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Data Policy Annex on IMAP data flow

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Rome, Italy, 7-8 June 2023

Agenda item 5. MAP Data Policy - Data flows Annexes

Data Policy Annex on IMAP data flow

UNEP/MAP
INFO/RAC - Rome, 2023

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Introduction

This document describes in details references and procedures tied to IMAP data flow with respect to the adopted Data Policy (UNEP/MED IG.25/27, Decision IG.25/10). It could be considered as a guideline to fulfill reporting duties for Contracting Parties focusing on data flow structure, data types, access levels, data sources, data formats, data quality, data licenses, metadata, data sharing practices and restriction.

Summary of data management aspects

Brief description of the structure

The IMAP Info System aims to collect, manage and share data collection carried out under the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) in the framework of Barcelona Convention.

The architecture of the IMAP Info System is shown in the figure:

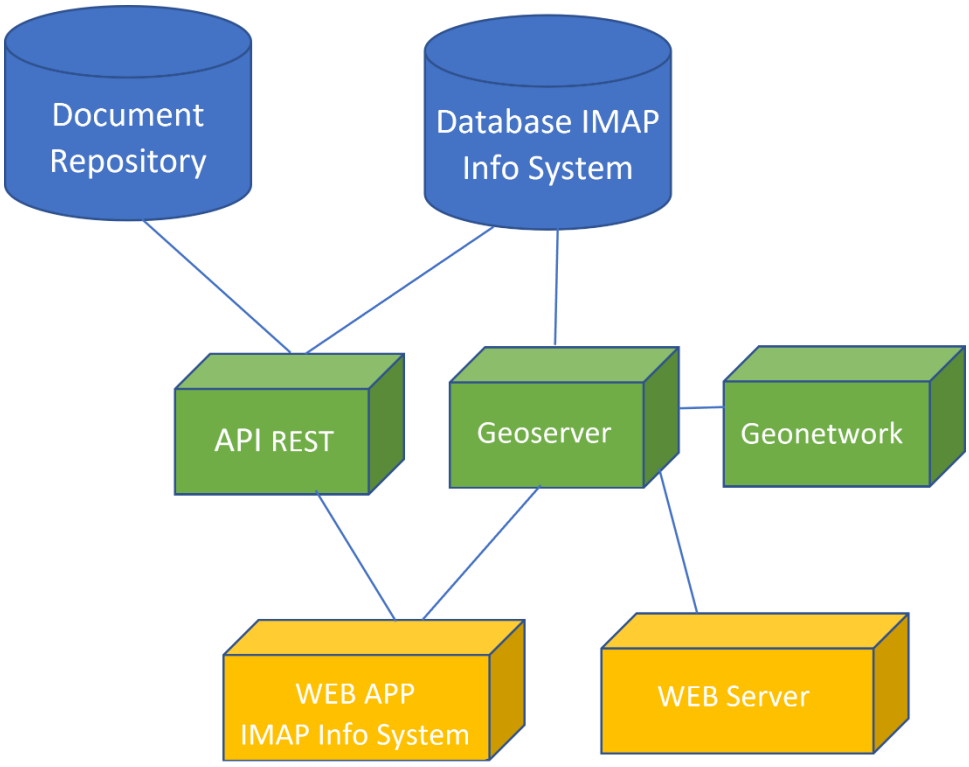


Figure 1 – IMAP architecture scheme

A brief description of the individual components of the architectural scheme follows:

- *Document Repository*: is the place in the file system where the files loaded on the system are physically saved. The Information Standards forms, the compiled Information Standards, any attachments and the report generated by the compliance check of the single Information Standard are saved in this repository.

