**EMSA/NEG/1/2019 for the Procurement of a Terrestrial-AIS Data Service in Specific Regions**

**Annex 6 to the Invitation to Tender**

***Specifications and compliance with technical requirements***

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# Acronyms

|  |  |
| --- | --- |
| **ABBREVIATION** | **DEFINITION** |
| **DATA** | Data Requirement |
| **EMSA** | European Maritime Safety Agency |
| **ESRI** | Environmental Systems Research Institute |
| **GENE** | General Requirement |
| **GIS** | Geographic Information System |
| **HTTP** | HyperText Transfer Protocol |
| **HTTPs** | HyperText Transfer Protocol Secure |
| **IEC** | International Electrotechnical Commission |
| **INFO** | Informative Requirement |
| **ITU** | International Telecommunications Union |
| **MMSI** | Maritime Mobile Service Identity |
| **MSS** | Maritime Support Services |
| **N/A** | Not Applicable |
| **REPO** | Reporting Requirement |
| **SSN-SI** | SafeSeaNet Streaming Interface |
| **TAIS** | Terrestrial Automatic Identification System |
| **T-AIS** | Terrestrial Automatic Identification System |
| **TCPIP** | Transmission Control Protocol/Internet Protocol |
| **WFS** | Web Feature Service |
| **WMS** | Web Map Service |

# Requirements Information

## Requirement structure

Each single requirement is uniquely identified by the code:

***TAIS\_XXXX\_NNNN***

where:

* **TAIS:** indicates these are Terrestrial Automatic Identification System requirements.
* **XXXX:**indicates the category of requirement as below:
  + **INFO:** informative requirement;
  + **GENE:** general requirement;
  + **DATA:** data requirement;
  + **REPO:** reporting requirement.
* **NNNN:** indicates a unique 4-digit identification number for each requirement.

All requirements are defined based on the following attributes:

* **Requirement ID (ID)**: unique ID - definition described above.
* **Type:** indicates if the requirement is a *minimum requirement* (Yes/No compliance, partial compliance not acceptable), a *quality requirement* (used for evaluation of the tender, non compliance and partial compliance possible) or *informative only* (compliance not applicable).
* **TITLE:** Name of the requirement, comprising some key words;
* **Definition of the requirement:** Text elaborating the requirement;
* **ACCEPTANCE CRITERIA:** Criteria to be used for the final acceptance and compliance of the requirement (indicated as N/A where not applicable).

## Example of a requirement

|  |  |
| --- | --- |
| **TITLE: EMSA example requirement** | |
| **ID:** TAIS\_GENE\_0001 | **TYPE:** Minimum/Quality/Informative |
| *The requirement will be detailed in this field* | |
| **ACCEPTANCE CRITERIA: N/A** | |

All information required by the contracting authority for the appraisal of tenders on the basis of the **minimum requirements** and **quality requirements** (part of the Award Criteria) shall be provided directly in this document and submitted to EMSA in **Word format**.

The Tenderer shall complete the cells marked in white associated to each requirement. For informative requirements (e.g. TAIS\_INFO\_0001), no information is needed.

For each non-informative requirement, the Tenderer shall provide:

* **Compliance of the requirement:** Tenderer must select the relevant option (Not Compliant, Partially Compliant or Compliant in the drop-down menu set by default to “Choose”);
* **Description**: The Tenderer shall provide clarification and/or a description on the proposed approach/capability or how they plan to fulfil the requirement. For Not Compliant or Partially Compliant, the Tenderer shall clearly identify the level and extent of non-compliancy, clearly indicating any elements that maybe decrease or mitigate the impact of the partial or full non-fulfilment of the requirement.

## Example of compliance matrix

|  |  |
| --- | --- |
| **ID:** TAIS\_GENE\_0001 | **COMPLIANCE:** Choose |
| **DESCRIPTION:** | |
| *Type applicable information on the requirement here* | |

Tenderers shall use the formatting styles already available in the Word document provided by EMSA. If needed, page breaks between sections can be removed by Tenderers.

Where the term “Tenderer” is used in this document, the Tenderer shall address the respective requirement in their bid. A reference to “Contractor” refers to activities, conditions or terms that shall be taken into account during the execution of the contract. Where equivalents are being offered by Tenderers, with respect to the technical specifications, they must be duly motivated and justified. Equivalents will be accepted only if they meet the requirements as defined in this document. EMSA reserves the right to disagree with the proposed equivalents and associated justifications.

## Minimum Requirements

The following requirements are considered minimum to which tenders must be compliant in order to be considered for Award.

