

*TENDER ENCLOSURE I - TENDER SPECIFICATIONS*

*ATTACHED TO THE INVITATION TO TENDER*

*Invitation to tender n°. EMSA/OP/14/2015*

**Call for Tender for provision of Optical Satellite Images and Value Added Products for  
Maritime Surveillance**

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Appendix A - External Interface Control Document (EICD)

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## ABBREVIATIONS

1. AOI Area of Interest
2. AWG HMA Architectural Working Group
3. CS Coastal State
4. CSN CleanSeaNet
5. DEM Digital Elevation Model
6. DN Digital Number
7. DC Data Centre
8. EC European Community
9. EMSA European Maritime Safety Agency
10. EO Earth Observation
11. EOP Application Schema for Earth Observation Products
12. ESA European Space Agency
13. EU European Union
14. EUNAVFOR European Union Naval Force
15. FTP File Transfer Protocol
16. GCM GMES Contributing Missions
17. GMES Global Monitoring of Environment and Security
18. GML Geography Mark-up Language
19. GSCDA GMES Space Component Data Access
20. HMA Heterogeneous Mission Accessibility
21. HTML Hyper Text Mark-up Language
22. HTTP Hyper Text Transfer Protocol
23. HTTPS Hyper Text Transfer Protocol Secure
24. ICT Information Communication & Technology
25. IMO International Maritime Organisation
26. JOURNALING Journaling component
27. KO Kick-Off meeting
28. MS Member States
29. MSS Maritime Support Services
30. NIR Near Infra-red
31. NRT Near Real Time
32. OGC Open GeoSpatial Consortium
33. OPT Application Schema for Earth Observation Products – Optical

- 34. PAN Panchromatic
- 35. POR Planning and Ordering component of the CSN DC
- 36. QA Quality Assurance
- 37. QC Quality Control
- 38. QI Quality Indicator
- 39. QNO Quality Notification
- 40. QUA Quality Report
- 41. SLA Service Level Agreement
- 42. SSL Secure Sockets Layer
- 43. UTM Universal Transverse Mercator
- 44. VD Vessel Detection
- 45. VIS Visible
- 46. VMS Vessel Monitoring Service
- 47. VTS Vessel Tracking Service
- 48. WGS84 World Geodetic System reference coordinate system
- 49. XML eXtensible Markup Language

## 1. INTRODUCTION AND SCOPE

### 1.1 Context of the tender

- 1.1.1.1 The European Maritime Safety Agency (hereafter EMSA or Agency) was established under Regulation 1406/2002/EC, as amended by Regulation 100/2013/EC of 15 January 2013, for the purpose of ensuring a high, uniform and effective level of maritime safety and prevention of pollution by ships.
- 1.1.1.2 The Agency's main objective is to provide technical, operational and scientific assistance to the European Commission and Member States in the proper development and implementation of EU legislation on maritime safety, pollution by ships and security on board ships. To accomplish this, one of EMSA's most important supporting tasks is to improve cooperation with, and between, Member States in all key areas.
- 1.1.1.3 In October 2009, the European Commission issued the Communication COM(2009)538 towards the integration of maritime surveillance which aims for “a more interoperable surveillance system to bring together existing monitoring and tracking systems used for maritime safety and security, protection of the marine environment, fisheries control, control of external borders and other law enforcement activities”
- 1.1.1.4 The principal maritime applications and services that are provided by the Agency to Member States, maritime safety administrations may also provide value to actors in other maritime sectors such as fisheries, customs, law enforcement, border control and defence.
- 1.1.1.5 Against this background EMSA has developed a range of Earth Observation services using satellite based monitoring systems in combination with vessel traffic information, and other data to provide an integrated maritime awareness picture.
- 1.1.1.6 The revision of the EMSA Founding Regulation in 2013 mandated the Agency to facilitate co-operation between the Member States and the Commission by providing, upon request, relevant vessel positioning and Earth observation data to competent national authorities and EU bodies to facilitate measures against threats of piracy and other unlawful acts. Examples of this cooperation are the current projects implemented with EFCA, Frontex and EUNAVFOR.
- 1.1.1.7 Copernicus is the European Earth Observation (EO) Programme which combines the use of satellite imagery and data with local, in situ, data sources to deliver geo-spatial information services and products to a wide range of end-users. It aims at achieving an autonomous and operational European capability in environmental and security information services (<http://www.copernicus.eu>)

- 1.1.1.8 The Earth Observation Data Centre (EODC) is the common and standardised system used by the Agency to handle Earth Observation data and associated metadata. At the Agency, the EODC is the central element for Earth Observation data for: i) reception from Service Providers as well as other external data sources; ii) management; iii) storage; iv) archiving; v) fusion; and vi) dissemination to the different users. The EODC is designed primarily to fulfil the user requirements of the operational entities in the coastal States and to support Earth Observation planning and tasking activities of the Agency. Service Providers shall deliver the satellite images and all associated analysis products and metadata to the Earth Observation Data Centre (EODC).
- 1.1.1.9 The Agency is continuing to develop an Integrated Maritime Data Environment (IMDatE) which integrates multiple sources of maritime data, including Earth Observation products, in accordance with the needs of different user communities involved in maritime surveillance activities. Some elements currently managed in the EODC might be transferred to the IMDatE interface. If this is the case, EMSA and the Contractor shall adapt their procedures accordingly.

## 1.2 General Considerations

- 1.2.1.1 All technical requirements of the specification are compiled in the form of a “technical requirements matrix” described in section 7 and provided as Tender Enclosure I – Appendix B.
- 1.2.1.2 Throughout this document the term “the Bidder” addresses the tendering phase, and means that the tenderer shall address such requirements in its offer. Reference to “the Contractor” addresses the contract implementation phase, and means that the tenderer shall perform or implement such requirements during the execution of the contract.
- 1.2.1.3 Throughout this document the term “the Agency” refers to EMSA, unless otherwise specified.
- 1.2.1.4 All requirements formulated with the term “advantageous” or “will be an ‘advantage’” shall be evaluated higher.
- 1.2.1.5 References in this document like “Chapter”, “Section” or “Paragraph” are referring to this document unless other reference documents are otherwise specified.

## 1.3 Objective, scope and description of the contract

- 1.3.1.1 The objective of this Call for Tender is to procure an end-to-end service chain providing very high and high resolution optical satellite images, from as many satellite missions as possible, and value added products tailored for maritime applications, including targeted vessel detection, targeted activity detection and change detection, with delivery primarily in near real time (NRT).



- 1.3.1.2 The Agency refers to a spatial resolution class for very high and high resolution satellite optical images. The spatial resolution class is based on the ESA defined resolution class for EO datasets for the Copernicus Space Component Data Access Portfolio<sup>1</sup>. The spatial resolution classes are defined as follows VHR1 ( $\text{res} \leq 1\text{m}$ ), VHR2 ( $1 < \text{res} \leq 4\text{m}$ ), HR1 ( $4 < \text{res} \leq 10\text{m}$ ) and HR2 ( $10 < \text{res} < 30\text{m}$ ).
- 1.3.1.3 Panchromatic, Pan-sharpened, Multispectral, and Composite image products across the above mentioned spatial resolution classes are requested in this contract.
- 1.3.1.4 The contract shall include the following elements as required in this Tender Specification:
- a) An order desk provided by the contractor, managing feasibility planning, tasking, ordering and reporting.
  - b) Provision of image licences from multiple high/very high resolution optical missions
  - c) NRT image reception, data processing, and image product delivery
  - d) NRT value adding services tailored to maritime surveillance including targeted vessel detection, targeted activity detection and change detection.
  - e) Project and operations management including provision of supporting documentation including, but not limited to, operational procedures, quality management plan, project management plan and reports.

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<sup>1</sup> Copernicus Space Component Data Access Portfolio: Data Warehouse 2011-2014. Issue 2. Revision 10. Date of Issue 01/12/2014

- 1.3.1.5 Bidders are invited to provide offers for new or innovative products, services or techniques relevant for maritime surveillance that could enhance the performance or reliability of the services.

## **1.4 NRT services and delivery times**

- 1.4.1.1 Near real time (NRT) delivery of satellite images and targeted vessel detection, targeted activity detection and change detection products is required for this contract.
- 1.4.1.2 NRT is the time delay introduced by data processing, analysis and transmission, between acquisition time of the image, and the delivery of the images and value added products to the Agency. The term implies there are no significant delays.
- 1.4.1.3 The NRT delivery times allowed for data processing, analysis and transmission are defined for satellite images and value added products in section 6.2.4. If Contractors can provide services faster than the NRT delivery times described in this section, this shall be considered advantageous.

## 1.5 Area coverage

- 1.5.1.1 Worldwide coverage is required with the focus on European and adjacent waters.
- 1.5.1.2 The Agency foresees the greatest demand for image acquisitions over the Mediterranean Sea, Straits of Gibraltar, and the Atlantic Ocean near the coasts of Morocco, Spain and the Canary Islands. However demand may change and Bidders should not consider this list of areas exhaustive.

## 1.6 Service Performance

- 1.6.1.1 The performance indicators described in this section shall be used to measure the service performance of the contract.
- 1.6.1.2 The Agency reserves the right to define other service performance indicators during the lifetime of the contract.
- 1.6.1.3 On an annual basis the service shall provide at least 95% delivery reliability of the ordered images, confirmed by the Satellite Operator as successfully acquired by the satellite sensor and down-linked to the ground station.
- 1.6.1.4 On an annual basis the service shall provide at least 90% reliability on the delivery timeliness requested by the Agency for images and for value added services.
- 1.6.1.5 At the Contract Kick-Off meeting the Agency and the Contractor shall agree on how the performance measures for delivery reliability and delivery timeliness shall be measured. Any conditions or exceptions which may affect the measurement of delivery reliability and delivery timeliness (for example due to special planning options or delivery modalities) should be identified at this time.
- 1.6.1.6 The service shall solve all non-conformances related to unsatisfactory service performance, or unsatisfactory service quality, which have been systematically reported by the Agency, and are affecting the quality of the service or products according to the requirements defined in TeamForge Issue Management procedure in Appendix E.
- 1.6.1.7 If the contractor fails to meet the performance indicators specified in this section, the Agency reserves the right to stop, for a temporary period, Tasking Forms for individual services from the contractor. Therefore Failure to meet these performance indicators may result in a reduction in the number of orders placed with the Contractor.
- 1.6.1.8

## 1.7 Implementation of contracts

- 1.7.1.1 Under this procurement procedure the Agency aims to conclude a Multiple Framework Contract with reopening of competition with maximum of 3 contractors. The contract shall provide an end-to-end service chain, capable of delivering very high and high resolution optical satellite image products (Panchromatic, Pan-sharpened, Multispectral, and Composite), across all spatial resolution classes (VHR1, VHR2, HR1, HR2), from as many satellite missions as possible. The contract shall provide value added products tailored for maritime applications, including targeted vessel detection, targeted activity detection and change detection, with delivery primarily in near real time (NRT). All elements of the service chain (a) to (e) as described in 1.3.1.4 shall be provided in accordance with this Tender Specification.
- 1.7.1.2 Bids shall be evaluated on the quality and price of the products and services being offered. The most economically advantageous bid will be ranked first, with remaining bids ranked in descending order accordingly.
- 1.7.1.3 A (Multiple) Framework Contract will be signed with each of the Contractors which have been ranked above a price/quality threshold up to a maximum number of 3 Contractors.
- 1.7.1.4 Before placing orders for satellite images and value added products, the EMSA Service Desk will send a feasibility request to all Contractors.
- 1.7.1.5 A feasibility request may contain a request for one or more satellite acquisitions/activations, over one or several Areas of Interest (AOI), according to pre-defined criteria, including but not limited to the requested time window, resolution, band composition/product type, incidence angle, tasking time, availability of value added product, delivery timeliness.
- 1.7.1.6 The feasibility request shall take into account the operational requirements of the end users.
- 1.7.1.7 The Contractors shall provide feasibility plan(s) to the EMSA Service Desk according to the feasibility planning and ordering procedures defined in section 3.5. The feasibility plan may contain a proposal for one or more image acquisitions/activations.
- 1.7.1.8 The EMSA Service Desk shall assess the proposed image acquisitions/activations in terms of how well the operational requirements of the end user are met.
- 1.7.1.9 The acquisitions/activations which best meet the operational requirements of end users are selected by the EMSA Service Desk. Orders are placed with Contractor(s) accordingly using Tasking Forms.
- 1.7.1.10 A set of pre-defined criteria shall be used by the EMSA Service Desk to evaluate the feasibility plans per activation/acquisition. The list of pre-defined criteria will include but is not limited to:

- a) Availability (meeting requirements for acquisition time window for the Area of Interest)
- b) Image product spatial resolution class (VHR1, VHR2, HR1, HR2),
- c) Band composition and product type
- d) Minimum and maximum incidence angle
- e) Tasking time: time between placing the order and the image acquisition.
- f) Availability of value added product
- g) Delivery timeliness
- h) Maximum price (based on the prices quoted in the original offer).

1.7.1.11 Under the (Multiple) Framework Contract, the services shall be purchased from the Service Provider through specific contracts as described in section 13 utilising the mechanism of reopening of competition.

## 1.8 Distribution rights

- 1.8.1.1 Contractors shall provide the multi-user licence allowing EMSA to distribute the images and derived products to authorised users.
- 1.8.1.2 The Bidders shall indicate in their bid if there are any restrictions on the distribution of the products (including per country, per image resolution or mode). A list of any restrictions may be annexed to the (Multiple) Framework Contract.
- 1.8.1.3 The Distribution policy of delivered products is defined in Tender Enclosure II “Framework Service Contract”.
- 1.8.1.4 Satellite images and associated products and value adding services delivered under this contract will be provided to EMSA with the right of onward distribution on a non-commercial basis to users of EMSA services.
- 1.8.1.5 Users of EMSA services include EU Member States, EFTA contracting parties and EU Acceding, Candidate and Potential Candidate Countries and Overseas Community Territories (OCT's) and Third countries sharing a regional sea basin with the Union covered by the European Neighbourhood Policy<sup>2</sup>.
- 1.8.1.6 EMSA may also distribute the satellite images and associated products and value adding services delivered under this contract to EU Institutions and organisations including but not limited to; European Fisheries Control Agency, European Environment Agency, FRONTEX, European Union Satellite Centre, Joint Research Centre, European Commission, the Council of Ministers and the European Space Agency (ESA) and to International Organisations including but not limited to; International Maritime Organisation (IMO) and International Commissions or Regional Agreements such as the Helsinki Convention, Bonn Agreement, Barcelona Convention and Istanbul Convention.
- 1.8.1.7 EMSA may distribute the satellite images and associated products and value adding services delivered under this contract to other parties for further analysis.

