



SeaDataNet

User manual and
instructions for updating
EDMED, EDMERP, EDIOS,
EDMO and CSR

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Short title

Guidelines for the Metadata Directories Maintenance

Long title

User manual and instructions for updating EDMED, EDMERP, EDIOS, EDMO and CSR

Short description

The document provides guidelines to the Project partners on how to maintain the SeaDataNet metadata directories e.g. how to submit new entries or update existing ones.

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Working group

MARIS, BODC, BSH-DOD, IFREMER

Dissemination**Copyright terms**

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Purpose of the document

This document provides guidelines to the SeaDataNet partners on how to maintain the Pan-European metadata directories content of EDMED, EDMERP, EDIOS, EDMO and CSR e.g. how to submit new metadata and how to update existing ones.

It does not intend to give instructions for the usage of the common software tools that have been developed within SeaDataNet for editing and generating XML metadata entries. This is included in the Mikado user manual and the appropriate on-line Content Management System (CMS) tools which have been developed within the Project for the distributed management of the metadata.

Its purpose is to integrate in one document the available options and methods for the maintenance of the infrastructure. These practices are already being used by existing partners while new partners may use it in a complementary way with the already existing information at the SeaDataNet Portal [1, 2], the manuals [8, 9, 10, 11] and the training workshops material [3]. This document has been updated in November 2013 because of the major upgrade that has taken place for the SeaDataNet first Innovation Cycle which included using ISO 19139 for CDI and CSR, migrating all directories to using the version 2 of the common vocabularies (NVS 2.0) and migrating use of C16 to C19 for Sea Regions.

Note: Guidelines for maintenance of the CDI service are given in a separate document D5.7

1. Introduction

1.1. Metadata directories overview

SeaDataNet maintains and operates an on-line metadata discovery system (<http://www.seadatanet.org/Metadata>) with overviews of marine organizations in Europe and their engagement in marine research projects, management of large datasets and data acquisition through research cruise, monitoring programmes and networks for the European waters and the global oceans:

- **EDMO:** European Directory of Marine Organizations (at present > 2,400 entries)
EDMO contains up-to-date addresses and activity profiles of research institutes, data holding centres, monitoring agencies, governmental and private organisations, that are in one way or another engaged in oceanographic and marine research activities, data & information management and/or data acquisition activities.
- **EDMED:** European Directory of Marine Environmental Data (at present > 3,900 entries)
EDMED is a comprehensive reference to the marine data sets and collections held within European research laboratories, so as to provide marine scientists, engineers and policy makers with a simple mechanism for their identification. It covers a wide range of disciplines including marine meteorology; physical, chemical and biological oceanography; sedimentology; marine biology and fisheries; environmental quality; coastal and estuarine studies; marine geology and geophysics; etc. Data sets are described in EDMED irrespective of their format (e.g. digital databases or files, analogue records, paper charts, hard-copy tabulations, photographs and videos, geological samples, biological specimens etc).
- **EDMERP:** European Directory of Marine Environmental Research Projects (at present > 2,700 entries)
EDMERP covers marine research projects for a wide range of disciplines including marine meteorology; physical, chemical and biological oceanography; sedimentology; marine biology and



fisheries; environmental quality; coastal and estuarine studies; marine geology and geophysics etc. Research projects are described as metadata factsheets with their most relevant aspects. The primary objective is to support users in identifying interesting research activities and in connecting them to involved research managers and organisations across Europe.

- **CSR:** Cruise Summary Reports (at present > 43,000 entries from partners and a total of > 53,000 entries)

Cruise Summary Reports (CSR = former ROSCOPs) are the usual means for reporting on cruises or field experiments at sea. Traditionally, it is the Chief Scientist's obligation to submit a CSR to his/her National Oceanographic Data Centre (NODC) not later than two weeks after the cruise. This provides a first level inventory of measurements and samples collected at sea. Currently, the Cruise Summary Reports directory covers cruises from 1873 till today from more than 2,000 research vessels, in all European waters and global oceans. This also includes historic CSRs from European countries which have been loaded from the ICES database from 1960 onwards.

- **EDIOS:** European Directory of the Ocean Observing Systems (at present > 350 programmes and networks and > 16,000 stations)

EDIOS, an initiative of EuroGOOS, is an information system for marine observing and monitoring programmes, stations and platforms (including moored buoys, coastal installations, seabed stations, drifting buoys, repeated sections and sampling stations, airborne repeated tracks, etc) where there are routine, repeated, and consistent long-term observations of the marine environmental conditions, and where the data are made available for use in real-time, or near real-time. This directory includes discovery information on location, measured parameters, data availability, responsible institutes and links to data-holding agencies.

A schematic overview of the metadata directories and their interconnections is shown at the Figure (1):

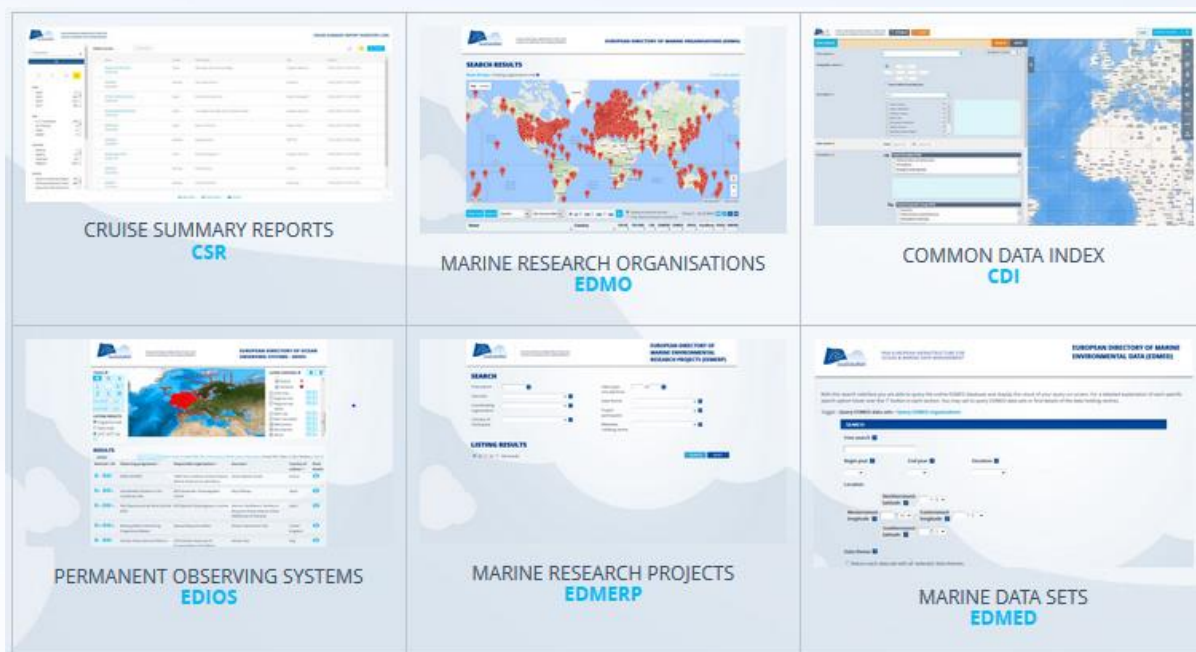


Figure 1: Metadata Directories Overview

The Common Data Index (**CDI**) is the key Data Discovery and Delivery service that provides online unified access to datasets managed by the distributed Data Centres (at present >1,300,000 entries). It gives users a highly detailed insight in the geographical coverage, and other metadata features of partners data holdings. Users can have access to datasets identified in a harmonized way, using a shopping basket mechanism. They can follow the processing of requests via an online transaction register and can download datasets in the SeaDataNet standard formats.