If a tender does do not comply with at least one of the minimum requirements listed below, it **will not** be considered for Award and may be immediately rejected for being irregular. For the minimum requirements detailed below, partial compliance will not be accepted.

|  |  |  |
| --- | --- | --- |
| **MINIMUM REQUIREMENTS** | | |
| **ID** | | **TITLE** |
| **TAIS\_DATA\_0003** | AIS Class A and AIS Class B data stream latency | |
| **TAIS\_DATA\_0006** | Data Sample – content | |
| **TAIS\_DATA\_0009** | Data Sample – source | |
| **TAIS\_DATA\_0013** | Data format | |
| **TAIS\_GENE\_0017** | EMSA streaming interface installation | |
| **TAIS\_GENE\_0019** | EMSA streaming interface technical support | |
| **TAIS\_GENE\_0020** | EMSA streaming interface modifications and updates | |
| **TAIS\_REPO\_0027** | Information on unavailability of base stations | |
| **TAIS\_REPO\_0028** | Information on infrastructure upgrades | |
| **TAIS\_REPO\_0032** | Service evaluation reports frequency | |
| **TAIS\_GENE\_0035** | Storage, processing and display in EMSA applications | |
| **TAIS\_GENE\_0036** | Provision of data via system-to-system interfaces | |
| **TAIS\_GENE\_0037** | Conditions of use of data and number of users | |

## Requirements compliance matrix

After responding to each requirement in Section 2 Specifications, the Tenderer shall complete the following table, indicating the following in the respective fields:

* **TENDERER:** insert the name of the Tenderer;
* **COMPLIANCE:** Select the compliance of each of the indicated requirements. Where compliance is indicated by as N/A, no action is requiremented from the Tenderer.

The *score* column will be used by EMSA to record the points awarded to each quality requirement. The *comments* column will be used by EMSA for recording any relevant comments. A complete methodology on the scoring that will be applied per quality requirement is detailed in *Annex 1 Tender Specifications - Award Criteria.*

| **REQUIREMENTS COMPLIANCE MATRIX** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | **TENDERER** | **INSERT TENDERER NAME** | | | | |
| **QUALITY CRITERIA** | **ID** | **TITLE** | **TYPE OF REQUIREMENT** | **COMPLIANCE** | **SCORE (EMSA TO COMPLETE)** | **COMMENTS (EMSA TO COMPLETE)** |
| Q1 | TAIS\_GENE\_0001 | Use of data for statistical purposes | Quality | Choose |  |  |
| Q1 | TAIS\_DATA\_0002 | Coverage area | Quality | Choose |  |  |
| N/A | TAIS\_DATA\_0003 | AIS Class A and AIS Class B data stream latency | Minimum | Choose | N/A |  |
| Q1 | TAIS\_DATA\_0004 | AIS Class A and AIS Class B data message types | Quality | Choose |  |  |
| Q1 | TAIS\_DATA\_0005 | Location of base stations | Quality | Choose |  |  |
| N/A | TAIS\_DATA\_0006 | Data Sample – content | Minimum | Choose | N/A |  |
| Q1 | TAIS\_DATA\_0007 | Data Sample – content #2 | Quality | Choose |  |  |
| Q1 | TAIS\_DATA\_0008 | Data Sample – format | Quality | Choose |  |  |
| N/A | TAIS\_DATA\_0009 | Data Sample – source | Minimum | Choose | N/A |  |
| Q2 | TAIS\_DATA\_0010 | Number of messages received | Quality | Choose |  |  |
| Q2 | TAIS\_DATA\_0011 | Number of ships detected | Quality | Choose |  |  |
| Q1 | TAIS\_GENE\_0012 | Service availability | Quality | Choose |  |  |
| N/A | TAIS\_DATA\_0013 | Data format | Minimum | Choose | N/A |  |
| Q1 | TAIS\_DATA\_0014 | Data format #2 | Quality | Choose |  |  |
| Q1 | TAIS\_DATA\_0015 | Data format ancillary information | Quality | Choose |  |  |
| N/A | TAIS\_INFO\_0016 | EMSA streaming interface technical specifications | Informative | N/A | N/A | *Informative requirement only* |
| N/A | TAIS\_GENE\_0017 | EMSA streaming interface installation | Minimum | Choose | N/A |  |
| N/A | TAIS\_INFO\_0018 | EMSA streaming interface installation hosting | Informative | N/A | N/A | *Informative requirement only* |
| N/A | TAIS\_GENE\_0019 | EMSA streaming interface technical support | Minimum | Choose | N/A |  |
| N/A | TAIS\_GENE\_0020 | EMSA streaming interface modifications and updates | Minimum | Choose | N/A |  |
| Q1 | TAIS\_GENE\_0021 | EMSA streaming interface modifications testing | Quality | Choose |  |  |
| Q1 | TAIS\_DATA\_0022 | Duplicate messages | Quality | Choose |  |  |
| Q3 | TAIS\_REPO\_0023 | Weekly reporting | Quality | Choose |  |  |
| Q3 | TAIS\_GENE\_0024 | System architecture and processing steps | Quality | Choose |  |  |
| Q3 | TAIS\_GENE\_0025 | Methodology for mitigating technical issues | Quality | Choose |  |  |
| Q3 | TAIS\_GENE\_0026 | Methodology for mitigating service failure | Quality | Choose |  |  |
| N/A | TAIS\_REPO\_0027 | Information on unavailability of base stations | Minimum | Choose | N/A |  |
| N/A | TAIS\_REPO\_0028 | Information on infrastructure upgrades | Minimum | Choose | N/A |  |
| N/A | TAIS\_INFO\_0029 | Service evaluation | Informative | N/A | N/A | *Informative requirement only* |
| N/A | TAIS\_INFO\_0030 | Service evaluation #2 | Informative | N/A | N/A | *Informative requirement only* |
| N/A | TAIS\_INFO\_0031 | Service evaluation #3 | Informative | N/A | N/A | *Informative requirement only* |
| N/A | TAIS\_REPO\_0032 | Service evaluation reports frequency | Minimum | Choose | N/A |  |
| Q3 | TAIS\_REPO\_0033 | Service evaluation reports content | Quality | Choose |  |  |
| Q1 | TAIS\_GENE\_0034 | Reintegration of data following an interruption in information transmission | Quality | Choose |  |  |
| N/A | TAIS\_GENE\_0035 | Storage, processing and display in EMSA applications | Minimum | Choose | N/A |  |
| N/A | TAIS\_GENE\_0036 | Provision of data via system-to-system interfaces | Minimum | Choose | N/A |  |
| N/A | TAIS\_GENE\_0037 | Conditions of use of data and number of users | Minimum | Choose | N/A |  |