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<sup>2</sup> Countries covered by the European Neighbourhood Policy are Algeria, Israel, Occupied Palestine Territory, Armenia, Jordan, Syria, Azerbaijan, Lebanon, Tunisia, Belarus, Libya, Ukraine, Egypt, Moldova, Georgia and Morocco [http://eeas.europa.eu/enp/index\\_en.htm](http://eeas.europa.eu/enp/index_en.htm).

## **2. SERVICE INTERFACE AND TRANSMISSION TO THE EODC**

### **2.1 Deliveries from the Contractor to EMSA**

- 2.1.1.1 The External Interface Control Document (EICD) specifies the interface to be implemented between the Earth Observation Data Centre (EODC) and the Service Provider.
- 2.1.1.2 A new version of the EICD will be released within the context of the next version of EODC. Release of the new version of the EODC is currently foreseen for September 2015. The new version of the EICD shall be used for the implementation of the interface by the contractor (Module 1).
- 2.1.1.3 The current version of the EICD (v1.3.4) referred to in Appendix A is available upon request by sending an email to the dedicated email address for this procurement procedure.
- 2.1.1.4 Minor changes to the EICD shall be considered as part of the maintenance of the interface by the Contractor. Examples of such minor changes could be adding an element to an XML file or changing a list of values for an element.
- 2.1.1.5 New version releases of the EICD to which the Contractor must adhere, shall be considered as a new development (Module 3).
- 2.1.1.6 When a new version of the EICD is released, there is a transition period during which the EODC still accepts products delivered in the previous EICD format.
- 2.1.1.7 The delivery of data packages by the Contractor shall be performed using a secured Internet connection with IP filtering.
- 2.1.1.8 EMSA reserves the right to change this security implementation (for instance to 2-way SSL).
- 2.1.1.9 For each data package, the Contractor shall generate an MD5 checksum that will be used to monitor product delivery integrity.
- 2.1.1.10 The transfer of each a data package is defined in the EICD and includes following:
  - a) The Contractor shall call a specific synchronous web service providing the following elements: filename of the data package, service ID, and MD5 of the file to be transmitted.
  - b) If the answer of the service is positive, the Contractor shall start the FTP transfer of the file.

#### **2.1.2 EO image products information model**

- 2.1.2.1 EO satellite image products shall be described using the Geography Markup Language (GML) application schema for EO products as defined by the Heterogeneous Mission Accessibility (HMA) interface specifications.

2.1.2.2 The HMA standards are under configuration management and are based on the resolutions system of the HMA Architectural Working Group (AWG). The Contractor shall design the EO image product package by taking into account the developments of these standards.

2.1.2.3 Below, in Fig. 1, is a representation of the layered view of the O&M EO products application schema approach as described in the Open GeoSpatial Consortium (OGC) standard Earth Observation Metadata profile of Observations & Measurements document<sup>3</sup>.

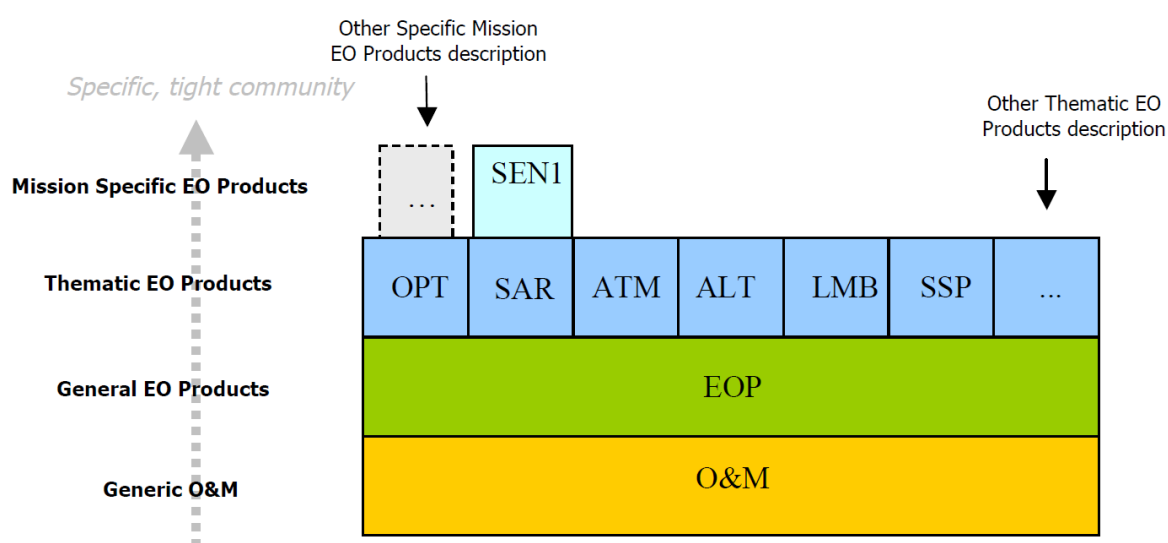


Figure 1 A layered view of O&M EO products data

<sup>3</sup> <http://www.opengis.net/doc/IS/om-eo-metadata>. Document reference OGC 10-157r3



2.1.2.4 For further information regarding the GML application schema of EO products metadata standards please refer to:

- a) <http://wiki.services.eoportal.org/tiki-index.php?page=HMA+Configuration+Management+Table>

## 2.2 Data transmission and Telecommunications network

### 2.2.1 Network provided by the Contractor

- 2.2.1.1 The delivery time of products from the Contractor will be determined when the products are available at EMSA premises.
- 2.2.1.2 The Bidder has to specify a network connection to EMSA enabling the delivery of the data as specified in this tender specification. Any technology with a sufficient bandwidth can be proposed.
- 2.2.1.3 The Bidder must specify a network connection with a minimum bandwidth of 100 Mbit/s.
- 2.2.1.4 The Bidder has to specify a secondary (back-up) communication link to the EODC via the internet, in the case of technical failure of the primary communication link.
- 2.2.1.5 Whether this service is managed by the Contractor, or sub-contracted to a telecommunications service provider, it shall be a fully managed service including all necessary circuit, hardware and software rental and maintenance for the duration of the contract.
- 2.2.1.6 The Contractor shall bear all costs (set-up, maintenance, operation and the fee's to the communication service providers) for data transfer to EMSA premises.
- 2.2.1.7 The data security concept shall be described in the Bid. As a minimum the Contractor shall use firewalls in conjunction with the encryption of data for data security.
- 2.2.1.8 The Contractor shall perform standard virus checking, anti-hacking and network security procedures on all messages to prevent malicious attacks.
- 2.2.1.9 EMSA reserves the right to reject network solutions if they are not compatible with the EMSA facilities or the EMSA IT landscape as described in Tender Enclosure I - Part F, EMSA ICT Technical Landscape.

### 2.2.2 Use of GEANT

- 2.2.2.1 EMSA has a connection to the European R&E network GEANT (<http://www.geant.net/>) via the “National Research and Education Networks” (NREN) which provides a shared bandwidth transfer of up to 1 GBit/s and a guaranteed bandwidth of 250 Mbit/s. The Contractor may, through the local NREN, connect to the Research & Education network. With the availability of the guaranteed, high bandwidth and cost effective GEANT solution, the data transmission time contributes only marginally to the overall delivery time.
- 2.2.2.2 The Contractor may, through the local NREN, connect to the R&E network
- 2.2.2.3 If the Contractor decides to use the R&E network, the Contractor has to bear only the costs to the next NREN node (set-up, maintenance, operation and communication cost to the next NREN) and potential fees of the local NREN. The communication to the local NREN must also have a bandwidth of a 100Mbits/s.
- 2.2.2.4 In order for the delivery of all products (incl. satellite images and associated metadata) to be done consistently within the timescales identified, the Contractor will be responsible for the telecommunications services between their data-centre and EMSA.
- 2.2.2.5 If the Contractor is using the R&E network as the primary network connection to the EO DC, and in case of a technical failure of the R&E network, the Contractor shall use his backup internet connection instead.
- 2.2.2.6 Service Providers are responsible for investigating any transmission delays that could originate from the network.

### **2.2.3 Transfer protocols**

- 2.2.3.1 The Contractor shall be able to support sFTP transfer protocol.
- 2.2.3.2 The Contractor shall be able to support bulk data transfer protocols including Grid FTP. This is expected to be the preferred transfer protocol.

### **2.2.4 System availability**

- 2.2.4.1 The Bidder shall describe contingency measures in case of system failures which may impact the EO service chain.
- 2.2.4.2 The health of the systems, which are part of the service chain, shall be permanently checked by the Contractor and shall be reported to the EO DC through a periodic system status report indicating availability of the system. The default rate for this check is 30 minutes but can be changed on request and in agreement with the Agency.

### **3. SATELLITE IMAGES (LICENCES AND IMAGE PRODUCTS)**

#### **3.1 Relevant missions**

- 3.1.1.1 The following satellite missions are of interest to the Agency: Worldview-1, Wordview-2, Worldview-3, Worldview-4, GeoEye-1, SPOT 6/7 and Pleiades 1A/1B. This list of satellite missions should not be considered exhaustive or exclusive.
- 3.1.1.2 The Contractor shall provide very high resolution (VHR) and high resolution (HR) optical image products acquired from satellite based optical sensors.
- 3.1.1.3 Products with a spatial resolution less than 1m [VHR1] and a spatial resolution 1m to 4m [VHR2] are of most interest to the Agency.
- 3.1.1.4 Products with a spatial resolution from 4m to 10 m [HR1] and from 10m to 30m [HR2] are of less interest to the Agency but may be requested occasionally.
- 3.1.1.5 Satellite based optical sensors typically have panchromatic and multispectral spectral bands.
- 3.1.1.6 The spectral band panchromatic is used by the Agency to classify if a satellite mission can provide products from the spatial resolution classes VHR1, VHR2, HR1, HR2.
- 3.1.1.7 Different band combinations are used to create image products such as multispectral (including thermal bands), panchromatic, pan-sharpened and composite products.

#### **3.1.2 Very High Resolution (VHR-1)**

- 3.1.2.1 The Contractor shall be able to provide image products with a spatial resolution from 0.3 m to 1 m [VHR1].
- 3.1.2.2 VHR1 products may include both multispectral and panchromatic bands. Multispectral bands should include at least red, green, blue and near infrared.
- 3.1.2.3 The Contractor shall be able to provide imagery from at least three missions meeting the VHR1 resolution and band type criteria (panchromatic band). Only missions that can meet the NRT delivery requirements as defined in 6.2.4 are eligible in terms of VHR1 mission count.
- 3.1.2.4 Providing imagery and services for more than three VHR1 missions is advantageous.
- 3.1.2.5 The Bidder shall provide detailed information on the supported missions and relevant products that can be delivered associated with each mission. The Bidder shall describe which VHR1 sensors he can provide within his offer according to product class.

- 3.1.2.6 The Bidder shall provide detailed information for each supported sensor on the spatial coverage, the repeat cycle of the satellite, the duty cycle of the sensor and possible steering capabilities in order to increase the coverage by pinpointing to a certain location.

### **3.1.3 Very High Resolution (VHR-2)**

- 3.1.3.1 The Contractor shall be able to provide image products with spatial resolution of between 1 m and 4 m [VHR2].
- 3.1.3.2 VHR2 products may include multispectral and panchromatic bands. Multispectral bands should include at least red, green, blue and near infrared.
- 3.1.3.3 The Contractor shall be able to provide imagery from at least two missions meeting the VHR2 resolution and band type criteria (panchromatic). Only missions that can meet the NRT delivery requirements as defined in 6.2.4 are eligible in terms of VHR2 mission count.
- 3.1.3.4 Providing imagery for more than two VHR2 missions is advantageous.
- 3.1.3.5 The Bidder shall provide detailed information on the supported missions and relevant products that can be delivered associated with each mission. The Bidder shall describe which VHR1 sensors he can provide within his offer according to product class.
- 3.1.3.6 The Bidder shall provide detailed information for each supported sensor on the spatial coverage, the repeat cycle of the satellite, the duty cycle of the sensor and possible steering capabilities in order to increase the coverage by pinpointing to a certain location.

### **3.1.4 High Resolution (HR-1)**

- 3.1.4.1 The Contractor shall be able to provide optical missions image products with spatial resolution of between 4m and 10m [HR-1].
- 3.1.4.2 HR1 products may include multispectral and panchromatic bands. Multispectral bands should include at least red, green, blue and near infrared.
- 3.1.4.3 The Contractor shall be able to provide imagery from at least one HR1 missions meeting the resolution criteria and band type criteria (panchromatic). Only missions that can meet the NRT delivery requirements as defined in 6.2.4 are eligible in terms of HR1 mission count.
- 3.1.4.4 Providing imagery for more than one HR1 mission is preferable.
- 3.1.4.5 The Bidder shall provide detailed information on the supported missions and relevant products that can be delivered associated with each mission. The Bidder shall describe which HR1 sensors he can provide within his offer according to product class.

- 3.1.4.6 The Bidder shall provide detailed information for each supported sensor on the spatial coverage, the repeat cycle of the satellite, the duty cycle of the sensor and possible steering capabilities in order to increase the coverage by pinpointing to a certain location.

### **3.1.5 High Resolution (HR-2)**

- 3.1.5.1 The Contractor shall be able to provide optical missions image products with spatial resolution of between 10m and 30m [HR-2].
- 3.1.5.2 HR2 products may include multispectral and panchromatic bands. Multispectral bands should include at least red, green, blue and near infrared.
- 3.1.5.3 The Contractor shall be able to provide imagery from at least one HR2 mission meeting the resolution criteria and band type criteria (panchromatic). Only missions that can meet the NRT delivery requirements as defined in 6.2.4 are eligible in terms of HR2 mission count.
- 3.1.5.4 The Bidder shall provide detailed information on the supported missions and relevant products that can be delivered associated with each mission. The Bidder shall describe which HR2 sensors he can provide within his offer according to product class.
- 3.1.5.5 The Bidder shall provide detailed information for each supported sensor on the spatial coverage, the repeat cycle of the satellite, the duty cycle of the sensor and possible steering capabilities in order to increase the coverage by pinpointing to a certain location.

