European Maritime Safety Agency

TENDER ENCLOSURE I– TECHNICAL SPECIFICATIONS

ATTACHED TO THE INVITATION TO TENDER

Invitation to tender no. EMSA/OP/12/2016

Contracts for Remotely Piloted Aircraft System (RPAS) services in support of the execution of Coast Guard functions

Table of contents

1 Introduction and background

1.1.1.1 The European Maritime Safety Agency (hereafter EMSA or the Agency) was established under Regulation 1406/2002/EC, lastly amended by Regulation 100/2013/EU of 15 January 2013, for the purpose of ensuring a high, uniform and effective level of maritime safety and prevention of pollution by ships, oil and gas installations.

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 With the revision of 2013 a new task has been incorporated in its mandate/ The Agency shall facilitate cooperation between the Member States and the Commission: by providing, upon request and without prejudice to national and Union law, relevant vessel positioning and Earth observation data to the competent national authorities and relevant Union bodies within their mandate in order to facilitate measures against threats of piracy and of intentional unlawful acts.

1.1.1.4 In the 5 year strategy of the Agency in the field of monitoring, surveillance and information sharing, as adopted by its Administrative Board, the aim is to become a major provider of reliable and efficient information services for the benefit of the EU maritime cluster and, where appropriate, for the use of other communities. In this context one of the objectives is to explore, at reasonable cost, in a sustainable and viable way, new capabilities offered by technology in the field of maritime surveillance.

1.1.1.5 On 15 December 2015 the Commission made a new proposal to amend the Regulation as part of the so-called border package (COM(2015) 667), by adding an article on European cooperation on coastguard functions. The Council and European Parliament reached agreement in first reading, adopted by the European Parliament on 6 July 2016. The new Article 2b of the EMSA Regulation reads: The Agency shall, in cooperation with the European Border and Coast Guard Agency and the European Fisheries Control Agency, each within their mandate, support national authorities carrying out coastguard functions at national and Union level, and where appropriate, at international level, by (b) providing surveillance and communication services based on state-of-the-art technology, including space-based and ground infrastructure and sensors mounted on any kind of platform.

1.1.1.6 The Explanatory Memorandum of the European Commission (COM(2015)667, Proposal for amending the Regulation of EMSA, p.6) stipulates: The Agency will organise and provide, as an institutional service provider, RPAS [Remotely Piloted Aircraft Systems] services operations in support of European Border

and Coast Guard Agency and border control authorities. This technology has a multipurpose character and can be used for a variety of public tasks at sea (border control, safety of navigation, Search and Rescue, pollution detection, fishery control, law enforcement actions). Strenghtening the cooperation between the Agencies will further enhance synergies and multipurpose use of the same assets.

1.1.1.7 The provision of RPAS services for maritime surveillance will further increase maritime situational awareness of Member States by enhancing the maritime picture with additional sources of data. RPAS services will be offered to cover any Coast Guard task, budget permitting. This new service will facilitate Member States with carrying out their coastguard tasks at national or EU level.

2 Type of Procedure

2.1.1.1 Economic operators are invited to submit an offer in this open procedure in accordance with the rules set out in the Invitation to Tender and its associated enclosures.

2.1.1.2 Within this open procedure, any interested service provider may submit a bid in response to the contract notice and procurement documents and is evaluated based on exclusion, selection and award criteria.

3 Objective of service

3.1.1.1 This call for tender is to contract European Remotely Piloted Aircraft Systems (RPAS) services in the civil maritime surveillance domain in support of executing Coast Guard functions.

3.1.1.2 The contracted RPAS services should have a high level of deployability and availability, which should lead to an increase of the operational Coast Guard capability and provide free of charge additional data streams to users from European Union (EU) Member States, Iceland, Norway, to the European Commission and to EU Agencies. Throughout this document the terms "user" and "Member States (MS)" refer to this given list of users.

3.1.1.3 A scalable service in terms of number of deployments is foreseen with a possibility to have a number of simultaneous RPAS deployments. The deployment should be based on mobile units (Local Ground Control Station - LGCS), which can be relocated as new requests may come over time. The RPAS services should be used as a complementary tool in the overall surveillance chain, including satellite imagery, vessel positioning information and surveillance by manned maritime patrol aircraft and vessels.

3.1.1.4 By establishing multiple framework contracts (FWC) to acquire pilot RPAS services, the contracting authority seeks cooperation with Contractors covering either one, two or three lots of the tender. The provision of cost-efficient RPAS services in the maritime domain should include assets and relevant expert staff

to pilot the RPA, capture and dissiminate the data. The FWCs will be implemented through specific contracts.

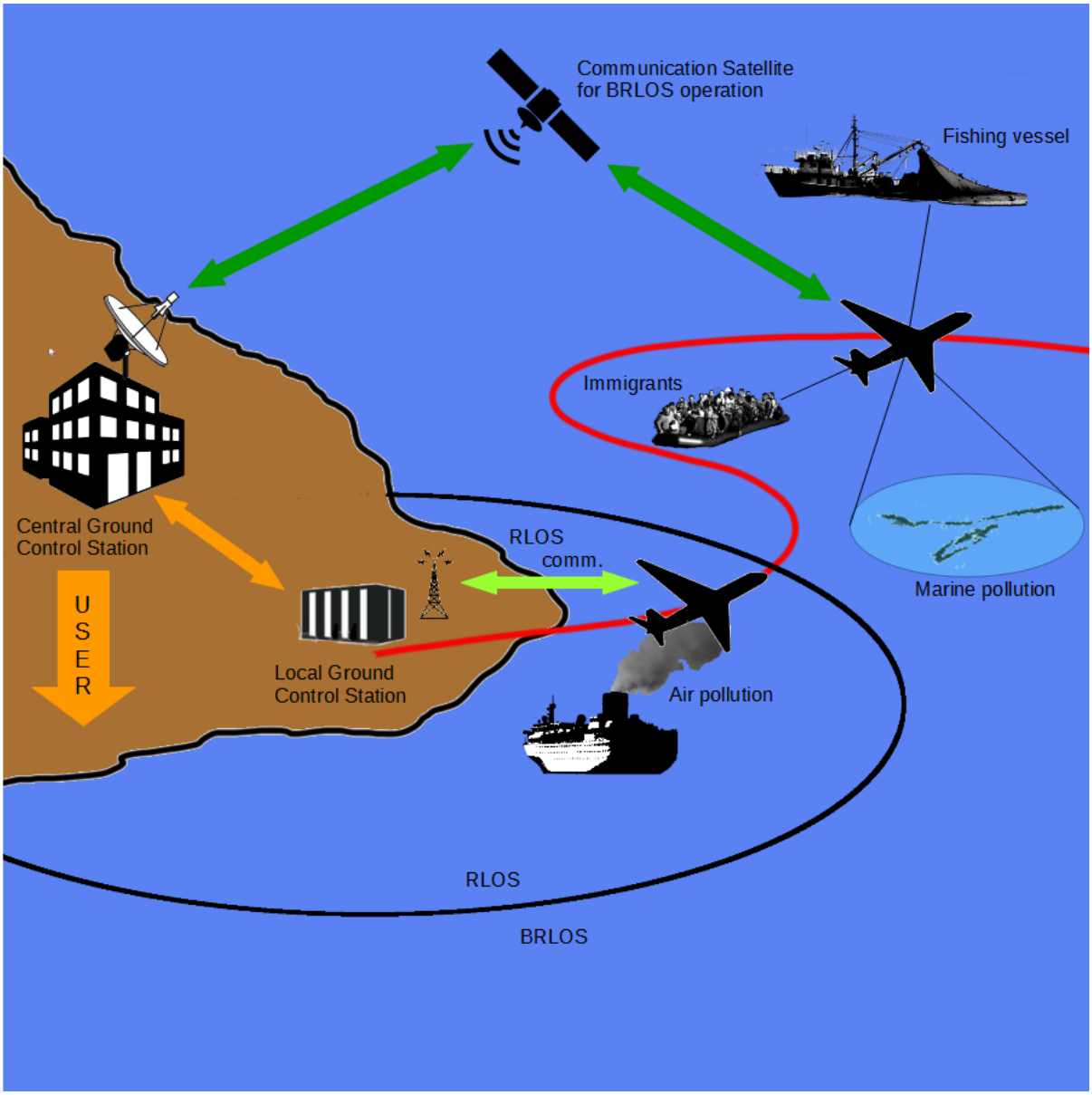

Figure 1: Typical RPAS operation in the maritime domain

3.1.1.5 The scenario depicted in Figure 1 illustrates a type of surveillance service the contracting authority may request. The figure reflects the foreseen deployment where the RPAS surveys an Area of Interest (AoI). This deployment includes the taxi flight from the base airport to the AoI, the specific activity for the service requested and finally passing all surveillance information and payload data to the users. For this transfer, the RPAS is using a direct link when flying within Radio Line of Sight (RLOS) and changing seamlessly to a satellite link when flying Beyond Radio Line of Sight (BRLOS). The communication link with the Coordination Centre will be part of the contracted operations.

3.1.1.6 Three classes of RPAS are foreseen to address the different operational domains in three lots: Medium size RPAS services with "long endurance", larger size RPAS services with "long endurance" and with a comprehensive set of sensor capabilities, and Vertical Take Off and Landing (VTOL) RPAS. The aircraft and the sensors of the three RPAS classes shall be designed to respond to the user requirements of the three European Agencies covering their Member State requirements in the areas of maritime surveillance activities.

3.1.1.7 There will therefore be several framework contracts signed for each lot representing the three RPAS classes. The lots and their implementation will be further described in section 5.

3.1.1.8 Within the RPAS classes the operations should address multiple purposes according to the capabilities of the RPA and the sensors, and therefore cover the various maritime surveillance needs in general, including fisheries, illegal immigration, anti drug trafficking, etc., but could also be used for other public purposes on an emergency basis.

3.1.1.9 The RPAS services will only be initiated following specific requests from these users and the consent of the country(s) where the RPAS will be operating.

3.1.1.10 The RPAS shall be available on a scheduled basis, but shall also allow unscheduled requests on a best effort basis.

3.2 General Considerations

3.2.1.1 The proposed solutions by the Bidder fulfilling the requirements given in this document will be subject to evaluation.

3.2.1.2 Throughout this document the term "the Bidder" means that the tenderer shall address the requirements in its proposal as requested in the procurement documents. Reference to "the Contractor" means that the tenderer shall perform or implement such requirements during the execution of the contract.

4 Requested Services

4.1 General Considerations

4.1.1.1 The contract seeks to acquire RPAS based maritime surveillance services, including set-up, operations, piloting, maintenance and data dissemination as defined in the specific contracts and based on user needs.

4.1.1.2 Any services requested should be performed by the Contractor in line with the operations defined in the Specific Contracts based on user needs.

4.1.1.3 Areas of operation can be all sea areas surrounding the European Union with an EU or EFTA country as a starting point of the service and if requested by governmental users, the service could be extended outside EU adjacent seas upon common agreement.

4.1.1.4 The following are expected as part of the service provided by the Contractor:

- RPAS fitted with (ad-hoc) payload, communications and deployment support;
- Being available on-site for deployments;
- Surveillance flight hours following the tasking requested by a user for a specific deployment and flight missions;
- Data sent , in the agreed format and from the following:
  - Payload data (images, videos, etc.);
  - RPAS housekeeping data (aircraft system information such as heading, position, system status, etc.).

  The data should be made available in the shortest possible time from when the data is acquired by the sensor on the RPAS to it being available to the EMSA applications for the user.

  The provided data may be integrated into the systems run by EMSA, FRONTEX and EFCA at a later stage during the lifetime of the contract in order to provide the end-user with a complete and comprehensive set of information which is enhanced by data which are already available to the Agencies. This shall be based on a common data interface between the contractor and the Agencies.
- Keeping the RPAS available for deployment throughout the framework contract.

4.2 Maritime surveillance

4.2.1 Multi-purpose activities

4.2.1.1 The maritime surveillance in the framework of this procurement is addressing the Coast Guard Functions as described in section 1.1.1.5.

4.2.1.2 Presently used satellite information provides an important source of information but in general is only available at certain times according to the satellite orbits. Additional services based on Remotely Piloted Aircraft Systems, can overcome these limitations.

4.2.1.3 The surveillance operation for maritime safety (4.2.2), maritime security (4.2.3) and fishery control (4.2.4) as described below could be provided by similar RPAS configurations. It is therefore the aim of the Agencies to operate the RPAS in a multi-purpose mode, meaning that several of the described activities are facilitated concurrently in a single deployment.

4.2.1.4 All of the before mentioned operations are relying on vessel detection (4.2.5), vessel identification (4.2.6) and behaviour monitoring (4.2.7) as detailed further down in this chapter.

4.2.2 Maritime safety

4.2.2.1 The International Convention on Maritime Search and Rescue (1979), commonly referred to as "the Search and Rescue Convention" (S&R; this is not the common abbreviation, but used throughout this document to avoid confusion with "Synthetic Aperture Radar"), was the first convention to establish an internationally recognised system covering search and rescue operations. The "North Atlantic Coast Guard forum" recently reiterated the importance of search and rescue activities, and is requesting further improvement of response operations. S&R is particularly challenging in remote areas and during bad weather conditions. Difficult sea conditions in general mean that the capacity to respond is diminished.