- *Database IMAP Info System*: is the PostgreSQL/Postgis database in which IMAP Info System information is saved, such as: definition of organizations, Information Standards forms and measures imported from the uploaded monitoring files. This database also contains information relating to users and related profiling.
- *API REST*: is a server application module, developed in NodeJS, which provides a series of APIs in RESTful architecture that make up the IMAP Info System engine. These APIs allow centralized and controlled access to the information in the IMAP Info System Database and the Document Repository. Among them, there are those, for example, to carry out the compliance check of the Information Standards and to load the measures in the IMAP Info System Database.
- *Geoserver*: is the map server for publishing geographic information in the OGC WMS and WFS standards.
- *Geonetwork*: it is the server that constitutes the catalogue of the IMAP Info System.
- *WEB APP IMAP Info System*: is the web module, developed in NodeJS and AngularJS, which implements the functionality of the IMAP Info System web application accessible by end users via a browser.
- *WEB Server*: is the server module that constitutes the access point to individual web applications and allows the download of files stored in the Document Repository.

Data are managed by INFO/RAC. IMAP Info System has four access levels. INFO/RAC members have access to all contents. MAP components can access, in addition to public contents, to the "Upload" section where they can download all the files uploaded by each Contracting Party (CP). The IMAP Users of each CP have access, in addition to the public contents, to the "Upload" section where they can upload the files of their own CP and download the files uploaded by the CP they belong to or published by other CPs. Finally general public can access to the following contents:

- **INFO AND CONTACTS**
- **DOCUMENTS**
- **GUIDELINES & TUTORIALS**
- **STANDARDS**
- **CONFORMITY CHECK**
- **PUBLISHED DATA**

Figure 2 – Reporting workflow

The workflow, which allows to upload monitoring data, starts with Login, to access the reserved sections and proceeds with the download of the Information Standards (Modules), related to the IMAP Common Indicators, through the Standards section. For each Module there is a description of the type of monitoring data and the information relating to the CI to which the Module refers.

The subsequent steps are filling in the Modules with the required data and check the compliance of data with respect to the IMAP Info System. The "Conformity check" tool is available for this purpose. The workflow end uploading the Information Standards on the IMAP Info System.

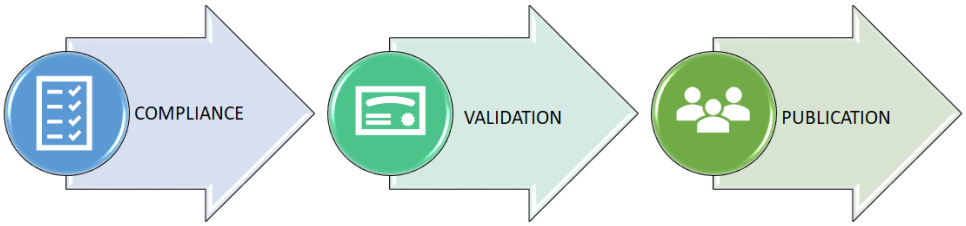


Figure 3 – Publication steps

Once the CP has loaded the compliant Information Standard in the IMAP Info System, the CP can officially validate the data. The validation of the data concerns the scientific content of the file, not to be confused with the formal compliance of the data with respect to the IMAP Info System (conformity check). Once the CP has officially released the data, the file becomes public. The published files are visible to all other CPs and to general public in the "Published Data" section.

Data types

Data Standards (Modules), related to the IMAP Common Indicators, are available through the **Standards section** as open data for anyone, inside and outside UNEP-MAP.

IMAP data types are basically two: the excel table reporting data, which is parsable with any spreadsheet manager or accessible by coding, and the geographical part of the dataset. The geographical part is represented not only by attached shapefiles which can be uploaded together with data, but also by spreadsheets themselves (Data Standards - DSs), since all the observations present in IMAP monitoring system are geo-referenced. The geographical part of IMAP is already predisposed (there is an underlying PostGIS database and a Geoserver instance, already able to manage geographical layers) but it will become operational once all data will be spatialized (time horizon: June 2023).

IMAP data are then accompanied by corresponding and valuable metadata, which are represented by **Data Dictionaries** (DDs). The final ambition is to attach to data metadata INSPIRE and ISO compliant.