## **3.2 Order desk and satellite tasking capabilities**

- 3.2.1.1 The Contractor shall provide an order desk for routine tasking services during business hours (08:00-18:00 UTC), Monday to Friday.
- 3.2.1.2 The Contractor shall provide an order desk for short notice tasking services 24 hours per day, 7 days per week, 365 days of the year.
- 3.2.1.3 The following tasking types are defined by the Agency:
- a) Routine tasking - applies to orders submitted to the Contractor for acquisitions up to 24 hours before the acquisition time.
  - b) Short notice tasking - applies to orders submitted to the Contractor for acquisitions in less than 24 hours before the acquisition time.
  - c) Archive tasking - is when an order is placed for an already acquired image, stored in the Contractor's existing archive.
- 3.2.1.4 The Bidder shall provide a detailed description of their satellite tasking capabilities, per tasking type, discriminating clearly between the missions that can be tasked locally and those that will be tasked via a third party

- 3.2.1.5 For each mission, the Bidder shall describe the minimum tasking times, including timing for programming and uploading tasking when within the visibility of the satellite, and how often the satellite tasking plan can be updated. It is advantageous if the Bidder can provide shortened tasking times.

For each mission, the Bidder shall propose an ordering procedure, addressing the tasking types described in this section, with clear timelines, including cut-off times for submitting orders to their order desk. The possibility of a shorter cut-off time for submitting orders to their order desk is considered beneficial for the Agency.

- 3.2.1.6 For each mission, the Bidder shall propose an ordering procedure, addressing the tasking types described in this section, with clear timelines, including cut-off times for submitting orders to their order desk. The possibility of a shorter cut-off time for submitting orders to their order desk is considered beneficial for the Agency.
- 3.2.1.7 The Contractor shall provide contingency planning in case of non-functional Ground Stations (back-up chain).

### 3.3 Priority

- 3.3.1.1 The Bidder shall provide information on the priority classes available per mission and demonstrate how EMSA orders shall be managed in relation to other clients.
- 3.3.1.2 When tasking the satellites, the Contractor shall ensure EMSA orders have the highest commercial priority.

### 3.4 Data reception and NRT processing

- 3.4.1.1 The Bidder shall describe their Ground Station(s) and data processing facilities for the satellite missions offered in their bid.
- 3.4.1.2 The Bidder shall submit in electronic format, a GIS shapefile (ESRI), in WGS-84, with the maximum Ground Station coverage (communication cone), for the satellite missions offered, for ascending and descending passes which shall indicate the possible capacity for acquisition of images (taking into account obstacles which would obstruct the antenna line of vision).

- 3.4.1.3 The Bidder shall describe the downlink scenario possible with the mission, e.g. direct downlink or via on-board recorders, and the associated downlink times and the network connections used to retrieve the data to their premises, indicating the delay introduced in the operational chain.
- 3.4.1.4 The Bidder shall describe existing backup mechanisms in place in case of technical problems with the ground station reception and processing facilities. Any delay resulting from a switch to the back-up mechanism shall be indicated.
- 3.4.1.5 The Bidder shall describe in detail the processing chain for each mission. The description shall include the software and hardware used and shall include the algorithms used.
- 3.4.1.6 The Bidder shall be able to process multiple products from different missions in parallel whilst respecting time constraints.
- 3.4.1.7 The Bidder shall provide the times required for processing and delivery of products for the different missions. The times are to be measured from acquisition stop time. The Contractor shall meet the timelines as specified in their Bid.

- 3.4.1.8 During the implementation of the contract, the Contractor shall be requested to provide information describing spatial coverage, repeat cycle, duty cycle and possible steering capabilities for each mission and this shall be provided in a format and structure that can be handled by generic feasibility planning software 'SAVOIR'.

### 3.5 Feasibility Planning and Ordering

- 3.5.1.1 The Contractor shall be requested to prepare a feasibility plan, for one or more satellite acquisitions/activations, based on a request from EMSA according to pre-defined criteria, including but not limited to: one or more Areas of Interest (AOI), time window, spatial resolution class and NRT delivery requirement.
- 3.5.1.2 Area of Interest (AOI) of at least 200 km<sup>2</sup> shall be always ensured.
- 3.5.1.3 The Contractor shall provide a feasibility plan using the EMSA planning file format as described in the EICD.
- 3.5.1.4 The bidder shall use weather forecast to optimise the feasibility plan.
- 3.5.1.5 The Contractor shall provide feasibility planning feedback to EMSA for routine and short notice tasking in less than 2 hours after receiving the initial request for services. These shall be business hours in case of routine tasking.
- 3.5.1.6 The POR (Planning and Ordering) interface of the EMSA EODC is the reference for the core activities to be performed for ordering process.
- 3.5.1.7 The Contractor shall use the POR interface of the EODC. The POR will be used to communicate EMSA's requests to the Contractor. Information will include, but not be restricted to:
- a) Tasking type (Routine, Short notice, Archive)
  - b) Ordering Type: Normal, Cloud-Cover Protection, Pinpointing, Stereo, Multi Mission, Constellation, Persistent (Stereo?)
  - c) Area of interest (AOI) (centre coordinates and/or polygon)
  - d) Area size (in km<sup>2</sup>)
  - e) Acquisition time interval (start date/time – stop date time)
  - f) Number of opportunities to be acquired over AOI (frequency and total number within a time window)
  - g) Requested satellite mission or missions
  - h) Delivery NRT requirement
  - i) Product level



- j) Imaging Bands
- k) File format (i.e. Native file, JPG2000, GeoTIFF, etc.).
- l) Optional :Pyramidal view
- m) Optional: Mapping projection
- n) Cloud cover protection threshold (in %) according to Quality parameters:
  - a. Total cloud cover protection
  - b. Area Min Sun Elevation
  - c. Area Max Off Nadir Angle
  - d. Total Max Off Nadir Angle

3.5.1.8 The Contractor shall use the POR to exchange information on tasked scenes.

- a. Communication from the Contractor to EMSA which services are confirmed or not confirmed (possible conflicts with pre-existing acquisitions) and can be tasked
- b. Communication from EMSA to the Contractor on services that should be cancelled (after an EMSA order has been accepted)
- c. Communication from the Contractor to EMSA if acquisitions are cancelled at a later stage or if a satellite anomaly at time of acquisition/downlink occurred. This shall also be communicated by email to EMSA.

3.5.1.9 Communication from the Contractor to EMSA for a cancellation or anomalies should include:

- a. Type of issue (i.e. satellite manoeuvre, planning conflict, Antenna problem, processing chain issue, network, etc.)
- b. Technical description of the issues, with as much details as possible at the time of the communication. Additional information should be provided as soon as it is available.
- c. Preventive and corrective actions that were taken
- d. Estimated time of anomaly resolution (if still on-going).

## 3.6 Cancellation of orders and anomalies

3.6.1.1 EMSA retains the right to cancel free of charge, images and value added products up to 24 hours before acquisition time.

- 3.6.1.2 It is an advantage if the Bidder can offer EMSA the right to cancel free of charge in less than the equivalent time for short notice ordering per mission. The deadline for cancellation should reflect the time limit for ordering type.
- 3.6.1.3 The Contractor shall inform EMSA 24 hours before satellite access regarding any potential risk of or expected cancellation due to technical or other reasons.
- 3.6.1.4 Cancellations by the Contractor which have not been notified to EMSA less than 24 hours before acquisition time will be subject to financial penalties unless otherwise justified.
- 3.6.1.5 If necessary the Contractor shall cancel orders using the EODC portal.
- 3.6.1.6 If the Contractor fails to deliver an image or product due to an satellite or ground station anomaly the Agency shall not be charged.
- 3.6.1.7 If necessary the Contractor shall report an anomaly using the EODC portal.

## 3.7 Planning modes

### 3.7.1 Pinpointing Planning

- 3.7.1.1 Flexibility and responsiveness is a key element for the provision of EO based information for maritime surveillance and security. Very often intelligence or information from other Earth Observation sources may highlight activities in specific locations at short notice. In these cases the satellite should be able to perform a last minute adjustment to pinpoint a specific location. Some optical satellites have flexible sensors with a steering capability which may allow this last minute readjustment of the footprint.
- 3.7.1.2 At ordering time, an initial AOI will be defined (AOI\_initial) and the satellite access window shall be reserved by the Contractor based on this area.
- 3.7.1.3 The adjustment of the final footprint shall be possible by sending the updated area (AOI\_final) to the Contractor up to 2 hours before acquisition time (maximum cut-off time).
- 3.7.1.4 The AOI\_final shall contain the same shape and size than the initial AOI. Only the centre position will be different.
- 3.7.1.5 The Contractor shall provide an indication of the area where the pinpointing has a high probability of being successful (AOI\_pinpointing). This refers to the area on the ground within which the centre of the AOI\_final can be shifted. This information shall be sent as a shapefile.
- 3.7.1.6 The Contractor shall send the AOI\_pinpointing as soon as possible, after accepting an order. A maximum time interval of two hours after order acceptance is requested to deliver the AOI\_pinpointing .

- 3.7.1.7 If the acquisition of the updated AOI (AOI\_final) is not possible, the original AOI (AOI\_initial) will be acquired and delivered. The Contractor shall provide a pinpointing service as described in the previous requirements, and describe the cut-off times for sending the AOI\_final and the time interval to send the AOI\_pinpointing.
- 3.7.1.8 A cut off time for sending the AOI\_final of less than two hours is advantageous.
- 3.7.1.9 The Bidder shall describe a solution for pinpointing, including an appropriate web interface, and describe in detail its capability to accept Pinpointing Orders
- 3.7.1.10 The Bidder shall indicate the maximum cut-off times for worldwide pinpointing and/or within specific areas such as the ground station visibility mask.
- 3.7.1.11 The Bidder shall describe if and how a weather forecast is used at the time of the pinpointing.

### **3.7.2 Multi Mission Planning**

- 3.7.2.1 The goal of Multi Mission Planning is to deliver all possible acquisitions to EMSA for a specific AOI, during a limited period of time, by tasking at least two different satellites.
- 3.7.2.2 The Bidder shall describe a solution for Multi Mission Planning and describe in detail its capability to accept Multi Mission Orders indicating which satellites can be made available.

### **3.7.3 Stereo/Persistent Planning**

- 3.7.3.1 Persistent monitoring allows multiple images over the same area in rapid succession on a single pass to calculate the speed and direction of a moving target. Information on speed at ground and course over ground of vessels is extremely important for maritime surveillance. This satellite acquisition mode may assess trajectories, speed and direction of moving targets.
- 3.7.3.2 The goal of the Stereo/Persistent planning is as well to acquire more than one data set over the same AOI on the same day, like Multi Mission Planning. However, the main difference is that the same sensor shall be used. In this respect, it cannot be used to backup an acquisition like Multi Mission Planning.
- 3.7.3.3 As only one sensor is collecting the same area on the same day in the same pass, the time difference between the two (or more) acquisitions will be very short and this type of orders is a value adding for example for estimating the speed/route of detected moving targets.
- 3.7.3.4 The Bidder shall describe a solution for Stereo/Persistent planning indicating which satellites can be made available.

### **3.7.4 Data Take Opportunities (DTO) planning**

- 3.7.4.1 The goal of DTO Planning is to maximise the reliability of a successful delivery and minimise the impact of last minute cancellations, non-acquisitions or satellite unavailability. This is achieved by allowing flexibility on the selection of the satellite mission that can be used to acquire the image. Instead of restricting the sensor at the time of the order, by indicating a unique satellite, it is possible for the Contractor to use any sensor from a pre-agreed list.
- 3.7.4.2 DTO Planning provides a back-up mechanism like Multi Mission Planning that allows replacement of cancelled passes by another collection opportunity on another satellite access window of a different satellite.
- 3.7.4.3 Only one image shall be delivered to EMSA using the DTO approach unless otherwise agreed in advance with the Agency.
- 3.7.4.4 When placing a DTO Order, it shall be indicated by EMSA which list of sensors can be considered by the Contractor for the acquisition (example: all missions made available by the Contractor OR all missions providing products within a resolution class, like VHR2). A list shall contain a minimum of two satellites.
- 3.7.4.5 It shall also be possible to provide a priority value for each of the missions, in order to indicate the preferable one.
- 3.7.4.6 The Bidder shall describe a solution for DTO planning indicating and describe in detail its capability to accept Constellation Orders. It shall indicate which lists of satellites can be made available.
- 3.7.4.7 The Bidder shall describe if and how a weather forecast is used when planning the time of the acquisition.
- 3.7.4.8 It shall be possible to combine DTO and Multi Mission Planning.

### **3.7.5 SAR Aligned Planning**

- 3.7.5.1 The goal of SAR aligned Planning is to take advantage of the synergies that can arise from having two different imaging systems (SAR and optical) acquiring data over the same area. An example can be to use SAR vessel detection as trigger for pinpointing.
- 3.7.5.2 In a SAR tuned planning, EMSA provides the SAR feasibility plan in the planning file format described in the EICD, and the Contractor takes it into account when producing the feasibility plan, or at pinpointing time.
- 3.7.5.3 The Contractor shall propose a SAR tuned Planning, indicating which potentialities can arise from SAR/optical synergies.

### **3.7.6 Other planning modes**

- 3.7.6.1 The Bidder is invited to propose other planning modes relevant for maritime surveillance purposes.

### 3.8 Cloud Cover Protection Planning

- 3.8.1.1 The scope of Cloud Cover Protection planning is to ensure an acquisition over a specific AOI with a maximum of cloud-free area.
- 3.8.1.2 The threshold for the maximum percentage e.g. 20%, of area covered with clouds will be specified by EMSA when placing this type of orders.
- 3.8.1.3 In case an image cannot be acquired in compliance with the cloud coverage protection threshold, it shall not be delivered or charged to EMSA.
- 3.8.1.4 The Bidder shall describe its capabilities in terms of Cloud Cover Protection Planning, indicating thresholds and any constraints (for example a minimum time window).

### 3.9 Product levels

- 3.9.1.1 EMSA considers the following basic product levels:
  - a) Geometric referenced (unmapped)
  - b) Geometric referenced (mapped)
  - c) Ortho rectified products
- 3.9.1.2 Geometric referenced products shall be projected to constant base elevation, which is calculated on the average terrain elevation.
- 3.9.1.3 Ortho rectified products may be requested occasionally by the Agency for some Coastal areas. These products shall have a digital elevation model (DEM) applied. The DEM model shall be at a scale appropriate to the resolution of the images, and shall be used to normalize for topographic relief with respect to the reference ellipsoid.
- 3.9.1.4 The Bidder shall describe the product levels available for each of the supported missions.
- 3.9.1.5 For Ortho rectified products, the Bidder should describe their NRT delivery capability for such products. An additional fee for Orto-rectified products may be applied.