4.2.2.2 The Global Maritime Distress and Safety System (GMDSS) is a global network of emergency communications for ships comprising various different communication networks using both satellite and terrestrial radio services. The GMDSS system makes use of shipboard search and rescue devices, one of which is the AIS Search and Rescue Transmitter (AIS-SART), which, since 1 January 2010, can be used in lieu of a radar Search and Rescue Transponder (X-Band SART) on SOLAS ships.

4.2.2.3 <u>Detection of survival crafts and humans at sea</u>

4.2.2.4 S&R operations are often undertaken in conditions which are less than ideal. RPAs could support coastguards by making operations safer and by making certain operations possible which might not be otherwise.

4.2.2.5 (Satellite) AIS messages from ships which are distant from shore can be used for locating distressed vessels or survival craft. The same shall apply to RPAS equipped with an AIS sensor, with the added advantage that RPAS could stay in the area of the vessel in distress. The same applies for the reception of signals from Emergency Position-Indicating Radio Beacons (EPIRB) or also mobile detection signals which could help to direct the RPAS to the area where Search and Rescue is needed.

4.2.2.6 Finally, radar and thermal mapping of large areas and/or from great distances allows targets to be found more effectively. Search-and-rescue teams already use radar and infrared imagers to find and rescue humans lost at sea, in particular at night.

4.2.2.7 <u>Safety of the environment against marine pollution</u>

4.2.2.8 The European Union has adopted multiple directives, e.g. to address the "The International Convention for the Prevention of Pollution from Ships

(MARPOL)"[1], in order to protect the environment from threats by shipping. RPAS could provide monitoring services to strengthen the enforcement of directives and identify MARPOL violations.

4.2.2.9 Once an oil spill or other pollution has been detected, further investigation with regard to its size, location, and possible spread or movement might be relevant for a decision on response activities and for guiding the response assets or dispersant aircrafts to the most relevant locations. This requires surveillance and monitoring systems which can be directed to the location at all time.

4.2.2.10 Furthermore in support to maritime pollution cleanup operations, e.g. oil spills or maritime litter, RPAS could be useful to stay on site and to monitor where large areas of pollution or waste may be located to then guide relevant clean-up operations.

4.2.3 Maritime Security

4.2.3.1 Border control

4.2.3.2 The Commission's recent legislative proposal mentioned earlier in this document, will give the contracting authority a role to organise and provide, as an institutional service provider, RPAS services in support of Member State border control authorities and Frontex (which is renamed European Border Control and Coastguard Agency - EBGA). In essence this will be to reinforce the protection of EU's external borders.

4.2.3.3 Currently EMSA provides services to Frontex in support of the European Border Surveillance System (EUROSUR). An intersystem service has been set-up between EMSA and Frontex, allowing EMSA service layers to be visualised in the restricted Frontex (EUROSUR) web-interface.

4.2.3.4 Frontex and national border control authorities will substantially benefit from services collecting, processing, fusing and correlating data of human activity at sea. RPAS derived information would be handled as an additional data source.

4.2.4 Fishery Control

4.2.4.1 In support of the MS fishery inspection activities, EFCA is seeking to enhance their current maritime awareness picture in view of fisheries Monitoring, Control and Surveillance (MCS).

[1] The MARPOL Convention was adopted on 2 November 1973 at IMO, amended in 1978 and entered into force on 2 October 1983.

4.2.4.2 RPAS may be primarily used to monitor compliance with spatial and temporal measures, such as closed areas, closed seasons and Real Time Closures (RTC's). Furthermore RPAS deployment will help to detect and identify vessels that are not emitting cooperative position data or that are suspected of not complying with fisheries regulations. Specific attention will be given to sensor capacities allowing to detect and identify any discard of fish overboard.

4.2.4.3 EMSA provides EFCA with the MARSURV service. This is a layered operational ship tracking service to support fisheries control campaigns, which can be used for behaviour analysis, risk assessment and classification of possible non-compliance. The service has been operational since 2013 and recently a provision was added in the Service Level Agreement (SLA) to be able to use VMS (Vessel Monitoring System) data for S&R purposes as well as in the context of providing services to FRONTEX for border surveillance within EUROSUR.

4.2.4.4 The EFCA MARSURV service is used by EFCA and MS authorities for the coordination of inspection activities and for monitoring fishing activity, as part of a dedicated risk management strategy. In addition, the service is used to gather information on possible IUU (Illegal, Unreported and Unregulated) fishing.

4.2.5 Vessel Surveillance: Detection, Monitoring and Tracking

4.2.5.1 Users are already provided by EMSA with a permanent feed of correlated terrestrial and satellite AIS combined with LRIT and VMS data combined with EMSA Central Ship Database information. The service provides integrated vessel track data for individual vessels and the information layers contain the last known vessel positions as well as other ship particulars.

4.2.5.2 RPAS sensor data shall complement the already available cooperative vessel position data sets. It will be used to cross-check vessel position and activity with the information available through available cooperative information sources in order to detect possible non compliance to ship reporting and/or non-cooperative vessels (vessels not sending position information). The sensors carried by the RPAS will be able to allow detection, identification and categorising of vessels of interest (and any associated vessel or target) as well as being used for behaviour monitoring.

4.2.6 Vessel Identification

4.2.6.1 In case of particular interest RPAS shall be able to provide information to identify the vessel:

- Vesseltype, activity, behaviour, length, beam, estimated speed & course occupants, associated gear, attendant vessels etc.
- ID where possible (name, IMO number, call sign, external registration, MMSI, flag, home port etc.).

4.2.7 Behaviour Monitoring

4.2.7.1 Users shall be provided with alert notifications in real-time on specific vessel patterns which are derived from specific behaviour monitoring algorithms.

4.2.7.2 RPAS shall be able to identify the parameters that services will use as input into behaviour monitoring algorithms. Parameters to be collected by the RPAS for behaviour monitoring include inter alia:

- vessel position, vessel course and speed, distance to shoreline, anchorage time pattern, range between vessels, (in a traffic lane - ship domain), vessel constrained by her draft, manoeuvering patterns, very low velocity tracks (under 1.5 knot), determination of possible landing point or port though the vector/course of the vessel
- Sudden changes of course and unusual vessel tracks, changes in the Estimated Time of Arrival, Destination
- detected activities on-board or around a vessel of interest (e.g. rendezvous at sea, any transhipment, towage or any fishing or ancillary gear which might be used,etc), including low radar cross section floating device adrift or undertow (Bluefin tuna cage(s))
- vessels entering or leaving particular areas (e.g. EEZ, area closed to fishing, restricted area, marine protected area)
- Identification of blacklisted vessels (e.g. IUU blacklist).
- Identification of a polluting vessel (e.g. oil, chemicals, litter, illegal discards and discharges, etc.)

5 Lot Structure

5.1 Lots

5.1.1.1 The Framework contracts will be divided over the following lots as follows:

- Lot 1: Large size RPAS services with "Long endurance" and extended sensor capabilities;
- Lot 2: Medium size RPAS services with "Long endurance"; and
- Lot 3: Vertical take off and landing systems (VTOL).

5.1.1.2 Multiple simultaneous deployments are foreseen across the lots.

5.1.2 Lot 1: Large size RPAS services with "Long endurance" and extended sensor capabilities

5.1.2.1 This lot will focus on maritime surveillance indicated in Section 4.2. The concept of operations and service requirements are indicated in section 7.2. The RPAS will focus on long endurance operations, equipped with the necessary extended sensors needed for maritime surveillance.

5.1.3 Lot 2: Medium size RPAS services with "Long endurance"

5.1.3.1 This lot will also focus on maritime surveillance indicated in Section 4.2. The concept of operations and service requirements are indicated in section 7.3. The RPAS will focus on long range operations, equipped with the necessary sensors needed for maritime surveillance however as the aircraft is smaller it is more manoeuvrable but may have a slightly lower endurance.

5.1.3.2 This lot refers to RPAS with a reduced Mean-Take-Off-Mass in order to facilitate the process to receive the permit to fly. Therefore it is an advantage if the RPA is below 150kg. However if the RPAS are operated as state aircraft or with an experimental permit to fly this limit does not strictly apply.

5.1.4 Lot 3: Vertical take off and landing systems (VTOL)

5.1.4.1 This lot will focus on smaller devices which are capable to start and land vertically from shore and from vessels operated by the users and will also focus on maritime surveillance indicated in Section 4.2. The concept of operations and service requirements are indicated in section 7.4. The RPAS will focus on short range operations, equipped with the necessary sensors needed for maritime surveillance however as the aircraft is smaller it is more manoeuvrable but will have a closer range and lower endurance.

5.2 How the Contract will work

5.2.1 The Framework Contract in Cascade

5.2.1.1 The contracts awarded per lot will be framework contracts (FWC) valid for two years with a possible renewal for a further one year period and then a final second renewal period for another year if requested by the contracting authority.

5.2.1.2 Framework contracts will be signed with two companies for each Lot indicated in section 5.1. Should the relevant number of RPAS or sensors or the required capabilities not be reached with the two companies, framework contracts may be signed with other companies.

5.2.1.3 The Contracting Authority requests a certain set of minimum capabilities, as defined in the tables in Section 7, which have to be offered by the Bidder in order to sign a framework contract.

5.2.1.4 Further advanced capabilities are requested which are not mandatory, but will allow a better score during evaluation.

5.2.1.5 The framework contracts per lot will be in cascade, which means that the contracting authority will rank the tenderers in descending order with a view to establishing a list of Contractors and the sequence in which they will be offered orders. The companies will be ranked according to their scores in terms of best price–quality ratio as indicated according to the scoring scheme in section 21.

5.2.2 The Specific Contracts (SC)

5.2.2.1 The framework contract in cascade will be implemented by signing specific contracts for the individual modules as described in chapter 6.

5.2.2.2 Based on a request by a user for a specific RPAS operation, a specific contract will be drawn up for each deployment encompassing several modules.

5.2.2.3 The Contractor which is ranked first after the evaluation will be the first to be requested by the contracting authority to sign a specific contract for the deployment.

5.2.2.4 However, if the Contractor at the top of the list does not meet the capabilities required for that specific deployment because:

- they are still in the development process to reach the mandatory and any proposed additional capabilities
- the advanced capability needs are not available (i.e. a specific sensor is not available for a particular deployment)
- of technical problems
- of any other unavailability to offer the requested service

the contracting authority will then consult the Contractor(s) in order of their ranking and sign the specific contact for the deployment with the next Contractor in the list who first meets the requested capabilities.

5.2.2.5 Should more and different RPAS vehicles be needed than what can be provided by the first Contractor, then the following ranked Contractor(s) in order of their ranking may be requested to provide the outstanding number and a specific contract may also be drawn up for this purpose. Therefore several specific contracts could be signed with several companies for one user request.

6 Contract modules, timings and associated cost elements

6.1 General Considerations

6.1.1.1 Please note that the term deployment will be used in this document and means means a specific "service" which is requested by a user for a specific area for a determined period of time.

6.1.1.2 The following modules and associated cost elements over time will apply to all Lots. Please be aware that multiple deployments could run in parallel:

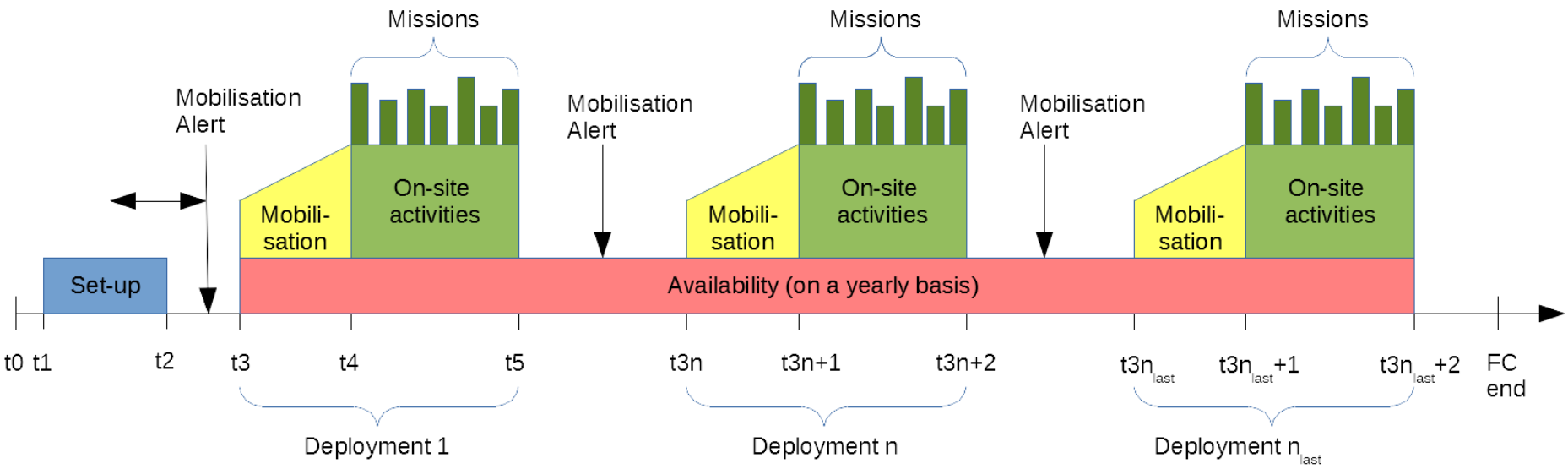

Figure 2 – Framework Contract timeline for various modules

Legend (details see text below):

- Set-Up: means all costs associated to the adaptations for the data handling and interfacing with the users, and with the refitting of the aircraft, local ground control segment (LGCS) and any preparations and adjustments needed to be ready for a future deployment
- Mobilisation Alert: information to the Contractor, that a deployment is planned
- Mobilisation: means all costs associated with moving the RPAS vehicle, local ground control segment (LGCS), the staff, etc. to be on-site where the deployment base will be.
- On-Site activities: means all costs associated to working staff, etc. associated with the deployment.
- Missions: includes all costs for the flight hours.
- Availability: covers costs to keep the RPAS available for operations.