In reason of the adopted data policy also IMAP data, once published, are normally exposed as Open Data (see paragraph about Data licenses for more details). However, before being published, data undergo a process that spans through initial data upload, assessment of compliance level with the IMAP DSs&DDs and scientific validation. Therefore, data, until validated, can undergo changes during the reporting workflow. The openness of the data depends on the access rights granted to the specific user and on the upload status of the dataset uploaded to the IMAP Info System. Before the official release, data is visible only to INFO/RAC (for management purposes), MAP components and the Contracting Parties users to which the data belongs to. Once the reporting workflow is completed, and data is officially released both DSs&DDs and geographical layers can be downloaded for anyone.

Nevertheless, some data has restricted access for some different reasons (legal, privacy, research or conservation matters, basically). For these occurrences availability and openness of data will be evaluated in a case-by-case exchange between INFO/RAC and the data owner that will lead to the definition of specific restriction measures concerning data sharing.

Data management common practices among different access levels

Data Collection

Data collection is the gathering and measuring information on targeted variables in the IMAP Info System, which allows, therefore, to answer relevant questions and evaluate the outcomes of a Good Environmental Status.

Data Sources

Data collected through the IMAP Info System concerns the 11 Ecological Objectives and related indicators.

- **EO 1 Biodiversity**: Biological diversity is maintained or enhanced. The quality and occurrence of coastal and marine habitats and the distribution and abundance of coastal and marine species are in line with prevailing physiographic, hydrographic, geographic and climatic conditions.
- **EO 2 Non-indigenous species:** Non-indigenous species introduced by human activities are at levels that do not adversely alter the ecosystem
- **EO 3 Harvest of commercially exploited fish and shellfish:** Populations of selected commercially exploited fish and shellfish are within biologically safe limits, exhibiting a population age and size distribution that is indicative of a healthy stock
- **EO 4 Marine food webs:** Alterations to components of marine food webs caused by resource extraction or human-induced environmental changes do not have long-term adverse effects on food web dynamics and related viability
- **EO 5 Eutrophication:** Human-induced eutrophication is prevented, especially adverse effects thereof, such as losses in biodiversity, ecosystem degradation, harmful algal blooms and oxygen deficiency in bottom waters.
- **EO 6 Sea-floor integrity:** Sea-floor integrity is maintained, especially in priority benthic habitats
- **EO7 Hydrography:** Alteration of hydrographic conditions does not adversely affect coastal and marine ecosystems.
- **EO 8 Coastal ecosystems and landscapes:** The natural dynamics of coastal areas are maintained, and coastal ecosystems and landscapes are preserved
- **EO 9 Pollution:** Contaminants cause no significant impact on coastal and marine ecosystems and human health
- **EO 10 Marine litter:** Marine and coastal litter do not adversely affect coastal and marine environment
- **EO 11 Energy including underwater noise:** Noise from human activities cause no significant impact on marine and coastal ecosystems

Monitoring and assessment of the sea and coast, based on scientific knowledge, are the indispensable basis for the management of human activities, in view of promoting the sustainable use of the seas and coasts and conserving marine ecosystems and their sustainable development. The 19th Meeting of Contracting Parties in 2016 agreed on the Integrated Monitoring and Assessment Programme of the Mediterranean Sea and Coast and Related Assessment Criteria (IMAP) in its Decision IG. 22/7 which lays down the principles for an integrated monitoring, which will, for the first time, monitor biodiversity and non-indigenous species, pollution and marine litter, coast and hydrography in an integrated manner. The IMAP implementation is in line with article 12 of the Barcelona Convention and several monitoring related provisions under different protocols with the main objective of assessing GES. Its backbone are the 27 common indicators as presented in decision IG 22/7: Integrated Monitoring and Assessment Programme.

The IMAP Info System currently allows contracting parties to report data for the 17 IMAP Common Indicators related to the Ecological Objectives (EO) shown in the table below.