### 3.10 Basic processing

#### 3.10.1 Imaging band options

- 3.10.1.1 The Contractor shall be able to deliver the following band options as part of the basic processing services.
  - a) Panchromatic (PAN) - Products include only one band usually with the highest resolution in greyscale.

- b) Multispectral (MS) - Products include all available multispectral bands, and at least Red, Green, Blue and Near Infrared.

3.10.1.2 The Contractor shall be able to deliver image products resulting from band combinations, for example Pan-sharpened products based on multispectral imagery but with panchromatic resolution.

3.10.1.3 Image band options to be applied to the specific products are defined during the ordering process.

3.10.1.4 The Bidder shall describe in detail the type of radiometric correction applied to each product. These can include:

- a) Atmospheric correction
- b) Sun-Sensor Geometry correction
- c) Other relevant sensor corrections

3.10.1.5 The Contractor shall ensure that the products delivered are subjected to radiometric correction.

### **3.10.2 Geometric correction and referencing**

3.10.2.1 Geometric correction (also referred to as geo-rectification) is the removal of distortions from sensor geometry which are preventing overlay with map layers, and comparison between image scenes.

3.10.2.2 These corrections shall account for systematic distortions such as scan skew, mirror-scan velocity, panoramic distortion, along-scan distortion (pixels at edge are slightly larger) and earth rotation etc. Geometric corrections shall also include some non-systematic distortions such as altitude and attitude variations in satellite.

3.10.2.3 Geometric referencing is the conversion of pixel coordinates to ground coordinates. As a further step images can be mapped to a predefined projection.

3.10.2.4 The Bidder shall specify what geometric corrections and references are applied to the delivered products for each satellite and mode if relevant.

3.10.2.5 The Bidder shall provide the demonstrated geolocation accuracy without ground control. The bidder shall indicate if this geolocation is immediately available for products delivered in NRT. If not, the bidder shall indicate the demonstrated geolocation accuracy without ground control for products delivered in NRT.

3.10.2.6 For images where ground control is possible, the contractor shall ensure a geolocation better than 20 m for products delivered in NRT. It is advantageous if geolocation is better than 5 m.

3.10.2.7 The Bidder shall describe the processes/algorithms to assign the ground coordinates to the pixels in the image.

3.10.2.8 The Contractor shall apply the requested geometric referencing and correction and correction operations linked with each specific product level.

3.10.2.9 All products shall be delivered in WGS84 World Geodetic System 1984 (EPSG 4326<sup>4</sup>). If the Agency requests mapped products then the following projections shall be supported:

- a) Universal Transverse Mercator
- b) Universal Polar Stereographic (for Polar Regions)
- c) Mercator

### 3.10.3 Image quality

3.10.3.1 This section contains requirements regarding the image products.

3.10.3.2 Contractors shall provide on a periodical basis (minimum every 3 months) a quality report on every image product delivered.

3.10.3.3 Bidders shall describe their methodology for image quality analysis. At a minimum this analysis shall assess the quality of the image products in terms of

- a) Cloud cover: The Contractor shall provide cloud-cover (in percentage) for all delivered products
- b) Geometric Quality: The Contractor shall provide the RMS of any delivered product and if there is any deviation to the ordered resolution
- c) Radiometric Quality: The Contractor shall provide information on any radiometric errors associated with the delivered product.
- d) Data Integrity: The Contractor shall specify any missing data or data errors associated with the each delivered product

3.10.3.4 The Contractor shall ensure that every image product undergoes quality control during operational production. The main purpose of this control is:

- a) Support the decision if the product is acceptable for service delivery or not
- b) Provide an estimation of the position accuracy of the product
- c) Assess if product meets planned coverage (coverage compliance)

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<sup>4</sup> The EPSG Geodetic Parameter Dataset is a structured dataset of Coordinate Reference Systems and Coordinate Transformations



- 3.10.3.5 The outcome of this analysis shall be documented and delivered to EMSA. Within the delivery of each basic service two products shall be included:
- a) Quality Notification (QNO).
  - b) Quality Report (QUA).
- 3.10.3.6 The QNO product shall state if the product has been considered suitable for service delivery or not.
- 3.10.3.7 The QUA product shall provide the coverage compliance as a percentage as described in section 3.10.3.8.
- 3.10.3.8 Coverage compliance shall refer to how well the initial planned coverage is met, by comparing the delivered image products to what has been planned. Coverage compliance shall be expressed as the percentage of planned coverage.
- 3.10.3.9 At a later stage of the service EMSA may implement of a quality control system that includes additional image quality measures. These may be implemented as further developments under Module 3. Therefore the Contractor may be requested by EMSA to include all quality indicators as part of the QUA.

### 3.11 Formats for image products

- 3.11.1.1 The Contractor shall provide all image products in the format(s) defined in the current and future versions of the EICD.
- 3.11.1.2 The Contractor shall be able to provide georeferenced imagery in GeoTIFF format.
- 3.11.1.3 The Contractor shall be able to provide georeferenced imagery in JPG2000 format. The format shall abide to ISO/IEC 15444. Specific parameters of the JPG2000 implementation shall be agreed during in Module 1 implementation.
- 3.11.1.4 The Contractor shall be able to provide the imagery in native file format.
- 3.11.1.5 Upon the request of EMSA the Contractor shall be able to provide mapped georeferenced imagery as a pyramidal file. This file can contain one or multiple bands, according to the tasking options defined by EMSA. The bands mentioned shall be well described regarding content (i.e. band 1 = red channel, band 2 = green channel, band 3 = blue channel, band 4 = NIR channel, etc.). Pyramid file options are defined during the ordering process.
- 3.11.1.6 In case the ordered image format will not include metadata, this shall be sent as an extra, individual product (ex: IMD file).
- 3.11.1.7 EMSA shall define the required format of the image, as an option, during the ordering process.

## 4. VALUE ADDED PRODUCTS

### 4.1 General requirements

- 4.1.1.1 Value added products are provided based on image products as defined in Chapter 3
- 4.1.1.2 The pricing of the value added products shall be independent of the mission (base data product used).
- 4.1.1.3 If, for some reason, the value added product is not delivered as ordered for a specific acquisition/activation there will be no charge to Agency for any image costs including licences.
- 4.1.1.4 The Contractor may be requested to provide value adding services for products provided by a third party.
- 4.1.1.5 More than one value added product can be requested for the same image.
- 4.1.1.6 The Agency may decide to provide AIS data to the Contractor to improve the quality of the Added Value Services. To that end the Contractor is obliged to respect any and all non-distribution requirements that that the Agency places on the usage of such data. Failure to respect such obligation will jeopardise the continuity of the Contract and may be used as grounds for its termination.

### 4.2 Targeted Vessel Detection

- 4.2.1.1 The Contractor shall provide a value adding service for targeted vessel detection.
- 4.2.1.2 The Bidder shall describe in detail the offered targeted vessel detection value adding service chain including algorithms and analysis procedures.
- 4.2.1.3 This added value product shall detect vessels in the image. ~~(with specific characteristics i.e. small vessel targets (5-15 meters in length)).~~ *(EMSA may communicate to the Contractor required characteristics of the vessel targets, for example size of vessel, type or types of vessel to be detected, heading of vessel).*
- 4.2.1.4 The Contractor shall deliver a vessel detection GML file as specified in the EICD.
- 4.2.1.5 The vessel detection parameters reported in the vessel detection GML shall include:
  - a) Position information
    - date and time of vessel detection in UTC calculated from acquisition time and vessel position on the image (units: ISO8601 format)
    - position of the detection expressed as the latitude and longitude of the centre co-ordinates of detected vessel (units: decimal degrees).

- position accuracy error range to express any uncertainty in the determination of the vessel position.

b) Movement information

- vessel heading (units: degrees °; minimum: 0; maximum: 359 0=360=Geographical North)
- vessel speed classification (fast/slow). Classification subject to revision and to be defined by EMSA in EICD.
- vessel speed over ground (SOG) (units: expressed in m/s if available)
- error in the estimation of the vessel speed over ground (SOG)
- vessel course over ground (COG) if available

c) Vessel details

- vessel length class (units: very small <10m, <15m small, <20m medium, <50m medium-large, large <100m, very large >100 m). Classification subject to revision and to be defined by EMSA in EICD.
- vessel length/beam (units: m)
- error in the estimation of vessel length (units: m)
- vessel width/breadth (units:m)
- error in the estimation of vessel width (+/-m)
- vessel type taken from a fixed list of values. The final list will be in the EICD but will evolve based on operational experience.
- For example
  - Oil tanker
  - Warship or naval auxiliary
  - NLS/Chemical/Gas Tanker
  - Pleasure yacht
  - Multipurpose / General Cargo vessel
  - Fishing vessel
  - Skiff
  - Inflatable rubber boats / zodiac
  - tugs
  - Passenger ship
  - Other types of ships

d) Vessel identification:

Identification elements (i.e. IMO, MMSI and preferably Name, Call Sign) must be provided. If AIS data used, the MMSI element shall always be provided. Pending operational relevance, the Agency might provide an alternative source of AIS data for integration in the analysis.

- IMO number
- AIS MMSI
- Vessel name
- Vessel call sign
- Confidence level of vessel detection
- Order of priority. If there is more than one possible identified vessel coming from vessel traffic information systems, corresponding to one vessel detection, then all possible candidates shall be reported by order of priority. The definition of order of priority is subject to revision and to be defined by EMSA in the EICD.

- 4.2.1.6 The contractor must impose no limitations on the number of vessels that it can detect in one image nor any associated cost implication.

### 4.3 Targeted activity detection

- 4.3.1.1 The purpose of targeted activity detection is to perform satellite detection of specific features that are linked with activities of interest to EMSA.
- 4.3.1.2 The Contractor shall provide a value adding service for targeted activity detection.
- 4.3.1.3 The Bidder shall describe in detail the offered targeted activity detection value adding service chain including algorithms and analysis procedures.
- 4.3.1.4 EMSA will provide to the Contractor, during tasking, the types and sub-types of targeted activity detection to be performed. More than one type of targeted activity detection may be performed on the same image. These will be defined in the relevant order.
- 4.3.1.5 The following list indicates the type(s) and sub-type(s) of targeted activity detection to be performed. The list is not exhaustive and is subject to revision and shall be defined by EMSA in the EICD.

a) Anti-Piracy

- Possible mother ship
- Skiffs on open water
- Skiffs on beach
- Hijacked ship
- Monitoring of activities/change detection along the coastline
- Rendezvous at sea, transfer between vessels

b) Fisheries Control

- Fishing vessel detection
- Fish cage detection
- Fish farm detection
- Fish trap detection
- Fish cage/fish net towed
- Catch unloading and transshipment monitoring

- Monitoring of fishing ports and landings
- IUU fishing vessels (black listed) monitoring

c) Anti- Trafficking

- Specific vessel detection
- Specific vessel in port
- Rendezvous at sea
- Detection of vessel adrift or 'ghost' ship
- Monitoring of remote ports, coast
- Monitoring of vessels loitering close to ports or to ships lines

d) Search and Rescue

- Object on water
- Vessel adrift
- Persons on the water
- Localization of non-reporting vessels

e) Pollution monitoring

- Large spill on the shore
- Large spill on open waters
- Spill in the vicinity of vessel grounding
- Spill from oil platform

f) Maritime border surveillance

- Detection of non-reporting vessels
- Specific vessel detection
- Specific vessel in port
- Vessel departing port
- Monitoring of remote ports, coasts

g) Beach Monitoring

- Detection of roads, paths

- Detection of stable structures on the beach (buildings, barracks)
- Detection of potential departure points
- Detection of potential aggregation points for illegal embarkation

4.3.1.6 EMSA will provide one or more Areas of Interest (AOI). These are the areas where the activity detection shall be performed.

4.3.1.7 EMSA will provide the priority of the AOI which shall indicate the order for analysis.

4.3.1.8 The Contractor shall provide the result of the targeted activity detection in a structured GML as specified in the EICD.

4.3.1.9 This GML file shall contain at least the following elements:

a) Targeted activity type

- The type of targeted activity to be performed. This is a dynamic list which shall evolve according to the needs of the service.
- The sub-type of targeted activity detection. This is a dynamic list which shall evolve according to the needs of the service.
- Text description of the request from EMSA
- Operators remarks-Text description of the activity reported by Service Provider
- Confidence level (low, medium, high) of activity detection
- A geo-referenced clip image shall be provided for each feature.
- Date and time of delivery

b) Position information of the activity

- Date and time of activity detection in UTC calculated from acquisition time and position on the image (units: ISO8601 format)
- Centre position of the activity detection expressed as the latitude and longitude of the centre co-ordinates of detected activity (units: decimal degrees).
- A position accuracy error range to express any uncertainty in the determination of the position of the activity
- Polygon describing the area extent of the reported activity

c) Vessels associated to the activity report

- There may be 1 or more vessels associated with this activity. For example a rendezvous at sea would normally involve a minimum of two vessels. For each vessel the following elements shall be provided in accordance with vessel detection information as described under 4.2.

d) Other feature associated to the activity report

- Text description of the feature associated with this activity, including any other information relevant for the specific object type
- Centre position of the feature detected expressed as the latitude and longitude of the centre co-ordinates of detected activity (units: decimal degrees).
- a position accuracy error range to express any uncertainty in the determination of the position of the feature.
- Size of feature ( $m/m^2$ )
- A geo-referenced clip image for each activity. The clip image shall be centred on the detected activity.

## 4.4 Change detection

- 4.4.1.1 Change Detection refers to the identification of differences between a reference image (Image\_REF) and other image(s) (image\_OTHER) over the same Area of Interest.
- 4.4.1.2 Basic Change Detection service: the change detection operation is applied once, between two images, the reference image and the other image.
- 4.4.1.3 Serial Change Detection service: the change detection operation is applied several times, on a series of pair of images, where the reference image is always the same.
- 4.4.1.4 Two different types of change detection can be requested:

**Change detection Type A:** Activity detection based.

Input: Activity detection analysis of the two images to be compared.

Description: A comparison is made between the detected activities of both images (ex: 'track on the beach').

Output: the following shall be delivered:

- a map raster file, containing the changed areas;
  - vector information containing the identified new/missing feature.
- For serial change detection, the provider shall also deliver the above outputs containing the merged results.