In addition, SeaDataNet maintains and operates Common Vocabularies for parameters, platforms types, instruments, etc., which are available as Web services and are used to mark up metadata, data and data products in a consistent and coherent way.

At present the Vocabulary Services (NVS 2.0) comprise over 120,000 terms in over 100 lists: (http://seadatanet.maris2.nl/v_bodc_vocab_v2/welcome.asp).

1.2. Background and future upgrades

At the beginning of the SeaDataNet Project (2006-2007), the metadata directories had different backgrounds, set-up and structure. Many of the descriptions were in free text format thus preventing the cross search of information between the different metadata bases. The CDI service provided access to the data holdings in different formats through the partner's interfaces or through e-mail requests to the individual data centres. This SeaDataNet Version 0 was actually a maintenance and continuation of the metadata system of the Sea-Search Project.

During 2008-2010 a major effort took place in order to set up an integrated on-line data service by interconnecting, harmonizing and mutually tuning the metadata directories in terms of formats, syntax and semantics. To this end the ISO 19115 metadata standard was adopted for all directories - and not only for the CDI - , ensuring thus interoperability between the metadata directories on behalf of the marine community. Common Vocabularies, Projects, Organizations and CSR References were used in the metadata descriptions. In addition the metadata became accessible and linked through Web Services to enable constant accessibility of the latest versions. Users could search for data sets in the CDI V1 database, order and get access by downloading the data requested in a unique format via a shopping basket mechanism and a communication between the SeaDataNet portal and the distributed data systems (SeaDataNet Version 1).

At the end of SeaDataNet project, the content of EDMED, EDMERP, EDMO and CDI directories have also been completely converted to V1 format. The upgrade of the older CSR V0 entries to the V1 content model, as well as the update of EDIOS content in cooperation with EuroGOOS, will be continued and completed within SeaDataNet-II.

During the last year of the SeaDataNet Project (2010-2011), the infrastructure was improved by adding data product services, OGC compliant viewing services and extending the ability to access various marine and ocean data types (CDI Version 2).

In the 1st Innovation Cycle (2011 - 2013) of the SeaDataNet-II project (2011-2015) the infrastructure has been further upgraded into an operational robust and state-of-the-art Pan-European system providing up-to-date and high quality access to ocean and marine metadata, data and data products. For the most frequently updated CDI and CSR directories an upgrade has been applied by migrating to the ISO 19139 XML schema for exchanging metadata and making these directories INSPIRE compliant. The CDI metadata format has also been expanded with options for linking CSR references, EDMED references and including Quality Information and references to Bibliography. sib Moreover all



directories have been upgraded to using the version 2 of the Common Vocabularies (NVS 2.0) in all marking up. And for Sea regions no longer use is made of C16 but C19.

Further upgrading is underway. While the exchange of CDI and CSR metadata in SeaDataNet-I was carried out on an ad-hoc basis between data centres and the central manager of each directory by e-mailing and uploading packages of XML entries, in SeaDataNet-II the maintenance process will be upgraded and become more effective. The CDI and CSR metadata will be created/updated at the local data centres in the same way as for Version 1 but the exchange with the central catalogues will become operational. e.g. the metadata will be automatically harvested by the central systems via OGC based Catalogue Services for the Web (CS-W).

2. Overview of management of the metadata directories

2.1. Workflow and governance

A simplified schema of the overall metadata workflow is shown in Figure (2). In each country contributions for each of the directories originate from a wide range of local organisations which are gathered and validated at the national scale by the SeaDataNet national nodes (usually NODCs). Depending on the local settings, these use MIKADO or the online CMS tools for preparing and forwarding (at V2 format) manually their national entries to the managers of the central European directories: BODC manages EDIOS, EDMED and the Common Vocabularies; IFREMER manages CSR; MARIS manages EDMERP, EDMO and CDI. Note: For CDI and CSR centers can continue to submit these XML files manually or have them automatically harvested by the CSW service.

Note ► *The cooperation between the local organisations and the national collators is very important because it ensures the effective metadata flow and management from the national systems to the central Pan-European archives.*

The roles of the partners are summarized as follows:

The national collators are responsible for the content of the directories and they co-ordinate the overall management activities at national level. They are solely responsible for submitting XML files to the central directories. More specifically they:

- Provide assistance in metadata preparation
- Collate new records or their updates
- Quality control metadata descriptions
- Distribute to the central portal in case of XML files
- Maintain contact with central directory managers

The role of the other organizations is to support and complement the coordination activities by:

- Providing new entries
- Completing the information
- Updating existing information



V2 Metadata workflow

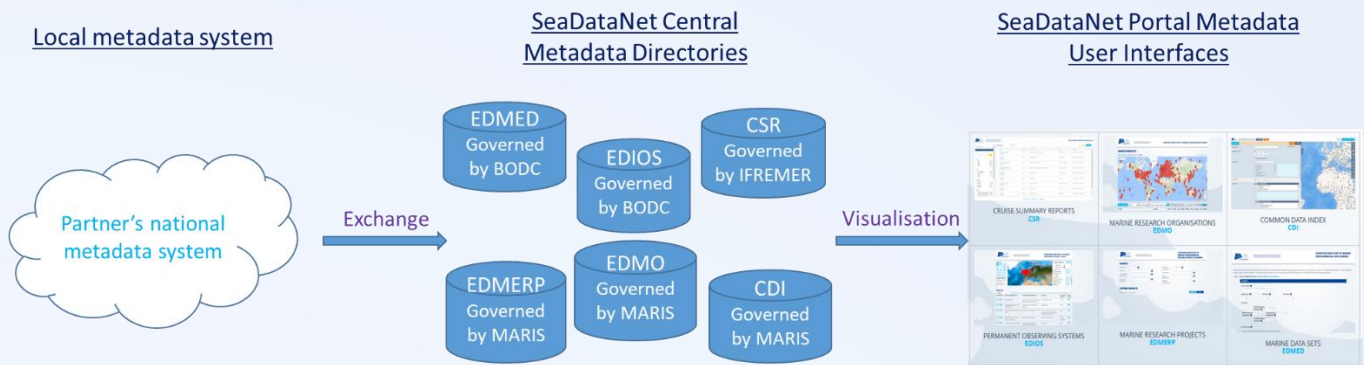


Figure 2: General workflow of the metadata directories

For each directory a user interface has been developed which enables the on-line search of the metadata bases and the display of the query on the screen. These metadata viewing services can be reached from the metadata overview page of the SeaDataNet portal:

<http://www.seadatanet.org/Metadata>

The individual links to each interface are at present:

- **EDMED:** <https://edmed.seadatanet.org/>
- **EDMERP:** <https://edmerp.seadatanet.org/>
- **EDIOS:** http://seadatanet.maris2.nl/v_edios_v2/search.asp
- **EDMO:** <https://edmo.seadatanet.org/>
- **CSR:** <https://csr.seadatanet.org/>

Note ► Visit the viewing services regularly to check the content of the databases and update/improve it when necessary.