EO1 - Biodiversity	B1	Coralligenous Habitat	Common indicator 1: Habitat distributional range to also consider habitat extent as a relevant attribute

			Common indicator 2: Condition of the habitat's typical species and communities
EO1 - Biodiversity	B2	Maerl/Rhodolith Habitat	Common indicator 1: Habitat distributional range to also consider habitat extent as a relevant attribute Common indicator 2: Condition of the habitat's typical species and communities
EO1 - Biodiversity	B3	*Posidonia oceanica* Meadows Habitat	Common indicator 1: Habitat distributional range to also consider habitat extent as a relevant attribute Common indicator 2: Condition of the habitat's typical species and communities
EO1 – Biodiversity	BA1	Line transect distance sampling - Marine Mammals & Marine Turtles	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BB1	Mediterranean Shag Survey - Marine Birds	Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles) Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BB2	Gulls and Terns Survey - Marine Birds	Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles) Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BB4	Distribution - Marine Birds	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BC1	Photo-Identification - Marine Mammals	Marine Mammals, Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BC2	Acoustic Sampling - Marine Mammals	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BC3	Population demographic characteristics - Marine Mammals	Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BM1	Monk seal - Marine Mammals	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles) Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex

			ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BT1	Nesting Beach - Marine Turtles	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BT2	Marine Habitat (Bycatch/Strandings) - Marine Turtles	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BT3	Marine Habitat (Plane/Boat/UAV) - Marine Turtles	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BT4	Marine Habitat (Telemetry) - Marine Turtles	Common indicator 3: Species distributional range (related to marine mammals, seabirds, marine reptiles) Common indicator 4: Population abundance of selected species (related to marine mammals, seabirds, marine reptiles)
EO1 - Biodiversity	BT5	Nesting and Demography - Marine Turtles	Common indicator 5: Population demographic characteristics (e.g. body size or age class structure, sex ratio, fecundity rates, survival/mortality rates related to marine mammals, seabirds, marine reptiles)
EO2 - Non Indigenous Species	I1	Non Indigenous Species	Common indicator 6: Trends in abundance, temporal occurrence, and spatial distribution of non-indigenous species, particularly invasive, non-indigenous species, notably in risk areas
EO5 - Eutrophication	E1	Nutrients & physical and chemical parameters	Common indicator 13: Concentration of key nutrients in water column Common indicator 14: Chlorophyll-a concentration in water column
EO7 - Hydrography	H1	Hydrography	Common indicator 15: Location and extent of the habitats impacted directly by hydrographic alterations to also feed the assessment of EO1 on habitat extent
EO8 - Coastal Ecosystems and Landscapes	C1	Coastline	Common indicator 16: Length of coastline subject to physical disturbance due to the influence of man-made structures to also feed the assessment of EO1 on habitat extent
EO9 - Contaminants	P1	Contaminants in Seawater, Sediment and Biota	Common indicator 17: Concentration of key harmful contaminants measured in the relevant matrix (EO9, related to biota, sediment, seawater)
EO9 - Contaminants	PMO1	Level of pollution effects	Common indicator 18: Level of pollution effects of key contaminants where a cause and effect relationship has been established
EO9 - Contaminants	PSF1	Levels of contaminants in seafood	Common indicator 20: Actual levels of contaminants that have been detected and number of contaminants which have exceeded maximum regulatory levels in commonly consumed seafood
EO9 - Contaminants	Q1	Bathing Water Quality	Common indicator 21: Percentage of intestinal enterococci concentration measurements within established standards

EO10 - Marine Litter	M1	Beach litter	Common indicator 22: Trends in the amount of litter washed ashore and/or deposited on coastlines (including analysis of its composition, spatial distribution and, where possible, source)
EO10 - Marine Litter	M2	Seafloor litter	Common indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor
EO10 - Marine Litter	M3	Floating microplastics	Common indicator 23: Trends in the amount of litter in the water column including microplastics and on the seafloor
EO10 - Marine Litter	ML T1	Ingestion and Entanglement on Marine Turtles	Common indicator 24: Trends in the amount of litter ingested by or entangling marine organisms focusing on selected mammals, marine birds, and marine turtles

Candidate Common Indicator 19 is going to be integrated in the IMAP Info System. The related Information Standard will be implemented in IMAP Info System, after its official approval.