## General data information

After responding to each requirement in Section 2 Specifications, the Tenderer shall complete the blank fields in the following tables with the respective values. The values to be used are to be calculated based on the data sample provided together with the bid, as described in TAIS\_DATA\_0006.

|  |  |  |
| --- | --- | --- |
| **COVERAGE OF THE NETWORK USED** | **INFORMATION TO BE PROVIDED BY THE TENDERER** | |
| Number of base stations located in each region | A |  |
| B |  |
| C |  |
| D |  |
| E |  |
| Number of AIS messages detected per day from all base stations | Class A |  |
| Class B |  |
| TOTAL[[1]](#footnote-2) |  |
| Number of unique MMSIs detected from all base stations | Class A |  |
| Class B |  |
| TOTAL[[2]](#footnote-3) |  |

## Specific data information

After responding to each requirement in Section 2 Specifications, the Tenderer shall complete the blank fields in the following tables with the respective values. The values to be used are to be calculated based on the data sample provided together with the bid, as described in TAIS\_DATA\_0006. The definition of each coloumn is as follows:

* **BASE STATION:** The name of the AIS base station included in the data sample provided;
* **REGION:** The region in which the AIS base station is located (see requirement TAIS\_DATA\_0002);
* **LONGITUDE:** The longitude of the location of the AIS base station in decimal degrees;
* **LONGITUDE:** The latitude of the location of the AIS base station in decimal degrees;
* **NUMBER OF AIS CLASS A MESSAGES PER DAY:** The total number of Class A messages detected by the AIS base station in the sample provided;
* **NUMBER OF AIS CLASS B MESSAGES PER DAY:** The total number of Class B messages detected by the AIS base station in the sample provided;
* **TOTAL NUMBER OF AIS MESSAGES PER DAY:** The total number of messages detected by the AIS base station in the sample provided;
* **NUMBER OF UNIQUE MMSIs PER DAY:** The total number of unique MMSI numbers detected by the AIS base station in the sample provided.

| **INFRASTRUCTURE INFORMATION (FROM DATA SAMPLE PROVIDED)** | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **BASE STATION** | **REGION** | **LONGITUDE (DECIMAL DEGREES)** | **LATITUDE (DECIMAL DEGREES)** | **NUMBER OF AIS CLASS A MESSAGES PER DAY** | **NUMBER OF AIS CLASS B MESSAGES PER DAY** | **TOTAL NUMBER OF AIS MESSAGES PER DAY** | **NUMBER OF UNIQUE MMSIs PER DAY** |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| *[BS identifier]* | Choose an item. |  |  |  |  |  |  |
| **(repeat pages as necessary)** | Choose an item. |  |  |  |  |  |  |

# Specifications

## Data for statistical usage

|  |  |  |
| --- | --- | --- |
| **TITLE: Use of data for statistical purposes** | | |
| **ID:** TAIS\_GENE\_0001 | **TYPE:** Quality | |
| The Tenderer shall grant the right to EMSA to produce vessel traffic maps, route statistics and density maps based on, or including, the T-AIS data provided in the scope of this Tender and for EMSA to make such products available to its users whenever requested to do so, with no obligation on the part of EMSA to inform the Contractor. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer grants EMSA the right to use the T-AIS data as part of the products stated in the requirement. | | |
| **COMPLIANCE:** TAIS\_GENE\_0001 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