2.2. Formats

As described in paragraph 1.2, during SeaDataNet all metadata directories were standardized and harmonized by adopting the ISO 19115 content model and schema as a common basis and by using, where possible, common vocabularies and references for completing the metadata records. In SeaDataNet II the CDI and CSR metadata formats have been upgraded to ISO 19139 and INSPIRE compliancy, while all directories now make use of the upgraded Common Vocabularies (NVS 2.0).

For each directory the following have been defined:

- Description of the format and XML tags
- XML Schema (XSD)



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- XML example file

The latest versions of the complete formats per directory can be retrieved from the following overview page of the SeaDataNet portal:

<https://www.seadatanet.org/Standards-Software/Metadata-formats>

The individual links to each format description package are at present:

- **EDMED**: <https://www.seadatanet.org/Standards/Metadata-formats/EDMED>
- **EDMERP**: <https://www.seadatanet.org/Standards/Metadata-formats/EDMERP>
- **EDIOS**: <https://www.seadatanet.org/Standards/Metadata-formats/EDIOS>
- **CSR**: <https://www.seadatanet.org/Standards/Metadata-formats/CSR>

Each of the format file packages contains: an XML example file, the XSD schema and a XLS mapping file of the metadata fields with the MIKADO variables and the ISO-19115 XML tags.

XML files, generated using the latest MIKADO software, will be valid and should parse to the associated Schema's. However partners not making use of MIKADO but generating XML entries for any of the SeaDataNet Directories should perform a validation before they can prepare and submit regular contributions. The Schema's for CDI and CSR include Schematron rules which allow to validate both the Syntax and the Semantics of CDI or CSR XML files, using an XML editor (e.g. Oxygene, XMLSpy, ..) and the related Schema's, which can be found at the SeaDataNet portal in the Standards and Formats section. For XML entries generated without MIKADO for EDMERP, EDMED and EDIOS a comparable approach can be applied. Those contributors can use MIKADO to check the Syntax validity. The same can be done by using an XML editor and the related Schema's. However work is still underway for including Schematron rules also in EDMERP, EDMED and EDIOS Schema's which will facilitate to validate also the Semantics next to the Syntax.

Note: In SeaDataNet I also online XML validation services were provided, but it has been decided no longer to maintain these, but to change it to local validation using MIKADO and XML editors and extended Schema's.

Note ► *New partners must always validate their XML documents before sending them to the central directory managers.*

2.3. Record Identifiers

In principle, every data/metadata entry in the partner's local data and information system has to be assigned with a unique identifier. The aim of the SeaDataNet system is to use a central identifier different in principle from the local systems and constant in time which will ensure the uniqueness of each data/metadata description globally.

Thus all the systems that manage the metadata have to generate unique local identifiers and since these are generated and exchanged **no subsequent changes are allowed** to these identifiers. For the vocabularies the uniqueness is very important for reference to the correct terms. For the CDI, the local identifiers provide the basis for the communication between the portal and the local systems. In addition the CDI ordering system makes use of these local identifiers to locate and retrieve data sets at the local systems. For the other metadata directories the local identifiers are of vital importance for the updating processes to enable the central systems to recognize whether the contributions are updates of existing records or new ones.



Note ► Partners are advised to store their local identifiers properly for easy and quick usage and reference.

2.4. Maintenance

A general representation of the maintenance workflow and the available tools that have been developed and implemented within SeaDataNet, is shown in Figure (3). Depending on the directory, the following options are available:

- On-line maintenance via CMS (EDMERP, CSR, EDMO),
- XML export from a partner to the pan-European directory:
 - Using MIKADO software manually, to enter and maintain local directories as sets of XML files (EDMED, EDMERP, CSR, EDIOS, CDI),
 - Using the MIKADO software automatically, to generate new and updated XML files from locally maintained metadata bases (EDMED, EDMERP, CSR, EDIOS and possibly most relevant CDI)

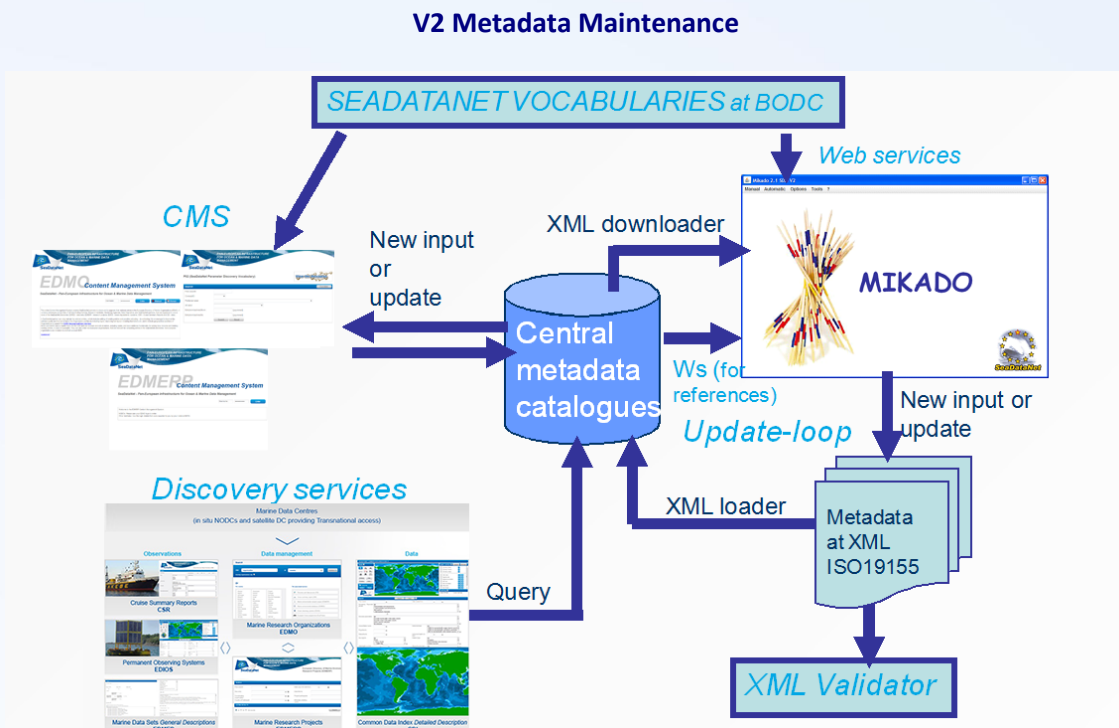


Figure 3: General Maintenance workflow and available tools

The local XML export can be produced by partners using a data entry form provided by the versatile MIKADO Java tool, developed and maintained by SeaDataNet. It can be retrieved from the following overview page of the SeaDataNet portal: <http://www.seadatanet.org/Standards-Software/Software>

The individual link to the present MIKADO software is: <http://www.seadatanet.org/Standards-Software/Software/MIKADO/Download>

MIKADO interacts with the Web Services of the Vocabularies, EDMO, EDMED, CSR and EDMERP and produces valid XML files that can be forwarded for import into the central directories. In addition MIKADO can be coupled at local level by the SeaDataNet national nodes to their national metadata systems for automatic generation of new and updated entries in XML format.