Data formats and data quality

IMAP Info System ensures the standardization of the data collected by the CPs through the Information Standards. The Information Standards are consistent with the Guidelines of the Common Indicators and are approved by the CPs before being implemented in the IMAP Info System.

For Common Indicators 15 (Hydrography) and 16 (Coastline), the file to upload in the IMAP Info System is a zip file containing a shape file with polylines (or polygons) according to the requirements reported in the specific Information Standard (C1 and H1 respectively), that is in Word format.

For all the other Common Indicators, the Information Standard is in Excel format and consists of two types of sheets:

1. Data Dictionaries - DDs
2. Data standards - DSs

The DD sheet explain how to complete the DS sheet with measurement data.

All data submitted to the IMAP Info System is subjected to validation and quality assessment checks in order to guarantee the quality of data acquired. Quality assurance is a process whose aim is to improve quality and it is based on a preliminary definition of good and poor quality for the specific data. The first step of Quality Assurance (QA) process has been the definition of Data Standards (DSs) and Data Dictionaries (DDs) and associated formal Quality Controls (QCs) for the monitoring modules associated to the IMAP Common Indicators. Data are compliant to DSs and DDs if and only if each of the following Formal Quality Controls are satisfied:

a. *Format* - every field is compliant to its format, i.e. its value is text, numeric or date according to the required format.
b. *Unique coding* - codes used to identify each row of the spreadsheet are unique, i.e. there is no more than one row with the same code in the spreadsheet whereas such rows define the associated objects.
c. *Coherent linking* - codes used to link information that is present in different spreadsheets must be coherent.
d. *Regular expression* - every field is compliant to specific regular expressions when such regular expressions are required.
e. *Admissible values* - every field for which there is a list of admissible values, is filled with one and only one value of such list, i.e. it is compliant to the DD associated to the DS.

f. *Mandatory fields* – all fields are mandatory and must be compiled, except for cases where it is specified in the DDs. Fields in red are not mandatory.

Data sets that are compliant with all the above formal quality controls from a) to e), are to be considered formally compliant or of good quality from a formal point of view.

The process for the collection and quality control of data sets is applied for each data standard by the typical three hand shaking communication (Figure 2):

1. Step 1: the user, a contracting party, downloads the Data Standard corresponding to the monitoring module for which he wants to transfer monitoring data
2. Step 2: after filling in the Data Standard with monitoring data, the user uploads the file into the system for the data flow which corresponds to the Data Standard used
3. Step 3: once the Data Standard has been filled in, the Information Standard must be sent to the "Conformity Check" tool to check the compliancy of the file before proceeding with the upload procedure. This tool produces a report with the results of formal quality control applied to the file uploaded. If every quality control is passed, the file is considered as 'formally compliant' otherwise the user has to correct the file in order pass all the formal quality controls.

Data licenses

According to the Data Policy, approved during the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean (Barcelona Convention) and its Protocols at their 22nd Meeting (, p. 353), data must be as open as possible, respecting the constraints imposed by local legislation, sensitivity of data, and copyrights. For files "officially released" by the IMAP user (Level III) the principal Open Data license individuated by the policy is Creative Commons Attribution (CC-BY). Nevertheless, if data is originally shared by the data owner (which corresponds in most of the cases with data creator) with a less restrictive license (like CC-0 or Public Domain) it is necessary to transmit this license while data is shared following the workflow summarily described in Figure 4a (specific case of data owner coincident with the Country). Other, more restrictive, licenses are still available to use and correspond to specific access level of the users or sensitivity of data themselves. Figure 4b shows all the possible licenses from the open ones (bright green zone) to the classic copyright (in red), which denotes closed data. Given what is stated in the data policy, the usage of "out of bright green" licenses is regulated and it must be appropriately motivated in a participative process that involves data owner, eventual data provider (if any), and the subject responsible for data sharing (such as INFO/RAC). For more references on which cases represent an exception to the general open data rule see the UNEP (Data Policy) at Section 4, Article 36.