## Coverage and Availability

|  |  |  |
| --- | --- | --- |
| **TITLE: Coverage area** | | |
| **ID:** TAIS\_DATA\_0002 | **TYPE:** Quality | |
| The area of coverage for the T-AIS data shall include base stations covering the following regions:     |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | **Corner 1** | | **Corner 2** | | **Corner 3** | | **Corner 4** | | | **Long** | **Lat** | **Long** | **Lat** | **Long** | **Lat** | **Long** | **Lat** | | **Region A** | 30.2344 | 42.2610 | 42.2754 | 42.2610 | 42.2754 | 47.4875 | 30.2344 | 47.4875 | | **Region B** | 28.3887 | 35.8669 | 42.2754 | 35.8669 | 42.2754 | 42.2610 | 28.3887 | 42.2610 | | **Region C** | 11.4257 | 29.9930 | 25.0488 | 29.9930 | 25.0488 | 33.6146 | 11.4257 | 33.6146 | | **Region D** | 25.0488 | 29.9930 | 34.7168 | 29.9930 | 34.7168 | 33.6146 | 25.0488 | 33.6146 | | **Region E** | 34.7168 | 29.9930 | 36.3867 | 29.9930 | 36.3867 | 35.8669 | 34.7168 | 35.8669 |   The Tenderer shall provide details of any of the listed regions for which there is no capacity to include the bid. If no details of a region(s) is provided, it shall be assumed that all regions are included.  In the case that not all regions are included in the bid, this requirement shall be considered partially complaint. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided details of any of the regions listed in the requirement which are not included in the bid. | | |
| **COMPLIANCE:** TAIS\_DATA\_0002 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: AIS Class A and AIS Class B data stream latency** | | |
| **ID:** TAIS\_DATA\_0003 | **TYPE:** Minimum | |
| The Contractor shall provide a real-time T-AIS data stream of AIS messages received in the region covered, from ships fitted with Class A shipborne mobile equipment and, where available, from ships fitted with Class B shipborne mobile equipment.  The target for latency of the T-AIS data stream is less than 1 minute from vessel’s transmission.  Full compliance will be considered for latency of less than 1 minute. Partial compliance will be considered for latency of more than 1 minute.  The Tenderer shall include in this requirement the expected latency of the T-AIS data stream. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor provides a real-time data stream of AIS messages for both Class A and, where available, Class B shipborne mobile equipment. 2. The Tenderer has included the expected latency of the T-AIS data stream in the description of the requirement. | | |
| **COMPLIANCE:** TAIS\_DATA\_0003 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: AIS Class A and AIS Class B message types** | | |
| **ID:** TAIS\_DATA\_0004 | **TYPE:** Quality | |
| The Contractor shall provide the T-AIS data stream without any restriction or limitation on the 27 AIS message types as described in Rec. ITU-R M.1371-5.  Restrictions or limitations which are a result of base station hardware shall not be considered as a restriction or limitiation for the purposes of this requirement. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor has not stated any limitations on the 27 AIS message types. | | |
| **COMPLIANCE:** TAIS\_DATA\_0004 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Location of base stations** | | |
| **ID:** TAIS\_DATA\_0005 | **TYPE:** Quality | |
| Together with the offer for this tender, the Tenderer shall provide EMSA with a GIS shape file (e.g. ESRI) indicating the name, location, coordinates and identification of the T-AIS base stations used.  This GIS shape file shall be distributable to EMSA’s users, as described in S*ection 2 – Objectives, scope and description of the contract* of the *Tender Specifications*, either in its original format, in EMSA’s web and/or mobile applications or any of the System-to-system interfaces used by EMSA. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided EMSA with a GIS shape file indicating the name, location, coordinates and identification of the T-AIS base stations used; 2. The Contractor provides an updated GIS file to EMSA in the case of any change to the T-AIS base stations used. | | |
| **COMPLIANCE:** TAIS\_DATA\_0005 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data Sample – content** | | |
| **ID:** TAIS\_DATA\_0006 | **TYPE:** Minimum | |
| Together with the offer for this tender, the Tenderer shall provide a data sample file containing all position reports (AIS message types 1, 2, 3 and 18) between **21st October 2019 0:00:00 UTC and 21th October 2019 23:59:59 UTC** collected by the proposed base stations.  Annex 3 to the Invitation to Tender - data sample file - is an example of a data sample file to be submitted. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer provides a data sample file covering the period stated in the requirement. | | |
| **COMPLIANCE:** TAIS\_DATA\_0006 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data Sample – content #2** | | |
| **ID:** TAIS\_DATA\_0007 | **TYPE:** Quality | |
| The data sample described in TAIS\_DATA\_0006 file should contain the following:   * **ais\_TS**: the AIS message timestamp extracted from the AIS message payload - UTC in epoch format; * **MMSI**: ship’s ID extracted from the AIS message payload - integer, 9 digits; * **Lat**: ship’s latitude extracted from the AIS message payload - values up to plus or minus 90 decimal degrees; * **Long**: ship’s longitude extracted from the AIS message payload - values up to plus or minus 180 decimal degrees; * **gnd\_ ID**: common name of the base station which received the AIS message; * **nmea**: the original message payload.   An example of the line representing an AIS position report is presented in Annex 3 Data sample file.csv  Providing the data sample according to Annex 3 Data sample file.csv willbe considered as advantageous.  Note: the format provided in this requirement is not the format of the data which the contractor is expected to provide during the execution of the tender. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer provides a data sample file containing the elements detailed in the requirement. | | |
| **COMPLIANCE:** TAIS\_DATA\_0007 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data Sample – format** | | |
| **ID:** TAIS\_DATA\_0008 | **TYPE:** Quality | |
| The data sample file provided by the Tenderer, as stated in TAIS\_DATA\_0006, shall be provided as a file containing tab-delimited values. To facilite the submission of the file, the Tenderer may deliver the data sample as a multipart zip file and in separate emails (maximum permitted attachments size of 12MB). | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer provides a data sample file containing containing tab-delimited values. | | |
| **COMPLIANCE:** TAIS\_DATA\_0008 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data Sample – source** | | |
| **ID:** TAIS\_DATA\_0009 | **TYPE:** Minimum | |
| The data sample file provided by the Tenderer, as stated in TAIS\_DATA\_0006, shall contain data acquired by terrestrial base stations only. Data collected by satellite AIS equipment or shipborne AIS transponders/receivers, or acquired by other means of communication, will not be accepted. | | |
| **ACCEPTANCE CRITERIA**:   1. The data sample file provided by the Tenderer includes AIS positions acquired by terrestrial receivers only. | | |
| **COMPLIANCE:** TAIS\_DATA\_0009 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Number of messages received** | | |
| **ID:** TAIS\_DATA\_0010 | **TYPE:** Quality | |
| Based on the data sample file provided by the Tenderer, as stated in TAIS\_DATA\_0006, the Tenderer shall indicate in the offer the number of AIS messages received per region for Class A shipborne equipment and Class B shipborne equipment.  If a breakdown per Class A and Class B cannot be provided, the total number of AIS messages received per region is acceptable as a partial compliance. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided the number of messages detected received per base station for both Class A and Class B shipborne equipment. | | |
| **COMPLIANCE:** TAIS\_DATA\_0010 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Number of ships detected** | | |
| **ID:** TAIS\_DATA\_0011 | **TYPE:** Quality | |
| Based on the data sample file provided by the Tenderer, as stated in TAIS\_DATA\_0006, the Tenderer shall indicate in the offer the total number of individual ships (MMSIs) detected per region for Class A shipborne equipment and Class B shipborne equipment.  If a breakdown per Class A and Class B cannot be provided, the total number of individual ships received per region is acceptable as a partial compliance. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided the total number of individual ships detected per region for both Class A and Class B shipborne equipment. | | |
| **COMPLIANCE:** TAIS\_DATA\_0011 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Service availability** | | |
| **ID:** TAIS\_GENE\_0012 | **TYPE:** Quality | |
| The Contractor shall ensure a minimum 95% availability of the T-AIS data service during this contract and better than 90% availability of the T-AIS data service per day.  Due to the location of some of the AIS base stations being requested, the uptime of each station will not be analysed for the purposes of calculating service availability. The calculation will be made based on the avaibility of the T-AIS data service from the Contractor. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor ensures a minimum of 95% availability of the T-AIS data service during the contract; 2. The Contractor ensures a minimum of 90% availability of the T-AIS data service per day. | | |
| **COMPLIANCE:** TAIS\_GENE\_0012 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