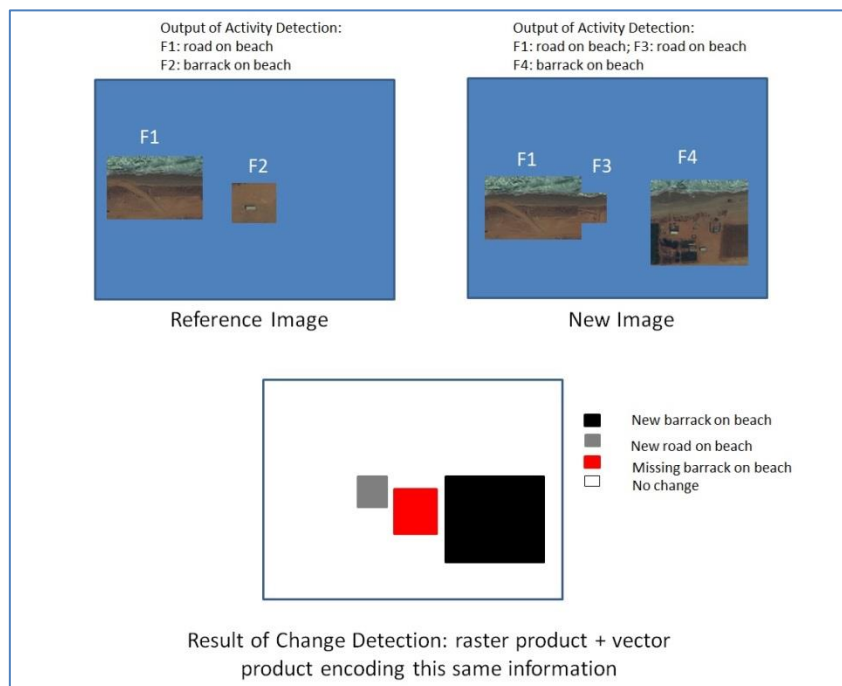


Figure 2 Example of Type A change detection on a coastal area

### Change detection type B: Algorithm based.

Input: Set of images.

Description: the change detection is performed on a raster (pixel) level, by applying an automatic algorithm to the set of images. The areas where a significant change is identified shall be analysed on the two images, and the type of feature corresponding to the change shall be identified ( e.g Fig. 2)

Output: the following shall be delivered:

- the map raster file, containing the changed areas;
  - and the vector information containing the identified new/missing feature.
- For serial change detection, the provider shall also deliver merged change detection product outputs.

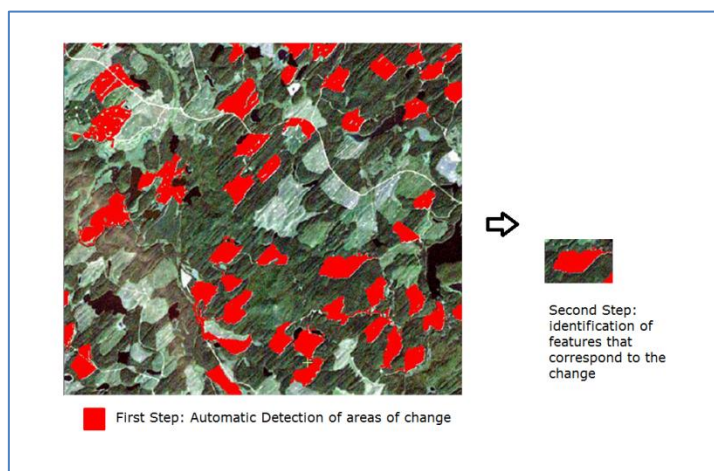


Figure 3 Example of Type B Change Detection on a coastal area.

- 4.4.1.5 When ordering the change detection service, EMSA will identify if it is service type (A or B) and the relevant images
- 4.4.1.6 The updated EICD will provide more detailed information on the implementation of change detection analysis.
- 4.4.1.7 Nevertheless there will be an initial period during which the Contractor will deliver change detection products in document /report format. This will enable both EMSA and the Contractor to refine the service based on operational experience.
- 4.4.1.8 Once the operational needs are sufficiently developed, the Contractor will implement a system to system service as described in an updated EICD. This will be covered under the Module 1 set-up activities and take place in 2016.

## 5. FURTHER DEVELOPMENTS

- 5.1.1.1 Further developments constitute work that needs to be undertaken due to changes in the service or product specifications, requested by EMSA, after the service has been accepted for operational performance under Module 1.
- 5.1.1.2 Further developments shall be performed under Module 3 of this contract as described in section 13.1.1.4.

## 6. SERVICE TASKING, DELIVERY AND REPORTING

### 6.1 Tasking Forms, Journaling, Reports, Non-conformances and Invoicing

#### 6.1.1 Tasking forms

- 6.1.1.1 At the end of the planning and ordering workflow, the planning is approved in the EODC by the Authorising Officer at EMSA.
- 6.1.1.2 The approval generates automatically digitally signed Task Forms. The date and time of approval by the Authorising Officer appears in the Task Form.
- 6.1.1.3 The information contained in the approved Task Form is the basis for ordering. Each individual acquisition in the Task Form is referenced by an individual order ID which is unique.
- 6.1.1.4 The actual time of acquisition might change between the time the Task Form is issued and the date of acquisition. The reference for the area to be imaged is the footprint of the image in the POR and not the start and stop time of acquisition. Such changes could be driven by the type of acquisition approach e.g. pin-pointing.
- 6.1.1.5 Reference detailed information on the service requested (image delivery, added value services) can be found in the POR and the JOU using the order ID.

- 6.1.1.6 At the same time a tasking form is approved, the service ID status changes to Tasked in POR and the GIS viewer.
- 6.1.1.7 EMSA will communicate to the Contractor(s) the Task Forms by email which will contain a request for the planned images and services of Module 2.

### **6.1.2 Journaling**

- 6.1.2.1 The tasked Contractor shall use the relevant interface of the (EODC Journaling - JOU) for monitoring the delivery of the products.
- 6.1.2.2 The EODC will allow the Contractor to access the JOU containing the list of all products ordered. For each service delivered, the JOU indicates the status, the service quality and the delivery time of each individual product expected for that service.
- 6.1.2.3 Contractor(s) shall have 96 hours after the expected delivery time to contest, through the JOU, information on delivered products and associated delivery times and quality.
- 6.1.2.4 96 hours after the expected delivery time the information on the JOU shall be "frozen".
- 6.1.2.5 Even after the status is frozen, EMSA and the Contractor(s) can still report errors on information contained in the JOU by using the comment field. As for a contest raised by the Contractor, an agreement has to be found between EMSA and the contractor.
- 6.1.2.6 EMSA marks products with status "final" that were not contested within the 96 hours delay or for which an agreement has been found.
- 6.1.2.7 Information in the JOU on products marked as final cannot be changed.
- 6.1.2.8 Time and quality information for products marked as final in the JOU serves as reference input for calculating the price and issuing the service report.

### **6.1.3 Reports**

- 6.1.3.1 EMSA will communicate to the Contractor(s) on a monthly basis by email, a report extracted from the financial system, which presents detailed information for each individual service, including on coefficients and prices. EMSA can deviate from the monthly time period if necessary.
- 6.1.3.2 The Contractor(s) will have 4 days after reception to agree to or contest the Report. Contest can only be related to the calculation of the service price itself.
- 6.1.3.3 If no disagreement has been communicated to EMSA in the time period referred above, the report shall be considered as agreed.

### **6.1.4 Non-conformances**

- 6.1.4.1 EMSA will issue non-conformance reports to the Contractor(s) if delivered products or services do not comply with the specifications or quality. Non-conformance reports will be issued by EMSA to the Contractor using a project management collaborative tool defined by EMSA. It is mandatory for Contractor to use this tool to reply to issued non-conformance reports.
- 6.1.4.2 The issue management procedure to be used during the contract is attached to the tender specifications as Appendix E TeamForge Issue Management.

#### **6.1.5 Service failure**

- 6.1.5.1 In case of service failure, EMSA shall request a technical report indicating the reasons for the failure and proposing improvements/tests to prevent or mitigate similar situations from reoccurring.
- 6.1.5.2 If a file is successfully transferred to the EODC, but is subsequently rejected during ingestion into the EODC because the file is either incomplete, corrupted or not format compliant due to the fault of the Contractor(s), it will be considered as not delivered for the application of the pricing matrix.

### 6.1.6 Invoicing

- 6.1.6.1 The Contractor(s) shall request the payment of the services delivered and agreed by the parties on a periodic basis as defined in the draft (Multiple) Framework Contract (Tender enclosure II).
- 6.1.6.2 The amount of the invoice shall correspond with the amounts in the agreed reports.

### 6.1.7 Contact Point

- 6.1.7.1 The Contractor shall provide a contact point which EMSA can address regarding resolution of pricing or invoicing issues. Enquiries shall be resolved in a timely manner.
- 6.1.7.2 The Contractor shall provide a contact point for satellite acquisition planning. This will be the focal point for exchanging information or addressing any issue regarding planning and the use of the EODC interfaces. Enquiries shall be addressed in a timely manner.

## 6.2 Delivery requirements

- 6.2.1.1 The Contractor shall be able to deliver images and value added products 24/7, 365 days per year.
- 6.2.1.2 Delivery time: is the duration of time elapsed between T1 and T0 when T1 is the FTP transmission completion time at the EO Data Centre and (i) T0 is the actual satellite acquisition stop time in case of direct downlink or (ii) T0 is the stop time of the data downlink in case an on-board recorder has been used or (iii) T0 is the FTP transmission completion time of satellite products sent to the Contractor by a third party.
- 6.2.1.3 Maximum Downlink Delay: In some cases EMSA may decide to impose a maximum delay (Dmax) in hours between actual acquisition stop time and downlink time. In that case, T0 shall be MIN (Downlink completion time, Actual Acquisition stop time + Dmax. Example 1. If the maximum delay is set to 3 hours, and the image downlinked 90 minutes after the acquisition stop time, then T0 is the downlink time. Example 2 If the maximum delay is set to 3 hours, and the image is acquired 4 hours after acquisition, the T0= acquisition stop time + 3 hours.
- 6.2.1.4 Archived data describes data that was already acquired by the Contractor.
- 6.2.1.5 EMSA shall be able to order archived data. Archived data shall be made available in a timely manner.
- 6.2.1.6 Delivery timeliness for archived data (minimum, average and maximum) shall be provided in the bid. Times shall be measured from request to data available in the EO DC.

## 6.2.2 EMSA product classes

6.2.2.1 EMSA product classes for optical images are defined in the Table 1 below.

Table 1 **Product class for optical images**

EMSA product class (Resolution.Area)	Resolution Class Description	Image acquisition area (Km <sup>2</sup> )
VHR 1.1	Very High Resolution where resolution: $R \leq 1m$	$A \leq 200 \text{ Km}^2$
VHR 1.2		$200 \text{ Km}^2 \leq A < 1000 \text{ Km}^2$
VHR 1.3		$1000 \text{ Km}^2 \leq A < 2500 \text{ km}^2$
VHR 1.4		$A > 2500 \text{ Km}^2$
VHR 2.1	Very High Resolution where resolution: $1m < R \leq 4m$	$A \leq 3200 \text{ Km}^2$
VHR 2.2		$3200 \text{ Km}^2 \leq A < 16000 \text{ Km}^2$
VHR 2.3		$4000 \text{ Km}^2 \leq A < 40000 \text{ Km}^2$
VHR 2.4		$A > 40000 \text{ Km}^2$
HR 1.1	High Resolution where resolution: $4m < R \leq 10m$	$A \leq 20000 \text{ Km}^2$
HR 1.2		$20000 \text{ Km}^2 \leq A < 100000 \text{ Km}^2$
HR 1.3		$100000 \text{ Km}^2 \leq A < 250000 \text{ Km}^2$
HR 1.4		$A > 250000 \text{ Km}^2$
HR 2.1	High Resolution where resolution: $10m < R \leq 30m$	$A \leq 180000 \text{ Km}^2$
HR 2.2		$180000 \text{ Km}^2 \leq A < 900000 \text{ Km}^2$
HR 2.3		$900000 \text{ Km}^2 \leq A < 2250000 \text{ Km}^2$
HR 2.4		$A > 2250000 \text{ Km}^2$

### 6.2.3 Services Use Cases:

- 6.2.3.1 **Use Case A.** Standard services within contractor ground station mask: EMSA will request a full NRT service chain, inter alia acquisition of satellite data at ground station, NRT processing, value adding services and delivery to EMSA for services within contractor ground station visibility. Delivery times of products are defined according to requirement 6.2.1.2.

The following example illustrates this Use Case: An image is acquired within the contracted ground station visibility mask, the satellite data is downlinked to this ground station, and data is processed in NRT, value added services are performed, and products are transferred to the EO Data Centre. NRT is calculated based on  $t_1 - t_0$  where:

$T_1$  = FTP transmission completion time at EMSA EO Data Centre

$T_0$  = actual satellite acquisition stop time

- 6.2.3.2 **Use Case B.** Services outside the contractor ground station mask: EMSA may task the acquisition of satellite data for any area outside the visibility range of contractor coverage. By using the on-board recorder of the satellite, when the satellite enters into the ground station coverage of the contractor, the acquired images may be down-linked and processed. The data is acquired and stored on the on-board recorder of the satellite, and the data downlinked to the ground station that will perform value adding services and deliver the products to the EO Data Centre. Delivery times of products are defined according to requirement 6.2.1.2.

The following example illustrates this Use Case: An image is acquired within the contracted ground station visibility mask, the satellite data is downlinked to this ground station, and data is processed in NRT, value added services are performed, and products are transferred to the EO Data Centre. NRT is calculated based on  $t_1 - t_0$  where:

$T_1$  = FTP transmission completion time at EMSA EO Data Centre

$T_0$  = MIN (actual satellite acquisition stop time + (Maximum Downlink Delay), downlink stop time)

- 6.2.3.3 **Use Case C.** Performance of value adding services on products which are downlinked to Ground Stations not operated by the contractor. EMSA may use contracts with other contractors and their ground stations for the purchase of licences, and also for direct downlink and, optionally, processing of satellite data. These satellite products, in Level 0 or native format, shall be transferred to a contractor for Value Adding and generation of products for transfer to the EO Data Centre. Delivery times of products are defined according to requirement 6.2.1.2.

