European Maritime Safety Agency

Tender Specifications
Attached to the Invitation to tender

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Invitation to tender No. EMSA/OP/20/2019 for Provision and Access to Maritime Data and Information for non-commercial use

1. Introduction

The European Maritime Safety Agency (EMSA) was established under Regulation (EC) No 1406/2002 as amended of the European Parliament and of the Council[1] for the purpose of ensuring a high, uniform and effective level of maritime safety, maritime security, prevention of, and response to, pollution caused by ships as well as response to marine pollution caused by oil and gas installations. Among its tasks, the Agency shall facilitate cooperation between the Member States and the Commission in providing objective, reliable and comparable statistics, information and data, to enable the Commission and the Member States to take the necessary steps to improve their actions and to evaluate the effectiveness and cost-efficiency of existing measures. Such tasks shall include the collection, recording and evaluation of technical data, the systematic exploitation of existing databases, including their cross-fertilisation, and, where appropriate, the development of additional databases (Article 1 paragraph 4d of the founding Regulation)

An internal information system called MARINFO was developed by EMSA in 2007 compiling maritime related data from different external providers with the objective of giving response to the needs of information of the Agency staff members, and other Agency stakeholders such as the Commission and Member States. Online access to maritime related data is also included in the MARINFO framework, besides the datasets contained in the MARINFO database. The new framework contract, under procurement, aims to provide continuity to this system and its further development.

2. Objective, scope and description of the contract

2.1 Objective

The objective of the contracts is to provide historical and up to date maritime information and data for supporting the core task of the Agency as described under Article 1 paragraph 4d of Regulation (EC) No 1406/2002

This contract shall allow EMSA to use historical and up to date maritime information and data, to develop objective, reliable and comparable statistics as well as to provide information and data thus enabling the Commission and the Member States and other EU Agencies to take the necessary steps to improve their actions and to evaluate the effectiveness and cost-efficiency of existing measures. Historical and up to date maritime information and data shall also be used for the creation and publication of main statistical results for studies, within EMSA's mandate, that can be circulated to the general public.

Moreover, this contract will allow EMSA the permission to export and display the raw historical and up to date maritime information and data referred in all modules and Lots (for non-commercial purposes) as far as within EMSAs mandate to authorized third-parties while externally accessing the MARINFO database.

[1] Regulation (EC) No 1406/2002 of the European Parliament and of the Council of 27 June 2002 establishing a European Maritime Safety Agency (OJ L 208, 5.8.2002, p.1.).

"Third-parties" refers to EMSA stakeholders, in particular the Commission services, EMSA maritime applications users (e.g. SafeSeaNet, THETIS, EMCIP, CSD) and other EMSA User Communities (e.g. European Agencies working closely with EMSA such as Frontex or EFCA, or other Institutions using EMSA services such as MAOC and EUNAVFOR).

With regards to historical and up to date maritime information and data usage within EMSA Applications, the contract will allow end users to access data on a ship-by-ship basis as well as to export from those applications the data elements that may be sourced from MARINFO (among other sources, mostly Member States' insertions and notifications) when in connection to specific searches depending on the functionalities available in each application.

By submitting a bid the tenderer accepts, in particular, this data usage by EMSA and EMSA's stakeholders.

2.2 The Lots

The present tender is divided into 3 Lots based on the different nature of the historical and up to date maritime information and data items under request. Under each Lot, EMSA aims to conclude a separate Framework Contract and tenderers can provide bids for one, two or all Lots.
Some ship information may also be collected in more than one Lot or module to ensure that the data features requested under a certain Lot or module are placed in context with the minimum relevant details for the ships referenced in those features (e.g. details of ships involved in accidents or ships' movements).

The division of the historical and up to date maritime information and data requirements in several Lots, and therefore in separate contracts, will also allow EMSA to increase the overall competitiveness of the tender and to manage the acquisition of data items with different frequencies according to the needs of different recipients within EMSA.

The information procured under the contract may not be required continuously by EMSA and consequently may not be purchased every year out of the 4-years, which is the maximum duration of each of the Framework Contract.

The Lots, from 1 to 3, refer to:

- **Lot 1:** Ship Movements, Ports Identification and associated Ship details;

- **Lot 2:** Ship lifecycle – including ship identification and technical details, company details, marine casualties, ship historical information (companies, flags, MMSI, ship names, crew, classification societies and P&I clubs), port state control data, ship engine data, orderbook (new builds and orders), demolitions, builder details, scrapping details and ship to ship transfer activity. It is also under request in this Lot an online subscription to access to ship details online and to access to ship maritime publications internally (EMSA staff only);

- **Lot 3:** Ship intelligence – including tailored products and access to maritime related applications providing information on ship bunkering activities and transportation of commodities by sea, including oil cargo transportation.

Each of the Lots is divided into modules encompassing different configurations of data. The Lots, through their respective modules, may be ordered separately or in groups, and it is possible that only specific modules of each Lot are ordered.

Tenderers interested in competing for more than one Lot must provide separate bids for each Lot. A bid to a Lot must address the entire Lot – i.e. all modules specified in the Lot.

The tenderers must indicate, when applicable, what are the original sources of the data under provision, referencing eventual third parties' contracts where dependencies may exist for a continuous data distribution.

The tenderers must also provide examples of internal methods for data verification and validation; this will be part of the award criteria of this call for tenders.

2.3 Online subscriptions and technical specifications

The services under procurement in this call for tenders are from one of three types: datasets, data developments or online data. This chapter describes the technical requirements to be put in place by the contractor for EMSA to access the procured information for datasets and online data.

2.3.1 Online subscriptions

Licences allowing online access to an external database shall allow EMSA to have a 24 hour a day, 365 days a year direct access to the data via online internet consultation.

The contractor shall provide a licence for five users minimum to concurrently access the system. Types of data to be accessed are described within the online subscriptions modules of the related Lots.

2.3.2 Technical Data Specifications

The contractor will provide information by sending files to EMSA with a frequency that varies according to the modules and is defined within the Lots, as well as in the specific contract/order form. Each file will be related to a certain entity and will contain several fields describing the entity as well as all possible relations with other entities.

To address and provide the data contents required in each Lot, the tenderer will have to define entities which may be: pure data (ship core information, engine data), or a coding system used by other entities to reference a specific type of information (list of countries, UN Locodes, list of engine brand...) or a multiple-to-multiple relation between entities (which companies operate which ships or which countries recognise which classification societies as recognised organisations).

The contractor should also abide to any future enhancement of the MARINFO database, not excluding a machine to machine data transfer in accordance with a protocol predefined by EMSA. Such changes will be duly communicated and mutually agreed in terms of technical arrangement as well as timing.

2.3.2.1 General technical requirements

Describing the data

One of the tasks of the contractor is to present the data to be integrated in the MARINFO database in a comprehensive way and to implement rules of coherency.

Each Lot shall come with a 'data dictionary' detailing the data type and length of each field, using a SQL Standard syntax (supported by Oracle), but also any specific business rules that led to the value of that field in the contractor's database and eventually some comments on the accuracy/coverage of this specific information or its primary source.

If any constraint may be implemented in a field (limited number of value, range of value, nullable value) or between two fields (foreign key relationship, greater/lower relationship), then the contractor must provide the details to implement it, regardless of the fact that this constraint might be implemented or not in the end in MARINFO database.

Entity Relationship Diagram (ERD)

The files to be delivered should be presented in a database schema format, showing clearly what is the structure and content of each file and what are the relations between the data provided in the same Lot.

This diagram will show every file and every field in each file. When there is a logical correspondence (or relation) between two fields, this should appear clearly on the diagram as well. That is the case, for example, between a data file and the corresponding coding files or between a core data file (ship information) and related information (ship engines). When such a relation is established between two files, cardinality must be mentioned.

Data dictionary

In parallel with the ERD addressed in the previous point, the tenderer will have to provide a data dictionary. This data dictionary must be provided in an editable electronic format (Microsoft Excel or equivalent). Each field of each table shall be described in this data dictionary (sorted by file and field order in the file) with the following into as a minimum:

- Name of the field;
- Brief description of the meaning of the field (if the name is not explicit enough);
- Data type (e.g., text, integer);
- If the data type is text, the subset of characters to be encountered;
- Data length in relation with the data type (if text: length, if decimal: precision...);
- Is the field part of a unique identifier from which records can be unambiguously traced?
- Can the field be left blank or not (is a blank field a field without valid information)?
- Is the field referencing a field in another file (possibly several other files) and which ones?
- Is the field a free value, a code, possibly a limited number of values or range?
- Are the values of a field related with a specific unit of measurement? – e.g., meters, tons, million cubic, feet, etc;
- Any valuable comment on this field, for example a special meaning, a definition of the terms used in the description or meaning of this field, any warning on the quality or completeness of the data;
- What are the main/original sources of information for this field?

