dialogue with industry bodies, rather than individual organisations, and want to ensure that there is clear benefit to any partner participating in EMODnet Biology

From 2 : Question: how does the data product strategy align to the Essential Ocean Variables? It is about defining the essential, and I see overlapping names there (i.e. is there a plan on bridging EMODnet's products to more global solutions via GOOS?)

From Presenter : @2 - all the products are based on biological EOV's and mapped to them. There is more detail on each of the products - https://www.emodnet-biology.eu/toolbox/en/gallery/

From Presenter : If the promise of such approaches is undermined by absence of analytics ready data - what specifically should we do

From 2 : @Presenter - thanks, I'm still struggling to see what exactly is mapped and how - conceptually, there's alignment, which is a very good start. I'll gather some of these for the BioEco Panel's data team as we develop specifications

From Presenter : @2 - the table (Table 3) in the paper (https://doi.org/10.1016/j.marpol.2020.103958) shows which product aligns with which EOV. Happy to talk in more detail about how we can improve alignment.

Presentation 46 – Predicting the spread of invasive marine species

17:29	46 - Predicting the spread of invasive marine species with open data and machine learning: Process and Challenges **Adrian Bumann**, Robin Teigland, Jannes Germishuys, Benedikt Ziegler, Martin Mattson, Eddie Olsson, Robert Rylander, Marcus Lindh, Yixin Zhang and Torsten Linders

From Presenter: More information on submission 46:
Heroku Visualization
https://odf-open-data.herokuapp.com/
Further Information on data & processing
https://www.kaggle.com/c/killer-shrimp-invasion/overview
https://oceandatafactory.se/odf-sweden-enabling-open-data-driven-innovation-for-the-oceans/
Submission 43, the follow-up to submission 46
https://www.youtube.com/watch?v=JLmB6wd323Y
https://imdis.seadatanet.org/files/IMDIS2021_poster_43.pdf

From Chair: @Presenter: From your results, were you able to suggest a mechanism that drives the spread of shrimps, for example "they are trying to find low temperature, low salinity water". **From Presenter: @Chair**, in theory yes, you could get such findings from the model (or models in plural, if you include the ones from the Kaggle competition). But 1. due to the assumptions those are not necessarily realistic and 2.it depends somewhat on the model usedDe Pier Luigi Buttigieg à tout le monde: 05:39 PM

From 1: **@Presenter**: - what are the major risks for bias creeping into the training sets?

From Presenter: @1: good question - from my pov, it would include both producing more data (which is however costly and takes time) and using the available data while considering the limitations. I think the latter is where the data scientist expertise comes in to avoid statistical pitfalls

From Presenter: @1: at least from our pov, it'd be not considering the real-life context (for example we found that ballast water from cargo ships is a major factor for the spread of that species, but we

didn't utilize such data due to time restrictions, and I'm sure there are other factors we didn't even consider). Also, it's easy to see predictions produced by the model and take them for granted without considering the statistical underlying

Presentation 57 – Videos and images from marine environmental monitoring data

17:37	57 - A picture is worth a thousand data points: Making videos and images from marine environmental monitoring available to all **Markus Lindh**, Patrick Gorringe and Johan Stål

From 1: How is the QC screening done? Thanks.

From 2: Practical question: How do you balance genuine need and potential exploits requests that could drag the whole system/bandwidth down?

From 3 : @Presenter: several projects are now exchanging imaging data, plus derived products including the output of CNNs etc, what is the major standards body you're engaging with to develop community standards?
I've seen several proposed from projects, but not so many that look long term.

From 3 : Thanks **@Presenter** - reminds me of the early days of metagenomics - essentially the community had to come together to create a standards body to make things scale beyond individuals projects. Really think it's time for this community to do so too.

From 4: @3 for linking the images to biodiversity data we are looking into DwC and the TDWG community (the biodiversity information standards)

From 5 : @3, within jericoS3 we are writing best practices for imagery data based on DwC standards.

Session Services: Data services and tools in ocean science

Chairs: Alexandra Kokkinaki (BODC, United Kingdom), Peter Thijsse (MARIS, Netherlands) 18 orals, 24 posters

Presentation 126 – VRE supporting sustainability of global fisheries

13:30	126 - Virtual Research Environments supporting sustainability of global fisheries **Anton Ellenbroek**, Marc Taconet, Julien Barde, Anne-Elise Nieblas, Aymen Charef, Aureliano Gentile and Emmanuel Blondel

From Presenter: Thank for organizing / joining the event. If you have questions on the H2020 Blue Cloud fisheries Demonstrator, they are welcome.

From 1: For more info -> https://www.blue-cloud.org/services/blue-cloud-virtual-research-environments

From 2: @Presenter: The CKAN repo you mentioned in the keynote, is it specific for your fisheries data for the B-C VRE, or is it a more generic repo?