Directory + pan-European coordinator	Format info	Online CMS	XML exchange from national to pan-European level	XML validation
EDMED (coordinator BODC)	Check EDMED format	No	Yes	Use MIKADO / XML editor and Schema
EDMERP (coordinator MARIS)	Check EDMERP format	Online	Yes	Use MIKADO / XML editor and Schema
CSR (coordinator IFREMER)	Check CSR format	Online	Yes	Use MIKADO / XML editor and Schema
EDIOS (coordinator BODC)	Check EDIOS format	No	Yes	Use MIKADO / XML editor and Schema
EDMO (coordinator MARIS)		Online	No	Not applicable

Table 1: Metadata directories maintenance modalities and governance

Note ► Traditionally, it is the Chief Scientist's obligation to submit a CSR to his/her National Oceanographic Data Centre (NODC) not later than two weeks after the cruise. Chief scientists are advised to contact their NODC to check whether they have to report directly to the SeaDataNet CSR online Content Management System or to their NODC. The NODC will then transfer their CSR entries to the central SeaDataNet directory.

3. Management of EDMED, EDMERP, EDIOS, EDMO and CSR

3.1. Maintenance of EDMED

Figure (4) represents: (a) the overall EDMED management workflow and (b) the maintenance options and tools.

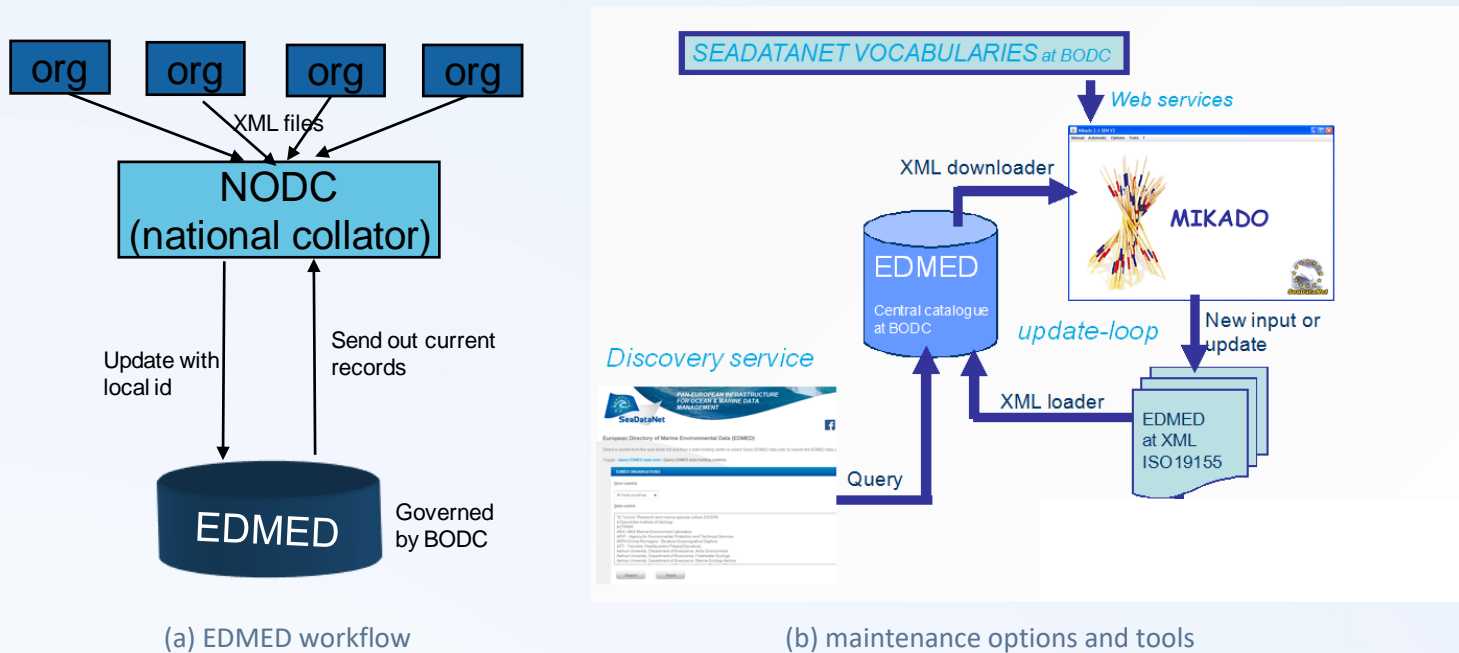


Figure 4: Management of EDMED

3.1.1. EDMED - Submitting new entries

Step 1: Prepare your XML files via the MIKADO tool in manual or automatic mode (export from your database).

The MIKADO user manual [8] provides detailed instructions on how to create EDMED XML files.

In general, there is one national focal point or collating centre in each country (usually the NODC of the country). If you are not that centre then you should send your XML files to them, as they are responsible for managing local dataset identifiers and EDMED content, and for forwarding the XML files to the central database which is managed by BODC.

Note ► *It is important that the content of the EDMED records is as complete and comprehensive as possible, so that they will be of maximum use to those who search the Directory. To assist with this, there are guidance notes available describing the required content of the fields of the EDMED XML records, which*

complements the information provided by this User manual and the MIKADO manual. These are distributed with requests for new or updated EDMED records and will be made available on the web-site.

All of the fields should be completed if at all possible, but as an absolute minimum you must ensure that you have assembled the following mandatory information for generating valid XML records:

- Collate Centre (EDMO reference)
- Dataset-name
- Dataset-id (local identifier, given by the data holding centre)
- Originator Centre (EDMO reference)
- Abstract/Summary
- Data holding centre (EDMO reference)
- Sea-areas
- Parameters
- Availability/Data Access Restriction
- Begin year or date
- Geographic coverage (bounding box)

Creation/Revision Dates are also mandatory, but are generated automatically by MIKADO. In addition, the EDMED identifier is automatically set to the Dataset-id for new records and converted to a central identifier during ingestion at the central database.

The above mandatory fields are shown with red asterisks at the manual interface and with bold characters at the queries of the automatic mode of MIKADO.

You have to map your metadata with the following vocabularies which are used by MIKADO for the construction of the EDMED XML format:

- EDMO
- EDMERP
- C19 (SeaVoX Sea Areas)
- P02 (Discovery Parameters)
- L08(Data Access Restriction Policies)

MIKADO provides functionality for manual and automatic mapping. If you do not succeed in recognizing your metadata within the fields of the vocabularies, ask for help from the corresponding scientist or contact the central vocabulary managers [15, 16].

Step 2: Once all the information related to the EDMED has been completed, save the XML files locally.

Step 3: Validate your XML files.

See 2.2

3.1.2. EDMED - Updating existing entries

Option 1

Step 1: Open an existing XML file or an XML URL using MIKADO.

Update your information via MIKADO interface following the MIKADO users' manual instructions [8] and save the XML files locally.

If you are working with XML URLs then save your modifications on the URL.

Step 2: Validate your local XML files



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Step 3: Send your XML files by email to the central Pan-European Coordinator at BODC [12].

Option 2

Step 1: Retrieve the EDMED records from BODC via MIKADO.

You need to know the local data set identifier and its collating centre name in order to retrieve the correct data set.

Download the appropriate EDMED record following the MIKADO users' manual instructions [8], update it as necessary using the MIKADO manual interface and save the XML file locally.

As noted in Section 3.1.1, Step 1, guidance notes for updating/producing EDMED XML records, complementing the information provided by this User Manual and the MIKADO manual, are available.