Concerning the "subset" of characters to be used, the tenderer is invited to write an annex describing all the chosen subsets and make reference to that annex when describing a field. The description of a subset may

be referencing a well-known charset (for example UTF-8, USASCII7, WE8MSWIN1252, WE8ISO8859P15, etc) or a list may be given describing the individual characters or range of characters expected for that field.

As a principle, the tenderer should be as specific as possible when describing the subset of characters for a field. For example, if only uppercase letters and numbers are to be used for a field, then it should be clearly mentioned ([0-9], [A-Z]) rather than just USASCII7 or UTF-8.

Data growth and volume

The data volume must be estimated by the tenderer for each entity at the beginning and the evolution of the data along the time, preferably for a four-year period. This volume may be given in number of records per entity.

For example, to evaluate the data volume and growth, the tenderer can consider, for each entity:

- The number of records that will be delivered with the first set of data;
- The number of records that are expected to be added within a year;
- The number of records that are expected to be modified/updated within a year;

Coherency principles

The diagram and the data dictionary should make clear which fields are used as record identifiers within a certain file. Each record must have a unique identifier, possibly made of several fields (but in a limited number).

Each time a field references a field of another file, the latter should be the unique identifier of the correspondent file (unless there is a strong and justified reason preventing this). Furthermore, both fields should have the same names in both tables/files.

As a general rule, field names should not be named after the tables (no prefixes or suffixes of the table should be part of the field name).
Regardless of the loading method used (total or incremental) the contractor should ensure at all times that there is no duplication of records (based on the unique identifier).

When a field references a field of another file, it is the responsibility of the contractor to make sure the referenced record has been provided in that delivery (or in a previous one assuming that it is still valid and up-to-date).

The tenders will be evaluated according to the data coherency rules used by the contractor in order to guarantee that no invalid duplication of records will occur and that any referenced entity and/or record in a dataset will be included in each delivery.

Each time a field is not supposed to be free text but is referencing another entity (for example: a ship, a company, an inspection...), the contractor should provide a file for this entity with the minimum of relevant information, in order to place that field in context.

For ships, for example, the minimum information for all Lots could be IMO number, name of ship, call sign, flag and gross tonnage.

For companies, for example, the name of the company, nationality, creation date and its major group or parent company could be minimum information for this entity.

For class societies, the name of the class society and an IACS belonging indicator could be the minimum information for this entity.

For each provided entity, in addition to relevant information for this entity, the contractor should provide interoperability fields to interact with other possible sources of information (i.e., with other Lots of MARINFO). For example, all records for the entity “country” should be identifiable by ISO-3166 codes (alpha-2, alpha-3 and numeric) and ports could be identified by UNECE “LO-CODES”.

As a general rule, when it is possible to identify an entity by a well-known and internationally recognised code in a number of organisations, then the contractor should provide this information as an attribute for this entity, even if the contractor is not making use of this code as a record identifier.

2.3.2.2 The file deliveries

Introduction

EMSA intends to use the same database as is currently used to receive and store the information procured under this Call for tenders. However, it may happen that the MARINFO system will be updated and modernised. In that case, EMSA and the contractor for each FWC may discuss and mutually agree on any changes in the below listed technical descriptions. Likewise, any changes in the datasets, or any changes proposed by the contractor under each FWC may be discussed and mutually agreed before taking effect.

General structure of the files and naming scheme

The file deliveries should consist of flat-text (CSV like) files. Each entity of the data description should have at least one (eventually two for incremental method) corresponding file. The file name shall be in lower case. The first part of the name of the file will be the name of the entity and the extension of the file will be the action requested on this entity with 4 possibilities:

- “.all” when the content is a total replacement of the destination table (replace all);
  - e.g., “ships.all”
- “.upd” when the content is modification of the destination table (insert/update);
  - e.g., “classsocieties.upd”
- “.del” when the content is a partial deletion of the destination table (delete);
  - e.g., “shiptype.del”
- “.nul” when nothing has to be changed or added in the destination table (no action);
  - e.g., “psc.nul”

For a single entity, it is possible to have only one file of one of the types above or eventually two files (“.upd” and “.del”) depending on the loading method to be applied for an entity (explained further in this document).

All files from each Lot shall be zipped in a file named “lotX_YYYYMMDD.zip” where X reflects the destination Lot (e.g.: “1”, “2” …) and YYYYMMDD is the date of extraction from the source database. For example “lot1_20150316.zip” contains the files from Lot 1 and the date of extraction is the 16th of March 2015. The files must be delivered in standard ZIP data compression file format, according to the .ZIP file specifications by PKWARE Inc.

Integrity of the files

In each provided ZIP file, there will be an additional file named “checksum.txt”, which shall be in line with the content of the ZIP file. This file will contain one header and one line per file in the zip file. Each line must contain 3 fields separated by the character “|”. The header will contain the name of the fields as below:

- FILENAME : name of the file (each flat text file)
- NBRECORDS : number of records
- MD5 : hash of the content of the file (using MD5 algorithm)

If there is a problem with a MD5 or a number of records, or if a file is missing, the delivery will be rejected. If a file is present in the delivery but not referenced in the checksum file, it will be ignored in the loading procedure.

Structure of a file

The file should be a standard CSV file, with no escape or enclosure of string mechanism.

With the exception of “.nul” files that can be completely empty, each file contains one header and zero, one or more records. The header is similar to a record in terms of number of fields and separators, but the content of each field is the name of the field in the destination table of the database, in upper case.

Structure of each record

Each record in a file has a fixed number of fields. Each record must be separated by a “record separator” and each field within a record must be separated by a “field separator”.

If the field is empty (null), then the length of this field will be zero and the file will contain two consecutive field separators. There is no need to differentiate a null field from a field containing an empty string.

If a field is told to be non-blank in the data dictionary, it cannot be empty/null.

Field separators and record separators

As there is no escape mechanism to protect characters in the CSV file, it is necessary to use field separators and record separators that surely do not appear in any field of any record throughout all the files. Within a Lot, the record and field separators must be the same for all files.

The record separator has to finish with a carriage return. It can be a “Linux-like” or “Windows-like” carriage return (i.e.: 0x0A or 0x0D0A), but whichever the choice, it has to be provided in the documentation and all the files should use the same convention.

To help achieving this requirement, it is allowed to use field separators and record separators made of several characters (3 or 4 characters for example). It is also possible to replace the separator by another character in the export process for all fields, so we are sure that it will not appear in a field. Only US-ASCII characters are allowed for separators.

Whatever the solution will be, the constraint has to be respected both for field and record separators (keeping in mind that a field may contain carriage returns). Before implementing the separators, the contractor will have to validate with EMSA its choice and explain it in relation with the constraints exposed above.

Delivery process

The delivery (zip files) should be made available in a FTP (or SFTP) server reachable from EMSA. If FTP is used, it has to be accessible in “passive mode”, if SFTP is used, the authentication method can be a user/password or a private/public key, after validation that it works properly with the EMSA SFTP client that we will use to retrieve files.

FTPS (FTP over SSL) is not allowed, only SFTP (SSH File Transfer Protocol). The file must be made available at a specific and fixed day and hour, each week (or month, depending on the frequency of the module) and EMSA is responsible for retrieving the files.

The server should keep at least the last 5 files for each table in each Lot corresponding to the last 5 weeks (or months, depending on the module).

EMSA deserves the right to amend the delivery process, subject to future enhancement of the MARINFO database in relation to data transfer, not excluding a machine to machine data transfer in accordance with a predefined by EMSA protocol

Encoding system used in the files

The final database in which the data is going to be loaded is an Oracle 11gR2, that uses the “AL32UTF8” encoding. However, whenever possible flat files should use US-ASCII as an encoding scheme. If a Unicode encoding is needed, then the flat-text file shall be encoded using strictly the “AL32UTF8” (UTF-8) charset.

Length of fields, taking into account the encoding system used

It has to be noted that one single character in UTF-8 can be encoded using 1 byte, 2 bytes, 3 bytes or 4 bytes. On the other hand, the MARINFO database will be using VARCHAR2 fields to store text data and the length of a VARCHAR2 field is defined in number of bytes, not number of characters. Therefore, lengthy fields containing UTF-8 characters that use more than 1 byte of storage may cause error when loaded in the corresponding field of the database (ORA-12899).

To cope with this issue, the contractor has to ensure that the data length of the data using UTF-8 encoding will not exceed the size given for a certain field in the data dictionary. We propose the following rules to enforce this constraint:

- By default, whenever possible, a field should use only US-ASCII characters (using only 1 byte of storage), this has to be reflected in the data dictionary;
- When justified, one field may contain 2 bytes UTF-8 characters, but these fields have to be identified clearly beforehand in the data dictionary. For these fields, the length of the corresponding field in the MARINFO database will be doubled;
- In all fields of all files, 3-bytes and 4-bytes UTF-8 characters are forbidden and should be replaced by the “closest” 1-byte or 2-bytes UTF-8 character.
    - Alternatively, all fields may be truncated to fit in the corresponding field, regardless of the size of each character using UTF-8 encoding.