From Presenter: @2: The GRSF Catalogue will be part of the larger https://blue-cloud.d4science.org/catalogue-bluecloudcurrent. The current GRSF CKAN can already be accessed here: https://i-marine.d4science.org/group/grsf/data-catalogue

Presentation 64 – Implementation SeaDataCloud VRE

13:48	64 - SeaDataCloud Virtual Research Environment: Implementation and Technical Aspects **Merret Buurman**, Charles Troupin, Alexander Barth, Sebastian Mieruch, Leo Bruvry-Lagadec, Naranyanan Krishnan, Themis Zamani, Giorgio Santinelli, Fedor Baart, Peter Thijsse and Filip Waumans

From 1: Did you make any alterations that are specifically marine?

From Presenter: @1: We have for example the OceanDataView tool, which is specific for marine data analysis. Does this answer your question? (Otherwise, let me know what kind of alternations you meant :))

From 1: Yes, thank you very much **Presenter**!

Presentation 69 – Working with the SeaDataCloud VRE

13:56	69 - Working with the SeaDataCloud Virtual Research Environment: what can we do for you? **Charles Troupin**, Alexander Barth, Leo Bruvry-Lagadec, Merret Buurman, Seppo Kaitala, Narayanan Krishnan, Sebastian Mieruch, Giorgio Santinelli, Peter Thijsse, Filip Waumans and Themis Zamani

From 1: @Presenter Epic intro!

From 2: I totally agree!

From 3: Will SeaDataCloud have the QC for temperature and salinity in the future?

From Presenter: @3: I don't know if the question is specifically for me, but yes, it has QC already. We shall put a link to the documentation describing the QC.

From 4: do the netCDF files generated by DIVA follow any specific standardization?

From Presenter: @4: Yes CF standards and SDN vocabularies

Presentation 38 - WebODV

14:04	38 - webODV – operational and ready for the community **Sebastian Mieruch** and Reiner Schlitzer

From 1: Are data source for webODV files or database?

From 2: @Presenter: webODV is great tool!

From 3: @Presenter: Can we currently import our own data spreadsheets into webODV?

From 4: Are the possibilities for user to "return" validation information to data source?

From 5: Will the webODV API follow any particular protocol (e.g. OGC or OpenDAP)?

Presentation 52 –Deep learning for supporting Ocean data QC

14:12	52 - Deep Learning for Supporting Ocean Data Quality Control Serdar Demirel, **Sebastian Mieruch** and Reiner Schlitzer

From 1: Have you tried to extend the skill assessment from regional dataset to the global dataset?

From Presenter: @1: No, we only analysed the Med Sea data.

From 2: **@Presenter:** You assessed on those 415k samples, but trained on other samples, right? How many (sorry if I missed that)? Were they from different campaigns? How diverse are the sample sources?

From Presenter: @2: We trained on ca. 1.000.000 samples. We separated the data per profile, thus samples from one profile can only be in the training OR in the control set.

From 3: **@Presenter:** - Did you do any testing on more flags than just "good" and "bad"?

From Presenter: @3: no, only bad and good

From 4: @Presenter: Could you write here the Title of the paper?

From Presenter: @4: Not yet fully published:
https://www.frontiersin.org/articles/10.3389/fmars.2021.611742/abstract

From 1st author : @4: the title is SalaciaML: A Deep Learning Approach for Supporting Ocean Data Quality

Presentation 13 –the EU HF-Radar node

14:20	13 - The European HF Radar node: two years distributing standardized and quality-controlled data to the major European Marine Data Portals **Lorenzo Corgnati,** Carlo Mantovani, Anna Rubio, Emma Reyes, Paz Rotllan, Antonio Novellino, Patrick Gorringe, Jose Luis Asensio Igoa, Annalisa Griffa and Julien Mader

From 1: @Presenter, How many people are working in the HF Radar node?

From Presenter: Hi **@1,** right now we're 10 people working on the node stuff.

Presentation 49 –Automated QC procedures for BGC data

14:48	49 - Novel automated quality control procedures for BGC data developed by the Copernicus Marine Service In-Situ TAC Team **Vidar Lien**, Jan Even Nilsen, Håvard Vindenes, Leonidas Perivoliotis, Seppo Kaitala and Virginie Racapé

From 1: Is there a mechanism to feed back the quality control to the data providers?

From Presenter: **@1,** We can contact when we know who the providers are, but there are no automatic mechanisms

From 2: Are you also interested in near real-time data?

From Presenter: **@2,** We already manage real time data

From 3: Are your QC methods documented as best practices somewhere?