With:

- t0: signature of the framework contract
- t1: signature of the specific contract for the initial set-up. It is the intention to sign the specific contract immediatly after t0
- t2: end of set-up phase

- t3: signature of the specific contract for the deployment including mobilisation costs, onsite-costs and costs of the missions (per flight hour). The permit must be available before the specific contract is signed.
- t4: end of mobilisation and start of on-site activities and missions
- T5: end of deployment
- n: the number of the deployment
- n_{last}: the last deployment within the framework contract

Note: the mobilisation of the first deployment might be requested during the set-up phase, so that the first on-site activities may immediately follow the set-up phase.

6.2 Module 1: Initial set-up phase

6.2.1.1 The first phase from when the FWC will be signed until the first user requests a specific operation, will be the set-up phase. This should be the time when the companies adapt the RPAS to meet the requirements for a potential deployment.

6.2.1.2 The set-up costs cover at the beginning of the contract the

- set up of the data provision and visualisation enabling the users and the Agencies to have access to the real time data/video streams;
- assembling a stand-alone mobile unit for flight monitoring and data visualisation which could be transferred to the requesting user, if necessary according to section 7.1.6.10.

6.2.1.3 The contracting authority assumes that the RPAs are already available for flight operations and do not require dedicated development to be fit for purpose. However, if necessary, this module will cover any

- refitting of the aircraft and any preparations and adjustments needed to be ready for a future deployment.

6.2.1.4 The setup-phase will be with the successful acceptance of the "minimum capabilities" as requested within the tender specifications in section 7.

6.2.1.5 A final report should be produced to indicate that all tests performed show that the Contractor is ready for a potential deployment according to the requirements indicated in these specifications.

6.2.1.6 The set-up phase shall not last more than 3 months after signature of the specific contract for this module.

6.3 Module 2: Mobilisation

6.3.1.1 This phase includes transport of the RPAS, the ground station, and the staff to the relevant location.

6.3.1.2 The contracting authority intends to task the Contractor for the mobilisation with at least a 30 day notice (mobilisation alert in Figure 2). The process to obtain the "permit to fly" will already have started however during this 30 day time period the "permit to fly" shall be received from the requesting state, which then enables the contracting authority to issue the specific contract for the mobilisation, deployment and missions (flights). However, the specific contract will always remain subject to the approval of the flight permission.

6.3.1.3 The maximum time for mobilisation after the signature of the specific contract for the mobilisation, deployment and missions shall then not exceed two

weeks. Therefore in essence there should normally be at least 6 weeks for the contractor to prepare for operations.

6.3.1.4 However in exceptional or emergency situations, the contracting authority or user may want to be able to mobilise on short notice. The Bidder is requested to provide in its bid the minimum possible time from the mobilisation alert to be ready for a deployment. This minimum time will be taken into account during the evaluation of the bids.

6.3.1.5 Therefore at the time the Contractor receives an alert that the mobilisation will be taking place in the near future, the process to achieve the "permit to fly" is already ongoing under the responsibility of the user (see 7.1.5.1). The specific contract will be signed with the Contractor only once the permit to fly is obtained.

6.3.1.6 The mobilisation costs should cover:

- preparation of a deployment
- assisting activities to achieve the permits to fly and providing the necessary documentation to support the approvals and permits to fly
- the transport of the aircraft, ground station and all other relevant equipment
- the travel costs of staff
- the on-site preparation

6.3.1.7 The relocation costs are applicable from one site to another within and across Europe. They are dependent on a distance, meaning that they are composed of two elements:

- a fixed fee (covering the on-site and deployment preparation)
- a variable fee for each mobilisation per 500 km of straight distance (great circle) (covering staff travel costs and costs associated with moving the relevant RPA and equipment/base)

6.3.1.8 At least one operational briefing on the object(s) of interest will be held per deployment and at the site of the deployment. The service manager from the Contractor has to be present at this briefing.

6.3.1.9 The mobilisation of the first deployment might be requested during the set-up phase, so that the first on-site activities may immediately follow the set-up phase.

6.3.1.10 If the Contractor fails to mobilise as requested and according to the specifications, the contracting authority may terminate the contract in line with Article I.11 of the framework contract.

6.3.1.11 During one deployment the operation could be redeployed to another location if necessary for the operation. In this case an additional mobilisation fee will be paid.

6.3.1.12 The mobilisation fees should be covered by the Contractor should the contractor with the consent of the contracting authority would chose another airport other than the one offered by the country from the requesting user,

6.4 Module 3: On-site activities

6.4.1.1 Each on-site activity will have a minimum duration of 1 month with possibility of extension. For longer operations of at least 3 months, a discount will apply (See price grids, section 19.2).

6.4.1.2 The Contractor must be able to provide services every day whether day or night. However the flight planning is done based on a weekly schedule. In exceptional cases an unscheduled deployment might be requested, which the Contractor has to provide as soon as possible on a best effort basis.

6.4.1.3 The Bidder has to state its maximum flight capabilities per 24 hours.

6.4.1.4 Different operational scenarios in terms of duration of deployments could be foreseen, depending on user requests. Please refer to section 21.3 where two scenarios are described, which might represent the lower and upper limit of the on-site operations.

6.4.1.5 The on-site costs cover:

- the operation and maintenance of the RPAS on site
- the staff needed on site (mission/deployment control, pilot(s), payload operators, maintenance, etc.)
- the third party liability insurance
- accommodation expenses for the staff needed on site

6.4.1.6 The on-site operation costs will be settled on a quarterly basis.

6.4.1.7 The actual on-site operation costs will be calculated based on a calendar day.

6.5 Module 4: Flight operations/missions

6.5.1.1 Flight hours are calculated from take-off until landing of the RPA considering an airport provided by the requesting user.

6.5.1.2 For each month a minimum of 160 flight hours will be assumed however only the flight hours flown will be paid by the contracting authority. This means flights do not necessarily need to take place every day of the week.

6.5.1.3 The cost of the flight hours should cover:

- The fuel used in the operation
- All communication costs regardless if RLOS or BRLOS (i.e. payload transmission and command and control)
- any other flight related expense

6.5.1.4 Airport fees will be covered by the requesting user, if applicable. These fees should be covered by the Contractor should the contractor chose, with the consent of the contracting authority, another airport other than the one offered by the host country from the requesting user.

6.5.1.5 Different operational scenarios in terms of the number of flight hours could be foreseen, depending on user requests. The number of hours may vary throughout the month which means flights do not necessarily need to take place every day of the week. All pilot duty regulations should be followed when an estimate of the teams which will be deployed on site are given. However as indicated it will be the customer or requesting user from the Member State that will be deciding how many flight hours are needed per day. The bidder shall make the staff available to cover the maximum endurance of the RPA.

6.5.1.6 Please refer to section 21.3 where two scenarios are described, which might represent a lower and upper limit of the flight operations.A scaling effect with the number of flight hours executed over a period of 12 months of the framework contract (according to date of signature) shall apply:

- as soon as 500 flight hours have been performed/flown, the remaining flight hours to reach the end of the 12 month period will receive a 10% discount.

6.5.1.7 Tasking time

6.5.1.8 The flights will be tasked based on a weekly schedule. Only in exceptional cases an unscheduled deployment might be requested, which the Contractor has to provide as soon as possible on a best effort basis.

6.5.1.9 A requesting procedure will be discussed and confirmed during the kick-off meeting. The Contractor shall provide a requesting procedure for the actual flights including the foreseen flight path and the maximum duration of the flight (deployment planning). If the Bidder already has an automatic procedure, this should be described in the bid.

6.5.1.10 However in exceptional or emergency situations, the contracting authority may want to be able to request flights on short notice. The Bidder is requested to provide the minimum time for the aircraft to be ready to fly. The minimum time for tasking a flight will be taken into account during the evaluation of the bids.

6.5.2 Unavailability of service during deployments

6.5.2.1 In case of extreme weather conditions exceeding the declared operational performance and limitations (See 7.1.1.3) of the RPAS or in case of force majeure (not including unscheduled maintenance), the Contractor is entitled to receive the on-site costs, but no compensation will be paid for scheduled, but not performed flight hours. The Bidder has to provide the weather limitations for the RPA in the bid. The non-performed flight hours can be rescheduled and included in the next weekly flight plan.

6.5.2.2 In case the Contractor is not able to meet the total minimum amount of flight hours specified in the flight plan during the deployment, the on-site costs will be reduced proportionally (i.e. 144 out of 160 flight hours performed, means 10% reduction in on-site costs).

6.6 Module 5: Service availability/reservation fee

6.6.1.1 With the first mobilisation, the contracting authority will start to pay a "service availability or reservation fee" in order to ensure that the service is available for deployments within the mobilisation time. This will be applicable to all of the Contractors chosen for Lot 1 and 2, but not for Lot 3 as the investment in hardware is significantly lower.

6.6.1.2 The service availability fee will be paid per quarter calculated based on calendar days.

6.6.1.3 The maximum duration for a specific contract to cover the service availability fees will be 12 months. However, the contracting authority has the intention to conclude specific contracts until the end of the FWC duration. This is detailed further in the draft specific contract annexed to the draft FWC provided with this Invitation to Tender.

6.6.1.4 The availability fee will, in principle, apply during the entire duration of the contract from the moment of the first mobilisation for the first deployment. It will continue throughout the mobilisation, on-site activities and flights.

6.6.1.5 The service availability/reservation fee will not be paid if the RPAS service is being provided to other parties. When the service is not required for EMSA, it is in principle allowed to offer it to other parties when there is no possible conflict with a request for service. In that case, with prior written agreement of the Agency, it can be offered to third parties and the availability/reservation fee will be deducted pro rata.

6.6.1.6 In case the Contractor is:

- not able to provide the RPAS due to technical failures within the mobilisation time, the payment of the availability fee will be suspended;
- not able to provide the services as requested for the next deployment according to these technical specifications, the payment of the availability fee will be suspended.

6.6.1.7 Any availability fees already paid to the Contractor would then be retroactively recovered from the moment of the end of the last deployment in line with Article II.23 of the FWC.

6.6.1.8 After the end of the next successful deployment, the service availability fee(s) will again be paid.

6.7 Module 6: Interfacing

6.7.1.1 During the lifetime of the framework contract, the contracting authority may request to integrate the RPAS data streams in the maritime surveillance applications of the Agencies.

6.7.1.2 The data formats and transport mechanisms shall follow certain standards as described below. Only one data formats and transport mechanism shall be implemented applicable to all three Agencies.

6.7.1.3 The Bidder shall already provide an offer for the implementation of the interfaces on his side in the bid. It is up to the contracting authority to decide if and when this module will be implemented by issuing a specific contract for this module.

6.7.1.4 After module 6 has been completed the Contractor is then obliged to provide the data in the given formats and transport mechanisms.

6.7.1.5 All service video streams and image data shall be made available as georeferenced data (see table below) to be further processed and visualised.

6.7.1.6 All service feature data shall be made available as georeferenced data (see table below) to be fed into geospatial web services (e.g. OGC WFS-T).

6.7.1.7 The Contractor shall implement a solution for the inventory of the metadata within the context of the services (e.g. via OGC catalogue service (CSW)).

6.7.1.8 For communication purposes between contracting authority, the requesting national users (or European Agency or the European Commission) and the Contractor operational team, a chat interaction shall be established based on JABBER/XMPP.

6.7.1.9 The transfer mechanisms shall be based on HTTP(S), FTP, REST.

6.7.1.10 The web services will be based on OGC standards.

6.7.1.11 The Contractor shall provide the data from its servers in the following formats. Alternative formats require explicit approval of the contracting authority and shall not be the basis for the bids:

Data type	**Data format**
Video stream data	STANAG 4609 / MISB 0902 (time coded video data) H.264
Image data	JPEG2000
AIS data	NMEA
Feature data	XML(GML), GEOJASON, NetCDF

Chat communication	JABBER/XMPP
Metadata	ISO 19119/19115

Table 1 *Data exchange formats*

6.8 Other costs

6.8.1.1 The RPAS maintenance should be fully covered by the Contractor. This could also include potential modifications' costs related to repetitive issues found during operations that could jeopardise availability.

6.8.1.2 No system maintenance or any other additional costs are to be charged to the contracting authority.

7 Service requirements and Conops

7.1 General Considerations

7.1.1 Requirements for all 3 Lots

7.1.1.1 The contracting authority wants to build upon RPAS solutions that are already flying the required sensors. Additional equipment/sensors not indicated as "Mandatory" may be put in place during the lifetime of the contract.