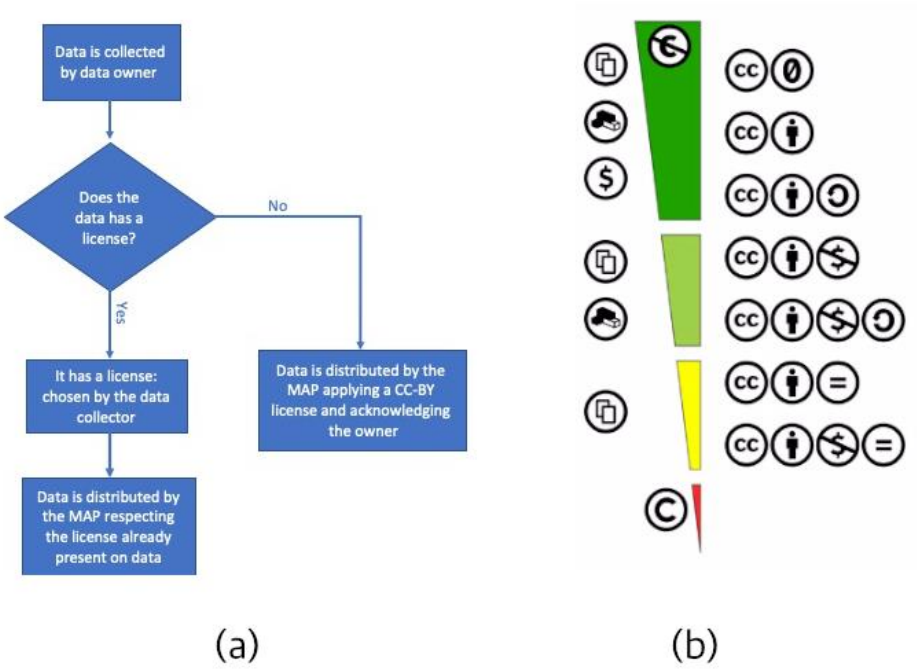


Figure 4 – License attribution fluxes for data (a); available licenses for data from bright green (open data) to red (closed data) (b).

Data Embargo periods

According to IMAP Info System data policy, data is normally made available to the public when the files are officially released.

Embargoes are enforced at the dataset level and can be requested if data is matter of innovative research which is currently under development (i.e. during data analyses phase or the writing of a results paper). For embargoed datasets, the basic metadata is publicly viewable, but the datasets themselves are not. Basic metadata include geospatial coordinates of the survey area, sampling period, site name, dataset type, current end date of embargo, and responsible researchers' names (point of contact).

Every embargo dataset will have one or more access managers, usually the original data generator or data uploader. Access managers or designated persons can access their embargoed data in IMAP Info System, using single-sign-on system and standard tools such as InfoMapNode geoportal. Access will be enabled by the system admin and data will be identified via a unique persistent identifier (PIDs).

The embargo process is not automatic; embargoes must be requested by the contributor(s) of the relevant data.

Embargoes are temporary and last for a predefined period. Normally, an embargo lasts two years after a dataset has been uploaded to the system, or until scientific publication connected to data is published, whichever happens first.

Embargoes will be automatically lifted after two years unless the data generators require further extension. Up to two-year extensions can be requested.

Production of metadata and other relevant documentation

General metadata are normally distributed with data through the Data Dictionaries (DDs), which extensively qualify an entire set of data (Data Standards – DSs) by specifying in detail the type of data expected for any

attribute of the dataset, eventual accepted intervals and values, parameters' unit of measures, data quality and so on.