From Presenter: @3, Yes on CMEMS website you can download a document there. Some of the documents may be referenced as best practices

From 4: Are CMEMS products representative for subtropical regions of the south Atlantic?

From Co-author: @4, we have not yet studied the representativeness of this region. Currently I just can said that the number a calibrated data from float increases in this region. region representativity will be a next step.

Presentation 99 – Blue-Cloud overview

14:56	99 - Blue-Cloud: Developing a marine thematic EOSC cloud to explore and demonstrate the potential of cloud based open science in the domain of ocean sustainability **Sara Pittonet Gaiarin**, Sara Garavelli, Dick Schaap, Pasquale Pagano, Anton Ellenbroek, Kate Larkin, Gilbert Maudire, Alain Arnaud and Frederico Drago

From Chair: EOSC is a very big Initiative: How is the interaction between EOSC and BlueCloud

Presenter (oral): The idea is to make the resources in Blue-Cloud interoperable with EOSC data through the EOSC portal. Gradually available via the EOSC framework in the near future

Presentation 103 – EMODnet ingestion overview

15:04	103 - EMODnet Ingestion and safe-keeping of marine data **Sissy Iona** and Dick Schaap

From 1: Do the DOIs assigned form SEANOE describe evolving or static datasets please?

From Presenter: @1, evolving data sets

From 1: thank you :); is it possible to link an example DOI here please. I'm curious

From 2: @1, for example, this DOI include several version of the dataset
https://doi.org/10.17882/46219

From Presenter: the EMODnet Data ingestion video
https://www.youtube.com/watch?v=p3vwngxyXuo

Presentation 135 - EMSO-ERIC data services

15:12	135 - EMSO ERIC Data Services: managing distributed data through an ERDDAP federation **Antoine Queric**, Rob Thomas, Maurice Libes, Enoc Martinez, Claudia Fratianni, Tania Morales, Helen Snaith, Maria Sotiropoulou, Sylvie Van Iseghem, Raluca Radulescu, Paulo José Relvas de Almeida, Raul Bardaji and Ivan Rodero

From 1 : How do you look at the cooperation between EMSO and Jerico-RI ?

From 2: how is ERDDAP performance with large number or high volume data sets And how can you optimise performance, I mean file management versus databases in the back-end

From Presenter: @2: When it comes to netCDF backend, performances depend on the user queries: restricting a query on geospatial constraints may be slower when the collection of files have a really heterogeneous spatial coverage. When the collection of files have heterogeneous time coverage, I was advised by the developer of Erddap to gather the data into bigger files which contain for instance monthly data

From 3: ERDDAP is one solution within EMSO ERIC, other services and tools are being available. Please check our data portal https://data.emso.eu. A new release is expected by the end of this week.

From Presenter: @3: I never had the occasion to work with database as a backend for Erddap, so I cannot tell if it will be more performant than Netcdf, but sure it will depend on the database schema.

From 4: Nice ERDDAP training video at OBPS, see https://www.youtube.com/watch?v=_BwMHRh7CS8

From 5: Would be good to start adopting common naming conventions on Erddap dataset names so then we you link different instances from different projects you easily get what is what (good task for next SDC)

Presentation 29 – OceanTeacher Global Academy

15:20	29 - OceanTeacher Global Academy: IOC's Capacity Development Tool **Claudia Delgado**, Greg Reed and Peter Pissierssens

From 1: @Presenter, do you take into account the emergence MOOCs (Massive Open Online Courses) and if so how do you exploit such capabilities

From Presenter: @1, MOOC is not the most suiting approach to our audience, no follow-up

From 2: Is there any training courses related to seabed mapping through OceanTeacher Training Academy?

From Presenter: @2, No and this would be a training topic of interest… looking for trainers

From 3: On a similar theme is there anything on the ocean teacher platform about FAIR and data services like vocabularies please?

From 4: Well **@3,** we need to provide the material for vocabularies which is one of our future objectives

From 5: Online training on FAIR and data services would be wonderful, especially if it can be abstracted from particular data centres and their processes, so it can be broadly applicable.

From 6: @3, the course "Contributing datasets to EMODnet Biology" covers some FAIR aspects and vocabs (although specifically to EMODnet Biology). See here https://classroom.oceanteacher.org/enrol/index.php?id=430

From 3: @5 that is the gap I'm inferring to, training that is accessible and understandable to non-data specialists

From 7: @3, there is one from SeaDataNet that includes BODC vocabularies too ;) (https://classroom.oceanteacher.org/course/view.php?id=335)

From 8: @7, Thanks for mentioning this document however I think we do need training material that cover the use of semantic annotation in general i.e. including but not exclusively related to SeaDataNet Common Vocabs and vocabs provided by the NVS. This document you mention was very focused on the SDN community and the SDN tools. We need to find the time and the contributors to develop training material that gives a good overview of all the controlled vocabulary resources available out there, how they connect and when to use one over another.