7.1.1.2 The Remotely Piloted Aircraft System (RPAS) should include relevant aircraft (RPA), ground control system, launch and recovery equipment (if needed) and communication systems and any other relevant parts required to provide the services.

7.1.1.3 The Bidder shall provide general performance and operational conditions of the proposed RPAS, including but not limited to:

- for general performance conditions: Maximum Take-Off Mass (MTOM), operating empty weight (without payload), recommended payload mass, maximum payload mass, dimensions, and endurance.
- For operational conditions and limitations: temperature range, humidity, precipation, wind tolerance (including ability for the payload to provide usable data), low visibility, ceiling altitude, take-off altitude flight radius, and ability to fly in icing conditions. (Note: the information provided should be accurate as if it is found to be incorrect at a later stage this could have severe consequences for the contract. In particular as the evaluation of the performance of the RPAS for such conditions is impossible during the evaluation process.)

7.1.1.4 At the beginning operations at one geographical location should be expected, ramping up to multiple geographical locations to be operated in parallel (by multiple companies) during the lifetime of the contract.

7.1.1.5 The service should be based on mobile unit (s) (LGCS) which can be relocated at any time.

7.1.1.6 The Bidder has to describe in detail the technical capabilities of the RPAS and sensors, and to which degree the requirements below are and will be met.

7.1.2 RPAS platform and sensors

7.1.2.1 The contractor must have appropriate third party liability insurance.

7.1.2.2 With regards to the liability for any loss or damage caused by the Contractor during or as a consequence of the implementation of the FWC, Article II.6 of the FWC applies.

7.1.3 RPAS communication infrastructure

7.1.3.1 The Contractor should include a clear description in his proposal on the communication channels capable of transmitting the payload data. This should include communication from the RPA to the ground segment and from there to the users and the three Agencies (the communication between the aircraft and the ground segment for the different lots is detailed in sections 7.2, 7.3 and 7.4).

7.1.3.2 The contracting authority will request the user/ the hosting entity of the operations to provide an internet connection at the Local Ground Control Station (LGCS) as depicted in Figure 1 (i.e. for distributing the payload data). The Bidder shall specify the minimum bandwith needs.

7.1.3.3 The radio and satellite communication from the RPAS to the LGCS and/or the CGCS shall be contracted for the entire area of operation as specified in the SC and based on the user request. As much as possible the Contractor will ensure that they are available for the entire area.

7.1.3.4 In particular the Bidder shall describe in detail which communication technology is used to transmit in real time all data to the Contractor ground system, including:

- satellite network,
- network mode,
- frequency,
- guaranteed bandwidth,
- area of coverage,
- latency time.

This has to be provided for RLOS and BRLOS communication channels.

7.1.3.5 If the frequency bands are not in the aeronautical band and/or the equipment do not have an aviation certification, there is a need to obtain an approval to emit in the frequency band.

7.1.3.6 The Bidder shall also explain how the access authorisations for the frequency bands will be obtained in the EU Member States. The Bidder is expected to prepare the associated data package and obtain the related authorisations for the usage of the frequency spectrum.

7.1.3.7 Communication ('command and control) between the RPA and the ground segment

7.1.3.8 An ATC communication link with the Air Traffic Controller in charge of the sector the RPAS is operated in must be provided. This link must be proven meeting the relevant ATC communication standards.

7.1.3.9 The RPA and the ground segment should be both able to transmit and receive command and control data under RLOS and BRLOS conditions. A back up Command and Control Link is mandatory, preferably using an other set of frequencies than the primary datalink.

7.1.3.10 The BRLOS and the RLOS communications shall provide a bandwidth allowing to transmit all command and control and flight data from the RPA to the ground segment.

7.1.3.11 BRLOS communication must use satellite communications. The performance of the satellite link must allow both safe command and control communications.

7.1.3.12 Communication (payload link) between the RPA and the ground segment

7.1.3.13 The RPA and the ground segment should be both able to transmit and receive payload data under RLOS and BRLOS conditions.

7.1.3.14 The BRLOS and the RLOS communications shall provide a bandwidth allowing to transmit all payload and relevant flight data from the RPA to the ground segment.

7.1.3.15 BRLOS communication must use satellite communications. The performance of the satellite link must allow the transmission of payload data according to the operational needs.

7.1.3.16 At minimum the communication bandwidth for the payload data shall be capable to transmit in parallel:

- one compressed video stream with either a frame rate of at least 10fps and a minimum resolution of 1024 x 768 pixel or a frame rate of at least 25fps and a minimum resolution of 720 x 576 pixel; as requested for the deployment;
- one high resolution image of at least 2 megapixel every second;
- all flight, housekeeping and metadata needed to fully characterise the data received (e.g. georeferenciation).

7.1.3.17 This however should not be achieved by degrading the command and Control data stream.

7.1.3.18 The Bidder shall describe which communication contracts are already in place and/or foreseen.

7.1.3.19 Communication between Central Ground Control Station and users/European Agencies

7.1.3.20 The Contractor should provide the payload and relevant flight data from the Central Ground Control Station (CGCS) (as depicted in Figure 1) via internet communication to the users in the host country and in parallel to EMSA, FRONTEX and EFCA. The connection to the internet should have a bandwidth suitable to transfer all data without any latency delay due to bandwidth limitations due to the Contractor internet connection.

7.1.3.21 The Bidder should provide a secondary (back-up) communication link to the internet, in case of technical failure in the primary communication link.

7.1.3.22 Whether the internet communication is managed by the Contractor or sub-contracted to a telecommunications service provider, it should be a fully managed service including all necessary circuit, hardware and software rental and maintenance for the duration of the contract.

7.1.3.23 The Contractor shall bear all costs (set-up, maintenance, operation and the fee's to the communication service providers) for data transfer to the end point.

7.1.3.24 The Contractor shall perform standard virus checking, anti-hacking and network security procedures on all messages to prevent malicious attacks.

7.1.3.25 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.

7.1.3.26 Use of GEANT

7.1.3.27 EMSA has a connection to the European R&E[2] 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.

[2] Research and Education

7.1.3.28 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.

7.1.3.29 The Contractor may, through the local NREN, connect to the R&E network.

7.1.3.30 The cost of the data transmission over the GEANT network and the transmission from the Portuguese NREN to EMSA will be covered by EMSA.

7.1.3.31 If the Contractor decides to use the R&E network, the Contractor will only need to bear 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.

7.1.4 RPA approval

7.1.4.1 The RPAS must as much as possible use systems/sensors and/or communication devices that have been approved as part of an RPA which was granted a previous permit to fly. Alternatively, compliance to recognised industry standards shall be demonstrated. The level of compliance to environmental standards should be compatible with the envisaged maritime operations (e.g. salt, humidity, temperature range, high intensity radiated fields, etc.). For example, Eurocae ED14/RTCA DO160 defines environmental qualification tests for equipment used in manned aviation. Equivalent military standards such as for example STANAG 4370 (AECTP 230) or MIL-STD-810-G could also be used. The Bidder shall identify the previous approval status and approval types for the RPAS, its components, and sensors and relevant certified management systems should be used according to aviation standards.

7.1.4.2 Safe operations should be ensured by having qualified personnel and risk mitigation measures. The Bidder shall provide in its proposal the experience of his staff in previous approval processes. The Bidder shall summarise his proposed approach to manage the operational risks and demonstrate to the approval authorities that risks are appropriately mitigated. This shall encompass all the elements of the operations from the deployment preparation, the design safety features to the qualification of the RPA pilots and the efficiency of the emergency procedures. Some references are provided in section 7.1.4.3 in order to clarify the expectations.

7.1.4.3 Contractors shall support the European Union in its activities to draw European standards on RPAS authorisation and operation. To this extent the Contractor is requested to provide data related to the successful deployments and to voluntarily report incidents. These voluntary reports shall be submitted to the European Aviation Safety Agency[3]. These events will be recorded in the

[3] http://www.easa.europa.eu/

European Central Repository and analysed as part of the Annual Safety Review[4]. The Contractor is asked to make these data available also for the development of a standardised operational environment and risk assessment of RPAS for the "Specific operation" category[5] for maritime surveillance. The extraction and analysis of the data will be performed by the European Aviation Safety Agency.

References:

Reference	Link
Eurocontrol RPAS documents	http://www.eurocontrol.int/articles/rpas-documents
Safety Assessment & Certification for UAS, Andrew R Evans & Dr Mark Nicholson, JRA Aerospace Ltd / The University of York	http://www-users.cs.york.ac.uk/~mark/papers/BristolUAV07.pdf
Multiple-Scenario Unmanned Aerial System Control: A Systems Engineering Approach and Review of Existing Control Methods, Aerospace 2013, 3, 1; doi:10.3390/aerospace3010001	http://www.mdpi.com/2226-4310/3/1/1/htm

7.1.5 Air traffic management

7.1.5.1 The contracting authority is aware of the difficulties to operate RPAS in non-segregated air space and getting the permits-to-fly. The users request the services and as such provide an official need for a permit-to-fly. As the requesting users in general have institutional contacts with the civil aviation agency responsible for the national Air Traffic Management (ATM), it will also be the responsibility of the users in cooperation with the contracting authority to facilitate the process and to provide the permits-to fly.

[4] See for example, http://easa.europa.eu/system/files/dfu/203807_EASA_SAFETY_REVIEW_2014.pdf

[5] See EASA: https://easa.europa.eu/document-library/notices-of-proposed-amendment/npa-2015-10

7.1.5.2 Cross border operations shall be possible. Therefore paragraph 7.1.5.1 will be applicable for all the concerned Member States.

7.1.5.3 However the Contractor is obliged to provide all documentation necessary in a timely manner and to support the process of receiving flight approval. This means the company is responsible to assist but the requesting user will be the one responsible for the permit to fly.

7.1.5.4 It will be the decision of the national ATM authority to approve or suggest acceptable solutions related to the flight modalities, e.g. flying within the non-segregated or segregated airspace, the flight levels, the restrictions and/or if the segregated airspace is dynamically allocated for the aircraft operations.

7.1.5.5 In order to achieve flight approval, it is an advantage, if the Contractor can:

a) provide previous authorisations for the aircraft and sensors operated
b) have ”detect and avoid”[6] technologies, even if international standards are not yet available. This will also enable to gather in-service experience to mature the technologies.
c) document the flight hours carried out so far with this RPA. Since the flight operations will be approved by different Member States, evidence of similar operations with incident rates and consequences is expected to simplify the approval process.

7.1.5.6 The Contractor shall provide in its bid the experience of his staff with ATM procedures for integration of its RPAS into the airspace and previous flight approvals already received for the proposed RPAS.

7.1.5.7 The Bidder is requested to describe already available:

a) operational procedures for the proposed RPAS including interaction with ATC and hand-over procedure between RPA pilots;
b) flight check lists;
c) maintenance plans;
d) RPA pilots’ qualification/training plan including ATM/airspace knowledge;
e) Mitigation strategy for the following generic hazardous scenarios: loss of command/control link, loss of ground control station, loss of communications with ATC, loss of control of RPA, loss of engine and technical failure of the RPA;

[6] In this document, ‘detect and avoid’, ‘sense and avoid’ or ‘collision avoidance’ system are used loosely; the intent of such a system is to detect aircraft and/or obstacles within the vicinity of the RPA, and support the RPA pilot or automatically execute manoeuvres to restore a safe situation if needed.

f) any proposed ”detect and avoid” technology;

g) contingency procedures.

7.1.6 Data provision

7.1.6.1 The data should be presented in the shortest possible time from when the data is acquired by the sensor on the RPAS to it being available to the EMSA applications for the user to access via an RPAS viewing system and enabling him to react immediately. There should be no additional delay other than the data transfer between data capture and availability at any of the Agency applications. In case the data products have to be processed and/or are derived from multiple measurements (e.g. an averaged figure) then the data should be made available immediately after the processing has been finalised with no additional delay.

7.1.6.2 Therefore the video data for example should be live streaming so that the user can see in almost real time what the RPAS is seeing or where it is flying or following a specific object at sea. The tenderers are invited to state the latency time of the different data products.

7.1.6.3 The service provider shall be able in real time/in the shortest possible time to present via a geospatial information system and video viewer (video/GIS) data captured by all the sensors in the aircraft payload. This video/GIS system shall be made available to the users and to the contracting authority.

7.1.6.4 The requesting user (at a national level) shall have the possiblity to limit/stop the payload data feed to other users.

7.1.6.5 At least the following data shall be made available to the user for all three lots in real time/in the shortest possible time:

a) Live Streaming Video (and recorded video access) of the image sensors on the RPA

b) Compiled Maritime Picture

- Aircraft position
- Executed flight path
- Moving Deployment Map
- Sensor footprint
- Radar images
- Identified objects in the radar signal, electro-optical and IR images
- AIS information and track (position, MMSI, …) of the vessels
- Georeferenced objects and incidents of interest in any of the sensor data

7.1.6.6 The Contractor shall analyse the video streams based on user requests which are defined within the flight plan, but can be updated during the flight. This includes the immediate informing of the users. The analysis could encompass for example and not limited to:

- Vessel identification
- any activity which may be taking place (i.e. fishing, towing, transfer, etc.)
- scanning/sweeping of certain areas for specific targets
- tracking of objects in support to search and rescue operations
- oil spill detection and delineation

7.1.6.7 The data to be analysed shall be specified further in the deployment or mission briefing.

7.1.6.8 Any further data product provided by the Bidder shall be listed in the proposal and will be evaluated as an advantage.