A systematic “multiply-by-four” of the length of all VARCHAR2 fields in the final MARINFO database is not acceptable, taking into account other type of constraints.

2.3.2.3 The loading procedure

Overview of the process

When receiving the delivery files from a certain lot, EMSA will integrate them in the MARINFO database. The integration process can be done in three ways:

- Total: Delete and replace all the data;
- Incremental: Insert new data, update what has changed and delete what has disappeared;
- Status Quo: no action needed;

For a given delivery, for each entity/file, the contractor can choose between one of the three abovementioned possibilities. However, depending if the data has changed or not, the contractor should use the “incremental” or the “status quo” method to deliver the data.

At EMSA’s request and at least once per year, a “Total” replacement of all the data may occur.

“Status Quo” method

If the data of an entity has not changed since the last delivery of its file, this is the method that should be used. The “status quo” method is indicated by naming a file with the extension “.nul”.

When a file has a “.nul” extension, the loading process will not modify any of the data for this entity in the MARINFO database.

The content of a “.nul” extension can either be void (empty file) or with only the header.

“Incremental” method

This method should be used when data has changed since the last delivery. The files will contain only modified records for this entity. When using this method, it is possible to have one or two files with extensions “.upd” and “.del”.

File with extension “.upd” will be considered as update information. This type of file contains one header and at least one record. All fields for this entity are provided in the file. In such a file, if a given record did not exist in the current MARINFO database, it will be created as a new record. If a given record already existed in the current MARINFO database, each field will be updated with the current value in the file. If all fields have the same value, the record will remain unchanged.

File with extension “.del” will be considered as deletion information. This type of file contains one header and at least one record. Only unique identifier fields are provided in the file. Based on these identifier fields, the corresponding records will be deleted (logically or physically) from MARINFO. If a record to be deleted does not exist in the current MARINFO database, the process will keep on going with a warning.

If a file “.upd” or “.del” does not contain any record, it should not be present in the delivery (there must be a minimum of one record). If there are no records to update or delete, then the method to be used should be “status quo” and not “incremental”.

If both ".del" and ".upd" files are present in the delivery, deletion will occur first.

"Total" method

This method should be used to force synchronisation of the MARINFO database with the contractor reference database. When using this method, the file should have an extension ".all".

File with extension ".all" will be considered as total deletion and replacement of all records for the corresponding entity. Consequently, the MARINFO database will be cleaned completely and all information of the file will be loaded as fresh new data. For technical reason, this cleaning could consist only in logical deletion of the current data, but the principle remains the same.

An ".all" file contains a header and records. In case zero records exist the corresponding MARINFO table will be emptied.

EMSA shall be entitled at all times to request an ".all" file for all entities for a given Lot in order to re-synchronise the data between the contractor and the MARINFO database.

It will be considered as advantageous feature (evaluated under the Award Criteria under point 16) the possibility offered by the tenderer of a remote access (cloud-alike access) to its own database, from where the data under request can be extracted by allowing to EMSA the submission and retrieval of results from SQL-queries. This would allow EMSA to use the contractor's database as is in case of delays in the MARINFO database implementation or in case of errors, updates, synchronization issues that may prevent EMSA, in any moment in time during the contract duration, of accessing to an up-to-date picture of the MARINFO information.

2.4 Data Coverage

Ships coverage

Information and data shall cover any ship to which Resolution A.1078(28) of the International Maritime Organization defining the IMO Ship Identification Number Scheme applies.

Geographical coverage

For all Lots the geographical coverage shall be worldwide.

2.5 Data Specifications Per Lot

The procurement is divided in 3 Lots describing the types of data that EMSA would like to receive.

The data described in the following Lots is to be supplied via online access, via datasets or via data developments.

The requested information with the exception of LOT 2 module g. (online subscription), LOT 3 module a. (online subscription) and module b. (data developments) must be supplied in the format of datasets, according to the requirements set under point 2.3.2 ("Technical Data Specification") in regular updates whose frequency differs depending on the modules within the Lots.

The provided datasets shall allow EMSA to track all changes that occurred between two periods enabling the determination of the modification at the time of the change. To better achieve this objective, it is highly recommended that “dates of effect” are provided to as many fields as possible.

LOT 1 – Ship Movements, Ports Identification and associated Ship details

This Lot shall cover data related to ship movements (port calls, berth and transit movements), ports identification and ship details at the time of the movement for having supporting information to the ship activity event. The exact data elements are described below, module by module (from module a. to module b.). Whenever only codes are provided for a data field (e.g. company IMO, ship type code) decoding tables are needed to understand the meaning of the data.

Module a. Port calls (including ports and anchorages), berths and transit movements

Port calls characteristics (as a minimum must include or allow the determination of):

- Ship identification (IMO, MMSI besides internal codes);
- Port of call ID;
- Arrival date and time (to port of call);
- Departure date and time (from port of call);
- Ship name at time of the call;
- Ship flag at time of the call;
- Ship type at time of call;
- Ship registered owner at time of the call;
- Ship beneficial owner at time of the call;
- Ship ISM company at time of the call;
- Ship class society at time of the call;
- Last port of call;
- Next port of call;
- Estimated arrival date (to next port of call)
- Movement type: e.g., at port, at anchorage, or both;
- Movement source (AIS or other, in case of several sources);
- Reason for call: e.g., bunkering, loading, etc (if available);
- Cargo information (if available): type, tons carried;

For transit movements, “last port” and “next port” information is not required.

Transit movement’s characteristics (must include):

- Ship identification (IMO, MMSI besides internal codes);
- Ship name at time of the call;
- Ship flag at time of the call;
- Ship type at time of call;
- Ship registered owner at time of the call;
- Ship beneficial owner at time of the call;

- Ship ISM company at time of the call;
- Ship class society at time of the call;
- Port of call (“passing by” port/area);
- Port of call ID;
- Arrival date (“passing by” date);
- Departure date (if available);
- Movement source (AIS or other, in case of several sources);

Berth callings (optional):

This optional data would be a complementary ship movement dataset to the above Port calls dataset and it is to provide berth callings globally and details of the berths the ship has called at (berth type, berth name, associated port, berth location, berth id and respective name decoding table)

Berth callings, if provided, will be considered as an advantageous feature (evaluated under the Award Criteria under point 16).

For module a. EMSA expects a first complete set of historical data at the beginning of the data provision for this module (e.g. by January 2020) covering the previous 24 months period (since January 2018) of all ships’ movements, and the provision of regular updates on a weekly basis covering the latest changes and the new movements recorded.

Fixed dates of delivery are defined in the relevant specific contract/order form.

The requested information must be supplied in the format of a dataset, according to the requirements set under point 2.3.2 (“Technical Data Specification”).

Any optional field included will be evaluated under the quality criteria as advantageous features.

Module b. Ports and anchorages

Worldwide ports and anchorages are to be provided in the module under this Lot using a Locode (based on UNECE Locodes) to each port as well as the type of port, including, if available (and as an example), the discrimination between ports and anchorages.

Places characteristics (must include):

- Place identification (UNECE Locode, besides internal codes);
- Place ID (internal code, as there may be ports without a known LOCODE)
- Place name;
- Place country;
- Place area;
- Place latitude;
- Place longitude;
- Indication of EU/Non-EU place;

- Place type (e.g. terminal, anchorage, main port etc)
- Place ID
- Anchorage indicator (Y/N) (if not embedded in Place type);
- Bulk liquid facilities availability (description);
- Dry Bulk facilities availability (description)
- Port waste reception facilities availability, type description (if available);
- Port waste reception facility ID (if available)
- Port waste reception facility name and address (if available)
- Port dismantling facilities availability, type description (if available)
- Port dismantling facilities ID (if available)
- Port dismantling reception facility name and address (if available)

For module b. EMSA also expects the provision of regular updates on a weekly basis covering the latest changes, at the time of delivery, and new places recorded.

Fixed dates of delivery are defined in the relevant specific contract/order form.

LOT 2 – Ship lifecycle

This Lot shall cover data related to ship particulars and ship historical particulars, shipping companies' details and shipping companies' historical details in relation to ships, casualties in shipping activity, PSC inspections and associated deficiencies, bunkering and repairs and/or retrofits (if available), vetting inspections (if available), ship engine details, ship equipment, newbuildings and demolitions, an online subscription for users in EMSA allowing quick access to the most recent updates and a license granting visualisation rights for ship details and ship engine details in other EMSA applications.

The exact data elements are described below, module by module (from module a. to module g.).