From 7: @8 true, much the same as for the EMODnet Biology course, which is quite focused for a specific initiative and standard

From 5: @3 - as someone who works with scientists from many nations (and a non-European at this week's conference!) I can see a lot of value in genericised training materials. Are you volunteering?!

From Presenter: @5: we have a course on Research data management (amongst others) that address the FAIR principles; please note however that all courses developed before 2020 were organised face to face and or blended). By this I mean that they were not designed for a fully online context

From 3: @5, we need the project, I fear it is no small task, the activities exist ENVRI, MEDIN, IOC but suspect that lack the resource too

From 5: @3 - the perennial problem!

From 9: @3 Canadas Portage network has a lot of RDM webinars targeting a whole array of topics from FAIR principles and dealing with marine dynamic datasets and DOI's from Ocean Networks Canada and much more.. No harm in checking it out here https://portagenetwork.ca/tools-and-resources/training-resources/

From 10: Please add your training courses to the Ocean Best Practices System https://www.oceanbestpractices.org/ for increased visibility and use. Relevant OTGA courses will be added during May.

Presentation 34 – Collaborative approach to access to UK marine data

15:28	34 - A collaborative approach to improving access to UK marine data **Charlotte Miskin-Hymas,** Jake Kuyer, Rob Daniel, Nicola Dewey, Dr Sean Gaffney, Dr Robin McCandliss and Dr Clare Postlethwaite

From Presenter: The full MEDIN cost benefit analysis report can be found here ; https://www.medin.org.uk/sites/medin/files/documents/MEDIN%20Cost%20Benefit%20Analysis_Final%20Report.pdf

Presentation 40 –IMARDIS infrastructure

15:36	40 - IMARDIS - A Marine Data Infrastructure Serving the Needs of the Welsh Marine Sector **David Mills**, Thomas Prebble, Guy Walker-Springett, Cathy Blakey, Gwyn Roberts, Sudha Susarita and Martin Austin

Presentation 36 – Applyinf RDF dataCube for Irish wave and weather buoy network

17:00	36 - Applying the RDF DataCube model to power data visualization and exploration dashboards for the Irish Wave and Weather Buoy Networks **Rob Thomas**, Donnchadh Ó Foghlú, Kieran Lyons and Will Meaney

From 1: Have you had or asked for industries views of the products you create or examples of industry uptake

From Presenter: **@1**, yes, at the start of the project Workshop where stakeholders were invited.

From 2: Is a Sparql endpoint robust to store/request a large amount of data in order to be used at a more global scale?

From Presenter: **@2**, We've been running our endpoint since 2018 without issue. One advantage to the Linked Data approach is that not all the information needs to be in one place. Our data queries also link to the NERC Vocabulary Server for contextual information. Helps keeps data distributed and close to the point of truth.

Presentation 26 – the French research vessel management

17:08	26 - The French research vessels management: an opportunity for harmonized data **Cecile Pertuisot**, Frederic Merceur, Nolwenn Danioux, Goulwen Peltier and Loïc Petit De La Villéon

From Chair : Is there any APIs on the French cruise catalogue?

From Presenter: No API on our cruise catalogue, no SPARQL endpoint. But from the SEXTANT catalogue have access to the catalogue

From 1: Do you use ship location data to semi-automatic populate cruise summery report?

From Presenter:@1, there is an application so that scientists can fill a template that will be then used to automatically generate the CSR for sharing in the European catalogue

Presentation 107 – SatBaltyk system

17:16	107 - SatBałtyk System- modern tool for monitoring and research of the Baltic Sea **Mirosława Ostrowska**, Joanna Stoń-Egiert and Agnieszka Zdun

From Presenter: SatBaltyk: http://www.satbaltyk.pl/en/

Presentation 138 – HarmoNIA project

17:24	138 - HarmoNIA project: web application for data visualisation **Damir Ivanković**, Dalibor Jelavić, Maria Eugenia Molina Jack and Marina Lipizer

From Presenter: Direct link for web application: https://vrtlac.izor.hr/ords/harmonia/H_VIZUAL, Just choose some parameters

From 1: Do you have the ability to show the uncertainty or errors in the data?

From Presenter: @1, Application can filter data according validation factors, and using visualisation and statistical part, errors in data can be easily identified.

From 2: Which technologies are used to build the data portal?

From Presenter: @2, Web application is build using Oracle database and ORDS application server (ORDS) run under Tomcat. For client side visualisations HighCharts and Boocle maps api v3 are used, together with custom JavaScripts.