7.1.6.9 It is an advantage if this video/GIS is a web based video/GIS application and can be visualised with standard web browsers without requiring special plugins. The following web browsers should be supported (for the specific version of the browsers, please consult the EC "Browser support" web page: http://ec.europa.eu/ipg/standards/browsers/index_en.htm.):

- Microsoft Internet Explorer
- Firefox
- Chrome
- Safari

7.1.6.10 In case the Contractor cannot provide a web based video/GIS application as described above and is using proprietory technology for data dissemination he has to provide mobile units (e.g. laptops with the relevant software installed) for stand-alone data monitoring by users.

7.1.6.11 These mobile units must allow data export. The data should be made available in agreed formats and exchange protocols to users and the applications of the Agencies.

7.1.6.12 The Bidder is requested to describe in the bid the data visualisation technology he provides in detail and to provide access to a mock-up or test account during the evaluation phase demonstrating the visualisation and data exploitation capabilities of the offered systems. EMSA believes that the bidders already have visualisation and data exploitation capabilities and therefore the mock-up solution or test account refers to these existing systems. This is in order for EMSA to be able to analyse and compare the offered data visualisation technology to other bidder solutions during the evaluation phase.

7.1.6.13 All data shall be at least accessible from the contactor from his servers for a period of 3 months after the data have been obtained.

7.1.6.14 With Module 6, the contracting authority might request automated data dissemination to the Agencies in specific formats as described in section 6.6.1.7 which will go directly to the applications of the three Agencies to complete the maritime picture available to users.

7.1.7 Experts and operational personnel

7.1.7.1 The agencies and/or Member State requesting the service would like the possibility to have operational control of the personnel. This means that the requesting user is able to communicate with the remote pilots to tell them where to fly and sensor/payload operators where and what to zoom into.

7.1.7.2 The Contractor shall provide:

7.1.7.3 Remote pilot(s):

a) should be authorised to deliver the surveillance flights during day/night;
b) should be trained to relevant standards and should be authorised to pilot the RPAS vehicles/platforms;
c) should at least be previously qualified on another aircraft or should hold a qualification of knowledge of the rules of the air;
d) all RPA pilots shall demonstrate that they underwent a full RPA training program;
e) shall demonstrate a good command of English to be able to communicate with the requesting user.

7.1.7.4 Sensor/payload operators:

a) crew with a proven record on sensor operation and data analysis;
b) the potential contribution of the payload operator actions to safety issues has to be mitigated;
c) shall demonstrate a good command of English to be able to communicate with the requesting user.

7.1.7.5 Ground crew:

a) staff to ensure the availability, operation and reliability of the service (technician(s) - for maintenance, payload management, communications, etc.).

7.1.7.6 The Bidder shall describe the training facilities and training plans, including regular refreshment training courses, for the pilots and operators.

7.1.7.7 The Bidder shall list the above mentioned experts foreseen for the execution of this contract. (see point 20.5.2).

7.1.7.8 Any security clearance of staff shall be mentioned in the bid and will be evaluated as an advantage.

7.1.7.9 In case an expert will be replaced during the lifetime of the contract, a person with at least similar qualifications should take over the duties. the contracting authority has to approve the changes and a new CV with an update of the table in Annex B has to be provided.

7.1.8 Logistics

7.1.8.1 The users request the services and as such provide an official need for operations. It will also be the responsibility of the users in cooperation with the contracting authority and the Contractor to provide the base airport facilities, taking into account the operational suitability, working hours and the existence of adequate logistical services.

7.1.8.2 A safe location will be provided by the requesting user or the hosting entity of the operations (Member State). This will be determined on a case by case basis however EMSA cannot take responsibility for any of the contents of the local ground control station.

7.1.8.3 This facility will normally be located in the near vicinity of the airport and the Member State will provide infrastructure like power, cable, phone lines, water and sanitation.

7.1.8.4 The Contractor shall manage logistical issues including:

- Insurances for people and equipment;
- Ground support for the RPAS including the mobile unit (LGCS) at the location of operation;
- Deployment support to staff (transport, accommodation, etc.);
- Support to ATC authorisations;
- Set up the local communication links to operate the RPA as needed and described above;
- Diplomatic clearance (when required).

7.1.8.5 The Contractor must ensure that restrictions or constraints

- from customs
- due to export licenses
- International Traffic on Arms Regulation – ITAR

do not hinder operations in all European Union Member States and EFTA countries.

7.1.9 Quality control

7.1.9.1 A quality management plan or system for the services provided should be shown or perhaps alternatively an ISO certification or an aviation organisation approval for the services provided.

7.1.9.2 Upon request, the Contracting Authority can request calibration certificates of the sensors and the on-board housekeeping equipment

7.2 Lot 1: Large size RPAS services with "Long endurance" and extended sensor capabilities

7.2.1 Definition of service

7.2.1.1 The expected services are explained in section 7.1. The focus of Lot 1 is to achieve services of very long endurance.

7.2.2 Aircraft and operational requirements

7.2.2.1 The principal requirements are listed below:

Area (see 7.1.5.1 and 7.1.5.2)	Areas of operation can be all sea areas surrounding the European Union with an EU or EFTA country	Mandatory
	If requested by governmental users, the service could be extended outside EU adjacent sea basins.	Mandatory
	Cross border operations will be included. Starting point can be any EU/EFTA country.	Mandatory
Endurance	An endurance of 12 hours with the full set of sensors.	Mandatory
	A longer endurance above 12h is a key advantage of the system	Advantage
Frequency of flights	Capability to operate one flight every day with the maximum endurance.	Mandatory
	Capability to operate total flight operations of longer than 14 hours every day. This might require multiple RPAs. It is with the Bidder to define the appropriate fleet.	Advantage
Daytime	Day and night operation capability	Mandatory
Environmental conditions / Flight stability	Operation in strong and turbulent weather conditions incl. crosswind (> Bft. 6 or 22-27 knots)	Mandatory

Ref to 7.1.1.3	Operation in heavy precipitation situations and reduced visibility.	Advantageous (please detail the capabilities in the bid)
	Operation in icy conditions	Advantage (please detail the capabilities in the bid)
Modes	Travelling/taxi mode: travel to the AoI	Mandatory
	Monitoring mode: Flying in order to detect vessels, pollution, humans in distress, and other human activity at sea	
	Loitering: Supporting actions (e.g. pollution response, search and rescue, rendez vous at sea) at different flight levels	
	Adaptation of the flight track and sensor operation according to last user request upfront and during the flight operation	
Flight altitude	Up to 5000m (or approx. 17000 feet)	Advantage
Range	500 km (approx. 270 nm) (BRLOS operation)	Mandatory
	A range of more than 500km is a key advantage.	Advantage
Communication	RLOS and BRLOS with satellite Data Down Link capabilities for payload data	Mandatory
Take-off and landing	The RPAs shall allow automatic take-off and landing	Advantage
Flight mobilisation time	Scheduled tasking: The missions will be tasked on a weekly basis. However the flight operations can be detailed up to 1 hour before the start.	Mandatory
	Unscheduled tasking: The goal for the flight mobilisation time from the receipt of tasking until the flight operation shall be less than 4 hours.	Optional on best effort basis (please detail the capabilities in the bid)
Safety issues / authorisations/	Operational risk management file and mitigation means for the flight	Mandatory

safeguards-pilot licenses	authorisation (see 7.1.4.2); Reporting of incidents (see 7.1.4.3). These elements have to be tailored to the operations intended in lot 1.	
	Safety features on board	Advantage
Pilots, payload operator issues	See 7.1.7.3 and 7.1.7.4. These elements have to be tailored to the operations intended in lot 1.	Mandatory
Ground station /segment issues	Operational risk management file and mitigation means for the flight authorisation (see 7.1.4.2); Hand-over procedure for RPA pilots as applicable (see 7.1.4.2); Reporting of incidents related to ground station (see 7.1.4.3). These elements have to be tailored to the operations intended in lot 1.	Mandatory

Table 2 *Operational requirements Lot 1*

7.2.2.2 In order to extend the range and endurance the Bidder may also propose a multi-RPAS/multi-ground station setup. However this system will be evaluated as one Remotely Piloted Aircraft System.

7.2.3 Sensor requirements

7.2.3.1 The requirements to be achieved are listed below:

All sensors	Specification of the sustainable environmental conditions for operations and for storage (e.g. humidity, stable wind an gusts, salt concentrations, etc.).	Mandatory
Gimble, including the following devices:	Forward looking and steerable in all directions Including an EO sensor and thermal IR sensor and laser illuminator (if available) All sensors in synchronisation	Mandatory

- **Electro optical (EO), visible**	Field of view > 40 degrees Optical zoom more than 10 At least 1000 pixels in one dimension	Mandatory
- **IR, either SWIR, MWIR or LWIR**	Field of view > 30 degrees Optical zoom more than 10 (for LWIR it is an advantage) Noise equivalent temperature resolution better 0.1K (if no thermal IR nadir scanner is available) Temperatur range 0 to 2000 degree celsius At least 600 pixels in one dimension	Mandatory
- **Laser illuminator in the IR**	forward looking and steerable in synchronisation in an sprectral range covered by the EO or IR	Advantage
Thermal IR nadir scanner, LWIR	Field of view > 60 degrees At least 1000 pixels in one dimension Noise equivalent temperature resolution better than 0.1K	Only necessary if the IR sensor in the gimbal is not already in the LWIR range Advantage.
Maritime radar	360º coverage with multimode capabilities: Maritime modes: • Detection and tracking of vessels (up to 200 km) Other modes: • Detection and localization of aircraft • Detection and localization of rainy zones • Interrogation/Detection of Search and Rescue beacons With a resolution of up to 50cm depending on the mode	Mandatory A range more than 80 km is an advantage

Synthetic aperture radar (SAR)	X or C band Range of 30km preferably 360 degrees or otherwise each side of the aircraft With the detection capability of oil on water and of vessels With a resolution of up to 50 cm depending on the mode.	Mandatory, if not covered by the maritime radar
	A range of more than 30km is a key advantage.	Advantage
AIS	AIS receiver with capabilities to relay the data	Mandatory within a half year
Distress sensors	Distress signal receiver with capabilities to relay the data (EPIRB)	Mandatory within a half year
Telephone mobile unit detections	Terrestrial mobile frequencies	Advantage
	Satellite mobile frequencies	Advantage
Aircraft housekeeping data	e.g. position, altitude, aircraft principal axes, viewing geometry of the sensors, health of the system and sensors, communication links	Mandatory
Data quality	The data provided shall be geo-referenced with an accuracy of better 100m within a range of 20 km. The sensors shall be calibrated. See section 7.1.9.	Mandatory
Data delivery and formats for integration into Agencies systems	See section 7.1.6: Data provision	Mandatory
	See section 6.7: Module 6: Interfacing	optional Module 6

Table 3 *Sensor requirements Lot 1*

7.2.3.2 For immediate services after signature of the framework contract, the "Mandatory" configuration shall be already available and provided by the Contractor as a minimum. This configuration shall be assumed for the price grids in Section 19.2.

7.2.3.3 The Bidder is required to state the flight hours the RPAS has already undertaken in this "Mandatory" configuration. It will be an advantage if the Bidder can prove that this configuration was already in operational use.