## Data Format

|  |  |  |
| --- | --- | --- |
| **TITLE: Data format** | | |
| **ID:** TAIS\_DATA\_0013 | **TYPE:** Minimum | |
| The real-time T-AIS data shall be provided by the Contractor to EMSA with respect to the following formats/standards:   * IEC 61162-1; * IEC 62320-1 (comment block extension); * ITU-R M.1371-5; | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor provides the T-AIS data in conformity with the standards listed in the requirement. | | |
| **COMPLIANCE:** TAIS\_DATA\_0013 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data format #2** | | |
| **ID:** TAIS\_DATA\_0014 | **TYPE:** Quality | |
| The real-time T-AIS data should be provided by the Contractor to EMSA with respect to the following formats/standards:   * EMSA’s additional usage of 'i’ parameter-code defined in *Appendix C. STARSTREAMING EcosystemInterface Guide*. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor provides the T-AIS data in conformity with the standards listed in the requirement. | | |
| **COMPLIANCE:** TAIS\_DATA\_0014 | | Choose |
| **DESCRIPTION:** | | |
|  | | |

|  |  |  |
| --- | --- | --- |
| **TITLE: Data format ancillary information** | | |
| **ID:** TAIS\_DATA\_0015 | **TYPE:** Quality | |
| Regarding the format/standard detailed in TAIS\_DATA\_0014, the Contractor should include the following ancillary information in the T-AIS data stream:   1. **Acqusition Timestamps**: timestamps indicating the date and time of reception of the AIS message by the base station:  * timestamp, with resolution of 1 second, sent inside comment block ‘c’ (in epoch format); * timestamp with the best possible resolution (ideally 1 µs), sent inside comment block ‘i’, element <T>, character ‘T’ (in epoch format).  1. **Base Station ID**: Identification of the base station receiving the message, sent inside comment block ‘i’, element <T>, character ‘G’ + string; 2. **Data Centre Ingestion Timestamp**: time when the position report is delivered to the Contractor’s data centre and is ready to be forwarded to the EMSA streaming interface - inside comment block ‘i’, element <T>, character ‘I’ + timestamp (in epoch format); 3. **Data Centre Delivery Timestamp**: timestamp when the message is forwarded to the EMSA streaming interface. The timestamp shall be updated for every consecutive attempt following unsuccessful communication. In case of nominal communication flow the data centre ingestion timestamp will be similar or the same to the data centre delivery timestamp - inside comment block ‘i’, element <T>, character ‘D’ + timestamp (in epoch format). | | |
| **ACCEPTANCE CRITERIA**:   1. The ancillary information detailed in the requirement is contained in the T-AIS data steam provided to EMSA. | | |
| **COMPLIANCE:** TAIS\_DATA\_0015 | | Choose |
| **DESCRIPTION:** | | |
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## Data Transmission