Presentation 139 – PLOCAN multiplatform observatory

17:32	139 - PLOCAN multi-platform observatory data infrastructure Tania Morales, Ruben Marrero, Eduardo Caudet, Eric Delory and Jose Joaquin Brito

From 1: Do you have a PID management for your platforms and the instruments on the platforms, incorporated in Plocan? (For provenance metadata provision)

From Presenter: Yes, the platforms and the sensors are uniquely identified

From 2: @Presenter, do the platforms have Edge computing?

From Presenter: @2, There are some platforms which have the ability of doing some computing and pre-processing of data, but normally all computing effort is doing in the server which receive the data

Session Tech: Technical developments for marine information and data management

Chairs: Merret Buurman (DKRZ, Germany), Sebastien Mancini (AODN, Australia)
9 orals, 21 posters

Presentation 96– How to stop reinventing the wheel in data management

09:30	96 - How to stop re-inventing the wheel: a data management case study **Jen Thomas**, Marco Alba, Eric Bouillet, Antonio Novellino, Carles Pina Estany and Michele Volpi

From 1: What granularity did you choose for the publication of datasets in zenodo?

From Presenter: @1: the majority of the datasets were published at the level of the cruise which was generally 3 months of data collection (in some cases less). Raw multibeam data were published for each survey, with this then being processed further and incorporated into other bathymetry repositories.

From 2: @Presenter, Very nice work you presented. How is the frictionless schema aligned with RDF and vocabularies provided by W3C or schema.org?

From Presenter: @2: I am not very familiar with all of those schemas, but the Frictionless Data community has done and is working on mappings from their schemas to others. Work done on this so far:
https://docs.google.com/spreadsheets/d/1XdqGTFni5Jfs8AMbcbfsP7m11h9mOHS0eDtUZtqGVSg/edit#gid=774748003

From Chair: What is your experience in guiding biologist to use frictionless schema?

From Presenter: @Chair: Biologists have not seen that side

Presentation 42 – A modular approach for cataloguing marine data

09:48	42 - A Modular Approach to Cataloguing Marine Science Data Adam Leadbetter, Will Meaney, Elizabeth Tray, Andrew Conway, Sarah Flynn, **Tara Keena**, Caoimhín Kelly and Rob Thomas

From 1: @Presenter : Could you please share a link to the article?

From Presenter : https://link.springer.com/article/10.1007/s12145-020-00445-w?wt_mc=Internal.Event.1.SEM.ArticleAuthorOnlineFirst#citeas

From Chair : How do you described the WS in the metadata?

From 2: How do you deal with "official" borders in the system? Government sources or UN? (pertains to modularity in that different states often have different ideas of boundaries, one could have a module for each view of the world - not sure if that's an issue in your area of application)

From 3: @2: you mean like EEZs (e.g. as published by Marine Regions)?

From 2: @3, Yes!

From 4: @Presenter - is this a drupal distro or strictly an internal tool?

From 5: To answer the q, it is specified in the INSPIRE directive

From 6: @Presenter: How is your work linked to what is done in open science cloud EOSC?

From 7: Hi **@Presenter** - Do the MI plan to catalogue more details related to Data Quality statements in metadata outside INSPIRE Directive e.g. quality related to MSFD, accuracy, completeness, consistency etc..

From Presenter: Hi **@7**! Yes, we are looking to applying a standard and accepted processes for assigning accuracy, quality and to better document relationships between datasets and their use, including for MSFD monitoring.

From8: @Presenter: Thanks for the response - if you have not felt the pain of different sovereign boundary issues, then it's probably not needed in your system yet (a great thing)

Presentation 113 – FAIR semantics and the NVS

09:56	113 - FAIR Semantics and the NVS **Alexandra Kokkinaki**, Gwenaelle Moncoiffe and Yann Le Franc

From Chair: example of recommendation that was improved by the work of your RDA task group

From Presenter: some of the recommendations were very theoretical, after the work of the WG, the recommendations setting was made more practical.

From 1: @Presenter - Could you briefly elaborate on how the recommendations bridge the actual terminologies (vocabs, thesauri, ontologies, etc) to the repositories that host them (NVS, OLS, OntoBee...). As your presentation touches on both the vocabs themselves and the repositories - just a bit confused on the scope

Thanks - yes, I remember this need - if we agree on these than the various portals and repositories can more smoothy federate content without more overheads for the terminology developers

From Presenter : @1 @Chair, I will email you to join the group in order to work together towards a harmonized semantic place.

Presentation 143 – Semantic interoperability

10:04	143 - Semantic interoperability of operational parameter terminologies in marine sciences **Gwenaelle Moncoiffe**, Alexandra Kokkinaki, Alison Pamment, Neil Holdsworth, Hans Mose Jensen, Adam Shepherd, Adam Leadbetter and Rob Thomas

From Chair: what is unambiguous?