7.3 Lot 2: Medium Size RPAS services with "Long endurance"

7.3.1 Definition of service

7.3.1.1 The expected services are explained in section 7.1.

7.3.1.2 A limited mean-take-off-mass (MTOM) is an advantage in receiving the permission-to fly.

7.3.2 Aircraft and operational requirements

7.3.2.1 The principal requirements are listed below:

Area (see 7.1.5.1 and 7.1.5.2)	Areas of operation can be all sea areas surrounding the European Union with an EU or EFTA country.	Mandatory
	If requested by governmental users, the service could be extended outside EU adjacent sea basins.	Mandatory
	Cross border operations will be included. Starting point can be any EU/EFTA country	Mandatory
Endurance	An endurance of 8 hours with the full set of sensors.	Mandatory
	A longer endurance above 8 hours is a key advantage of the system	Advantage
Frequency of flights	Capability to operate one flight every day with the maximum endurance.	Mandatory
	Capability to operate total flight operations of longer than 10 hours every day. This might require multiple RPAs. It is with the Bidder to define the appropriate fleet.	Advantage
Daytime	Day and night operation capability	Mandatory
Environmental conditions /	Operation in strong and turbulent weather conditions incl. crosswind (> Bft. 6 or 22-	Mandatory

Flight stability **Ref to 7.1.1.3**	27 knots)	
	Operation in heavy precipitation situations and reduced visibility	Advantage (please detail the capabilities in the bid)
	Operation in icy conditions	Advantage (please detail the capabilities in the bid)
Modes	Travelling/taxi mode: travel to the AoI	Mandatory
	Monitoring mode: Flying in order to detect vessels, pollution, humans in distress, and other human activity at sea	
	Loitering: Supporting actions (e.g. pollution response, search and rescue, rendez vous at sea) at different flight levels	
	Adaptation of the flight track and sensor operation according to last user request upfront and during the flight operation	
Flight altitude	Up to 3000m (or approx. 10,000 feet)	Advantage
Range	300 km (approx. 220 nm) (BRLOS operation)	Mandatory
	A range of more than 300km is a key advantage.	Advantage
Communication	RLOS and BRLOS with satellite Data Down Link capabilities for payload data	Mandatory
Take-off and landing	The RPAs shall allow automatic take-off and landing	Advantage
Flight mobilisation time	Scheduled tasking: The missions will be tasked on a weekly basis. However the flight operations can be detailed up to 1 hour before the start.	Mandatory
	Unscheduled tasking: The goal for the flight mobilisation time from the receipt of tasking until the flight operation shall be less than 4 hours.	Optional on best effort basis (please detail the capabilities in the bid)

Safety issues / authorisations/ safeguards- pilot licenses	Operational risk management file and mitigation means for the flight authorisation (see 7.1.4.2); Reporting of incidents (see 7.1.4.3).	These elements have to be tailored to the operations intended in lot 2. Mandatory
	Safety features on board	Advantage
Pilots, payload operator issues	See 7.1.7.3 and 7.1.7.4. These elements have to be tailored to the operations intended for lot 2.	Mandatory
Ground station /segment issues	Operational risk management file and mitigation means for the flight authorisation (see 7.1.4.2); Hand-over procedure for RPA pilots as applicable (see 7.1.4.2); Reporting of incidents related to ground station (see 7.1.4.3). These elements have to be tailored to the operations intended for lot 2.	Mandatory

Table 4 *Operational requirements Lot 2*

7.3.2.2 In order to extend the range and endurance the Bidder may also propose a multi-RPAS/multi-ground station setup. However this system will be evaluated as one Remotely Piloted Aircraft System.

7.3.3 Sensor requirements

7.3.3.1 The requirements to be achieved are listed below:

All sensors	Specification of the sustainable environmental conditions for operations and for storage (e.g. humidity, stable wind and gusts, salt concentrations, etc.).	Mandatory
Gimble, including the following devices:	Forward looking and steerable in all directions (fully stabilised) Including an EO sensor and thermal IR sensor and laser illuminator (if available) All sensors in synchronisation	Mandatory

- **Electro optical (EO), visible**	Field of view > 40 degrees Optical zoom more than 10 At least 1000 pixels in one dimension	Mandatory
- **IR, either SWIR, MWIR or LWIR**	Field of view > 30 degree Optical zoom more than 10 (for LWIR it is an advantage) Noise equivalent temperature resolution better 0.1K (if no thermal IR nadir scanner is available) Temperature range 0 to 2000 degree celsius At least 600 pixels in one dimension	Mandatory
- **Laser illuminator in the IR**	forward looking and steerable in synchronisation in an spectral range covered by the EO or IR	Advantage
Thermal IR nadir scanner, LWIR	Field of view > 60 degree At least 1000 pixels in one dimension Noise equivalent temperature resolution better than 0.1K	Only necessary if the IR sensor in the gimbal is not already in the LWIR range Advantage
Maritime radar	360º coverage with multimode capabilities: Maritime modes: • Detection and tracking of vessels (up to 100 km) • Detection localization and tracking of small targets in High Sea States Other modes: • Detection and localization of aircraft • Detection and localization of rainy zones • Interrogation/Detection of Search and Rescue beacons With a resolution of up to 50cm depending on the mode	Mandatory A range more than 50 km is an advantage

Synthetic aperture radar (SAR)	X or C band Range > 30km preferably 360 degree or otherwise each side of the aircraft With the detection capability of oil on water and of vessels With a resolution of up to 50cm depending on the mode	Mandatory if not covered by the maritime radar
AIS	AIS receiver with capabilities to relay the data	Mandatory within a half year
Distress sensors	Distress signal receiver with capabilities to relay the data (EPIRB)	Mandatory within a half year
Telephone mobile unit detections	Terrestrial mobile frequencies	Advantage
	Satellite mobile frequencies	Advantage
Aircraft housekeeping data	e.g. position, altitude, aircraft principal axes, viewing geometry of the sensors, health of the system and sensors, communication links	Mandatory
Data quality	The data provided shall be geo-referenced with an accuracy of better 100m within a range of 20 km. The sensors shall be calibrated. See section 7.1.9.	Mandatory
Data delivery and formats for integration into Agencies systems	See section 7.1.6: Data provision	Mandatory
	See section 6.7: Module 6: Interfacing	optional Module 6

Table 5 *Sensor requirements Lot 2*

7.3.3.2 For immediate services after signature of the framework contract, the "Mandatory" configuration shall be already available and provided by the Contractor as a minimum. This configuration shall be assumed for the price grids in Section 19.2.

7.3.3.3 The Bidder is required to state the flight hours the RPAS has already undertaken in this "Mandatory" configuration. It will be an advantage if the Bidder can prove that this configuration was already in operational use.

7.4 Lot 3: Vertical-Take-Off-and-Landing RPAS

7.4.1 Definition of service

7.4.1.1 The expected services are explained in section 7.1.

7.4.1.2 The focus of Lot 3 is to provide vertical-take-off-and-landing (VTOL) RPAS capabilities to users operated from their vessels or at remote locations on shore with a limited range.

7.4.2 Aircraft and operational requirements

7.4.2.1 The main requirements are listed below:

Area (see 7.1.5.1 and 7.1.5.2)	Areas of operation can be all sea areas surrounding the European Union with an EU or EFTA country.	Mandatory
	If requested by governmental users, the service could be extended outside EU adjacent sea basins.	Mandatory
	Cross border operations will be included. Starting point can be any EU/EFTA country.	Mandatory
Endurance	An endurance of 4 hours with the full set of sensors.	Mandatory
	A longer endurance above 4 hours is a key advantage of the system	Advantage
Frequency of flights	Capability to operate one flight every day with the maximum endurance.	Mandatory
	Capability to operate total flight operations of longer than 8 hours every day. This might require multiple RPAs. It is with the Bidder to define the appropriate fleet.	Advantage
Daytime	Day and night operation capability	Mandatory
Environmental conditions / Flight stability	Operation in strong and turbulent weather conditions incl. crosswind (> Bft. 6 or 22-27 knots)	Mandatory
	Capability to vertical take off and landing	Mandatory (please

Ref to 7.1.1.3	on vessels at sea	specify the area on the vessel necessary for the operations)
	Operation in heavy precipitation situations and reduced visibility	Advantage (please detail the capabilities in the bid)
	Operation in icy conditions	Advantage (please detail the capabilities in the bid)
Modes	Monitoring mode: Flying in order to detect vessels, pollution, humans in distress, and other human activity at sea	Mandatory
	Loitering: Supporting actions (e.g. pollution response, search and rescue, rendez vous at sea) at different flight levels	
	Adaptation of the flight track and sensor operation according to last user request upfront and during the flight operation	
Flight altitude	Up to 400m (or approx. 1200 feet)	Mandatory
Range	> 50 km in RLOS operation > 100 km in BRLOS operation (if available, see next point)	Mandatory
Communication	RLOS communication between RPAS and vessel ground segment	Mandatory
	BRLOS communication between RPAS and vessel ground segment would be a key advantage of the system	Advantage
	Between ground segment on vessel (or directly from RPAS) and central ground segment: BRLOS with satellite Data Down Link capabilities for payload data.	Advantage
Take-off and landing	The RPAs shall allow automatic take-off and landing	Advantage
Flight mobilisation time	Scheduled tasking: The missions will be tasked on a weekly basis. However the flight operations can be detailed up to 1 hour before the start.	Mandatory

	Unscheduled tasking: The goal for the flight mobilisation time from the receipt of tasking until the flight operation shall be less than 4 hours.	Optional on best effort basis (please detail the capabilities in the bid)
Safety issues / authorisations/ safeguards- pilot licenses	Operational risk management file and mitigation means for the flight authorisation (see 7.1.4.2); Reporting of incidents (see 7.1.4.3). These elements have to be tailored to the operations intended in lot 1.	Mandatory
Pilots, payload operator issues	See 7.1.7.3 and 7.1.7.4. These elements have to be tailored to the operations intended for lot 3.	Mandatory
Ground station /segment issues	Operational risk management file and mitigation means for the flight authorisation (see 7.1.4.2); Hand-over procedure for RPA pilots as applicable (see 7.1.4.2); Reporting of incidents related to ground station (see 7.1.4.3). These elements have to be tailored to the operations intended for lot 3.	Mandatory

Table 6 *Operational requirements Lot 3*

7.4.2.2 In order to extend the range and endurance the Bidder may also propose a multi-RPAS/multi-ground station setup. However this system will be evaluated as one Remotely Piloted Aircraft System.

7.4.3 Sensor requirements

7.4.3.1 The requirements the contracting authority would like to achieve are listed below:

All sensors	Specification of the sustainable environmental conditions for operations and for storage (e.g. humidity, stable wind and gusts, salt concentrations, etc.).	Mandatory
Gimble, including th following	Forward looking and steerable in all directions Including an EO sensor and thermal IR	Mandatory

devices:	sensor and laser illuminator (if available) All sensors in synchronisation	
- **Electro optical (EO), visible**	Field of view > 40 degrees Optical zoom more than 10 At least 1000 pixels in one dimension	Mandatory
- **IR, either SWIR, MWIR or LWIR**	Field of view > 30 degrees Optical zoom more than 10 (for LWIR it is an advantage) Noise equivalent temperature resolution better 0.1K (if no thermal IR nadir scanner is available) Temperatur range 0 to 2000 degree celsius At least 600 pixels in one dimension	Mandatory
- **Laser illuminator in the IR**	forward looking and steerable in synchronisation in an sprectral range covered by the EO or thermal IR	Advantage
Thermal IR nadir scanner, LWIR	Field of view > 60 degrees At least 1000 pixels in one dimension Noise equivalent temperature resolution better 0.1K	Only necessary if the IR sensor on the in the gimbal is not already in the LWIR range Advantage
Maritime radar	360º coverage with multimode capabilities: Maritime modes: • Detection and tracking of vessels (up to 80 km) • Detection localization and tracking of small targets in High Sea States Other modes: • Detection and localization of aircraft • Detection and localization of rainy zones • Interrogation/Detection of Search and Rescue beacons With a resolution of up to 50cm	Advantage A range more than 40 km is an advantage

	depending on the mode	
Synthetic aperture radar (SAR)	X or C band Range > 20km preferably 360 degrees or otherwise each side of the aircraft With the detection capability of oil on water and of vessels. With a resolution of better than 50cm depending on the mode	Advantage, as an alternative to the maritime radar
AIS	AIS receiver with capabilities to relay the data	Mandatory within a half year
Distress sensors	Distress signal receiver with capabilities to relay the data (EPIRB)	Mandatory within a half year
Telephone mobile unit detections	Terrestrial mobile frequencies	Advantage
	Satellite mobile frequencies	Advantage
Aircraft housekeeping data	e.g. position, altitude, aircraft principal axes, viewing geometry of the sensors, health of the system and sensors, communication links	Mandatory
Data quality	The data provided shall be geo-referenced with an accuracy of better 100m within a range of 20 km. The sensors shall be calibrated. See section 7.19.	Mandatory
Data delivery and formats for integration into Agencies systems	See section 7.1.6 Data Provision.	Mandatory
	See section 6.7 Module 6: Interfacing.	optional Module 6

Table 7 *Sensor requirements Lot 3*

7.4.3.2 For immediate services after signature of the framework contract, the "Mandatory" configuration shall be already available and provided by the Contractor as a minimum. This configuration shall be assumed for the price grids in Section 19.2.

7.4.3.3 The Bidder is required to state the flight hours the RPAS has already undertaken in this "Mandatory" configuration. It will be an advantage if the Bidder can prove that this configuration was already in operational use.

8 Service Reports and Invoicing

8.1 Mobilisation Reports

8.1.1.1 For each mobilisation (module 2), the Contractor has to produce a mobilisation report including activities performed according to Section 6.3.

8.2 Service Reports

8.2.1.1 For each deployment (modules 3 and 4), the Contractor has to produce a quarterly service report (accompanying the invoice) indicating what happened during the deployment, and including the following information:

- User who requested the deployment
- Description of the deployment
- Reference made to the Tasking Form
- Flight hours performed
- Flight hours performed outside what was tasked (over or under)
- Flight patterns made
- staff having worked on the deployment
- Main problems or issues to resolve for future deployments
- Main findings and observations during the deployment (the occurance of events grouped per category)

8.2.1.2 In case the Contractor was not able to perform the service, a non-flight report has to be issued per deployment, indicating

- User who requested the deployment
- Reference made to the Tasking Form
- Description of the planned missions
- Reason for cancelling the flight or for reduced flight hours compared to the agreed flight plan

8.2.1.3 Templates may be provided during the lifetime of the contract depending on the requesting user.

8.3 Availability Report

8.3.1.1 The Contractor must produce, along with the invoice, a report on the state of the RPAS, proving that the RPAS is available for services (module 5).