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| **TITLE: EMSA streaming interface technical specifications** | |
| **ID:** TAIS\_INFO\_0016 | **TYPE:** Informative |
| The T-AIS data is to be transmitted to EMSA via the EMSA streaming interface. The interface’s technical specifications are attached as Annex 4 STARSTREAMING EcosystemInterface Guide. | |
| **ACCEPTANCE CRITERIA**: N/A | |

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| **TITLE: EMSA streaming interface installation** | | |
| **ID:** TAIS\_GENE\_0017 | **TYPE:** Minimum | |
| Within 30 days of the signing of the Contract and receiving instructions from EMSA, the selected Contractor shall download and install the EMSA streaming interface following the instructions that will be given by EMSA. The access to the software and all other documents and digital certificates necessary to configure and use the software will be provided after signature of the contract.  In exceptional circumstances due to the security procedures of the Contractor, this period of 30 days may be extended on agreement by EMSA. However, a commitment to the period of 30 days must be made. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor installs the EMSA streaming interface within 30 days of receiving instructions from EMSA. | | |
| **COMPLIANCE:** TAIS\_GENE\_0017 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: EMSA streaming interface installation hosting** | |
| **ID:** TAIS\_INFO\_0018 | **TYPE:** Informative |
| The Contractor shall be responsible for providing the hosting infrastructure (hardware/operating system/network connections) and hosting service for the EMSA streaming interface at the Contractor’s premises. The correct installation will be validated by EMSA. | |
| **ACCEPTANCE CRITERIA**: N/A | |

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| **TITLE: EMSA streaming interface technical support** | | |
| **ID:** TAIS\_GENE\_0019 | **TYPE:** Minimum | |
| The Contractor shall satisfy the following requirements when installing and using the EMSA streaming interface:   1. To provide during working hours the maintenance of the EMSA streaming interface, its configuration at local level and IT operation of the system; 2. support EMSA’s monitoring by enabling the performance monitoring service provided by EMSA, for the optimal operation of the EMSA streaming interface; 3. respond in less than three hours during working hours to incidents causing unforeseen service interruption; 4. analyse incidents and the required interventions for repair or maintenance; 5. report incidents requiring remote intervention by EMSA to the Agency’s Maritime Support Services (MSS); 6. receive requests from the MSS on service failures, control the processing of the reported incidents, and keep MSS informed about the status of issues; 7. support the back-up and recovery in case of failure of the EMSA streaming interface and to provide unprocessed data following recovery on EMSA’s end-point/node; 8. Install updates and maintenance patches as required by EMSA. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor fulfils the requirements listed when using the EMSA streaming interface. | | |
| **COMPLIANCE:** TAIS\_GENE\_0019 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE:** **EMSA streaming interface modifications and updates** | | |
| **ID:** TAIS\_GENE\_0020 | **TYPE:** Minimum | |
| EMSA may alter the EMSA streaming interface at any time following the signature of the contract. EMSA shall provide a period of 30 days’ written notice by email, prior to any alteration.  The Contractor shall adhere to any modifications to the EMSA streaming interface’s specifications made during the validity of the contract. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor complies with the specifications of EMSA streaming interface in providing the TAIS data. | | |
| **COMPLIANCE:** TAIS\_GENE\_0020 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: EMSA streaming interface modifications testing** | | |
| **ID:** TAIS\_GENE\_0021 | **TYPE:** Quality | |
| The Contractor should participate in testing campaigns required by EMSA in the case of modifications to the EMSA streaming interface’s specifications made during the validity of the contract.  Testing campaigns will require providing a parallel stream of T-AIS to EMSA’s preproduction environment in addition to the main operational stream. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor participates in any necessary testing campaigns for the validation of modifications made to EMSA’s streaming interface. | | |
| **COMPLIANCE:** TAIS\_GENE\_0021 | | Choose |
| **DESCRIPTION:** | | |
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## Quality Control