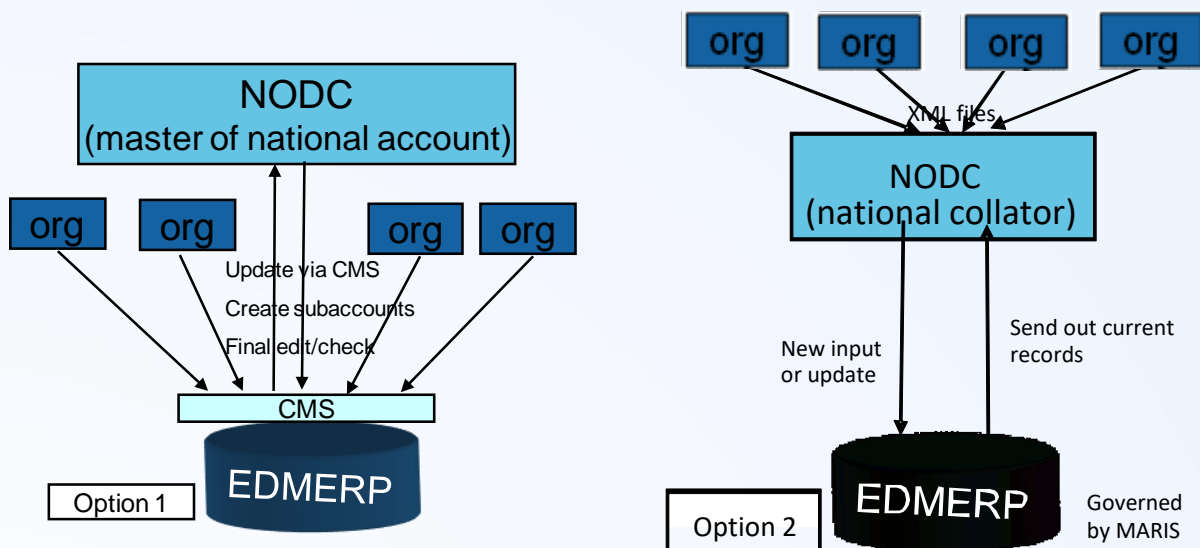
Retrieval through MIKADO is more convenient for individual records. If you wish to retrieve many records BODC can export your data from the central data base and provide you with a zip file.

Step 2: Validate your local XML files

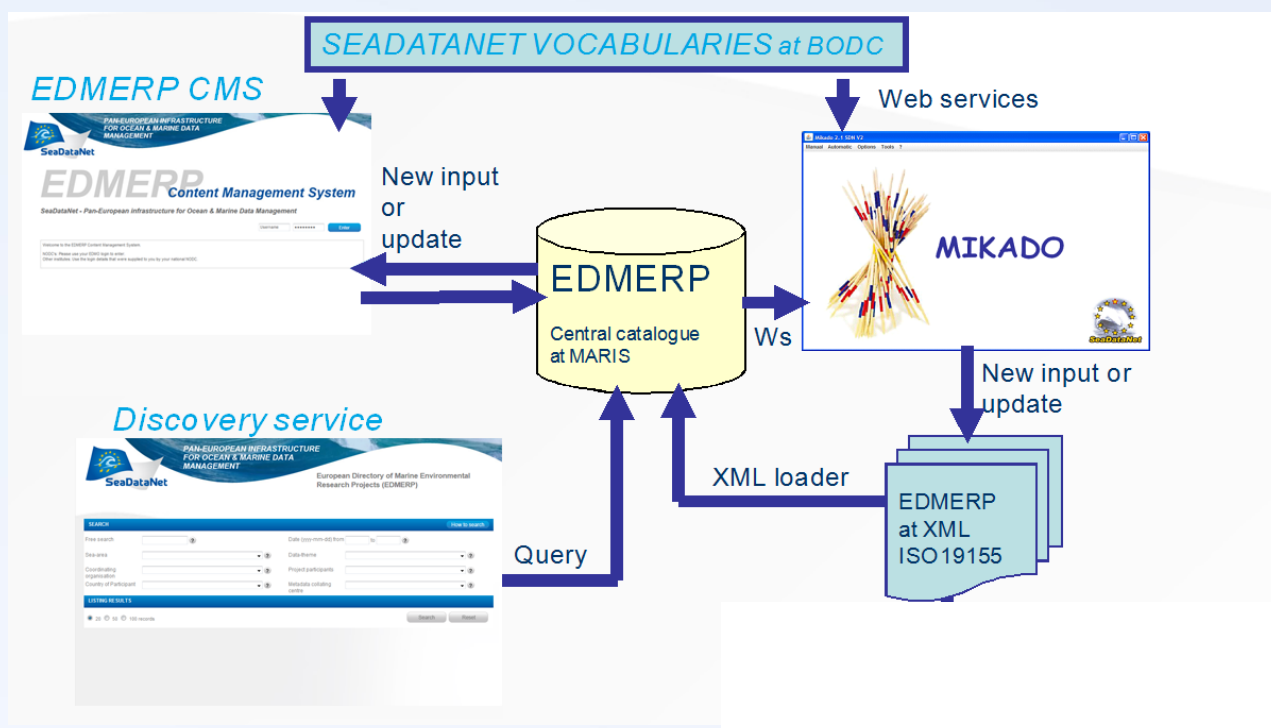
Step 3: Return the updated XML records by email to BODC [12].

3.2. Maintenance of EDMERP

Figure (6) represents: (a) the overall EDMERP management work flow and (b) the maintenance options and tools.



(a) EDMERP Work Flow



(b) maintenance options and tools

Figure 6: Management of EDMERP

3.2.1. EDMERP - Submitting new entries

Option 1

Submit your metadata via the on-line CMS form [5] using your EDMERP username and password that has been provided to you by the central manager of MARIS.

As the EDMERP directory contains descriptions of projects that are coordinated by several institutes per country, the national collator (usually the NODC) can create sub-accounts so that the coordinators of the projects can add their own project records.

However only the NODC is the master of the national account e.g. only NODC can validate the new entries to make them available to users of the public EDMERP Directory. The Institutes can indicate that a record is ready for validation.

The EDMERP identifier is given automatically by the central system.

Instructions how to use the EDMERP CMS Tool are provided in the on-line manual [9].

Option 2

Step 1: Prepare your XML files via MIKADO tool in manual or automatic mode (export from your database), same procedure as for EDMED (see step 1 of paragraph 3.1.1.).

The MIKADO user manual [8] provides detailed instructions on how to create EDMERP XML files.

As for EDMED, if you are not the responsible collating centre, send your XML files to your National Collating Centre/NODC to submit them to the central database.

Ensure that you have assembled the following mandatory information before using either option 1 or option 2:

- EDMERP identifier (central identifier given by the system)
- Collate-centre (EDMO reference)
- Creation-date
- Project name
- Project acronym
- Revision date
- Project coordinator Name
- Project coordinator Institute (EDMO reference)
- Responsible party (EDMO reference)
- Abstract/Summary
- Sea areas
- Data-themes
- Project start date

The above mandatory fields are shown with a red font at the CMS interface, red asterisks at the manual interface of MIKADO and with bold characters at the queries of the automatic mode of MIKADO.