8.4 Interfacing Report

8.4.1.1 A report indicating what has been undertaken during the development of the system interfaces (module 6) including acceptance of the interfacing based on relevant testing must be produced by the Contractor.

8.5 Invoicing

8.5.1.1 The Contractor shall request the payment of the services delivered and agreed by the parties on a periodic basis as defined in the framework contract (tender enclosure II) and/or specific contracts. The above mentioned reports in chapters 8.1 to 8.4 will be used as supporting evidence for the invoices.

9 Contact point

9.1.1.1 The Contractor shall provide a contact person for the contracting authority to be able to address any enquiry. Enquiries shall be resolved in a timely manner.

9.1.1.2 A contact person for planning of deployment shall also be provided by the Contractor. This will be the focal point for any planning issue with regards to the missions.

10 Contract management responsible body

10.1.1.1 The European Maritime Safety Agency, - Department C - Operations will be responsible for managing the contract. The address of the contracting authority is the following: European Maritime Safety Agency, Praça Europa 4**,** 1249-206 Lisbon, Portugal.

11 Project management, operation, and emergency and quality plans

11.1 General

11.1.1.1 All documentation shall be written in the English language.

11.1.1.2 The Contractor shall be available for a monthly teleconference.

11.2 Project Management Plan

11.2.1.1 The project will require the highest standards of project and operational management.

11.2.1.2 The Bidder shall provide a Project Management Plan. This plan should contain the following elements as listed in this chapter:

- Proposed team structure and the involvement and interaction of each team member within the different modules of the FWC including deployments;
- Detailed curriculum vitae of the key technical and management persons who will be delivering the service under the proposed contract.
- Specific to Module 1 and 2 : Several Project Plans detailing the activities and timelines for the set-up period including final acceptance test

(Project Plan 1) and also timings and tasks for the mobilisation (Project Plan 2). The outline Plan 1 for the set-up shall include a work breakdown, a Gantt chart showing tasks to be done, schedule and milestones for service set-up including who will work on the tasks for the set-up. The Bidder shall describe contingency measures in case of system failures which may impact the service chain.

11.2.1.3 Recognised standards for project management shall be identified in the bid.

11.3 Operational Plan

11.3.1.1 This document is related to Module 3 and 4 and should cover how the RPA system is operated during deployments. This should include command and control procedures and communication with pilots, ATM authorities, etc.

11.4 Emergency /Contingency Plan

11.4.1.1 A plan should be provided which includes any emergency and contingency plans should an operation not go according to planned. This should be provided to the contracting authority during the set-up phase.

11.5 Quality Plan

11.5.1.1 A plan should be provided which shows the quality management for the contract which may include the quality management system that the company follows as well as specific quality related measures to be followed during the lifetime of the contract (i.e. ISO certification, etc.).

12 Timetable

12.1.1.1 The estimated date for signature of the framework contract is expected to be the fourth quarter 2016.

12.1.1.2 Module 1 services will be procured through the signature of a specific contract.

12.1.1.3 The service set-up of module 1 shall not last longer than 3 months after the signature of the specific contract.

12.1.1.4 The Bidder shall comply with the due date for all milestones, deliverables and meetings identified in the Table below.

	Event / Delivery	Date, Location From T0	Comment	Event	Delivery	Milestone
T0	Kick-off meeting (KOM) Signature of specific contract for service set-up[7]	KOM at the contracting authority also with EFCA and FRONTEX participation				x
T1	Update of the project plan and set-up plan	+ 1 week			x	
T2	Acceptance test of the set-up incl. - data handling and dissemination - relevant plans described in section 11	+10 weeks		x		x
T3	Delivery of set-up documentation	To be agreed at KOM	To be approved by the contracting authority		x	x
T4	Service in Full Operation	No later than +3 months	Final acceptance of RPAS system with report	x	x	x

Table 8 Set-up time table

12.1.1.5 The table above represents the indicative plan of the implementation of the FWC, which is not binding on the contracting authority and may be adapted during the contractual period.

12.1.1.6 If the Contractor has to deviate from the given timeframe justification for the deviation(s) must be given. the contracting authority reserves the right to disagree with the deviations and the proposed time plan.

12.1.1.7 The kick-off meeting will be held at the contracting authority 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 the 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.

[7] Framework contract(s) shall be already in place prior to kick-off meeting

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

12.1.1.9 For project management the EMSA web based tool TEAMFORGE may be used by both parties for the duration of the contract.

13 Estimated Value of the Contract

13.1 General

13.1.1.1 The estimated budget available for the contract is 67.1 Million Euros excluding VAT. This value does not indicate that this amount will be spent by the contracting authority under the contract.

13.1.1.2 The budget must cover all costs of the contract for all contractors and all lots (e.g. costs for setting up the service, testing, operations, maintenance and upgrades, meetings, and travelling) for the duration of the contract (the two years plus the possible renewal for one year and additional renewal for another year).

14 Terms of payment

14.1.1.1 Payments shall be issued in accordance with the provisions of the framework contract and specific contract(s) (Tender Enclosure II).

15 Terms of contract

15.1.1.1 When drawing up a bid, the Bidder should bear in mind the terms of the draft framework contract contained in Tender Enclosure II. The Framework Contract is a draft because it needs to be adapted with specific names to be included for the signing including the requesting user however the conditions cannot be changed. The Specific Contract will only be amended based on the type of request received.

15.1.1.2 The contracting authority may, before the contract is signed, either abandon the procurement or cancel the award procedure without the Bidder being entitled to claim any compensation.

15.1.1.3 The implementation of the contracts follows the rules as already described in chapters 5.2 and 6.

15.1.1.4 The ownership of the derived data shall be fully and irrevocably acquired by the contracting authority as stipulated in the draft framework contract (Tender Enclosure II).

16 Subcontracting

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

16.1.1.2 The tenderer must provide required evidence for the exclusion and selection criteria on its own behalf and, when applicable, on behalf of its subcontractors. The evidence for the selection criteria on behalf of subcontractors must be provided where the tenderer relies on the capacities of subcontractors to fulfil selection criteria[8]. 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.

17 Joint Offer

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

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 Requirements as to the tender

18.1.1.1 Bids can be submitted in any of the official languages of the EU. However, since the main working language of the contracting authority is English, bids

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

should preferably be submitted in English and should, in particular, include an English version of the documents requested under point 20.5 and 21 of these tender specifications.

18.1.1.2 The tenderer must comply with the minimum requirements provided for in these tender specifications. This includes compliance with applicable obligations under environmental, social and labour law established by Union law, national law and collective agreements or by the international environmental, social and labour law provisions listed in Annex X to Directive 2014/24/EU of the European Parliament and of the Council[9].

18.1.1.3 The tenderer shall complete the Tenderer's Checklist.

18.1.1.4 Bids shall be submitted in paper AND electronic versions on CD,DVD, or USB key or similar added to the paper bid.

18.1.1.5 If the tenderer intends to either subcontract part of the work or realise the work in co-operation with other partners ("joint offers") he shall indicate it in his offer by completing the form "Information regarding joint offers and subcontracting".

18.1.1.6 The tender must be presented as follows and must include:

a) **A signed letter** indicating the name and position of the person authorised to sign the contract and the bank account to which payments are to be made.

b) **The Financial Form** completed, signed and stamped. This document is available on the Procurement Section (Financial Form) of EMSA's website (www.emsa.europa.eu).

c) **The Legal Entity Form** completed, signed and stamped along with the requested accompanying documentation. This document is available on the Procurement Section (Legal Entity Form) of EMSA's website (www.emsa.europa.eu).

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

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

18.2 Part A

18.2.1.1 All the information and documents required by the contracting authority for the appraisal of tenders on the basis of points 17, 20.2 and 20.6 of these specifications (part of the exclusion criteria).

18.3 Part B

18.3.1.1 All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Economic and Financial capacity** (part of the Selection Criteria) set out under point 20.4 of these tender specifications.

18.4 Part C

18.4.1.1 All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Technical and professional capacity** (part of the Selection Criteria) set out under sections 20.5 of these tender specifications.

18.5 Part D

18.5.1.1 All the information and documents required by the contracting authority for the appraisal of tenders on the basis of the **Award Criteria** set out under sections 21 (to be read in connection with sections 6, 7 an 11) of these specifications. It would be appreciated if the bid could follow a structure which is similar to the tender specifications.

18.6 Part E

18.6.1.1 Setting out prices in accordance with section 19 of these specifications.

18.6.1.2 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 the contracting authority.

19 Price

19.1 General considerations

19.1.1.1 Prices must be quoted in euro.

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

19.1.1.3 Prices must include all costs (including travel expenses and daily subsistence allowance).

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

19.1.1.5 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.

19.1.1.6 All optional "advantages" indicated in these technical specifications will be considered positively during the evaluation however these should be offered as part of the overall bid. Should these have an additional price attached then they will not be considered as favourable by the evaluation committee for each of the criteria indicated in Table 10.

19.2 Pricing schema

19.2.1.1 Service set-up costs (module 1) shall include all costs associated with implementation of the contract, including development and/or adaptation of planning procedures and planning tools, data exchange formats and interfaces and any preparations and adjustments for refitting of the aircraft to be able to be prepared for a deployment.

19.2.1.2 Module 1: Initial set-up phase, Module 2: Mobilisation and Module 3: On-site , shall all include travel costs.

19.2.1.3 The prices in the grids below refer to the various Modules described in Section 6. The cells with the bold frame in the price grid below should be filled in.

19.2.1.4 The price grid should be filled in for each of the lots separately.

19.2.1.5 Only one single price grid per lot will be accepted, which then would be applicable for all quantities of services requested (i.e. and used for both scenarios).

	Price in Euro	Conditions / further details description
Module 1 –Intial Set-Up Phase		
Fixed set-up fee		Once per framework contract. Limited to 40,000 Euros
Module 2 – Mobilisation		Costs are composed of a fixed fee and a fee per distance
Mobilisation costs - fixed costs		This is a price which is applied for each deployment.
Mobilisation costs per 500 km		Distance between company home base and the place of deployment or from one deployment to the next This is a price which is applied for each deployment.
Module 3 – On-site activities		
One calendar day of deployment on site		
Discount offered for operation contrated for more than 3 months - give equivalent reduced day rate		
Module 4 – Flight operations/missions		
One flight hour including all fees, fuel, satellite communication (if applicable) and RPAS operation		Operational assumptions: - 10 days of consecutive flights - 10 unscheduled flights During: - 20% of the flight time in BRLOS, life video transmission is assumed - 30% of the flight time in RLOS, life video transmission is assumed During the lifetimetime of the contract correction factors as given in chapter 6.5 might apply.
Module 5 - Aircraft Availability/Reservation Fee		One fee should be stated for the whole system offered /on stand-by which might include serveral RPA.
Calculated on a daily basis but SC for one year. Price to be given is annual fee.		Starting with the first request for mobilisation

	Price in Euro	Conditions / further details description
Module 6 – Interfacing		
Fixed fee		Once per framework contract Limit of 75,000 for Lot 1 Limit of 50,000 for Lot 2 Limit of 30.000 for Lot 3

Table 9 Price grid template for Lots 1 to 3

20 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

20.1 Legal position – means of proof required

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

20.2 Grounds for exclusion - Exclusion Criteria

20.2.1.1 To be eligible to participate in this contract award procedure, a tenderer must not be in any of the following exclusion situations:

a) it is bankrupt, subject to insolvency or winding up procedures, its assets are being administered by a liquidator or by a court, it is in an arrangement with creditors its business activities are suspended or it is in any analogous situation arising from a similar procedure provided for under national legislation or regulations;

b) it is subject to a final judgement or a final administrative decision establishing that it is in breach of its obligations relating to the payment of taxes or social security contributions in accordance with the law of the country in which it is established, with those of the country in which the contracting authority is located or those of the country of the performance of the contract;

c) it is subject to a final judgement or a final administrative decision establishing that it is guilty of grave professional misconduct by having violated applicable laws or regulations or ethical standards of the profession to which the person belongs, or by having engaged in any wrongful conduct which has an impact on

its professional credibility where such conduct denotes wrongful intent or gross negligence, including, in particular, any of the following:

- fraudulently or negligently misrepresenting information required for the verification of the absence of grounds for exclusion or the fulfilment of selection criteria or in the performance of a contract;
- entering into agreement with other persons with the aim of distorting competition;
- violating intellectual property rights;
- attempting to influence the decision-making process of the contracting authority during the award procedure;
- attempting to obtain confidential information that may confer upon it undue advantages in the award procedure ;

d) it is subject to a final judgement establishing that the person is guilty of any of the following:

- fraud
- corruption
- participation in a criminal organisation
- money laundering or terrorist financing
- terrorist-related offences or offences linked to terrorist activities
- child labour or other forms of trafficking in human beings as defined in Article 2 of Directive 2011/36/EU of the European Parliament and of the Council

e) the person has shown significant deficiencies in complying with the main obligations in the performance of a contract financed by the Union's budget, which has led to its early termination or to the application of liquidated damages or other contractual penalties, or which has been discovered following checks, audits or investigations by an Authorising Officer, OLAF or the Court of Auditors;

f) it is subject to a final judgement or a final administrative decision establishing that the person has committed an irregularity within the meaning of Article 1(2) of Council Regulation (EC, Euratom) No 2988/95;

g) for the situations of grave professional misconduct, fraud, corruption, other criminal offences, significant deficiencies in the performance of the contract or irregularity, the applicant is subject to:

- facts established in the context of audits or investigations carried out by the Court of Auditors, OLAF or internal audit, or any other check, audit or control performed under the responsibility of an authorising officer of an EU institution, of a European office or of an EU agency or body;
- non-final administrative decisions which may include disciplinary measures taken by the competent supervisory body responsible for the verification of the application of standards of professional ethics;
- decisions of the ECB, the EIB, the European Investment Fund or international organisations;

- decisions of the Commission relating to the infringement of the Union's competition rules or of a national competent authority relating to the infringement of Union or national competition law; or
- decisions of exclusion by an authorising officer of an EU institution, of a European office or of an EU agency or body.