The following example illustrates this Use Case: image is acquired in Atlantic area; the data is downlinked to a ground station not operated by the contractor. The data is transferred by the ground station operator to the FTP site of the contractor for value adding services and delivery to EMSA. The service provider selected will be according to his capability to provide the requested service, in the required time, and which has been ranked most highly in the evaluation. NRT is calculated based on  $t_1 - t_0$  where:

$T_1$  = FTP transmission completion time at EMSA EO Data Centre

$T_0$  = FTP transmission completion time of satellite products to the contractor

#### 6.2.4 Services delivery timing:

6.2.4.1 For each satellite acquisition the following data products shall be delivered to the EO DC:

- i. EO product (EOP)
- ii. Quality notification (QNO)
- iii. SAR Vessel Detection layer (VDE)
- iv. Activity detection (ACT)
- v. Change Detection (CDE)
- vi. Quality Report (QUA)

6.2.4.2 For each satellite data acquisition, data products will be delivered to EMSA in several data packages consisting of one or more files being transferred by FTP. If a file is successfully transferred to the EO DC, but is subsequently then rejected during ingestion into the CSN DC because the file is either incomplete, corrupted or not format compliant due to the fault of the Contractor, it will be as not delivered.

Table 2 **Required maximum NRT delivery times of products.**

EMSA Product Class	Resolution	Image acquisition area (Km <sup>2</sup> )	Maximum delivery time of the products				
			EOP, QNO	VDE	ACT	CDE	QUA
VHR 1.1	$R \leq 1m$	$A \leq 200 \text{ Km}^2$	45 minutes	55 minutes	65 minutes	75 minutes	6 hours
VHR 2.1	$1m < R \leq 4m$	$A \leq 3200 \text{ Km}^2$					
HR 1.1	$4m < R \leq 10m$	$A \leq 20000 \text{ Km}^2$					
HR 2.1	$10m < R \leq 30m$	$A \leq 180000 \text{ Km}^2$					
VHR 1.2	$R \leq 1m$	$200 \text{ Km}^2 \leq A < 1000 \text{ Km}^2$	120 minutes	140 minutes	160 minutes	180 minutes	6 hours
VHR 2.2	$1m < R \leq 4m$	$3200 \text{ Km}^2 \leq A < 16000 \text{ Km}^2$					
HR 1.2	$4m < R \leq 10m$	$20000 \text{ Km}^2 \leq A < 100000 \text{ Km}^2$					
HR 2.2	$10m < R \leq 30m$	$180000 \text{ Km}^2 \leq A < 900000 \text{ Km}^2$					



6.2.4.25 It is an advantage for the evaluation if the Bidder is capable of delivering products faster than defined in Table 2 – required maximum delivery time of products.

6.2.4.26 EMSA may request the following delivery times:

- NRT;
- Less than 3 hours;
- Less than 6 hours;
- Less than 24 hours;
- More than 24 hours;
- Archive;

## 6.2.5 Price Reductions

### Delivery Delay

6.2.5.1 In case of delivery delays the following coefficients will apply to the base price as described in Table 3 Price co-efficient for delivery time delay.

6.2.5.2 The calculation for each service will be based on the lowest price co-efficient for delivery time delay. For example if a QUA package is delayed less than 1/3 requested delivery time , then the price co-efficient for delivery time delay falls into time category 2. However, if for the same service, an EOP for a service is delivered within 2/3 of the requested delay, then the price co-efficient falls into time category 3 for the entire service.

**Table 3 Price co-efficient for delivery time delay**

Timeliness of product delivery	Product delivery time category	Co-efficient of the service price (EOP, QNO, VDE, ACT, CDE)	Co-efficient of the service price (QUA)
On time	Time category 1	100%	100%
Delayed less than 1/3 requested delivery time	Time category 2	75%	75%
Delayed less than 2/3 requested delivery time	Time category 3	50%	
Delayed less than requested delivery time	Time category 4	25%	
Over requested delivery time	Time category 5	0%	0%

6.2.5.5 The quality parameter is a percentage value calculated from the coverage compliance as specified in 3.10.3.7 and 3.10.3.8, and the usable area as specified in 3.10.3.9. Quality will be assessed against the quality information provided in the QUA / QNO packages.

6.2.5.6 The following co-efficient in Table 4 will apply to the base price regarding quality.

**Table 4 Price co-efficient for quality**

Quality parameter	Co-efficient of the service price
91% - 100 %	100%
71 % - 90%	90%
51 % - 70%	60%
31 % - 50%	30%
<30%	0%

6.2.5.7 Note that the Agency reserves the right to undertake its own quality assessments as part of validating the Contractors quality parameter reporting.

6.2.5.8 The price coefficients for timeliness and quality are multiplied and then are applied to the price list for the order.

6.2.5.9 If the Module 2 services are operationally unusable due to quality issues they will not be paid.

## 6.2.6 Volume Price Reduction

6.2.6.1 The prices will be subject to a price reduction according to the number of orders (images and products delivered and paid) per year. A service is considered delivered and paid when the total price reduction is not zero.

6.2.6.2 The volume price reduction for services shall be via a step discount pricing method. All segments, regardless of the product type will count as one unit for the volume price reduction. The reduction will apply on the whole service with all elements: satellite licences, processing to image product, value added products and any extra services. For example the initial 400 services would be paid 100% of the price.

6.2.6.3 The price would be reduced to 95% for the next 400 services (401 to 800). The price would be again reduced to 90% for the next 400 services (801 to 1200).

6.2.6.4 The discount is applicable for the amount of services delivered over a 1 year period, starting on the date of the first service delivered under the (Multiple) Framework Contract e.g. 12 months later, at day one of the month, the count is reset to zero, and accordingly the price factor to 100%. Throughout the year with the tasking of images, the prices will be reduced according to the thresholds as given.

**Table 5 Price co-efficient annual volume discount**

Units per year	Co-efficient of base price
< 400	100%
401 until 800	95%
801 until 1200	90%
Over 1200	85%

## **7. TECHNICAL REQUIREMENTS MATRIX**

7.1.1.1 The Bidder shall fill in the technical requirements matrix presented in Tender Enclosure I Appendix B for all requirements.

7.1.1.2 How well the bid meets the requirements are assessed on 3 levels:

2: Fulfilled – If the requirement is fully met by the Bidder

1: Partially fulfilled – if the requirement is not fully met by the Bidder but presents a partial solution

0: Not fulfilled – if the requirement is not met or addressed by the Bidder.

7.1.1.3 The Bidder shall describe how the requirements are met (or refer to the section of the bid where the specific requirement is mentioned).

## **8. CONTRACT MANAGEMENT RESPONSIBLE BODY**

8.1.1.1 The European Maritime Safety Agency - Unit C.2 Information Services – User Management will be responsible for managing the contract. The address of EMSA is the following: European Maritime Safety Agency, Praça Europa 4, 1249-206 Lisbon, Portugal.

## **9. PROJECT PLANNING**

### **9.1 Project Management Plan**

9.1.1.1 The project will require the highest standards of project management, and product and service delivery, covered by the contract. Recognised standards for project management shall be identified in the bid.

9.1.1.2 The Bidder shall provide a Project Management Plan. This plan shall contain at least the following items:

- a) An implementation plan detailing the activities and timelines for Module 1. The implementation plan shall include a work breakdown, a Gantt chart showing tasks, schedule and milestones for service set-up and testing, and a test and acceptance plan.
- b) Proposed team structure and the involvement and interaction of each team member within the project;
- c) Detailed curriculum vitae of the key technical and management persons who will be delivering the service under the proposed contract.
- d) In case the team structure changes during the lifetime of the (Multiple) Framework Contract, EMSA shall be immediately informed and the team structure document including the CV's be updated accordingly.

- e) Risk Management Plan

## 9.2 Risk Management Plan

9.2.1.1 The Bidder shall provide a Risk Management Plan. This plan shall contain a risk analysis on their proposed solutions in terms of:

- a) Technical performance
- b) Implementation time
- c) Management issues

9.2.1.2 The Agency will evaluate the risk management plan including risk analysis and the possible risk mitigation and associated management procedures.

## 10. TIMETABLE

10.1.1.1 The estimated data of signature of the contract is September 2015.

10.1.1.2 The work shall start from the date of the signature of the specific contract for service set-up and testing.

10.1.1.3 The Bidder shall comply with the due date for all milestones, deliverables and meetings identified in the following Table 6 Timetable for service set-up.

10.1.1.4 Note that the sooner the service is operational, the sooner the Agency will be able to place orders for associated products and services.

**Table 6 Timetable for service set-up**

	Event / Delivery	Date, Location From T0	Comment	Event	Delivery	Milestone
T0	Kick-off meeting (KOM) Signature of specific contract for service set-up and testing <sup>5</sup>	K.O at EMSA		x		x
T1	Service Set-Up Plan, Update of the Service Plan as presented within the Bid.	+ 1 weeks			x	
T2	Test plan and test specifications	+ 4 weeks			x	
T3	First test	+ 8 weeks	Including Service Implementation Plan review All specifications will be reviewed	x		x

<sup>5</sup> (Multiple)Framework Contract(s) shall be already in place prior to kick-off meeting

	Event / Delivery	Date, Location From T0	Comment	Event	Delivery	Milestone
T4	Delivery of documentation	+ 10 weeks	Report on the service implementation and service test result; To be approved by EMSA		x	
T5	Final acceptance test, then Service in Full Operation	+ 12 weeks	Final acceptance test with accepted test report	x	x	F

10.1.1.5 If the Contractor has to deviate from the given time frame he has to justify the deviation(s). However the foreseen dates for the Final Acceptance Test and the service in full operation are fixed and not adjustable. EMSA reserves the right to disagree with the deviations and the proposed time plan.

10.1.1.6 During the set-up and test phase the Contractor(s) shall provide a Progress Report on implementation status upon the request of EMSA. An update of the Project Management plan shall be provided upon the request of EMSA.

10.1.1.7 The kick-off meeting will be held at EMSA at the date of the signature of the specific contract for service set-up and testing, or shortly thereafter. Its purpose shall be to enable all contracting parties to discuss the project to be fulfilled by the Contractor, as well as to settle all the details of the work to be undertaken, as well as any pre-financing scheme, if requested.

10.1.1.8 The Contractors' project manager, responsible for the work to be undertaken and Contractor's key technical staff shall be present at the kick-off meeting.

10.1.1.9 During the kick-off meeting Contractor will be provided with the most up to date interface technical specification (EICD) to the EODC.

10.1.1.10 All documentation shall be written in the English language.

10.1.1.11 The Contractor shall be available for a monthly teleconference.

10.1.1.12 A project management collaborative tool shall be defined by EMSA and will be used by both parties for the duration of the contract. Currently the Agency uses TeamForge.

10.1.1.13 Annual Review Meetings, Mid-Year Project Management meetings, Annual Reports (and Service and Operational Enhancement Plans) are scheduled as indicated in the Table 7 Annual meetings and reporting.

10.1.1.14 During the course of the contract, the Annual Review Meetings and the Project Management meetings shall cover a broad range of issues including contract management, service performance analysis, exchange of experience and lessons learned, identification of efficiency gains to be implemented in the 'end to end' service, identification of performance improvements, development of the quality of the value added services and associated algorithms, familiarisation with new software and/or functionalities, familiarisation with relevant developments in the field of earth observation for maritime surveillance, cooperation with other EMSA contractors and/or end users, including the sharing of any underlying algorithms that have been developed as part of the service to the Agency. The meetings can also include 'hands-on Training' on relevant software for data analysis, and selected contents presented during the Annual User Conferences organised by the contractor. These can be for example presentations from other users, use-cases and studies of new products, as well as any other relevant state-of-the-art presentations held during those conferences.

10.1.1.15 The Contractor shall support communication and promotion of the service and provide associated publicity material including imagery/videos/publications etc.

10.1.1.16 The Contractor shall be appropriately prepared for Annual Review meetings and Project Management meetings. The first Annual Review Meeting shall be held at EMSA premises, the second at the Contractor's premises. The location shall alternate every year unless otherwise agreed.

10.1.1.17 At his own expense and in addition to the Kick-off meeting, the Contractor must attend and actively support organising events related to the activities described above (10.1.1.14). If requested by the Agency, this can be up to a maximum of 4 days per year of the contract at EMSA premises.

10.1.1.18 Timing for Project Management meetings will be determined during the contract implementation.

10.1.1.19 The Contractor must deliver a monthly service report as well as an (mid-year) Project Management Report and Annual Report. Appendix F provides indicative templates (Table of Contents). The final format will be determined by the Agency based on the experience gained in consultation with the Contractor.

**Table 7 Annual meetings and reporting**

	Event / Delivery	Date, Location From T0	Comment	Event	Delivery	Milestone
T6	Annual Report	t0+11 months	Including update of the service description and specification; new release if necessary		x	
T7	Service and Operational Enhancement plan	t0+11 months	Analysis of possible service/procedures improvements		x	
T8	Annual Meeting	t0+12 months at EMSA		x		x

T9	Annual Report	t0+23 months	Including update of the service description and specification; new release if necessary Service evaluation report		x	
T10	Service and Operational Enhancement plan	t0+23 months	Analysis of possible service/procedures improvements			
T11	Annual Meeting	t0+24 months at Contractors premises		x		x
T12	Annual Report	t0+35 months	Including update of the service description and specification; new release if necessary Service evaluation report		x	
T13	Service and Operational Enhancement plan	t0+35 months	Analysis of possible service/procedures improvements		x	
T14	Final Meeting	t0+36 months at EMSA or if contract is extended at Contractors premises		x		x
T15	Annual Report	t0+47 months	Including update of the service description and specification; new release if necessary Service evaluation report		x	
T16	Service and Operational Enhancement plan	t0+47 months			x	
T17	Final Meeting	T0+48 months at EMSA		x		x

## 11. ESTIMATED VALUE OF THE CONTRACT

- 11.1.1.1 The maximum budget available for this contract is EUR 23 Million excluding VAT. This value does not indicate that this amount will be spent by EMSA under this contract. The Agency would like to sign 3 Contracts.
- 11.1.1.2 The total value of Module 1 shall not exceed EUR 75,000 excluding VAT. The budget must cover all costs of the contract (e.g. costs for setting up the service, testing, operations, maintenance and upgrades, and travelling) for the duration of the contract. The Bidder shall provide a breakdown of Module 1 costs in their bid.