Specific metadata format, different for each dataset uploaded, is in course of definition based on INSPIRE model. By a simple query on data, it is possible to describe typical metadata parameters such as title, language, date of upload, version, temporal range, spatial range, keywords, unique identifier, point of contact, file source path and so on, depending on specific corresponding INSPIRE metadata model. Extended metadata models with respect to base models will be evaluated based on rising necessities. An example of metadata that is possible to extract semi-automatically from data is reported in Table XXX.

Coralligenous Habitat	
Habitat distributional range to also consider habitat extent as a relevant attribute Condition of the habitat's typical species and communities	
Temporal information	Begin date 2020-01-01 End date 2020-03-31
Keywords (GEMET - INSPIRE themes version 4.1.3)	Environmental monitoring facilities, Habitats and biotopes
Keywords (GEMET - Themes, version 4.1.3)	Water, biology, ecosystems
Keywords (GEMET - Concepts, version 4.1.3)	Posidonia
Keywords (GEMET - Vocabulary, version 4.1.3)	Habitat
Unique identifier	B1_20220322085328_CP_France
Files source paths	http://imappilot.info-rac.org/app/#/upload

Data sharing practices and restriction (eventual aggregation)

IMAP data sharing practices include:

- Download service of spreadsheets containing both data (DSs) and general metadata (DDs) on Common Indicators, and the associated metadata for validated datasets in the "Published Data" section.
- View and download standard services for geographical data delivered through the "Geographical data" section and recalled, as remote services, into InfoMAPNode platform.

Spreadsheets will be delivered in XLSX format https://www.rfc-editor.org/rfc/rfc4180to respond to the general principle of interoperability among systems, which relies on the usage of common and internationally agreed standards. For the same reasons, metadata will be delivered in XML format and geographical data will be delivered through WMS protocol for visualization and WFS and other interoperable formats (such as GeoJSON) for download, directly from the geographical viewer.

Where data is in some way restricted (for legal, privacy, research or conservation reasons) the data access in view and download will be restricted consequently to specific users with recognized access grants. Only if the operation is possible and acceptable both for data owner and data sharer, some data manipulation, such as data aggregation will be put in place if this allows data to be made public at a lower detail level. Also, data downscaling is a viable option when the location of specific data needs to be blurred to do no harm the resource described by data (i.e. sensitive data in BM1 module).

Data metric policy

Workflows for different access levels

Authentication, authorization, and accounting (also called AAA) is the architecture behind the InfoMAP System to manage intelligently controlling access to UN Environment Programme/MAP resources, enforcing policies, and providing the information needed to use for services. These three elements are considered important for effective network management and security.

The three pillars to control security and right of actors are:

• Authentication is the process of ascertaining that somebody really is who they say they are.

• Authorization refers to rules/permissions that determine who is allowed to do what.

• Accounting is about keeping track of the resources used for financial or auditing purposes.

Authentication technology provides access control for systems by checking if a user's credentials match the credentials in an authorized user database or in data authentication server. Users are identified with a user ID, and authentication is performed when the user provides a correct credential (password) which matches with the user ID in the database. Each authenticated user can access and manage data domains, based on the user's configured role within the System. Each role has a set of corresponding permissions inside the System, in order to manage, edit and view specific data.

The **user**, in general, is any entity (physical person or organization) that interacts with the IMAP Info System. The IMAP Info System is composed of different components for the data flows. Each user, according to its role, has a set of corresponding permissions within the IMAP Info System.