Module a. Ship current details, ship historical information (flag, MMSI, name, type, crew, classification societies and P&I clubs) and ship companies historical information

The world's fleet details, a ship data table, must be submitted, regardless the ships' current status, that is including ships already dead (scrapped) or newly built (newbuildings). It is necessary to be able to track history of several ship related data from all ships under the criteria, even if not active today, and to be able to do it as far back in time as possible.

All fields shall have a date of effect of the occurrence, as far as relevant and available as opposed to having the date of the contractor's acknowledgment of the situation (e.g. class society date of effect for each ship, flag entry date of effect for each ship, registered owner date of effect for each ship). Another field where date of effect is of relevance is the ship type or other physical details as typically the construction related particulars apply as from new-building, but in case of repairs or retrofit the date of effect shall be the date the change took place. To cater for these situations date of effect for ship type is also required.

A separate table for companies (with descriptive info) must be also supplied in order to place in context some of the required ship details, particularly the basic management details.

For company related information only the names of the companies and their nationalities (allegiance countries) are mandatory fields while Company IMO number, if available, will be evaluated as an advantageous feature. Other details could be Company address, Company status etc.

Ships characteristics current details (must include):

- IMO number;
- Ship name;
- Ship name date of effect;
- Date of Last Ship update;
- Flag
- Flag date of effect;
- Flag EU Indicator (optional);
- Port of Registry;
- MMSI;
- Call sign;
- Telephone numbers (e.g. INMARSAT type) (if available)
- Details of any VHF and HF radio equipment (if available)
- Minimum crew size requirements (if available)
- Ship type;
- Ship type (according to PSC types; if available);
- Ship status;
- Classification society for statutory certification;
- Classification society for ISM purposes;
- Classification society for ISPS purposes;
- Classification societies effect date;
- Registered owner and nationality, IMO Number and Name;
- Start date of Registered owner;
- Beneficial company and nationality, IMO Number and Name (if available);
- Start date of Beneficial company (if available);
- Parent beneficial company and nationality, IMO Number and Name (if available);
- Start date of Parent beneficial company (if available);
- ISM Manager company and nationality, IMO Number and Name;
- Start date of ISM company;
- Other Technical manager company and nationality, IMO Number and Name (if available);
- Start date of other Technical manager company (if available);
- Operator company and nationality, IMO Number and Name (if available);
- Start date of Operator company;
- Single Hull Tanker indicator (Y/N/Non-available);
- Hull type (displacement, semi-displacement, light craft; optional);
- Hull shape;
- Hull material: Steel, Aluminium, Wood and Composite, etc;

- Gross tonnage;
- Deadweight;
- Net tonnage;
- Light displacement tonnes (LDT);
- Keel laying date;
- Contract date;
- Build date (if not possible, only Month and Year of built or Year of build);
- Main and Secondary Fishing gear (if relevant and available);
- Dimensions: Length overall, Length between perpendiculars, Breadth, Draught;
- Other dimensions: Number of Ramps, Number of Ro-Ro Lanes, Number of Ro-Ro Ramps, Number of Tanks, Length of RORO Lanes, Width of RORO Lanes;
- Capacity information on: Passengers, Crew and Cargo (if available; Vehicle, TEUs, etc);
- P&I Club information (company code and decode, insurance risks covered)
- Builder country;
- Build yard location (if available);
- Builder name;
- Repair/retrofit yard country (if available);
- Repair/retrofit yard country (if available);
- Repair/retrofit yard location (if available);
- Repair/retrofit yard name (if available);
- Death Date (if applicable);
- Demolition yard country (if available);
- Demolition yard location (if available);
- Demolition yard name (if available)

A separate table for companies, a reference table (must include):

- Company IMO (if available for Owners, ISM Manager and Operator);
- Company name;
- Company address;
- Nationalities (all existing allegiance countries e.g. registered country, address country etc);
- Company status (if available);
- Year of formation (if available);
- Postal address;
- Website (if available);
- Email address(es) (if available);
- Telephone(s) (if available)

The relation between a company and a ship (the role of the company in the ship)

Owner, Operator, ISM Manager etc) needs to be addressed by the database schema, either by adding data fields to the ship table or by creating several companies related tables for the different company roles.

Historical information

Ship Flag, Ship MMSI, Ship Name, Classification Society, P&I Clubs, Crew data and Company histories shall be separate data objects containing the full available history for each ship in the Ship characteristics entity. There cannot be history from ships inexistent in the Ships entity.

Classification Society History (must include):

- Ship IMO number;
- Recognized Organisation/Classification Society Name;
- Class Status;
- Class Status Date of Effect;
- Indication if it is current Class;
- IACS Belonging Indicator;

Ships Name History (must include):

- Ship IMO number;
- Ship Name;
- Ship Name Date of Effect;
- Indication of current Name;

Ships Flag History (must include):

- Ship IMO number;
- Flag identification;
- Call sign (for each Flag version);
- Flag start date;
- Flag end date;
- Indication if it is current Flag;

MMSI History (if available):

- IMO number;
- MMSI number;
- Call sign
- Effective dates (start date/end date);

P&I History (if available):

- IMO number;
- P&I Club/Company code;
- P&I Club/Company decode (description and company details);
- Main Insurance information (risks covered);
- Entry date in contract and validity;

Crew data (if available):

- Crew list date;
- IMO Number;
- Ship Name;

- Total Crew;
- Total Officers;
- Total Ratings;

Company History (must include):

- Company IMO number (if available for Owners (Registered and Beneficial), ISM Manager and Operator)
- Ship IMO Number;
- Company Date of Effect (in relation to the Ship);
- Role with Ship: Owner, ISM Manager, Operator, etc;

Additional dates of effect, historical information, as well as other additional details submitted in the proposal will be evaluated under the quality criteria of the tender as advantageous features.

For module a. EMSA expects the provision of regular updates on a weekly basis covering the latest changes on ships details, at the time of the delivery, and the inclusion of new ships.

Fixed dates of delivery shall be defined in the relevant specific contract/order form.

Module b. Casualties

This module shall cover a list of casualties and ships involved in casualties (at least serious and very serious) and all relevant characterisation details of the casualty.

Casualties characteristics (must include):

- Casualty id;
- Ship Identification (IMO number);
- Ship name at time of the accident;
- Ship flag at time of the accident;
- Ship type at time of the accident;
- Ship registered owner at time of the accident;
- Ship beneficial owner at time of the accident;
- Ship ISM company at time of the accident;
- Ship class society at time of the accident;
- Seriousness indicator of casualty;
- Casualty date;
- Casualty type;
- Casualty cause;
- Number of dead people;
- Number of missing people;
- Number of injured people;
- Pollution Indicator;
- Amount and type of pollution (if applicable);

- Number of ships involved (unless this table caters for each ship casualty);
- Location data (latitude, longitude, region);
- Loss Type;

The contractor must differentiate between ships “as casualties” and the “accident/incident event” (at the origin of the casualty), if necessary using multiple tables to address this distinction.

These two concepts are to be treated as separate, although inter-related, entities. These entities must be reflected and associated in the database schema allowing EMSA to measure them separately (e.g. 1 collision can generate 3 ships’ casualties - if 3 ships were involved in that collision).

Additional dates of effect as well as other additional details submitted in the proposal will be evaluated under the quality criteria of the tender as advantageous features.

If available, other types of events involving ships’ activities and known to be posing threats to the human life, to on-board cargo or to the environment are also to be provided, eventually in a separate table (e.g human trafficking, piracy, illegal discharges, other incidents not necessarily in connection to a standard casualty event).

For module b. EMSA expects a first complete set of historical data at the beginning of the data provision for this module (e.g. by January 2020) covering the previous 24 months period (since January 2018) of casualties and the provision of regular updates on a monthly basis covering the latest changes, at the time of delivery, and new casualties recorded.

Fixed dates of delivery shall be defined in the relevant specific contract/order form.

Module c. Port State Control inspections

This module refers to datasets containing information about the results of PSC inspections, encountered deficiencies, bans, detentions and arrests derived from inspections under all available PSC MoU agreements worldwide or PSC Maritime Authorities (Paris MoU, Tokyo MoU, Black Sea MoU, Mediterranean MoU, USCG, Riyadh MoU, Viña del Mar, Indian Ocean MoU, Caribbean MoU, Abuja MoU).

The number of PSC regimes made available should be the maximum possible to cover the widest possible geographical area where maritime activity can be found.