## 12. TERMS OF PAYMENT

- 12.1.1.1 Payments shall be issued in accordance with the provisions of the draft framework contract and specific contract (Tender Enclosure II) available on the Procurement Section under the call to tender EMSA/OP/14/2015 on the EMSA website at the following address: <http://www.emsa.europa.eu>

## 13. TERMS OF CONTRACT

- 13.1.1.1 In drawing up a Bid, the Bidder shall bear in mind the terms of the draft (Multiple) Framework Contract.
- 13.1.1.2 EMSA may, before the contract is signed, either abandon the procurement or cancel the award procedure without the tenderers being entitled to claim any compensation.
- 13.1.1.3 The (Multiple) Framework Contract will be signed for a maximum duration of 4 years (2 years with an option of a one year extension twice).
- 13.1.1.4 The (Multiple) Framework Contract shall be implemented by:
  - a) Module 1: Specific contract for service set-up and testing. The specific contract shall be issued immediately after the signature of the framework contract
  - b) Module 2: Specific contract(s) for satellite images and value added products. Under specific contract(s) tasking Forms shall be issued for the purchase of the services. The Tasking Forms will cover the costs of the service, including all products, and transmission costs
  - c) Module 3: Specific contract(s) for future developments of the service upon request of EMSA
- 13.1.1.5 The ownership of the EO data will be solely by EMSA as defined in the draft (Multiple) Framework Contract (Tender Enclosure II).



## 14.SUB-CONTRACTING

- 14.1.1.1 If the tenderer intends to either sub contract part of the work or realise the work in co-operation with other partners he shall indicate in his offer which part will be subcontracted, as well as the name and qualifications of the subcontractor or partner. (NB: 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.
- 14.1.1.2 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.
- 14.1.1.3 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.
- 14.1.1.4 In case of sub-contracting the Bidder should correctly complete and include in the bid Tender Enclosure IV - Statement of subcontracting.

## 15.REQUIREMENTS AS TO THE TENDER

- 15.1.1.1 Submission will be treated as an individual/unique Bid and accordingly a full set of all relevant supporting documentation must be submitted with each Bid.
- 15.1.1.2 Bids can be submitted in any of the official languages of the EU. The working language of the Agency is English. Bids must include an English version of the Technical Offer and of the documents/information requested under section 18.4.2 (Technical and Professional Capacity) and section 19 (criteria for Award of Contract) of the present tender specifications.
- 15.1.1.3 Bidders shall complete the Tenderer's checklist.
- 15.1.1.4 If Bidders intend to either sub contract part of the work or realise the work in co-operation with other partners (Joint Offers) Bidders shall indicate in his offer by completion of the form – Information regarding join offers and sub-contracting.
- 15.1.1.5 The Bid shall also be submitted in electronic format on CD or DVD. EMSA shall be able to copy extracts from the bid for administrative purposes.
- 15.1.1.6 The tender must be presented as follows and must include:
  - a) Signed cover letter indicating the name and position of the person authorised to sign the contract and the bank account on which payments are to be made.

- b) Financial Form completed, signed and stamped: available on the Procurement Section (Financial Form) on the EMSA Website at the following address: <http://www.emsa.europa.eu>.
- c) Legal Entity Form completed, signed and stamped and requested accompanying documentation, available on the Procurement Section (Legal Entity Form) on the EMSA Website at the following address: <http://www.emsa.europa.eu>.

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

## 15.2 Part A

- 15.2.1.1 All the information and documents required by EMSA as the contracting authority for the appraisal of tenders regarding grouping of providers, sub-contracting, legal position, grounds for exclusion and evidence to be provided by Bidders.
- 15.2.1.2 For the contents please refer to the following Sections within this document
  - a) Legal position (Section 18.1) – Legal Entity Form;
  - b) Exclusion Criteria (Section 18.2);
  - c) Evidence to be provided by the Bidder (Section 18.3).

## 15.3 Part B

- 15.3.1.1 All the information and documents required by EMSA as 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 Section 18.4.1 of these specifications;
- 15.3.1.2 For the contents please refer to the following Sections within this document:
  - a) Economic and financial capacity (Section 18.4.1).

## 15.4 Part C

- 15.4.1.1 All the information and documents required by EMSA as 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 Section 18.4.2 of these specifications. Bidders are requested to include a copy in English of the documents requested under this Section.
- 15.4.1.2 For the contents please refer to Section 18.4.2 within this document.

## 15.5 Part D

15.5.1.1 All the information and documents required by EMSA as the contracting authority for the appraisal of tenders on the basis of the Award Criteria set out under Section 19 of these specifications; Bidders are requested to include a copy in English of the documents requested under this Section. Part D deliverables shall include:

- a) Fulfilment of requirements
- b) The fulfilment of the requirements has to be stated in a technical requirements matrix
- c) Quality Assurance of products and services
- d) Project Management

## 15.6 Part E

15.6.1.1 The Bidder is requested to set out prices in accordance with Chapter 15.6.1.3 of these specifications.

15.6.1.2 The Bidder is requested to fill in all the prices in the Excel template, which is available from the EMSA website (Tender Enclosure III) and to provide the worksheet in digital format and a scanned copy of the price sheet shall be duly signed by the Bidder and submitted in digital format to EMSA.

15.6.1.3 It is important to note that the price information must be presented as requested. Failure to do will undermine the principle of having an equal framework on which to evaluate offers. Accordingly, non-compliant offers would jeopardise the acceptability of the offer.

15.6.1.4 In order evaluate any offer the price information must not be associated with any conditions. Any advantages/ restrictions must be expressed as part of the “quality” of the offer with respect to the technical specifications.

## 16. PRICE

### 16.1 General considerations

16.1.1.1 Prices for the contract provision of Optical Satellite Images and Value Added Products for Maritime Surveillance shall include prices for all elements of the service to be delivered under Module 1 + Module 2 + Module 3.

16.1.1.2 Prices must be quoted in Euro

- 16.1.1.3 Prices must be fixed amounts, non-revisable and remain valid for the duration of the contract. Estimated travel and subsistence allowance expenses must be indicated separately. This estimate should be based on Articles I.3 and II.7 of the draft contract. This estimate will comprise all foreseen travels and will constitute the maximum amount of travel and daily subsistence allowance expenses to be paid for all tasks.
- 16.1.1.4 The Bidder is requested to present a price breakdown as specified in this chapter. The Bidder is requested to provide the worksheet Tender Enclosure III filled in, in digital format together with the Bid. Deviations or modifications to the tables are not allowed.
- 16.1.1.5 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 1406/2002/EC. 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.

## 16.2 Module 1 – Service set-up and testing

- 16.2.1.1 The price breakdown for Module 1, service set-up and testing, shall include the service set-up and testing costs, which shall cover the travel and expenses costs required for Module 1, including the Kick-Off meeting at the EMSA premises, all necessary works and adaptations of the products and services to be compliant with the specifications until the products and services are accepted for operational performance (Acceptance test).
- 16.2.1.2 The cost of travel and daily subsistence allowances expenses for the Kick-off meeting, the Annual Meetings and the Final Meeting shall be included in the overall costs in Module 1.
- 16.2.1.3 Set-up and testing costs are related to developing/adapting services and products.
- 16.2.1.4 Set-up and testing costs shall cover all necessary adaptations of the products and services to be compliant with the specifications, until the service is accepted for operational performance (Acceptance Test). This shall include testing for interfacing with the EODC and testing of module 2 deliveries.
- 16.2.1.5 Module 1 costs shall be a maximum of EUR 75,000. Module 1 costs shall not exceed this maximum. Note that there will be an adjustment in the ceiling that the Agency would cover applicable to any previous contractors providing similar services to EMSA.
- 16.2.1.6 The Table below shall be filled with the Module 1 costs.

**Table 8 Price Table Module 1**

	Price (Euro) Unit
--	-------------------

	Total fixed price
1. Kick-off meeting Annual meetings, interface specification, documentation, reporting, management	
2. Set-up and testing 3. Prototyping, 4. Interfaces implementation 5. Conformity, Acceptance testing	

## 16.3 Module 2 – Satellite Images and Value Added Products

16.3.1.1 The price breakdown shall include the service unit costs per image acquisition, for Ground Station data reception, for processing to an image and for product transmission to EMSA.

16.3.1.2 The prices shall be composed of a fixed base price per activation plus a price per area for the different resolution classes (VHR1, VHR2 and HR1 and HR2). Any additional service costs relevant for Module 2, which are not covered by these categories, have to be included in the individual unit costs.

**Table 9 Price Table Module 2**

EMSA Product Class	Licence fee	Image Acquisition and Downlink	NRT Processing to image product	Vessel Detection (VDE)	Activity Detection (ACT)	Change Detection (CDE)
VHR1 fixed service fee						
VHR1 Price per km <sup>2</sup>						
VHR2 fixed fee						
VHR2 Price per km <sup>2</sup>						
HR1 fixed fee						
HR1 Price per km <sup>2</sup>						
HR2 fixed fee						
HR2 Price per km <sup>2</sup>						
Archive product						

16.3.1.3 Bidders may include an additional fee per activation for the following services.

**Table 10 Price Table Module 2 Additional Fees**

Services	Fixed fee per service
Short notice tasking (as defined in section 3.2.1.3 and 3.2.1.2)	
NRT delivery	
Delivery time less than 3 hours	
Delivery time less than 24 hours	
Delivery time more than 24 hours	
Ortho rectified product (as defined in section 3.9)	

### 16.3.1.4 Module 3 – Further Developments

- 16.3.1.5 Further developments constitute work that needs to be undertaken due to changes in the service or product specifications requested by EMSA after the service has been accepted for operational performance.
- 16.3.1.6 The price breakdown for Module 3 ‘Further developments’ shall be charged on a time and means basis where there shall be fixed prices for one working day of the service.
- 16.3.1.7 The cost of travel and daily subsistence allowances expenses will be estimated at the moment of the signature of the specific contract. This estimate will comprise all foreseen travels for each specific contract and will constitute the maximum amount of travel and daily subsistence allowance expenses to be paid.
- 16.3.1.8 Note that the daily rates per job profile will be used in the evaluation of the Bidder’s price offer.

**Table 11 Price Table Module 3**

Components	Price (Euro) Unit per day
Senior specialist: programmer, engineer, manager more than 10 years’ work experience	
Project specialist: programmer, engineer, manager more than 5 years’ work experience	
Junior programmer, engineer, manager less than 5 years’ work experience	

## 17. JOINT OFFER

- 17.1.1.1 Groupings, irrespective of their legal form, may submit Bids. The Bidder 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.
- 17.1.1.2 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.
- 17.1.1.3 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

## 18. INFORMATION CONCERNING THE PERSONAL SITUATION OF THE SERVICE PROVIDER AND INFORMATION AND FORMALITIES NECESSARY FOR THE EVALUATION OF THE MINIMUM ECONOMIC, FINANCIAL AND TECHNICAL CAPACITY REQUIRED

### 18.1 Legal position – means of proof required

- 18.1.1.1 When submitting their Bid, the Bidder is requested to complete and enclose the **Legal Entity Form** and requested accompanying documentation, available on the Procurement Section (Legal Entity Form) on the EMSA Website at the following address: <http://www.emsa.europa.eu>.

### 18.2 Exclusion Criteria - Grounds for exclusion

- 18.2.1.1 To be eligible for participating in this contract award procedure, the Bidder must not be in any of the following exclusion grounds:
- a) is bankrupt or being wound up, are having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, is the subject of proceedings concerning those matters, or is in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
  - b) they have been convicted of an offence concerning its professional conduct by a judgement which has the force of res judicata;
  - c) they have been guilty of grave professional misconduct proven by any means which the contracting authority can justify;
  - d) they have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the

country in which they are established or with those of the country of the contracting authority or those of the country where the contract is to be performed;

- e) they have been the subject of a judgement which has the force of res judicata for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Union financial interests;
- f) they have been the subject of the administrative penalty for being guilty of misrepresentation in supplying the information required by the contracting authority as a condition of participation in the procurement procedure or failing to supply an information, or being declared to be in serious breach of his obligation under contract covered by the budget.



### 18.3 Evidence to be provided by the Bidder

- 18.3.1.1 For this purpose the Declaration on Honour available on the Procurement Section on the EMSA Website ([www.emsa.europa.eu](http://www.emsa.europa.eu)) shall be completed and signed by the Bidder.
- 18.3.1.2 Please note that the tenderer to whom the contract is to be awarded shall provide additional proof evidencing eligibility.
- 18.3.1.3 For situations described in (a), (b) and (e), production of a recent extract from the judicial record is required or, failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied. Where the tenderer is a legal person and the national legislation of the country in which the tenderer is established does not allow the provision of such documents for legal persons, the documents should be provided for natural persons, such as the company directors or any person with powers of representation, decision making or control in relation to the tenderer.
- 18.3.1.4 For the situation described in point (d) above, recent certificates or letters issued by the competent authorities of the State concerned are 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.
- 18.3.1.5 For any of the situations (a), (b), (d) or (e), where any document described in two paragraphs above is not issued in the country concerned, it may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or administrative authority, a notary or a qualified professional body in his country of origin or provenance.
- 18.3.1.6 If the tenderer is a legal person, information on the natural persons with power of representation, decision making or control over the legal person shall be provided only upon request by the contracting authority.
- 18.3.1.7 When the tenderer to be awarded the contract has already submitted relevant evidence to EMSA, it remains valid for 1 year from its date of submission. In such a case, the reference of the relevant project(s) should be mentioned and the Bidder is required to submit a statement of confirmation that their situation has not changed

## **18.4 Selection Criteria**

### **18.4.1 Economic and financial capacity – means of proof required**

18.4.1.1 The tenderer must be in a stable financial position and must have the economic and financial capacity to perform the contract.

18.4.1.2 To prove its financial and economic capacity, the Bidder shall provide the following evidence with its offer:

18.4.1.3

- a) Financial statements for the last three years for which accounts have been closed.
- b) A statement of overall turnover and turnover relating to the relevant services for the last three financial years.
- 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 still complies with the requirements. 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, he may prove his 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 any other document enabling it to verify the tenderer's economic and financial capacity.

## **18.4.2 Technical and professional capacity - means of proof required**

18.4.2.1 To prove their technical and professional capacity the Bidder shall provide proof of the following mandatory criteria with their application.

18.4.2.2 Relevant experience: This proof will consist of a list identifying work carried out during at least the last three years that is of relevance and/or analogous to the services to be provided. This list shall include:

- a) The Bidders's level of experience for the provision of services on an operational basis;
- b) A description of the services previously offered, with an indication of the objectives, contracting parties, duration and budget;
- c) The Bidders ability to offer all services under the present contract in the English language;
- d) Any evidence, statement or testimonial from the customer, from the public sector or private sector, relating to the performance and/or quality of the services previously provided by the Bidder;
- e) For the Project Manager/Senior specialist the minimum requirements are:

### Education

- i. University Degree(s)
- ii. Proven hands-on experience in Project/Technical Management
- iii. Excellent English speaking and writing skills

### Professional Experience

- i. More than 10 years of working experience including at least 3 in areas related with this tender (space, earth observation or satellite services).