The structure of the profiles and their associated rights in the IMAP Info System are:

Contracting Party users: All the data collection may have a different composition of a national role, in order to guarantee a correct management of the environmental information, three different levels include:

- MAP Focal Point users
- INFO/RAC National Focal Point users
- IMAP users

UNEP/MAP Components users: For each of them, there is a different role in the System due to the competence and role of the activities carried out in the different data flow and data assessment. The subdivision of functions is the following:

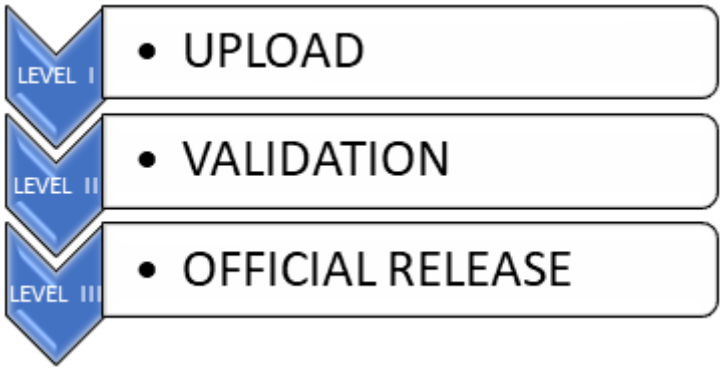
- **Coordination Unit** (CU) is the formal owner of the IMAP Info System.
- **INFO/RAC** is the administrator of the overall of the IMAP Info System. INFO/RAC holds all rights in order to protect data and system security, it is responsible for system management and reporting monitoring however INFO/RAC is not responsible for file contents and reporting dataset, unless it is required by the owner.
- **MAP Components** (MED POL, REMPEC, PAP/RAC, PB/RAC, Med WAves and SPA/RAC) are the involved in IMAP data aggregation in order to prepare specific evaluation layers or environmental products and quality assurance. They can view a great part of data but they are not responsible for system management if it isn't required.

Anonymous users: They represent users who are not authenticated and only have the possibility to search and view metadata and data publicly available.

The **IMAP User Network** is the network of IMAP Users responsible to upload, validate and release monitoring data related to IMAP Common Indicators, following the workflow explained in Section A of this

document. IMAP user Network consists of Country representatives, officially appointed by each CP and coordinated by the **INFO/RAC NFPs**. A 3-level structure has been set up for IMAP User profiles, allowing CPs to differentiate the level of responsibility according to the internal national organization on data management.

- Level I - Upload: users uploading the monitoring data file and performing the compliance quality check - scientific institutions responsible for data production and elaboration (i.e. monitoring and research institutes).
- Level II - Validation: users performing the process of quality control of monitoring data - national institutions responsible for data collection and validation (i.e. Environmental National Agencies).
- Level III - Official release: users have the duty to confirm the official release - national entities responsible for the official release of the data (i.e. MAP Focal Points).



The appointment, updating and integration of the IMAP User network is responsibility of the **MAP Focal Points**. INFO/RAC NFPs act as facilitators among INFO/RAC and IMAP users, allowing the sharing and exchange of knowledge and information for data reporting purposes on IMAP Info System. As facilitators, INFO/RAC NFPs collaborate with INFO/RAC providing suggestion and observations to improve Information Standards. Furthermore, INFO/RAC NFPs encourage and facilitate all national IMAP Users participation into the Training/Assistance meeting organized by INFO/RAC.

Interactions according to data granularity and access

This part of the document describes the granularity of permission in managing data based on the user's configured role within the System.

		Data Production			**Data Consultation**		
		Upload Information Standards (DDs&DSs)	**Download Information Standards (DDs&DSs)**	**Upload data**	**Download data not yet in "published" status**	**Download data in "published" status**	**View location for data in "published" status (GIS viewer)**
Contracting Party users	**MAP Focal Point user**						

	National Focal Point user						
	IMAP user Level I - Upload						
	IMAP user Level II - Validation						
	IMAP user Level III - Official release						
MAP Component users	**CU**						
	INFO/RAC						
	MEDPOL						
	REMPEC						
	PB/RAC						
	PAP/RAC						
	MedWaves						
	SPA/RAC						
MAP Partners							
Anonymous users							

LEGENDA
available
only for the CP to which the IMAP user belong to
only for data related to the specif cluster
not available