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| **TITLE: Duplicate messages** | | |
| **ID:** TAIS\_DATA\_0022 | **TYPE:** Quality | |
| If requested by EMSA, the Contractor shall remove any duplication of messages acquired through different base stations. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor is able to remove any duplicated messages acquired through different base stations if requested by EMSA; | | |
| **COMPLIANCE:** TAIS\_DATA\_0022 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Weekly reporting** | | |
| **ID:** TAIS\_REPO\_0023 | **TYPE:** Quality | |
| The Contractor shall provide a weekly summary report by email.  As a guide, the report should contain the following data for the last seven days:   * The exact number of T-AIS messages per message type per each base station that were provided to the EMSA streaming interface; * The number of unique MMSIs detected per base station; * The number of unique MMSIs detected overall; * The operational status of each base station; * Information on any planned interventions, including expected impact, reason for intervention and expected downtime.   Providing the weekly summary report according to the details of this requirement willbe considered as advantageous. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor provides a weekly report of the T-AIS data service. | | |
| **COMPLIANCE:** TAIS\_REPO\_0023 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: System architecture and processing steps** | | |
| **ID:** TAIS\_GENE\_0024 | **TYPE:** Quality | |
| In the description of this requirement, the Tenderer shall provide a detailed description of the end-to-end system architecture which shall include the base stations and processing steps.  The completeness of this description shall be reviewed by EMSA and considered as compliant, partially compliant or not compliant accordingly. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided information on the system architecture applied for detecting and processing the T-AIS data. | | |
| **COMPLIANCE:** TAIS\_GENE\_0024 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Methodology for mitigating technical issues** | | |
| **ID:** TAIS\_GENE\_0025 | **TYPE:** Quality | |
| In the description of this requirement, the Tenderer provide a detailed description of the methodology that will be applied by the Contractor in mitigating the effect of technical problems which might impact the T-AIS data quality such as:   1. Interference sources (legal and illegal); 2. Topographic conditions; 3. Signal processing; 4. Performance of the AIS base station.   The completeness of this description be reviewed by EMSA and considered as compliant, partially compliant or not compliant accordingly. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided information on the methodology used by the Contractor to mitigate any technical issues which may impact on the quality of the T-AIS data. | | |
| **COMPLIANCE:** TAIS\_GENE\_0025 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Methodology for mitigating service failure** | | |
| **ID:** TAIS\_GENE\_0026 | **TYPE:** Quality | |
| In the description of this requirement, the Tenderer shall provide a detailed description of the back-up strategy that will be used by the Contractor in case of failure of the T-AIS data service.  The completeness of this description shall be reviewed by EMSA and considered as compliant, partially compliant or not compliant accordingly. | | |
| **ACCEPTANCE CRITERIA**:   1. The Tenderer has provided detailed information on the back-up strategy to be used by the Contractor in case of base station failure. | | |
| **COMPLIANCE:** TAIS\_GENE\_0026 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Information on unavailability of base stations** | | |
| **ID:** TAIS\_REPO\_0027 | **TYPE:** Minimum | |
| In case of unavailability of a base station, the Contractor shall inform EMSA in writing (by email) and within a reasonable timeframe, indicating the reason for unavailability and the expected date and duration of the unavailablity. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor informs EMSA in the case of the unavailability of a base station, providing information on the reason for the unavailability and the expected beginning and end of the unavailability. | | |
| **COMPLIANCE:** TAIS\_REPO\_0027 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Information on infrastructure upgrades** | | |
| **ID:** TAIS\_REPO\_0028 | **TYPE:** Minimum | |
| The Contractor shall, in case of service upgrades (e.g. integration of a new T-AIS base station or an existing one is decommissioned), notify EMSA in writing (by email) with 30 days’ notice. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor informs EMSA with 30 days’ notice of any upgrade to the infrastructure used. | | |
| **COMPLIANCE:** TAIS\_REPO\_0028 | | Choose |
| **DESCRIPTION:** | | |
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## Service Validation and Reporting

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| **TITLE: Service evaluation** | |
| **ID:** TAIS\_INFO\_0029 | **TYPE:** Informative |
| The T-AIS data service shall be subject to evaluation to ensure product quality during the lifetime of the service. All aspects of the service will be evaluated by the contracting parties (Contractor and EMSA) and the validation of the service may include verification campaigns by EMSA as well as routine verification measures. | |
| **ACCEPTANCE CRITERIA**: N/A | |

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| **TITLE: Service evaluation #2** | |
| **ID:** TAIS\_INFO\_0030 | **TYPE:** Informative |
| The T-AIS data stream provided by the Contractor to the EMSA streaming interface will be the reference source of data for evaluation. | |
| **ACCEPTANCE CRITERIA**: N/A | |

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| **TITLE: Service evaluation #3** | |
| **ID:** TAIS\_INFO\_0031 | **TYPE:** Informative |
| All technical requirements and their parameters shall be evaluated as part of the service validation. | |
| **ACCEPTANCE CRITERIA**: N/A | |