Inspections data (must include):

- PSC regime identification;
- IMO number;
- MMSI;
- Ship name at time of inspection;
- Ship flag at time of inspection;
- Ship type at time of inspection;
- Ship registered owner at time of inspection;
- Ship beneficial owner at time of inspection;

- Ship ISM company at time of inspection;
- Inspection date;
- Inspection authority (country);
- Inspection port ID;
- Inspection port Name;
- Recognised organisations (at time of inspection);
- Classification society (at time of inspection)
- Deficiencies indicator;
- Detention indicator;
- Number of deficiencies

Deficiencies data (must include):

- Inspection identification;
- Deficiency definition;
- Deficiency 4-or 5-digit code as per Memorandum or USCG area
- Deficiency Action taken
- Deficiency ground for detention indicator

Banning data (if existing must include):

- IMO number;
- Banning authority (country);
- Flag (at time of banning);
- Banning start date;
- Banning end date;
- Reason for banning;

Expulsion data (if existing, must include):

- IMO number;
- Expelling authority (country);
- Flag (at time of banning);
- Expulsion start date;
- Expulsion end date;
- Reason for Expulsion

Certificate data (must include):

- IMO number;
- Certificate name;
- Certificate code (if available, in that case a decoding table is required)
- Issuing authority;
- Issuing date;

- End date/ validity;
- Source (Class societies, PSC inspection etc), (if available)

For module c. EMSA expects a first complete set of historical data at the beginning of the data provision for this module (e.g. by January 2020) covering the previous 24-month period (since January 2018) of PSC inspections and the provision of regular updates on a monthly basis covering the latest changes, at the time of delivery, and new inspections recorded.

Fixed dates of delivery shall be defined in the relevant specific contract/order form.

Module d. Ship Engine Data

This module requires data on ship engine related information, for both main and auxiliary engines, in conjunction to ship identification details for those ships which engine information is being provided. The module will cover all ships regardless their current status (that is including ships already dead/scrapped, newbuildings, etc). It is necessary to be able to track engine data from all ships, even if not active today. If exact values cannot be provided, estimated data is allowed and recommended, but such estimations must be clearly identified in the metadata, in the dictionary of the database and in the variable name.

This module contains a mandatory set of data (Part I) and a complementary (non-mandatory) set of data (Part II).

As mandatory data (Part I), this module shall comprehend detailed information on ship engines data (for both main and auxiliary engines).

As complementary data (Part II), information about other ship engines (such as boilers or propellers) is required. Bidders are encouraged to include data for Part II in their proposal.

Part II is considered as complementary data thus providing additional elements in order to enrich the offer. Such details will be evaluated under the quality criteria as advantageous features.

For Part I (mandatory) the minimum set of data required by EMSA, for both main and auxiliary engines, is:

Ship engines and main ship identification (must include):

- IMO number;
- MMSI number;
- Flag,
- Ship name;
- Ship type;
- Newbuilding indicator;
- Speed*;
- Draught*;
- Capacity (Deadweight)*;
- Type of Propulsion System (conventional, non-conventional)**;
- Length between Perpendiculars;

- Engine Manufacturer;
- Model;
- Engine Power Output* (Maximum Continuous Rating - MCR);
- Rating (RPM);
- Fuel Type;
- Number of Engines;
- Non-conventional propulsion (diesel-electric, combined diesel and/or turbine, water jet, hybrid, etc.);

** Speed, Power Output, Draught and Capacity should be consistent with each other.*
*** Conventional propulsion (main engine mechanical drive)*

For Part II (complementary, non-mandatory) the desired set of data should cover, as much as possible, further emission related engines such as boilers and propellers:

Complementary information (should include):

Boilers

- Boiler Manufacturer;
- Model;
- Thermal Power Output (Maximum Continuous Rating);
- Steam Capacity and Specific Fuel Consumption;
- Type/s of Fuel and Grade;
- Number of Boilers;

Propellers

- Number of propellers;
- Manufacturer;
- Diameter;
- RPM;
- Type (CPP [Controllable Pitch Propeller]/FP [Fixed Pitch Propeller]/POD [Podded Propulsion System]);

Others

- Abatement Technique, if available [Filtering, Exhaust Gas Cleaning Systems (EGCS), Selective Catalytic Reduction - SCR, etc.] and application details for these systems* on board the ships (engines, diesel generators etc);
- Shaft Generator Power Output and Consumption;
- Fuel Type and Grade;
- Ratings and Specific Fuel Consumption (RPM, SFC);

* By “application details of these systems” we mean, for example, for scrubbers: where has the scrubber been installed (main or auxiliary engine?), what type of scrubber (Open loop, closed loop?), has it been retrofitted etc. Any of these details will be considered as advantageous features and will be valued as such in the evaluation criteria.

For module d. EMSA expects the provision of one first set of data (e.g. January 2020) and three additional sets of data during the year of the order (e.g. April 2020, July 2020 and October 2020) with the latest updates on ship engine data and emissions related data, at the time of delivery, and new ship engines recorded.

Fixed dates of delivery are defined in the relevant specific contract/order form.

Module e. Newbuildings and Demolitions

This module encompasses one single module (module a.) covering detailed information on the shipping newbuildings (ships in the orderbook) and demolitions (ships being scrapped/recycled) and for those, the minimum data fields to be considered in each dataset are described below.

It should be noted that, once a ship is delivered, entering therefore in service/commission and leaving for this reason the orderbook, such ship is not be removed from the newbuildings dataset under request to allow the tracking of all new builds from the beginning of this provision and to maintain an easy access to details from ships recently built.

The requested information must be supplied in the format of a dataset, according to the requirements set under point 2.3.2 (“Technical Data Specification”) of this specification.

Newbuildings characteristics (must include):

- IMO Number;
- Ship name;
- Ship type;
- Hull type;
- Class society (if available);
- GT;
- DWT;
- LDT;
- Builder and Builder country;
- Builder yard location;
- Hull number (if available);
- Contract date;
- Expected data of delivery;
- Year and month of build;
- Flag at the time of order (if available)
- Flag at the time of delivery
- Beneficial company and nationality (if available);
- Major group or parent beneficial company and nationality (if available);
- Price (if available)

Demolitions characteristics (must include):

- IMO number;
- Ship name;
- Ship type;
- Hull type;
- Class Society;
- Flag (at time of demolition);
- GT;
- DWT;
- LDT;
- Date of demolition;
- Place of demolition (Scrapping facility/yard);
- Country of demolition;
- Source of the data (if available);
- Registered owner company and nationality, at time of demolition;
- Major group or parent beneficial company and nationality at time of demolition (if available);
- Last known classification society (if available);
- Last value (if available)

Additional dates of effect as well as other additional details submitted in the proposal will be evaluated under the quality criteria as advantageous features.

For module e. EMSA expects a complete set of data at the beginning of the data provision (e.g. by January 2020) covering newbuildings and demolitions details from the last 5 years (since 2010, inclusive).

For the newbuilding dataset this means that ships built from 2015 (inclusive) onwards plus the ships currently on the orderbook (not yet delivered) shall be in the dataset under provision in this module with the relevant details as described above for newbuildings.

For the demolitions dataset this means that ships demolished from 2015 (inclusive) shall be in the dataset under provision in this module with the relevant details as described above for demolitions.

EMSA expects the provision of regular updates on a monthly basis covering the latest changes, at the time of delivery, to the existing data as well all newbuilts and new demolitions recorded since the last update.

It should be noted that ships leaving the orderbook, as they become delivered, should not be removed from the newbuildings dataset. This dataset will compile all historical newbuilding related data as described in this tender for all newbuilt ships since 2015.

Fixed dates of delivery shall be defined in the relevant specific contract/order form.

Module f. Ship To Ship Transfer Data (STS)

This module shall cater for the provision of ship data vis a vis the indication of activity between two ships such as bunkering, cargo transfer and other activities. The data elements to be presented in this dataset

- Identification of the ships involved (IMO, MMSI, Ship name, Ship type, GT, DWT, YOB, Flag)
- Identification of the type of activity the ships are involved (Bunkering, Cargo transfer, etc)
- Date and time of the event
- Location of the event (latitude, longitude, nearest port, geographical area)

In the case of bunkering operations, it would be valued if additional information regarding the bunkering product (type of fuel) and origin of the product could be retrieved from comparison with commodities data and commodities movements, eventually at disposal of the contractor. This will be evaluated under the quality criteria as advantageous features.

For module f. EMSA expects a first complete set of historical data at the beginning of the data provision for this module (e.g. by January 2020) covering the previous 24 months period (since January 2018) of ship-to-ship data and the provision of regular updates on a monthly basis covering the latest changes, at the time of delivery, and new STS operations recorded.

Module g. Online subscription

This module shall provide online access to all of the data already provided via datasets in the other modules of this Lot, as well as online access to other types of data, for which datasets are not requested (e.g. AIS positions). Online access to marine safety related magazines and/or newspapers as well as online notifications for casualties, if provided, are to be evaluated under the quality criteria for the evaluation of the tender, as advantageous features.

Since the datasets under request in this Lot can never be absolutely exhaustive, this module shall compensate for any additional need of information out of the scope of the data fields presently contemplated by this Lot. Such way of accessing data will also allow to access recent information (e.g. casualties details) in between data deliveries, for which we may need immediate access.