You have to map your metadata with the following vocabularies:

- EDMO
- P08 (Data Themes)
- C19 (SeaVoX Sea Areas)
- L08 (Data Access Restriction Policies)

If you use the CMS tool, the mapping of your metadata is carried out by choosing the appropriate field from the drop down lists. In case of MIKADO tool, it provides functionality for manual and automatic mapping. If you do not succeed in recognizing your metadata within the description fields of the vocabularies, ask for help from the corresponding scientist or contact the central vocabulary managers [15, 16].

Step 2: Once all the information related to EDMERP has been completed, save the XML files locally.

Step 3: Validate your XML files, see paragraph 2.2.

Step 4: Send your XML files by email to the central Pan-European Coordinator at MARIS [13].

3.2.2. EDMERP - Updating existing entries

Option 1

Step 1: Edit your records via the on-line CMS tool [5] using your EDMERP username and password that has been provided to you by the central manager of MARIS or using the sub-account login and password that has been provided to you by your national collator.

You can use the 'Free search' box on the left top to find the project that you need to edit.

Note that only the NODC can validate the modifications performed by the local users of the sub-accounts.

Option 2

Step 1: Open an existing EDMERP XML file or an XML URL using MIKADO.



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Update your information via the MIKADO interface following the MIKADO users' manual instructions [8] and save the XML file locally.

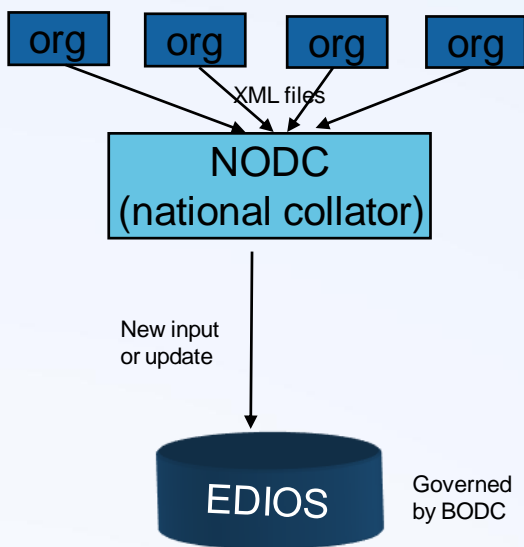
If you are working with XML URLs, save your modifications on the URL.

Step 2: Validate your local XML files, see paragraph 2.2.

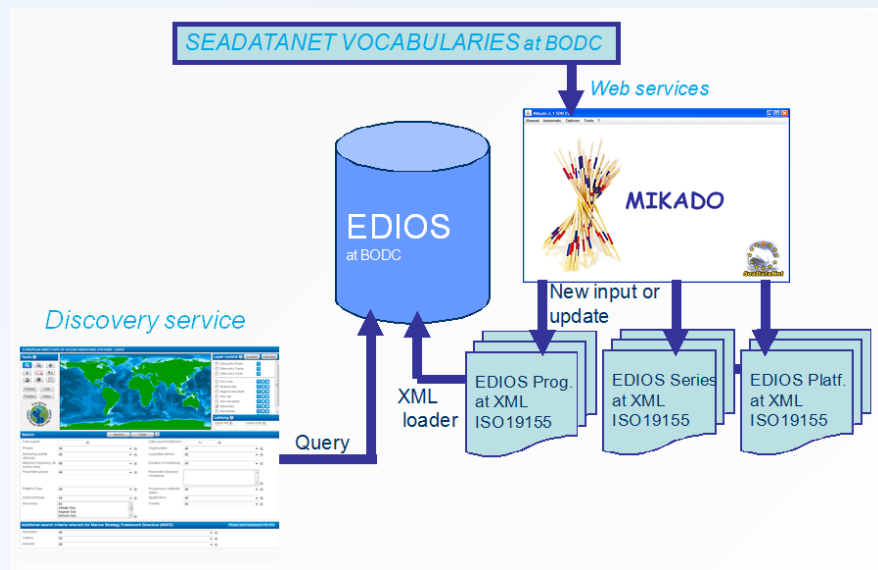
Step 3: Send the updated XML records by email to central Pan-European Coordinator at MARIS [13].

3.3. Maintenance of EDIOS

Figure (7) represents: (a) the overall EDIOS management work flow and (b) the maintenance options and tools.



(a) EDIOS Work Flow



(b) maintenance options and tools

Figure 7: Management of EDIOS

3.3.1. EDIOS - Submitting new entries

Step 1: Prepare your XML files via the MIKADO tool in manual or automatic mode (export from your database).

EDIOS consists of three related schemas for: observing programmes, series and platforms. You have to **first create the programmes, then the series and finally the platforms**. An EDIOS programme can relate to multiple series. Therefore an EDIOS Programme identifier is used in the EDIOS series form as the EDIOS programme reference, while the EDIOS series identifier(s) is used in the EDIOS platforms form as the EDIOS series reference. Detailed instructions how to do this can be found in the MIKADO user manual [8].

As for EDMED and EDMERP, if you are not the national EDIOS coordinator, you should send your XML files to them as they have the responsibility of managing the local EDIOS information and forwarding the XML files to the central database which is managed by BODC.

Note ► *It is important that the content of the EDIOS records is as complete and comprehensive as possible, so that they will be of maximum use to those who search the Directory. To assist with this, there are guidance notes available describing the required content of the fields of the EDIOS XML records, which complements the information provided by this User manual and the MIKADO manual. These are distributed with requests for new or updated EDIOS records and will be made available on the web-site.*

All of the fields should be completed if at all possible, but as an absolute minimum you must ensure that you have assembled the following mandatory information for generating valid XML records:

Programme Information:

- EDIOS program identifier (local identifier)
- Program acronym
- Program Name
- Start date
- Sea-areas
- Abstract
- Data Access Restriction
- Collate Centre (EDMO reference)
- Principal investigator/laboratory
- Coordinating institute (EDMO reference)

Series Information:

- EDIOS series identifier (local identifier)
- Series acronym
- Series Name
- Geographic coverage (bounding box)
- Start date
- Abstract
- Parameters
- Quality control procedures
- Collate Centre (EDMO reference)

Platform Information:

- EDIOS platform identifier (local identifier)
- Platform Name
- Platform class
- Platform Owner (EDMO reference)
- Collate Centre (EDMO reference)

The Creation and Revision Dates are also mandatory, but are generated by MIKADO.

The above mandatory fields are shown with red asterisks at the manual interface and with bold characters at the queries of the automatic mode of MIKADO.

You have to map your metadata with the following vocabularies which are used by MIKADO for the construction of the EDIOS XML format:

- EDMO
- EDMERP
- C17 (Platform Classes)
- C19 (SeaVoX Areas)
- C34 (Activity purpose categories)



- C35 (European Nature Information System Level 3 Habitats)
- C36 (Monitoring activity legislative drivers)
- P02 (Parameters Discovery Vocabulary)
- P06 (data storage units)
- L12 (parameter quality control procedures)
- L05 (Device Categories)
- L06 (SeaVoX Platform Classes)
- L10 (geographic co-ordinate reference frames)
- L11 (Depth measurement reference planes)
- L12 (parameter quality control procedures)
- L13 (SeaVoX Vertical Co-ordinate Coverages)
- L14 (Activity Operational Stati)
- L15 (quality management system accreditations)
- L08(Data Access Restriction Policies)

MIKADO provides functionality for manual and automatic mapping. However, if you do not succeed in recognizing your metadata within the fields of the vocabularies, ask for help from the corresponding scientist or contact the central vocabulary managers [15, 16].