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| **TITLE: Service evaluation reports frequency** | | |
| **ID:** TAIS\_REPO\_0032 | **TYPE:** Minimum | |
| The Contractor shall provide Service Evaluation reports which will then be reviewed and accepted by EMSA. These reports are to be generated periodically. The Contractor shall provide these Service Evaluation reports on a quarterly basis during the validity of this contract, within 30 days of the end of the respective quarter. | | |
| **ACCEPTANCE CRITERIA**:   1. The Contractor provides EMSA with Service Evaluation reports every quarter. | | |
| **COMPLIANCE:** TAIS\_REPO\_0032 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Service evaluation reports content** | | |
| **ID:** TAIS\_REPO\_0033 | **TYPE:** Quality | |
| The Service Evaluation Report stated in TAIS\_REPO\_0032 should contain detailed information on compliance or divergences on the following technical parameters, including:   1. Latency; 2. Total number of messages detected per day and, if available, per message type; 3. Total number of distinct MMSIs captured daily overall and for per base station; 4. Average numbers of messages per day per base station; 5. Any incidents that may have occurred i.e. data outage, satellite/payload fail, etc 6. Statistics on types of vessels detected; 7. Availability of the T-AIS data feed on a daily, monthly, and yearly basis in respect of the total T-AIS data streamed to EMSA and per base station; 8. Additional parameters as may be requested by EMSA.   If required by EMSA, specific geographical areas from where the T-AIS data is to be provided, may be analysed separately.  Providing the Service Evaluation Report according to the details of this requirement willbe considered as advantageous.  The tenderer shall include a model Service Evaluation Report in the tender. | | |
| **ACCEPTANCE CRITERIA**:   1. The Service Evaluation report provided by the Contractor to EMSA contains the elements listed in the requirement. | | |
| **COMPLIANCE:** TAIS\_REPO\_0033 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Reintegration of data following an interruption in information transmission** | | |
| **ID:** TAIS\_GENE\_0034 | **TYPE:** Quality | |
| If, for any reason, the data from the Contractor’s server cannot be transferred to EMSA (e.g. due to internet failure, disconnection or unavailability of EMSA’s server), the Contractor shall ensure the necessary infrastructure for the storage of the data covering a period of up to 2 weeks in its message queue component.  The Contractor’s system shall transmit the data to EMSA when communications and/or systems have recovered. The Contractor’s system shall be able to resend all messages covering the above-mentioned period. Stored data transmission order (e.g. FILO or LIFO) shall be agreed between the Parties.  The stored data shall automatically be sent in the background (when the connection with EMSA is restored) or through a mutually agreed alternative approach. The purpose of this requirement is to reduce the risk of loss of ship position data (AIS data) during failures/scheduled interruptions affecting the Contractor’s system, the proxy, or the connection with EMSA. | | |
| **ACCEPTANCE CRITERIA:**   1. The Tenderer describes the mechanism to be able to store and reintegrate up to 2 weeks of data. | | |
| **COMPLIANCE:** TAIS\_GENE\_0034 | | Choose |
| **DESCRIPTION:** | | |
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## Access, Use and Distribution

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| **TITLE: Storage, processing and display in EMSA applications** | | |
| **ID:** TAIS\_GENE\_0035 | **TYPE:** Minimum | |
| The tenderer shall grant the right to EMSA to store, process, and display all Terrestrial-AIS data provided in the scope of the tender in EMSA’s visualisation applications, including web and mobile applications, and to distribute it to users, as defined in *Section 2 – Objectives, scope and description of the contract*, in real time and historically. | | |
| **ACCEPTANCE CRITERIA:**   1. The Tenderer grants EMSA the right to store, process and display the data as detailed in the requirement. | | |
| **COMPLIANCE:** TAIS\_GENE\_0035 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE: Provision of data via system-to-system interfaces** | | |
| **ID:** TAIS\_GENE\_0036 | **TYPE:** Minimum | |
| The tenderer shall grant the right to EMSA to provide system-to-system interfaces to users, as defined in *Section 2 – Objectives, scope and description of the contract*, of the Terrestrial-AIS data provided in the scope of this Tender. These interfaces may include several different formats for integration in other systems/applications/platforms using, inter-alia, the following system-to-system formats (not exhaustive or limited to):   * Web Map Service (WMS); * Web Feature Service (WFS); * Inter VTS Exchange Format (IVEF) via TCPIP or HTTPs; * EMSA Canonical Data Format (CDF) via TCPIP or HTTPs; * NMEA VDM data stream via the EMSA streaming interface (SSN-SI or equivalent) Proxy; * Or other formats that may be developed specifically for other projects/operations. | | |
| **ACCEPTANCE CRITERIA:**   1. The Tenderer grants the right to provide system-to-system interfaces to users. | | |
| **COMPLIANCE:** TAIS\_GENE\_0036 | | Choose |
| **DESCRIPTION:** | | |
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| **TITLE:** **Conditions of use of data and number of users** | | |
| **ID:** TAIS\_GENE\_0037 | **TYPE:** Minimum | |
| Tenderers shall not impose any conditions, restrictions or limitations on the number of users or entities, types of entities or their number of users which will be provided with the Terrestrial-AIS data service.  Any governmental restrictions may be excluded from this requirement. Any governmental restrictions must be clearly stated in the offer.  Note: users or entities are considered to be EMSA’s Member States and Institutional Users, including primarily Frontex, EFCA, EUNAVFOR, EUROPOL and MAOC-N (list not exhaustive). The Terrestrrial-AIS data shall not be made publically available by EMSA. | | |
| **ACCEPTANCE CRITERIA:**   1. The Tenderer does not impose any conditions, restrictions or limitations as detailed in the requirement. | | |
| **COMPLIANCE:** TAIS\_GENE\_0037 | | Choose |
| **DESCRIPTION:** | | |
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1. Value per Class A and Class B to be provided if known. If not known, the total is acceptable. [↑](#footnote-ref-2)
2. Value per Class A and Class B to be provided if known. If not known, the total is acceptable. [↑](#footnote-ref-3)