For this purpose, a subscription to online information shall include the following contents:

g.1 Ship data: details of ships containing data fields including name and former names, call sign, IMO number, MMSI details, current status, tonnages, class, inspections, detentions, cargo, capacities, gear and machinery details;

g.2 Owners data: details of ships related companies.

g.3 Real-time and historic ship movements including real-time AIS position and for each movement record the port of call, country, arrival date and sailing date are given. This service would, preferably, allow EMSA to create its own list of ships to track.

g.4 Casualty data worldwide: details of casualties and total losses, providing information on the incident itself, date, location, casualty group, consequences. This shall include the access to archive of recorded casualties and enable queries to retrieve data.

g.5 Online news subscription including online access to archive, if available:

i. Daily news service (accessed on internet and via downloads; no hardcopies are needed), including rapid notification of casualties by e-mail alert system, if available.

ii. Weekly and/or monthly news magazines on marine safety and security, if available (accessed on internet and in hardcopy, if available).

LOT 3 – Ship intelligence

This Lot shall cover tailored products and access to maritime related applications providing information on ship bunkering activities and transportation of commodities by sea, including oil cargo transportation.

Module a. Access to graphical user interfaces operated by the contractor

This Lot shall provide access to processed data as may be available to the contractor. The aim is to procure access to intelligence regarding ship movements and events the ship is involved in, visualised in a user interface. The access rights may be through individual licenses or through deep hyperlinks allowing authorised users of EMSA applications to access the website(s) of the contractor.

Information to be displayed shall cover all ships transmitting AIS signals, enriched with information coming from ship particulars' databases, pictures and identified events. The user shall be able to select all ships per area, by time window or alternatively by individual ship. Area selection shall be done through selection from a pre-defined list as well as through ad-hoc polygons to be drawn by the user. The found results shall return in images on the screen such as tracks and heat-maps but also be retrievable in the form of tables with summarised data at ship-level. Finally, the data as presented in tables shall be downloadable by the authorised user.

Data related to cargo movements broken down by different commodities carried by ships transmitting AIS information shall be made available to allow analysis of trade patterns to and from the European Union. The facility therefore shall provide insight in the type of cargo transported, and identify individual ships, operators, countries and ports.

Both for movements as well as cargoes the search criteria and other filtering shall be customizable by the user and saved on a personalized basis for future use. Eventually, an automatic or programmable run of the same settings shall be able to be stored and made available on a later stage to generate comparable records for similar periods of time in the future or past, identical vessels or the same area or cargo.

Module b. Data calculations and specific monitoring

EMSA performs various calculations and simulations to establish for instance emissions. These exercises follow established algorithms on one hand, but are based on a wide range of assumptions, on the other. Additionally, EMSA focusses on areas of interest such as the areas covered by the Polar Code, the various semi-enclosed sea basins in the European area, specific coastal areas and port areas. In all cases, the interest is defined by the presence and particular activities of ships in such areas.

This module aims to procure services from the contractor related to the creation of customizable algorithms which will run as part of the above-mentioned set-up described in module a. Input for the parameters used in the algorithms shall come from the various databases operated by the contractor which contain information defining the ship as well as movements. Input for the algorithms to be created will be provided by or under the auspice of EMSA. Creation shall happen in close coordination with the contractor's development team and may cover several iterations. Important is that it shall be easily possible to manipulate the parameters of the algorithms on ad-hoc basis without intervention of the contractor in order to do "what if" simulations.

Due to the experimental nature, the final product shall only be accessible to EMSA, even if added as a customized feature in the above-mentioned Graphical User Interfaces operated by the contractor. Only EMSA may decide on further dissemination of the calculated information.

For each (set of) algorithms detailed specifications shall be provided by EMSA which shall be separately contracted under this Framework contract. Given its need-base nature, such exercises may happen more than once per year, or not at all during a particular year.

Examples of calculations and simulations:

- Volume and type of Air Emissions based on ship particulars, assumed fuel used, observed speed and detected area for a certain range of time;
- Volume and origin of Ballast Water discharged based on vessel particulars, laden or ballast status, voyage characteristics, availability of BWTS;
- Movement of ships after being expelled from ports for non-compliance with certain legal provisions;
- Identification of ships operating in the Polar Areas versus their Ice Class;
- Identification of Passenger ships operating domestically taking account of their passenger capacity, construction standards and material, age, and sea-areas in which they operate;
- Trading patterns involving various cargoes subject to seasonal, legal or political changes. This could include the closure of major port(s) or critical infrastructure, termination of a major operator or occurrence of a severe winter;
- Availability of ships of a certain type typically involved in the transport of defined cargoes on certain routes. Availability factors may be considered as fuel related, size related or volume related because of (lack of) newbuilding and/or recycling patterns.

3. Contract management responsible body

EMSA – Unit B.3, in charge of Environment & Capacity Building, will be responsible for managing the contract.

4. Project Planning

Data samples

Within the maximum of 15 days after the signature of the contract, the contractor shall supply free of cost test samples of all datasets to be provided under the Framework Contract in accordance to the requirements set

under point 2.3.2 (“Technical Data Specification”) to be internally processed, analysed and fine-tuned, ensuring the success of the future deliveries.

Delivery procedures

The relevant order forms/specific contracts shall define the fixed dates for the deliveries and further particular technical details. Upon success of data delivery the contractor must send an e-mail notification to EMSA using the following email address: Marinfo.Notifications@emsa.europa.eu.

5. Timetable

The estimated date for signature of the Framework contracts is the beginning of November 2019.

For the provision of initial datasets, delivery frequency and fixed delivery dates (the latter still to be defined):

Dataset deliveries

Lot	Module	Module data	First Dataset Coverage and Delivery Date	Delivery Frequency (fixed dates to be defined in the Order Form)
1	a	Port calls, berths and transit movements	Complete set of historical data at the beginning of the year with the 1st order form (e.g. January 2020) covering the previous 24 months (since 2018).	On a weekly basis
	b	Ports data	-	On a weekly basis
2	a	Ship current details and ship historical information including companies	-	On a weekly basis
	b	Casualties	Complete set of historical data at the beginning of the year with the 1st order form (e.g. January 2020) covering the previous 24 months (since 2018).	On a monthly basis
	c	Port state control data	Complete set of historical data at the beginning of the year with the 1st order form (e.g. January 2020) covering the previous 24 months (since 2018).	On a monthly basis
	d	Ship engine data	one first set of data (e.g. January 2020) and three additional sets of data during the year of the order (e.g. April 2020, July 2020 and October 2020) with the latest updates on ship engine data.	-
	e	Newbuildings and Demolitions	Complete set of historical data at the beginning of the year with the 1st order form (e.g. January 2020) covering newbuilds and demolitions details since 2015.	On a monthly basis
	f	Ship to Ship Transfer Data	Complete set of historical data at the beginning of the year with the 1st order form (e.g. January 2020) covering the previous 24 months (since 2018).	On a monthly basis
	g	Online subscription		

3	a	Access to graphical user interfaces operated by the contractor		
	b	Tailored developments	As specified in the specific contract.	As specified in the specific contract

Online subscription

The contractor shall provide EMSA with the necessary tools (codes, etc. for accessing online information services) within 20 days after the signature of the relevant specific contract/order form.

6. Estimated Value of the Contract

The maximum budget available for this contract is EUR 1200000 excluding VAT over the maximum duration:

- Lot 1: EUR 220.000
- Lot 2: EUR 750.000
- Lot 3: EUR 230.000 (maximum EUR 180.000 for Module a)

7. Terms of payment

Payments shall be issued in accordance with the provisions of the **draft contract** available under the dedicated section of the procurement procedure on the e-Tendering platform at http://simap.ted.europa.eu/.

8. Terms of contract

When drawing up a bid, the tenderer should bear in mind the terms of the draft contract.

EMSA may, before the contract is signed cancel the award procedure without the tenderers being entitled to claim any compensation.

9. Financial guarantees

Not applicable.

10. Subcontracting

If the tenderer intends to either subcontract part of the work or realise the work in co-operation with other partners it shall indicate in its offer which part will be subcontracted, as well as the name and qualifications of the subcontractor or partner. It should be noted that the overall responsibility for the work remains with the tenderer.

The tenderer must provide required evidence for the exclusion and selection criteria on its own behalf and, when applicable, on behalf of its subcontractors. The evidence for the selection criteria on behalf of subcontractors must be provided where the tenderer relies on the capacities of subcontractors to fulfil

selection criteria[2]. The exclusion criteria will be assessed in relation to each economic operator individually. Concerning the selection criteria, the evidence provided will be checked to ensure that the tenderer and its subcontractors as a whole fulfil the criteria. However, the selection criteria may apply individually where it is relevant in view of their nature.

11. Requirements as to the tender

Bids can be submitted in any of the official languages of the EU. However, as the main working language of the Agency is English, bids should preferably be submitted in English and should in particular include an English version of the documents requested under points 15.5 and 16 of the present Tender Specifications.