Step 2: Once all the information related to EDIOS has been completed, save the XML files locally.

Step 3: Validate your XML files, see paragraph 2.2.

Step 4: Send your XML files by email to the central Pan-European Coordinator at BODC [12].

3.3.2. EDIOS - Updating existing entries

Step 1: Open an existing EDIOS XML file or an XML URL using MIKADO.

Update your information via MIKADO interface following the MIKADO users' manual instructions [8] and save the XML file locally.

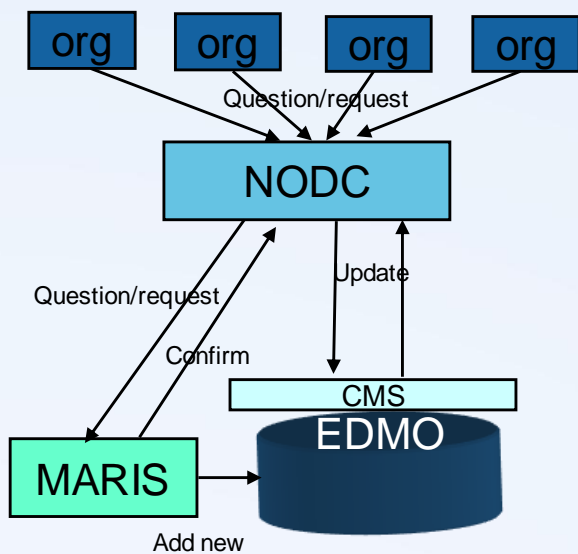
If you are working with XML URLs, save your modifications on the URL.

Step 2: Validate your XML files, see paragraph 2.2.

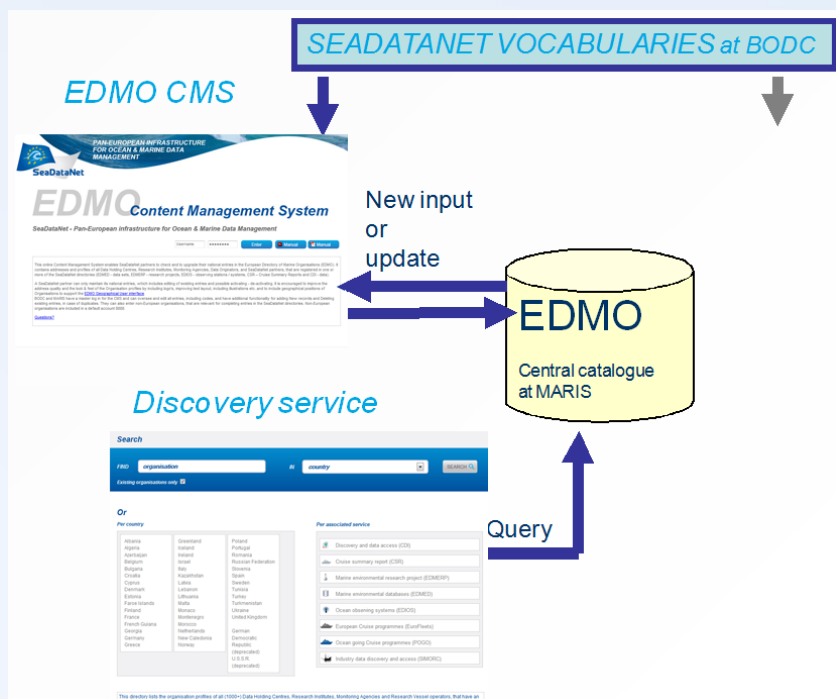
Step 3: Send the updated XML records by email to central Pan-European Coordinator at BODC [12].

3.4. Maintenance of EDMO

Figure (8) represents: (a) the overall EDMO management work flow and (b) the maintenance options and tools.



(a) EDMO Work Flow



(b) maintenance options and tools

Figure 8: Management of EDMO

3.4.1. EDMO - Submitting new entries

Step 1: Send to MARIS [13] the name of the new Organization and request new record to be added.

EDMO is a vocabulary with strict governance and only MARIS (or alternatively BODC) can create new records, while national collators/NODCs are responsible for the entries of organisations from their countries.

MARIS will provide NODCs with an EDMO username and password (Note: This can also be used for the EDMERP CMS).

Step 2: Log in the CMS form [6] using your EDMO username and password and start adding the details of the new Organization.

Only NODCs belonging to the SeaDataNet partnership have access to the CMS forms to maintain their national entries, activating or de-activating relevant entries.

If your Organization is not listed in the EDMO catalogue, request your NODC to register your entry.

Instructions how to use the EDMO CMS Tool are provided in the on-line manual [10].

The following information is required for a valid entry via the on-line CMS tool:

- National Collator (EDMO reference)
- Organization Name
- Country (C32 Vocabulary)



sdn-userdesk@seadatanet.org – www.seadatanet.org

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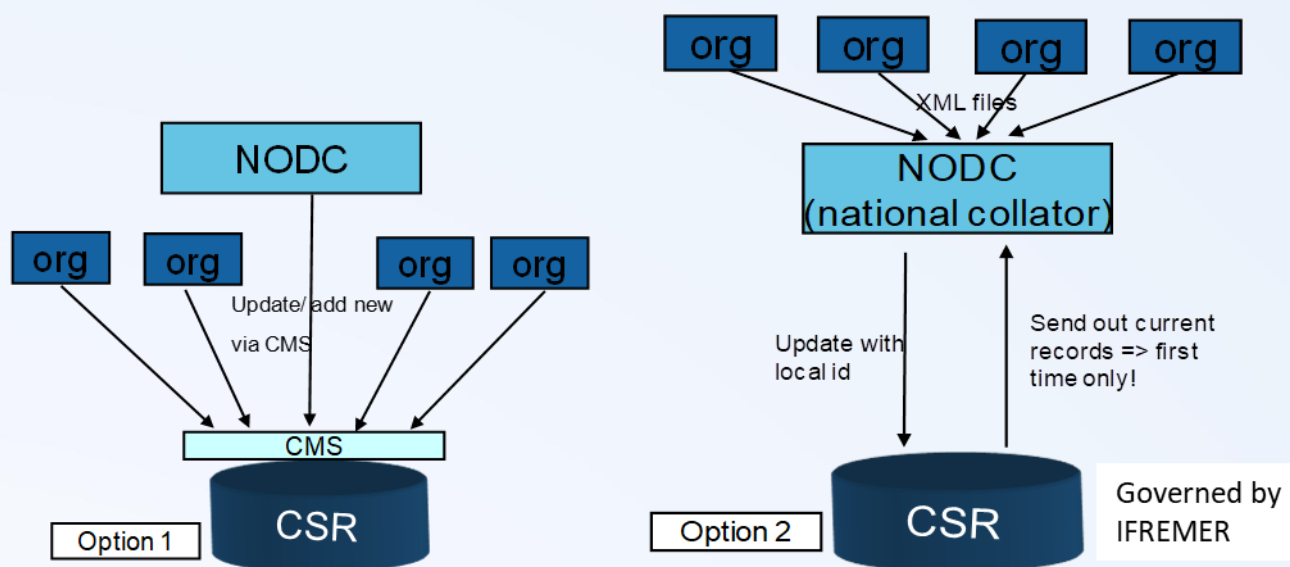
3.4.2. EDMO - Updating existing entries

Step 1: Edit your records via the on-line CMS tool [6] using your EDMO username and password that has been provided to you by the central manager of MARIS.