From Gwen: This aim of this WG is what are the minimum elements that could lead to interoperability. Difficult to decide the level of details you want to go to. Capture as much information in a format that is machine readable.

From 1: @Presenter - many EOVs (especially on the BioEco side) are more loosely defined as the various GOOS regions don't have consensus yet (struggling with this on the UNESCO side right now) How do you allow for the real world ambiguity?

From 2: @Presenter can you tell more or provide a link to the RDA group please?

From Presenter: @2, the best place to start is here https://www.rd-alliance.org/group/interoperable-descriptions-observable-property-terminology-wg-i-adopt-wg/wiki/i-adopt-0. Please do not hesitate to contact me if you need more info.

From 3: At INSPIRE they make use of GEMET keywords: https://www.eionet.europa.eu/gemet/en/about/. This is a Thesaurus approach.

From 1: @Presenter: Thanks! On the BioEco EOV side, we're working on it :) we are developing a data model to interface BioEco EOV data to UNESCO's ODIS/Ocean InfoHub.
I've been making some ENVO classes for the global implementation of EOV data specifications for this, but it would be good to make sure we have a bridge to the SeaDataNet world via NERC VS

From Presenter: @1, Looking forward to see the work on the BioEco EOVs. Definitely want to be in tune with what you are doing at the EOV level.

Presentation 71 – Increasing FAIRness within ENVRI-FAIR

10:12	71 - Increasing FAIRness of marine data within ENVRI-FAIR **Peter Thijsse**, Thierry Carval, Valerie Harscoat, Dick Schaap, Sylvie Pouliquen, Ivan Rodero, Benjamin Pfeil, Katrina Exter and Envrifair Wp Partners

From Chair: Strengths and gaps in terms of FAIR principles

From Presenter: @Chair, Gaps are mostly in the R (Reproducibility)

From 1: Question: how do you interoperate with systems that do not use the same terminologies?

From Presenter: @1: We will use the vocabularies in data and metadata used by the RI's. The NERC vocab stores these mapping (e.g. between CF and P01) and exposes them.

From 1 : Thanks @Presenter - it may be good for your systems to host what they consider correct mappings for your users to use. Around OBO and TDWG, and likely soon in the IODE ODIS system, we're starting to store such mappings in structures like https://github.com/mapping-commons/SSSOM

If one doesn't provide the mappings, all sorts of weird things start happening. Hopefully these will be precursors to more formal and stable mappings hosted in the vocabularies themselves, so SPARQL cross-walks are possible

From 2: @1, regarding the question to **@Presenter**, yes, at this stage there is overlap because the networks either use BODC PUV (P01) codes or are mapped to it. But in the future, if we have a common interoperability framework in place then we should be able to have more flexibility and manage more complex logical mapping reasoning between terminologies like e.g. CF Standard Names and BODC PUV, ICES, and others.

From 3 : @Presenter: this FIP being a wizard - is there a link to it?

From Presenter : @3, I think this page is a good starting point => https://fip-wizard.readthedocs.io/en/latest/about/about.html

Presentation 66 – IODE QMF

10:20	66 - Delivering Quality Marine Data and Services: the IODE Quality Management Framework **Greg Reed** and Rob Thomas

From 1: *@Presenter*, is the QMF in machine readable form or in any RDF model?

From Presenter: à1, It is not in a RDF model.

Presentation 147 – UNESCO/IOC Ocean Best Practices System

11:45	147 - Evolving the UNESCO/IOC Ocean Best Practices System: preparing methods for the oceans' digital ecosystem **Pier Luigi Buttigieg**, Cora Hörstmann, Pauline Simpson and Jay Pearlman

From Presenter :
OBPS from another life in IMDIS 2018: https://www.youtube.com/watch?v=pAWaEshyBNw
The IOC Manual & Guide on more machine-friendly (but still approachable to non-digital-native stakeholders): https://www.oceanbestpractices.net/handle/11329/1266
The associated perspective: https://doi.org/10.3389/fmars.2020.556234
The repo: https://github.com/iodepo/OceanBestPractices

From 1 : @Presenter - is the community involved in data acquisition on the seabed in the geophysics and hydrographic domains involved in IOC?

From 2 : @Presenter is the OBP versioning available now?

From Presenter : An important note on the OBPS:
It doesn't *only* host best practices, but any methodological element (standard specification, method, policy, guide, etc)
Once they are stably archived and plugged in to our technology stack, we can help those "find each other" and facilitate convergence into what one or more communities would call "best" practice (we will also log best for whom, best for what).

Presentation 117 – Digital twin of the North Sea

11:53	117 - Digital twin of the North Sea **Joan Staeb**, Igor Mayer, Yvonne Koldenhof, Fedor Baart, Petra Jeurissen and Peter Thijsse

From 1 : @Presenter: great tool. Are you using this or planning to in a training environment?