The tenderer must comply with the minimum requirements provided for in these Tender Specifications. This includes compliance with applicable obligations under environmental, social and labour law established by Union law, national law and collective agreements or by the international environmental, social and labour law provisions listed in Annex X to Directive 2014/24/EU of the European Parliament and of the Council.[3]

The tenderer shall complete the Tenderer's Checklist.

If the tenderer intends to either subcontract part of the work or realise the work in co-operation with other partners (Joint Offers) it shall indicate it in its offer by completing the form "Statement of Subcontracting / Joint Offer". This document is available on the Procurement Section / Calls for Tenders (Documents for tenderer) of EMSA's website (www.emsa.europa.eu).

12. Submission via the e-Submission application

Tenderers shall submit tenders electronically via e-Submission in one of the official languages of the European Union through the e-Tendering website and before the closing date for the tenders reception as described in the Invitation to tender.

The detailed steps on how to access and use e-Submission are provided in Appendix I – *E-Submission Guidelines*, attached to these Tender Specifications.

The tenderer must provide the following information using e-Submission:

a) **Cover letter** indicating the name and position of the person authorised to sign the contract, the bank account to which payments are to be made and the email address to be used for contacts during the procurement procedure.
b) **The Financial Identification Form** - completed. This document is available on the Procurement Section (Financial Identification Form) of EMSA's website (www.emsa.europa.eu).
c) **The Legal Entity Form** - completed, along with the requested accompanying documentation. This document is available on the Procurement Section (Legal Entity Form) of EMSA's website (www.emsa.europa.eu).

[2] To rely on the capacities of a subcontractor means that the subcontractor will perform the works or services for which these capacities are required.

[3] Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC (OJ L 94, 28.3.2014, p. 65).

d) All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the points **10, 14, 15.2 and 15.6** of these specifications (part of the exclusion criteria).

e) All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Economic and Financial capacity** (part of the selection criteria) set out under point **15.4** of these specifications.

f) All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Technical and professional capacity** (part of the selection Criteria) set out under point **15.5** of these specifications.

g) All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Award Criteria** set out under point **16** of these specifications.

h) Setting out **prices** in accordance with **point 13** of these specifications.

i) Tender Preparation Report – generated by e-Submission.

Tenderers are exempt from submitting the Legal Entity Form and Financial Identification Form requested if such a form has already previously been completed and sent either to EMSA or any EU Institution. In this case the tenderer shall simply indicate on the cover letter the bank account number to be used for any payment in case of award.

In e-Submission please fill in all mandatory fields (marked with a star *) and other fields as appropriate. All tenders must be clear, complete and consistent with all the requirements laid down in the Tender Specifications including the above instructions. The documentary evidence/documents required in the Tender Specifications must be uploaded in e-Submission. Tenders not uploading the necessary documents may be rejected.

13. Price

a) Prices for Provision and Access to Maritime Data and Information for non-commercial use shall include all items in Appendix A – Financial Proposal.

b) Prices must be quoted in Euro.

c) Prices must be fixed amounts, non-revisable and remain valid for the duration of the contract

d) Under Article 3 and 4 of the Protocol on the privileges and immunities of the European Union, EMSA is exempt from all duties, taxes and other charges, including VAT. This applies to EMSA pursuant to the Regulation (EC) No 1406/2002. These duties, taxes and other charges can therefore not enter into the calculation included in the bid. The amount of VAT must be shown separately.

14. Joint Offer

Groupings, irrespective of their legal form, may submit bids. Tenderers may, after forming a grouping, submit a joint bid on condition that it complies with the rules of competition. Such groupings (or consortia) must specify the company or person heading the project and must also submit a copy of the document authorising this company or person to submit a bid.

Each member of the consortium must provide the required evidence for the exclusion and selection criteria. The exclusion criteria will be assessed in relation to each economic operator individually. Concerning the selection criteria the evidence provided by each member of the consortium will be checked to ensure that the consortium as a whole fulfils the criteria.

If awarded, the contract will be signed by the person authorised by all members of the consortium. Tenders from consortiums of firms or groups of service providers, contractors or suppliers must specify the role, qualifications and experience of each member or group.

15. Information concerning the personal situation of the tenderer and information and formalities necessary for the evaluation of the minimum economic, financial and technical capacity required

15.1 Legal position – means of proof required

When submitting their bid, tenderers are requested to complete and enclose the **Legal Entity Form** and requested accompanying documentation, available in the Procurement Section (Legal Entity Form) of EMSA's website (www.emsa.europa.eu).

15.2 Grounds for exclusion - Exclusion criteria

To be eligible to participate in this contract award procedure, a tenderer must not be in any of the exclusion situations listed in the Declaration of Honour.

For this purpose, the Declaration of Honour available on the Procurement Section of EMSA's website (www.emsa.europa.eu) shall be completed and signed.

15.3 Legal and regulatory capacity – Selection criteria

15.3.1 Standards / Prerequisites

The tenderer must have the legal and regulatory capacity to pursue the professional activity needed for performing the contract.

15.4 Economic and financial capacity – Selection criteria

15.4.1 Standards / Prerequisites

The tenderer must be in stable financial position and the economic and financial capacity to perform the contract

15.4.2 Evidence:

a) Financial statements or their extracts for the three years for which accounts have been closed.

b) Statement of the overall turnover and, where appropriate, turnover relating to the relevant services for the last three financial years available.

c) Tenderers are exempt from submitting the documentary evidence if such evidence has already been completed and sent to EMSA for the purpose of another procurement procedure and the provided documents are up-to-date. In this case the tenderer should simply indicate on the cover letter the procurement procedure where the evidence has been provided.

d) If, for some exceptional reason which EMSA considers justified, a tenderer is unable to provide one or other of the above documents, it may prove its economic and financial capacity by any other document

which EMSA considers appropriate. In any case, EMSA must at least be notified of the exceptional reason and its justification in the tender. EMSA reserves the right to request at any moment during the procedure any other document enabling it to verify the tenderer's economic and financial capacity.

15.5 Technical and professional capacity – Selection criteria

15.5.1 Standards / Prerequisites

a) The tenderer shall have experience in collecting and delivering comprehensive reliable data on maritime information and data worldwide.

b) For Lots 1, 2 and module a of Lot 3, the tenderer shall propose a team for contract implementation with at least 2 dedicated profiles to be the focal points with EMSA. One of the dedicated profiles shall have at least 5-years' experience in collecting and delivering comprehensive reliable data on maritime information and data worldwide from a **technical** perspective. One of the other dedicated profiles shall have at least 5-years' experience in collecting and delivering comprehensive reliable data on maritime information and data worldwide from a **business** perspective.

c) For module b of Lot 3, the tenderer shall propose a team composed of individuals with the technical and management capacity of performing the tasks assigned to a Project Manager, Senior Application Developer, Application Developer, Matter Expert and Quality Assurance Officer, described below.

Project Manager: the PM is in charge of the successful initiation, planning, design, execution, monitoring, controlling and closure of the Framework Contract (IT). This profile shall have:

Education

- University degree(s) in Computer Science or Information Science, or other Engineering field;
- Excellent English verbal and writing skills (level B2 or higher).

Professional Experience

- More than 5 years (in the last 10 years) of proven professional experience with direct responsibility in managing teams in the information technology (IT) industry for software development;
- Proven professional experience in the development of web-based applications or software applications, ideally in the maritime field.

Senior Application Developer: the SAD is in charge of coordinating the development and creation of software components and technological artefacts necessary for the construction and configuration of the requirements in this tender. This profile shall have:

Education

- University degree(s) in Information Technology, Computer Science, or equivalent field;
- English verbal and writing skills, (level B1 or higher).

Professional Experience

- Minimum 5 years (in the last 10 years) of proven professional experience with software development, at least 5 of which as system designer, software developer and tester.

- Minimum 5 years (in the last 10 years) of experience in software development in one or more programming languages suitable to perform the type of developments expected during contract implementation (see module b of Lot 3).

Application Developer: the AD works with the SAD in the development and creation of software components and technological artefacts necessary for the construction, implementation, and configuration and testing of the requirements under this tender. This profile shall have:

Education

- University degree(s) in Information Technology, Computer Science, or equivalent field;

  or

  At least 7 years (in the last 10 years) of proven professional experience with software development, at least 5 of which as system designer, software developer and tester, web programmer or similar;

Professional Experience

- Minimum 5 years (in the last 10 years) of proven professional experience with software development, at least 3 of which as system designer, software developer and tester, web programmer or similar;
- Minimum 3 years (in the last 5 years) of experience in software development in one or more programming languages suitable to perform the type of developments expected during contract implementation (see module b of Lot 3).

Matter Expert: While members of the development team are supposed to be experts in the design and development of requirements expected under module b of Lot 3, the ME is the person with special knowledge and skills in the ship business.