For the Senior Developer, Test Designer, Quality Assurance Engineer the requirements are more than 5 years of working experience including at least 3 years in areas related with this tender (space, earth observation or satellite services).

18.4.2.3 The Bidder shall provide a company profile illustrating the company structure, technical and management organisation demonstrating their capability to implement and maintain the requested service.

18.4.2.4 The Bidder shall provide detailed curriculum vitae of the key technical and management persons who will be delivering the service under the proposed contract.

## 19. AWARD CRITERIA

19.1.1.1 Only the tenders meeting the requirements of the exclusion and selection criteria will be evaluated in terms of quality and price.

19.1.1.2 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:

Q1) Fulfilment of technical requirements ( $W_1 = 30\%$ ) (Section 19.2.2)

Q2) Quality assurance of products and services ( $W_2 = 10\%$ ) (Section 19.2.3)

Q3) Project Management ( $W_3 = 10\%$ ) (Section 19.2.4)

and the price criterion and associated weighting:

Price of the Bid ( $W_{Price} = 50\%$ ) (Section 19.3)

19.1.1.3 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

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

The overall weighted quality is

$$Q = \sum_i Q_i * W_i$$

The score for quality is

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

The score for price is

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

- 19.1.1.4 Only bids that have reached a minimum of 50 % of the 10 maximum points for  $Q_1$ ,  $Q_2$  and  $Q_3$  will be taken into consideration when calculating the score for quality  $SQ$ , score for price  $SP$  and score  $S$ .
- 19.1.1.5 Only bids that have reached a minimum of 50 % of the 100 maximum points for the score  $S$  will be taken into consideration for awarding the contract.

## 19.2 Quality award criteria

- 19.2.1.1 The requirements on the Bidder as outlined in this document will be used by the Agency to assess the technical aspects proposed in the Bids. To facilitate this evaluation, the Bidder is requested to prepare a compliance matrix in digital format stating the compliancy level with each requirement (fully compliant, partially compliant, non-compliant), in the case of partial compliancy, the Bidder shall state the reasons. The compliance matrix shall be provided together with the Bid. The compliance matrix will be used by the Agency to evaluate the Bid for the level of compliance with the requirements described in this document.
- 19.2.1.2 A series of technical award criteria will be used to evaluate technical aspects of the products and services proposed by the company/consortia. These criteria are listed below, together with a short explanation and requests for supporting documentation.

### 19.2.2 Fulfilment of technical requirements (30%)

19.2.2.1 The Agency shall refer to the bid and to the technical requirements matrix (15%) completed by the Bidder, as well as the fulfilment of scenarios I, II and III (15%).

19.2.2.2 Evaluation of the bid and the technical requirements matrix:

The bid and the requirements matrix will be evaluated according to the following equally weighted sub-criteria:

a) The quality of the offer and degree of fulfilment of technical requirements for Satellite images (licences and image products), including number of missions offered, satellite tasking capabilities, order desk, and planning, including NRT requirements as requested in Chapter 3.

b) The quality of the offer and degree of fulfilment of technical requirements for Value Added Products namely services and products offered for targeted vessel detection, targeted activity detection, and change detection including NRT requirements as requested in Chapter 4.

c) The quality of the offer and degree of fulfilment of technical requirements for service tasking, delivery and reporting including NRT requirements as requested in Chapter 6.

d) The data transmission and telecommunication network for the provision of the service and non-functional requirements shall also be evaluated.

19.2.2.3 **Evaluation of Selected Scenarios:** Each bidder shall submit a proposal for Scenario I, II and III using Appendix D –Scenario Table. Each Scenario proposal shall be evaluated and scored by the Evaluation Committee nominated for this call for tender.

#### **Scenario I:**

Activity Detection Type: Anti-trafficking

Activity Detection Sub-type: Rendezvous at sea

Order Type: Normal

Tasking Type: Short notice

Following intelligence that there will be a rendezvous at sea on 2 August 2015, on Saturday 1 August 2015, at 10:00 UTC EMSA receives a request from an end user for 1, or more, VHR1 optical images, Pansharpened or Panchromatic, to be acquired as soon as possible, and no later than 36 hours of placing the feasibility request.

The image(s) shall cover a minimum area AOI (200km<sup>2</sup>).

The AOI is an open water area 50 km due South of the island of Lampedusa.

All vessels <15m length, which are at a close distance (0.01-0.5 Nm) or are tethered to another vessel of any length, must be reported.

Information on the vessel type, vessel heading and vessel speed are parameters of great advantage to the users of this service.

The satellite image and the detected vessel information shall be delivered to EMSA in NRT.

#### **Scenario II:**

Activity Detection Type: Pollution monitoring

Activity Detection Sub-type: Large spill on open waters

Order Type: Normal

Tasking Type: Short notice

The EMSA Contingency Plan has been activated on Monday 14<sup>th</sup> September 2015 at 08:00 UTC following the collision of an oil tanker and a cargo vessel 20km North of Galicia, Spain. A large amount of oil has been released and the leak is ongoing. The spill is already spread over an area of approximately 70 km x 70 km. According to the drift modelling forecast, within the next 24 hours the oil spill might spread on a 100 km x 100 km area (including uncertainty radius).

EMSA sends a feasibility request at 10:30 UTC. The request is to task the next possible optical acquisitions and deliver HR2 products as soon as possible, preferably within the next 48 hours. An area of 100 km x 100 km around the location of the accident shall be imaged. The Targeted Activity Detection type 'Pollution monitoring' is requested.

In order to support clean-up operations, the selected product will be a multispectral (composite) product, if available, to optimise the characterisation of the oil spill (e.g. concentration of the oil). In case this product is not available for the mission, a Pansharpened or Panchromatic, product will be selected.

#### **Scenario III**

Activity Detection Type: Beach Monitoring

Activity Detection SubType: Detection of potential aggregation points for illegal embarkation

Tasking Type:

Order Type: Pinpointing or short term tasking

Scenario Description: EMSA is providing support to an end user that is monitoring a set of locations for maritime border surveillance. Three different locations (A, B and C) on the Libyan coast have been identified as potential places for illegal embarkation.

EMSA issues a routine tasking at 14:00 UTC for an optical acquisition of VHR1 class product, pansharpened, 10kmx10km, for an area of interest of 7 km x 7 km centred on location A. Both the image and the activity detection service shall be delivered in NRT.

Four hours before the acquisition time, the end user informs EMSA that based on intelligence, the most probable location for the illegal embarkation is location C. Three hours before the acquisition time, EMSA requests the contractor to shift the acquisition to location C.

- 19.2.2.4 Each Bidder must describe what they can offer (each 'Yes' answer will bring the maximum points and each answer 'No' will bring no points) according to the specific requirements of the Scenario I, II and III according to the criteria below:

**Table 12 Scenario Description Table**



Questions	Guidelines for Answer	Maximum points
Are you able to task at least one satellite within the time requirements indicated in the Scenario?	Yes/No	1
How many images do you estimate can be delivered (from different satellites) from the required image class (VHR1/VHR2/HR1/HR2) can you acquire within the next 36 hours?	Number (1 image = 0.5 point 2-4 images= 1 point, ≥5 = 2 points)	2
How many images can you deliver to EMSA in NRT?	Number(1 image = 0.5 point, 2-4 images= 1 point, ≥5 = 2 points)	2
Can you provide the specified ordering type (ex: pinpointing may be offered or short term tasking opportunity)?	Yes/No	1
Are you able to provide the value added products within the time requirements indicated in the Scenario?	Yes/No	1
How many parameters/characteristics can you report in NRT?	Number	3

### 19.2.3 Quality Assurance of products and services (10%)

19.2.3.1 The regular mechanism for quality checking and assurance used to perform the tasks under the terms of the contract will be evaluated according to the requirements section 4.3 and additionally in terms of the procedures to check the overall functioning, performance and quality of the data.

19.2.3.2 Bidders shall describe the quality method/criteria used internally to evaluate the quality of both basic product (image), and value adding services.

19.2.3.3 A Quality Management Plan shall be provided by Bidders and evaluated by the Agency. The document shall describe inter-alia:

- a) Quality control procedures;
- b) Quality Assurance procedures;

### 19.2.4 Project Management (10%)

19.2.4.1 Strong project management is required for the execution of this service.

19.2.4.2 The Bidder must provide a Project Management plan and a Risk Management Plan as described in Chapter 9.

## 19.3 Price award criteria (50%)

19.3.1.1 The Agency will consider all price elements as award criteria for evaluation of the Bids. The price evaluation will be done based upon prices provided for Module 1 (45%)+ Module 2 (2.5%)+ Module 3 (2.5%).

19.3.1.2 The price evaluation for Module 2 will be done based on the following price calculation scenario:

**Table 13 Price Award Module 2**

Module 2 – Image products and services ordered on an annual basis						
Product	EMSA product class	Resolution (m)	Area (km <sup>2</sup> )	Units	Delivery Time (Section 6.2.4)	Amount (EURO)
Image	VHR1.1	$R \leq 1$	200	55	NRT	
				15	< 3 hours	
				15	< 6 hours	
Image + SAR Vessel Detection layer	VHR1.1	$R \leq 1$	200	20	NRT	
				5	< 3 hours	
Image + Activity detection	VHR1.2	$R \leq 1$	1000	20	NRT	
				5	< 6 hours	
Image +Change Detection	VHR1.2	$R \leq 1$	1000	20	NRT	
				5	Archived	
Image	VHR2.1	$1 < R \leq 4$	3200	10	NRT	
				5	< 24 hours	
				5	> 24 hours	
Image + SAR Vessel Detection layer	VHR 2.1	$1 < R \leq 4$	3200	5	NRT	
				5	< 24 hours	
Image + Activity detection	VHR 2.2	$1 < R \leq 4$	16000	5	NRT	
				5	>24 hours	
Image +Change Detection	VHR 2.2	$1 < R \leq 4$	16000	5	NRT	
				5	Archived	
Image	HR1.1	$4 < R \leq 10$	3200	10	NRT	
Image	HR2.1	$10 < R \leq 30$	3200	10	NRT	

19.3.1.3 The price evaluation for Module 3 will be done based on the following scenario.

**Table 14 Price Award Module 3**

Price offer for Module 3 – Further developments	No of days	Price EUR:
Senior specialist: Manager more than 10 years of work experience	10 days	EUR
Project specialist: engineer, analyst, designer, more than 5 years' work experience	20 days	EUR
Junior specialist: programmer, engineer, tester less than 5 years' work experience	40 days	EUR
Senior specialist: manager	5 days	EUR
Total price:		EUR

19.3.1.4 For evaluation of the prices offered for Module 1 Set up and testing, the score for the price will be given applying the following table and is equal to P:

**Table 15 Price Award Module 1**

Price offer for Module 1	Marks
Below or equal to €25,000	10
€25,001- €45,000	9
€45,0001- €60,000	8
€60,001- €74,999	7
Equal to €75,000	6

## **20. CONTRACT WILL NOT BE AWARDED UNDER SPECIAL CIRCUMSTANCES**

20.1.1.1 Contracts will not be awarded to the tenderers who, during the procurement procedure:

- (a) are subject to a conflict of interest;
- (b) are guilty of misrepresentation in supplying the information required by the contracting authority as a condition of participation in the contract procedure or fail to supply this information.

## **21. FALSE DECLARATIONS**

21.1.1.1 Without prejudice to the application of penalties laid down in the contract, the tenderers and contractors who have been guilty of making false declarations concerning situations referred to in Chapter 15.6.1.3 above or have been found to have seriously failed to meet their contractual obligations in an earlier procurement or grant shall be subject to Administrative and financial penalties set in Article 145 of Commission Delegated Regulation of 29.10.2012 on the rules of application of Regulation (EU) No 966/2012 of the European Parliament and of the Council on the financial rules applicable to the general budget of the Union.

## **22. INTELLECTUAL PROPERTY RIGHTS (IPR)**

- 22.1.1.1 Please consult the contract for IPR related clauses.
- 22.1.1.2 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.
- 22.1.1.3 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.

## **23. NO COMMITMENT BY THE AGENCY**

- 23.1.1.1 The Invitation to Tender does not bind the Agency in any way to place a contract, and the Agency reserves the right to place a contract for the whole or only part of the activities covered by the Invitation to Tender. EMSA may, before the contract is signed, either abandon the procurement or cancel the award procedure without the Bidder being entitled to claim any compensation.

## **24. NO REIMBURSEMENT OF TENDER EXPENSES**

- 24.1.1.1 Expenses incurred in the preparation and dispatch of the Tender will not be reimbursed.

## **25. INFORMATION RESOURCES**

- 25.1.1.1 The Bidder is advised to consult the EMSA (<http://www.emsa.europa.eu>) for links to reference documents and further information.

## Appendix A – External Interface Control Document (EICD)

The EICD is available upon request by sending an email to the dedicated email address for this procurement procedure

## Appendix B- Technical Requirements Matrix

## Appendix C- Price Matrix

## Appendix D – Scenario Table

## Appendix E – TeamForge Issue Management

## Appendix F –Reports: Table of Contents

The Reports will include tables, graphs clips images etc. as appropriate.

Title: Monthly Optical Services Monthly Report: N. 1: Period ABC- XYZ

1 - Introduction

2 – Activations

Deliveries

3 - Value Adding Service Results

3.1 Target Vessel Detection' Results

3.2 Targeted Activity Detection' Results

3.3 etc.

4 – Examples

5 - Costs/Contract Budget Overview and Consumption and Execution

Title: Project Management / Annual Optical Services Monthly Report: N. 1: Period ABC- XYZ

Table of Contents

1 Introduction

2 Staff Updates

3 Contractual

4 Progress Meetings

5 Operational Report

5.1 Order Handling through EO DC

5.2 Maintenance of Processing Interface

5.3 Improvements to the OPSSERVE service

5.3.1 Module 2 Improvements

5.3.2 Module 3 Activations

5.4 Summary of Activations

5.5 Module 3 Activations

5.5.1 Activity Detection (ACT)

5.5.2 Vessel Detection (DER)

6 Budget and Pricing

6.1 Budget consumption

7 Review of the Service and Conclusions

7.1 Ongoing Service

7.1.1 Delivery speed

7.1.2 Unavailability of Satellite Acquisition Windows (SAWs)

7.1.3 Specific Activations

8 Closing remarks

Annex 1: Curricula Vitae of new Team Members

Annex 2: Technical Report on the Failure of 2 Acquisition

Annex 3: Test Report

Annex 4: List of Activations in the Reference Period