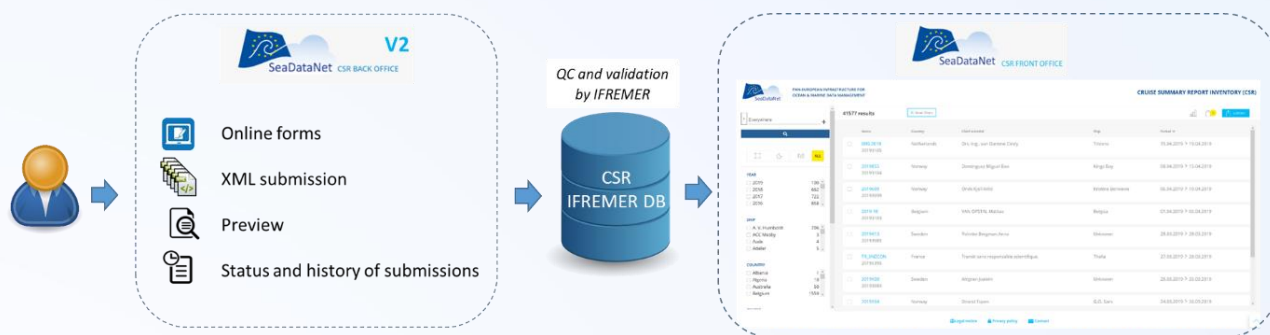
You can use the Search boxes on the left top to find the Organization that you need to update.

3.5. Maintenance of CSR

Figure (9) represents: (a) the overall CSR management work flow and (b) the maintenance options and tools.



(a) CSR Work Flow



(b) maintenance options and tools

Figure 9: Management of CSR

3.5.1. CSR - Submitting new entries

Option 1 - Online

Step 1: Log in to the CSR back-office [7] using your marine-id account.

Step 2: Complete your metadata using the online forms.

Step 3: Submit your completed CSR entry

The CSR back-office [7] provides access to both NODCs and other organisations. Also, new records can be created directly by everyone in the CSR database.

Instructions how to use the CSR back-office [7] are provided in the user manual [11].

This option is appropriate for individual entries, e.g. by chief scientists after the research cruise.

Option 2 - MIKADO

Step 1: Prepare your XML files via the MIKADO tool in manual or automatic mode (export from your database), using the same procedure as for EDMED and EDMERP (see step 1 of paragraph 3.1.1. or 3.2.1.).

The MIKADO user manual [8] provides detailed instructions on how to create CSR XML files.

As for EDMED, EDMERP and EDIOS if you are a CSR originator but not the responsible collating centre, you have to send your XML files to your NODC and your NODC will submit the files to the central database.

Similar to the former ROSCOP forms the CSR has 4 basic parts:

- General Cruise Information
- Mooring Description
- Sampling/Measurement Description
- Information on Geographic Coverage

Ensure that you have assembled the following mandatory information before using either option 1 or option 2:

- Cruise ID (local identifier given by data centre)
- Cruise name
- Responsible party (person, i.e. chief scientist)
- Responsible party (organisation)
- Start and end date of cruise
- Ship/platform name and class
- Data Access Restriction
- Objectives/purpose of cruise
- Collate-centre (EDMO reference)
- Geographic coverage (bounding box)
- Sea areas

You have to map your metadata with the following vocabularies:

- EDMO for Organisations/collating centre (including organisations of scientists/Pis)
- EDMERP for projects
- C17 (ICES Platform codes)
- L05 (Device Categories)
- L06 (SeaVoX platform classes). This is only necessary when the ship/platform is UNKNOWN, i.e. ship code is 'ZZ99'
- C19 (SeaVoX Areas)



- C37 (Ten-degrees Marsden Squares)
- C38 (Ports Gazetteer)
- C32 (ISO Countries)
- P02 (Parameter Discovery)
- L08(Data Access Restriction Policies)

If you use the CSR back-office [7], the mapping of your metadata is simply done by selecting the appropriate field from the drop down lists. In case of MIKADO tool, it provides functionality for manual and automatic mapping. If you do not succeed in recognizing your metadata within the description fields of the vocabularies, ask for help from the corresponding scientist or contact the central vocabulary managers [15, 16].

Step 2: Once all the information related to the CSR has been fulfilled, save the XML files locally.

Step 3: Validate and submit your XML files using the CSR back-office [7].

3.5.2. CSR - Updating existing entries

Option 1 - Online

Step 1: Log in to the CSR back-office [7] using your marine-id account.

Step 2: Search and edit the desired CSR entry.

Step 3: Modify the CSR entry using the online forms.

Step 4: Save and submit your modifications.

Option 2 - MIKADO

Step 1: Open an existing XML file or an XML URL using MIKADO.

Update your information via the MIKADO interface following the MIKADO users' manual instructions [8] and save the XML files locally.

Step 2: Validate and submit your XML files using the CSR back-office [7].

References

Useful links

- [1] SeaDataNet website: <http://www.seadatanet.org>
- [2-1]SeaDataNet-I project: <https://www.seadatanet.org/About-us/SeaDataNet>
- [2-2]SeaDataNet-II project: <https://www.seadatanet.org/About-us/SeaDataNet-2>
- [2-3]SeaDataCloud project: <https://www.seadatanet.org/About-us/SeaDataCloud>
- [3] SeaDataNet technical documentation: <https://www.seadatanet.org/Publications/Technical-documentation>

On-line Content Management Tools

- [5] EDMERP CMS: http://seadatanet.maris2.nl/vu_edmerp/pwelcome.asp
- [6] EDMO CMS: http://seadatanet.maris2.nl/vu_organisations/pwelcome.asp
- [7] CSR back-office: <https://csr-backoffice.seadatanet.org>

User Manuals

- [8] Mikado User Manual: <http://www.seadatanet.org/Standards-Software/Software/MIKADO>
- [9] EDMERP CMS User Manual: http://seadatanet.maris2.nl/edmerp/edmerp_manual_nodc.pdf and http://seadatanet.maris2.nl/edmerp/edmerp_manual_subaccounts.pdf
- [10] EDMO CMS User Manual: <https://edmo.seadatanet.org/edmo/Manual-of-the-EDMO-Content-Management-System.pdf>
- [11] CSR back-office user manual: <https://www.seadatanet.org/Metadata/CSR-Cruises>

Contacts for Metadata Entries

- [12] **BODC**: Lesley Rickards (ljr@bodc.ac.uk), Elizabeth Bradshaw (elizb@bodc.ac.uk), Enquiries Officer (enquiries@bodc.ac.uk),
- [13] **MARIS**: CDI - Support team (cdi-support@maris.nl), EDMO - Peter Thijsse (peter@maris.nl)
- [14] **IFREMER** : CSR – Support team sdn-userdesk@seadatanet.org, Vanessa Tosello (Vanessa.tosello@ifremer.fr)

Contacts for Common Vocabularies

- [15] **BODC**: vocab@bodc.ac.uk

Contacts for MEDATLAS Parameter Usage Vocabulary

- [16] **IFREMER**: Michele Fichaut (Michele.Fichaut@ifremer.fr)