This profile shall have at least 5-years' experience (in the last 10) in working for the maritime sector, collecting and delivering comprehensive reliable data on maritime information worldwide from a business perspective. This profile shall have:

- Experience of at least 5 years (in the last 10) in translating business needs into data-related solutions and
- Experience of at least 5 years (in the last 10) in interacting and negotiating in previous data related projects with key business stakeholders such as classification societies, shipyards, ports, ship owners, flags administrations, PSC regimes, ship brokers or ships insurers.

Quality Assurance Officer: The QAO is responsible for determining, negotiating and agreeing on in-house quality procedures, standards and specifications, assessing Lot 3 module b) requirements and ensuring that these are met. This profile shall have:

Education

- University degree(s) in Computer Science or Information Science, or other Engineering field;
  or
- At least 5 years (in the last 10 years) of proven professional experience with internal risk management policy, software testing, software anomalies detection, ICT quality policy management and implementation, ICT process quality models, quality assurance methodologies.

- English verbal and writing skills (level B1 or higher);

Professional Experience

- Minimum 5 years of working experience, 3 of which dealing with execution of software tests, drafting and revision of software testing documentation, monitoring quality control, implementing strategic planning ensuring correct operations which comply fully with specific needs and outcomes in terms of the development, integration, security and overall management of ICT systems.

15.5.2 Evidence

a) The tenderer shall submit proof of previous or on-going projects or contracts where the tenderer has competed and been awarded for the same types of data as in this procurement such as statements or recommendations from previous or current clients.
b) The tenderer shall submit the CVs of each proposed team member.

15.6 Declaration of Honour (DoH)

Please note that the tenderer shall provide information with regards its situation and on the natural or legal persons that are members of the administrative, management or supervisory body or that have powers of representation, decision or control and beneficial owners.

Upon request and within the time limit set by EMSA, the tenderer shall provide the following evidence concerning itself, the natural or legal persons as listed under the first paragraph, and concerning the natural or legal persons which assume unlimited liability for the debt of the tenderer:

For the exclusion situations described in points (a), (c), (d), (f), (g) and (h) of the Declaration of Honour, production of a recent extract from the judicial record is required or, failing that, an equivalent document recently issued by a judicial or administrative authority in the country of establishment of the tenderer showing that those requirements are satisfied.

For the exclusion situations described in (a) and (b) of the Declaration of Honour, production of recent certificates issued by the competent authorities of the country of establishment is required. These documents must provide evidence covering all taxes and social security contributions for which the tenderer is liable, including for example, VAT, income tax (natural persons only), company tax (legal persons only) and social security contributions. Where any document described above is not issued in the country concerned, it may be replaced by a sworn statement made before a judicial authority or notary or, failing that, a solemn statement made before an administrative authority or a qualified professional body in its country of establishment.

The successful tenderer must provide the documents mentioned as supporting evidence before signature of the contract and within the deadline given by EMSA. This requirement applies to each member of the group in case of joint tender.

If the tenderer already submitted such evidence for the purpose of another procedure, its issuing date does not exceed one year and it is still valid, the person shall declare on its honour that the documentary evidence has already been provided and confirm that no changes have occurred in its situation.

16. Award criteria

The contract will be awarded to the tenderer who submits the most economically advantageous bid (the one with highest score) based on the following quality criteria and their associated weightings:

1. Quality, comprehensiveness and coherency of data (W_1 =35%)

This quality criterion shall be evaluated according to the detailed description of the methodologies used in data collection, validation, quality and coherency, and the provided data sample(s).

The sample data to be supplied in each Lot must be provided within the respective bid, with the purpose of allowing EMSA to assess the quality and level of detail of the contents in the proposal. The sample data will be used for evaluation purposes only and does not necessarily have to correspond to the datasets structure actually ordered after the conclusion of the contracts. The tenderer must to submit sample datasets covering information from all ships having IMO numbers between 8000000 and 9000000 and under coverage in this tender.

2. Data specification details (data dictionary, schema and identification of original sources) (W_2 =20%)

For the evaluation of this criterion, the bid must be accompanied by an annex containing a full list of the proposed variables based on the requirements, including any additional/optional fields made available by the tenderer.

The bid must also include the solutions proposed for the loading procedures of the data as well as a detailed ERD diagram of all data entities involved and their relationships.

3. Provision of complementary/additional data, and/or additional fields or features and the possibility to retrieve information, querying the data online remotely from the tenderer's own database (W_3 =15%)

and the price criterion and associated weighting (the price of the bid, as per Appendix A – Financial Proposal, otherwise the bid may be rejected at the evaluation stage):

Price[3] of the bid (W_{Price} = 30%)

For Lot 1 and Lot 2

The price for the delivery of Lot a, as a global sum ($W_{Price}1$);

For Lot 3

The price of the bid shall be calculated as the sum of the following two prices and according to the formula provided hereinafter:

- The price for the delivery of Module a, as a global sum ($W_{Price}1$). In addition, only bids that offer a price equal to, or lower than, EUR 180 000 for this module will be considered for evaluation;

- The price of the scenario in Appendix A for services delivered under Module b ($W_{Price}2$), calculated by multiplying the price per person-day for each profile by a "coefficient" reflecting the relative use of each profile. This scenario is not used for evaluating the compliance of the economical proposal against the FWC ceiling, but to make the different proposals comparable.

$$W_{Price} = W_{Price}1 + W_{Price}2$$

For all bids evaluators will give marks between 0-10 (half points are possible) for each quality criterion.

The score is calculated as

$$S = SQ + SP$$

where:

The average quality for quality criterion i is

$$Q_i = \frac{1}{number\ of\ evaluators} * \sum_{evaluator} mark\ of\ the\ evaluator\ for\ quality\ criterion\ i$$

The overall weighted quality is

$$Q = \sum_i Q_i * W_i$$

The score for quality is

$$SQ = \frac{Q}{Q\ of\ the\ bid\ with\ highest\ Q} * 100 * \sum_i W_i$$

The score for price is

$$SP = \sum_i \frac{lowest\ Price_i\ of\ all\ bids}{Price_i} * 100 * W_{Price_i}$$

Only tenders that have reached a minimum of 60 % for Q_1, a minimum of 60 % for Q_2, and a minimum of 60 % for Q_3 will be taken into consideration when calculating the score for quality SQ, score for price SP and score S.

Only tenders that have reached a minimum of 70 % for the score S will be taken into consideration for awarding the contract.

17. Rejection from the procedure

Contracts will not be awarded to tenderers who, during the procurement procedure, are in one of the following situations:

a) are in an exclusion situation;

b) have misrepresented the information required as a condition for participating in the procedure or have failed to supply that information;

c) were previously involved in the preparation of procurement documents used in the award procedure where this entails a breach of the principle of equality of treatment, including distortion of competition that cannot be remedied otherwise.

18. Intellectual Property Right (IPR)

Please consult the contract for IPR related clauses.

If the results are not fully created for the purpose of the contract this should be clearly pointed out by the tenderer in the tender. Information should be provided about the scope of pre-existing rights, their source and when and how the rights to these rights have been or will be acquired.

In the tender all quotations or information originating from other sources and to which third parties may claim rights have to be clearly marked (source publication including date and place, creator, number, full title etc.) in a way allowing easy identification.

19. Special negotiated procedure under point 11.1(e) of Annex I to FR

EMSA may at a later stage exercise the option to increase the estimated value of the contract via negotiated procedure with the successful tenderer in accordance with the provisions of point 11.1 (e) of Annex I to the Financial Regulation.

APPENDIX A – FINANCIAL PROPOSAL[4]

LOT 1 – Ship Movements, Ports Identification and associated ship details

Module	**Fixed Price**
Module a. Port calls (including ports and anchorages), berths and transit movements	
Module b. Ports and anchorages	
TOTAL LOT 1	

LOT 2 – Ship lifecycle

Module	**Fixed Price**
Module a. Ship current details, ship historical information (flag, name, type, crew and classification societies and P&I clubs) and ship companies historical information	
Module b. Casualties	
Module c. Port State Control inspections	
Module d. Ship Engine Data	
Module e. Newbuildings and Demolitions	
Module f. Ship To Ship Transfer Data (STS)	
Module g. Online subscription	
TOTAL LOT 2	

LOT 3 – Ship intelligence

Module	
Module a. Access to graphical user interfaces operated by the contractor	**Fixed Price**
Module b. Data calculations and specific monitoring	**Price of the Scenario for Evaluation**
TOTAL LOT 3	

Module b. Scenario for Evaluation

Profiles	Price per day **A**	Number of days' scenario for evaluation **B**	Total (**A x B**)
Project Manager		10	
Senior Application Developer		15	
Application Developer		25	
Matter Expert		15	
Quality Assurance Officer		5	
TOTAL MODULE b. – Price of Scenario for Evaluation			

[4] White cells shall be filled-in. Failure to fill-in Appendix A may result in rejection of the tender.