From 2 : @Presenter, how are you working with other neighbouring countries for the North Sea?

Presentation 47 – Enhancing ESIMO through a cloud platform

12:01	47 - Enhancing the technical architecture of the Unified State Ocean Information System (ESIMO) through the use of a cloud platform and digital technologies **Sergey Belov**, Nikolai Mikhailov and Alexey Kozlovcev

Session INFRA: Marine environmental infrastructures for observation data (data management and access)

Chairs: Simona Simoncelli (INGV, Italy), David Mills (Bangor University, United Kingdom)
11 orals, 8 posters

Presentation 121 – Avoidance of "choke" bycatch species

14:00	121 - A novel, spatially based, real-time software solution for the avoidance of "choke" bycatch species **Amos Barkai**, Heidi Henninger and Ron Smolowitz

From 1: @Presenter: do the vessels have problems with being transparent about their fishing tracks/positions? I know fishers who are very reluctant about disclosing this data to others...

From Presenter: @1, Data and reports are sent only to bodies and people which were approved by the fishers.

From 2: @ **Presenter**, have you assessed the effect of this on yellowtail flounder? i.e. how much has unwanted catch been reduced by?

From Presenter: @2, Pilot project on a limited number or vessels, so it is premature to answer this question.

Presentation 22 – Data management architecture to enable multinational cooperation

14:18	22 - Data Management Architecture to enable Multinational Co-operation **Andrew Conway** and Adam Leadbetter

From Chair: how do you address the challenge to allow partners to discover and access other people data? Data reuse?

From Presenter: lots of different catalogues of data. The idea is to collect a list and share it on the internet.

From 1: @Presenter - does each organisation archive the data they have collected themselves - and is there commitment for long-term

From Presenter: **@1,** yes, each organisation is responsible for their own archive, ERDDAP offers some caching ability, but this is not really long term. An advantage of using a standard federated system though is really having the data available in ERDDAP at all, presented in an appropriate and metadata-standard compliant way makes it much easier for NODCs and other international bodies to harvest the data themselves for long-term archival

Presentation 44 – Unifying specialized databases : the HCDC approach

14:26	44 - Unifying specialized databases for a central search portal – the HCDC approach **Linda Baldewein**, Ulrike Kleeberg, Dietmar Sauer, Robin Luckey, Philipp S. Sommer and Housam Dibeh

From 1: @Presenter, I am surprised that scientists wanted a google like search function. E.g. PANGAEA has been using it for two decade and many scientists have issues defining their queries. Especially for complex queries or if abbreviations are being used

From Presenter: @1, I agree that there can be difficulties with finding the data with only one search field. That is why we implemented different filter functions on top of the single search field in order to simplify the filtering process. So far, the Feedback has been positive from the scientists that have tested the portal

From 1: @Presenter - thanks for answering! Great that you have positive feedback and filters help to guide into the right direction. The main issue is that many do not know how to efficiently google and get overwhelmed or frustrated by results

Presentation 59 – ODATIS cluster for French marine data management

14:34	59 - ODATIS: cluster for French marine data management **Valérie Harscoat**, Sabine Schmidt, Gilbert Maudire, Cécile Nys, Joël Sudre, Caroline Mercier, Gérald Dibarboure and Frédéric Huynh

From Chair: at what stage of development is the system? Is it operational?

From Presenter: @Chair, Operational for the access to data catalogue focussing on interoperability and FAIRness of the data, Web services are under development.

Presentation 61 – - Gena, a cross-domain crowdsensing infrastructure

14:42	61 - Gena, a cross-domain crowdsensing infrastructure **Paolo Diviacco**, Rodrigo Carbajales, Massimiliano Iurcev, Nikolas Potleca and Alessandro Busato

From 1: @Presenter - when deploying sensors on citizen boats or mobiles - do you have problems with GDPR (data protection)

From presenter: **@1**, Yes, actually. The anonymity of the data is guaranteed. No way to get back to the position or the identity of the originator.

Presentation 10 – River data management for coastal oceanography

15:40	10 - River data management for coastal oceanography **Antonio Novellino**, Flavio Santos, Estrella Olmedo, Marco Alba, Luca Bonofiglio, Patrick Gorringe, Francisco Campuzano and Caio Fonteles

From Chair: Real big challenge the river data management. Some areas are free of data, why?

From Presenter: **@Chair**, Difficult to find the information, where are the river data archived is not always known. Last country incorporated was the UK.

From 1: I am sorry, I did not follow the presentation from the beginning. However, for Danube, ICPDR could be source to search for data.

From 2: @Presenter: does EMODnet Physics include and river water constituents (e.g. dissolved nutrients) together with the runoff/discharge?

From Presenter : Hi **@2**, the idea is to incorporate more water properties in the future, currently we are focusing in river flow since there are continuous observations available for many systems while other properties are only monitored seasonally or even annually, in the best scenarios

Presentation 106 - How to handle EOV Inorganic Carbon data

15:48	106 - Welcome to the now: How to handle EOV Inorganic Carbon data in respect to the Sustainable Development Goals and the FAIR Data Management Principles **Benjamin Pfeil**, Steve Jones, Maren K. Karlsen, Rocío Castaño Primo and Camilla Landa

From Chair: Tools for QC for Surface CO2 data? What about the other variables CO2 cycle data?

From Chair: What are the main products derived from the data? Where are they available?

From 1: @Presenter thank you for your nice presentation. What do you think should be the role of NODCs in the ICOS data workflow? What is needed in order to optimise this relationship between the data source, the NOCDs and ICOS?,

From Presenter: @1, I think your question applies for most research infrastructures. In the case of ICOS we perform high level services that will be hard to achieve for most NODCs since specialised expertise and services are needed. We have to ensure that data is managed consistently in order to ensure quality and keep uncertainties low. I think the key of involving NODCs is collaboration and to ensure that data is interoperable and can be harvested by NODCs and other sources - this will ensure national visibility while assuring the best possible quality.

From 1: @Presenter, many NODCs will archive and collate data (all data) collected from their national research vessel fleet or funded by their research funding bodies. However there is no need to duplicate effort hence if there could be better coordination between specialised data centres like ICOS and NODCs then there would be less duplication of efforts, better data quality at the NODC (as you mentioned), less risk of creating near duplicate version of the data, improved data interoperability right from the start, and less confusion for the data users. However we have talked about this for a very long-time and we don't seem to have yet managed to clarify the workflow. I was just wondering if you were aware of any effort made in that direction.

From Presenter: @1, At the moment there is little duplication of efforts when we talk about ICOS data - carbo data is often not made available at NODCs - this was the outcome of IODE survey in 2018. I think the entire landscape with NODCs, ADUs, Research Infrastructures, data aggregators, community databases is confusing but it reflects the funding, political and scientific landscape as well. One way on how to improve it would be the SDG14.3.1 methodology that aims at a larger integration in the future but a larger involvement of expert data centres e.g. ICOS in Europe will be needed

Presentation 129 – Implementation of the Greek MSFD

15:56	129 - Recent developments on the integrated information system for the support of the implementation of t Angelos Lykiardopoulos, Paraskevi Drakopoulou, Athanasia-Sissy Iona, Vassiliki Loukaidi, Christina Damianou

From Chair: Who are the amin target of your application? What are the next steps?

From Presenter: @Chair, the main objective is to gather the information and give it to the stakeholders needing this kind of observations.

From 1: are there any examples of MSFD products?

From Presenter: @1, Not yet, because the development is still on going.

Presentation 145 – from OBSEA to EMODnet

16:04	145 - In-situ Real-time Underwater Noise Dataflow: from OBSEA to EMODnet **Enoc Martínez**, Daniel M. Toma, Antonio Novellino, Marco Alba and Joaquín del Río

From 1: @Presenter - what catalogue software are you using to store SensorML XML?

From Presenter: **@1**, we are not using any specific catalogue.

From Chair: What are the main downstream applications and products that are related to his type of data? Do you provide products?

From Presenter: **@Chair**, Actually our work focus on the acquisition and data and we do not provide products. EMODnet provides maps from these data

Presentation 97 - - Interoperable Provision of Research Vessel Tracking Data

16:12	97 - Interoperable Provision of Research Vessel Tracking Data via OGC SensorThings API and Sensor Observation Service **Christian Autermann,** Simon Jirka and Dick Schaap

From Chair: What is the primary purpose of the service?

From Presenter: @Chair, Main purpose it to get the data into EMODnet infrastructures

Presentation 148 - Monitoring of the Western Mediterranean Sea using FerryBox

16:20	148 - Ship Of Opportunity Monitoring of the Western Mediterranean Sea using FerryBox **Sana Ben Ismail**, Sondos Awachri, Nouha Barraj, Mohamed Anis Ben Ismail and Cherif Sammari

From 1: Is the Ferrybox listed on the European RI, as equipment that can be shared with other countries? For example in the frame of future Black Sea research expeditions?

From presenter: @1, Yes, all information has been sent to EUROGOOS who managed Ferrybox at the Mediterranean level.

From 2: Can the VOS use these Ferrybox systems? This can improve the Ocean observations to a great extent if ferry box systems are installed in VOS

From Presenter: @2, yes !