20.3 Legal and regulatory capacity – Selection Criteria

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

20.3.1.2 The tenderer must hold a particular authorisation proving that it is authorized to perform the contract in its country of establishment.

20.4 Economic and financial capacity – Selection Criteria

20.4.1.1 Requirements:

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

20.4.1.3 Evidence:

20.4.1.4 The Bidder has to provide the following evidence:

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

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

c) Tenderers are exempt from submitting the documentary evidence if such evidence has already been completed and sent to the contracting authority 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 the contracting authority considers justified, a tenderer is unable to provide one or other of the above documents, he may prove its economic and financial capacity by any other document which the contracting authority considers appropriate. In any case, the contracting authority must at least be notified of the exceptional reason and its justification in the tender. the contracting authority reserves the right to request at any moment during the procedure any other document enabling it to verify the tenderer's economic and financial capacity.

20.5 Technical and professional capacity – Selection Criteria

20.5.1.1 The Bidder shall show the experiences as detailed in the following sections.

20.5.2 Professional capacity by staff

20.5.2.1 Requirements:

20.5.2.2 The Project Manager or lead for the contract should have relevant project management and operational management skills having been proven through at least 5 years with other customers.

20.5.2.3 The pilots who will be coordinating the deployments for the contract must have a minimum of 3 years experience piloting aircrafts and/or RPAS and this should be demonstrated through previous projects/deployments.

20.5.2.4 The operational, logistical, maintenance, and other ground support staff should have relevant experience having worked on RPAS deployments or similar operations.

20.5.2.5 Evidence:

20.5.2.6 The Bidder shall provide a detailed curriculum vitae in the European format (http://europass.cedefop.europa.eu/en/documents/curriculum-vitae) for each key staff member (coordinating positions,pilots, and any other relevant staff) and a filled in summary table as in "ANNEX B: Experience of staff to be working on this contract".

20.5.3 Operational experience

20.5.3.1 Requirements:

20.5.3.2 The company must show at least a significant number of proven flight hours with its Remotely Piloted Aircraft being offered for the contract. This should include the flight hours already performed (target is a minimum of 500 flight hours) and/or the number of acceptance tests which have already been conducted.

20.5.3.3 Evidence:

20.5.3.4 Evidence of this will be given through letters or description of projects or deployments where the Bidder and the key staff have been involved.

20.5.3.5 The Bidder shall provide a filled in summary table as in "ANNEX C: Operational Experience related to this contract".

20.5.3.6 Testimonials by previous Contractors would be an advantage.

20.6 Evidence to be provided by the tenderers

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

20.6.1.2 Please note that **only upon request** and within the time limit set by the contracting authority the bidder shall provide information on the persons that

are members of the administrative, management or supervisory body, as well as the following evidence concerning the tenderer or the natural or legal persons which assume unlimited liability for the debt of the tenderer:

- For exclusion situations described in (a), (c), (d) or (f) of point 20.2 above, a recent extract from the judicial record is required or, failing that, an equivalent document recently issued by a judicial or administrative authority in the country of establishment of the tenderer showing that those requirements are satisfied.
- For the exclusion situation described in (a) or (b) of point 20.2 above, production of recent certificates issued by the competent authorities of the State concerned is required. These documents must provide evidence covering all taxes and social security contributions for which the tenderer is liable, including for example, VAT, income tax (natural persons only), company tax (legal persons only) and social security contributions. Where any document described above is not issued in the country concerned, it may be replaced by a sworn statement made before a judicial authority or notary or, failing that, a solemn statement made before an administrative authority or a qualified professional body in its country of establishment.

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

20.6.1.4 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 bythe contracting authority.

20.6.1.5 When the tenderer to be awarded the contract has already submitted relevant evidence to the contracting authority, 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 tenderer is required to submit a statement confirming that its situation has not changed.

21 Award Criteria

21.1 General

21.1.1.1 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:

21.1.1.2 Evaluators will give marks between 0-10 (half points are possible) for each quality criterion Q_i.

21.1.1.3 Each quality and price criterion will be weighted in order to contribute to the overall score S. Only a bid that has reached the listed minimum value for each quality criterion Q_i will be taken into consideration when calculating the score for quality SQ, the score for price SP and the score S.

21.1.1.4 The quality and price criteria are given in the following table:

Criterion	Title	Weighting	Minimum	Section
Q_1	Fulfilment of technical requirements	W_1 = 60%	50%	21.2.2
Q_2	Quality assurance of products and services	W_2 = 10%	50%	21.2.3
P_1	Price scenario A	W_P_1 = 15%	n/a	21.3.2
P_2	Price scenario B	W_P_2 = 15%	n/a	21.3.2

Table 10 Quality and Price criteria

21.1.1.5 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

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

21.1.1.6 Only a bid that has reached a minimum of 60% for the score S will be taken into consideration for awarding the contract.

21.2 Technical award criteria (70%)

21.2.1 General Considerations

21.2.1.1 The requirements as outlined in these tender specifications will be used by the contracting authority to assess the technical aspects proposed in the bid.

21.2.1.2 A series of technical award criteria will be used to evaluate the technical aspects of the products and services proposed by the company/consortia. These criteria are listed below, together with a short explanation and what relevant supporting documentation is required. The criteria used to evaluate the appropriateness of the proposed technical solution are described below.

21.2.2 Fulfilment of technical requirements (60%)

21.2.2.1 The contracting authority will evaluate the level of fulfilment of the requirements described in Sections 6 and 7.

21.2.2.2 Furthermore, the contracting authority will evaluate the bid considering the criteria indicated in Sections 6 and 7 and those indicated in Table 12 below.

21.2.2.3 The quality of the technical offers under one or both lots (depending on what the Contractor will be bidding for) will be evaluated in accordance with the award criteria of the table below:

Criteria	**All Lots**
Availability	8
- RPAS available for the service (also including those as backup and to extend continuous operations)	
- Mobilisation time	
- Time between flights	
- Capabilities in supporting the execution of permits to fly	
Maximum endurance	10
- Maximum range	
Platform Capability	7
- Payload capacity	
- State of certification of the RPA	
Detection Capability/Available Sensors	10
- Electro optical equipment suitability for the deployments (technical details required)	
- Radar equipment suitability for the deployments (technical details required)	
- Other sensors required in the specific contract, with technical details (i.e. AIS SOx sniffers)	
- State of certification of the sensors	
- Satellite communication capabilities / bandwidth	
Communication Capability	10

Criteria	All Lots
- RLOS communication capability: high data rate (full motion video)	
- BRLOS communication capability: high data rate (full motion video)	
- Data interfacing with the Agencies integrated applications	
Data Exploitation Capability	10
- Analysis capacity	
- Alerting functionality	
- Delivery time of the exploited data to the Agencies and the end user	
- Quality and completeness of the flight monitoring and data visualisation	
- Quality of proposal for module 6	
Qualifications and Experience of staff	5
TOTAL	60

Table 11 Grid award criteria (Fulfilment of technical requirements)

21.2.3 Quality Assurance of products and services (10%)

21.2.3.1 The quality assurance procedures to perform the tasks under the terms of the contract will be evaluated according to the requirements in sections 7 and 11.

Criteria	All Lots
Quality assurance certification by the Bidder	
Training of staff	
Detection Capability/Available Sensors	
- Project Management Plan	
- Operational Plan	
- Emergency /Contingency Plan	
- Quality Plan	
TOTAL	10

Table 12 Grid award criteria (Quality Assurance of products and services)

21.3 Price award criteria (30%)

21.3.1.1 The evaluators will consider all price elements as award criteria for the evaluation of the bid. The price evaluation will take into consideration the basic lifetime of the Framework Contract (2 years).

21.3.1.2 The price award criteria are evaluated per lot. For each lot, two scenarios (lower and higher volume of services) are definedand the single price grid per lot will be used for each scenario as described in section 19.2. According to the prices given by the Bidder, the scenarios below will then be used to enable the price points to be awarded for each bid.

21.3.1.3 The price evaluation will be done based upon the following operational scenarios, which describe one year of service operation. These are just scenarios and the first mobilisation may take place at a later stage than what is indicated here below. The availability fee may therefore start at a later stage as this is dependent on when a first request from a user is received for a first mobilisation.

21.3.2 Lot 1 to Lot 3

Weighting	**Scenario**		**Conditions**
	A	**B**	
Module 1 –Intial Set-Up Phase			
Fixed set-up fee	Once per framework contract	Once per framework contract	Limitation see chapter 19.2
Module 2 – Mobilisation			
Number of RPAS (re-) locations per year	2 mobilisations With each deployment over 3 months	2 mobilisations With each deployment under 3 months	A distance of up to 2000 km is assumed. Single mobilisation fee = Fixed fee + 4 *(fixed fee given for 500 km)
Module 3 – On-site activities			
Number of calendar days on site per year	<u>For Lot 1:</u> 250 days <u>For Lot 2:</u> 200 days <u>For Lot 3:</u> 200 days	<u>For Lot 1:</u> 75 days <u>For Lot 2:</u> 75 days <u>For Lot 3:</u> 50 days	
Module 4 – Flight operations/missions			

Weighting	Scenario		Conditions
	A	B	
The standard price will be assumed. During the lifetime of the contract a scaling effect may be applied according to chapter 6.5.			
yearly flight hours	For Lot 1: 3000 (250 days x 12 hours per day) For Lot 2: 2000 (200 days x 10 hours per day) For Lot 3: 1200 (200 days x 6 hours per day)	For Lot 1: 900 (75 days x 12 hours per day) For Lot 2: 750 (75 days x 10 hours per day) For Lot 3: 300 (75 days x 4 hours per day)	
Module 5 - Aircraft Availability/ Reservation Fee			
Fixed Aircraft Availability/Reservation Fee	Only for Lot 1 and 2: 21 months	Only for Lot 1 and 2: 21 months	
Module 6 – Interfacing			
Fixed fee	Once per framework contract	Once per framework contract	

Table 13 Evaluation Scenarios Lot 1, 2 and 3

22 Rejection from the procedure

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

a) are in an exclusion situation;

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

c) were previously involved in the preparation of procurement documents where this entails a distortion of competition that cannot be remedied otherwise.

23 Intellectual Property Rights (IPR)

23.1.1.1 Please consult the draft contract for IPR related clauses.

23.1.1.2 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 materials, their source and when and how the rights to these materials have been or will be acquired.

23.1.1.3 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.

24 Special negotiated procedure under Article 134(1) RAP

24.1.1.1 The contracting authority may at a later stage exercise the option to increase the estimated value of the contract via negotiated procedure with the successful tenderers in accordance with Article 134(1) (b) or (e) of the Rules of Application to the Financial Regulation. There might be future EMSA needs for further service adaptations meeting an appropriate quality/price ratio. These adaptations would be beyond the proposed solution of the bids and would not alter the services in general.

25 Information resources

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

26 ANNEX A: Abbreviations

26.1.1.1 The terms in the table below, appearing either in a complete or in an abbreviated form, when used in this document and its annexes, relating to the Technical Proposal, Financial Proposal and Draft Contract, shall be understood to have the following meaning:

Term	Abbreviation	Meaning
Area of Interest	AoI	The geographical area where information that will satisfy an information requirement can be collected. Areas of Interest are inside the Service Deployment Area.
Base Airport		Is the airport, provided by the Host country of the operation, where the deployment will be done.
Beyond Line of Communication	BLOC	Equivalent to BRLOS, please see there.
Beyond Line of Sight	BLOS	A related term used to describe that the object is too distant or obscured by terrain to be visually detectable.
Beyond Radio Line of Sight	BRLOS	A related term used to describe radio communications capabilities that link personnel or systems to objects, which are too distant or fully obscured by terrain for Line of Sight communication (LOC or RLOS).
Broadband Link		A high-capacity transmission technique using a wide range of frequencies, which enables a large number of messages to be communicated simultaneously using a single telecommunication link.
Central Ground Control Station	CGCS	A fixed station, served by the service provider to operate the RPA, to monitor the payload, to process the data and to dissiminate the information to the users and the Agencies.
Data Link		A telecommunication link over which data is transmitted.
Deployment		A deployment is composed of the mobilisation, the on-site activities and a number of flights called missions, each of these missions is carried out in a specific Areas of Interest, defined within the Service Deployment Area.
Emission Control Area	ECA	Sea areas in which stricter controls are established to reduce or minimise emissions from ships.
EU, EEA and EFTA		European Union, European Economic Area and European Free Trade Association.
Ground Segment		The segment which receives the payload data from the RPAS via satellite communication or via the Local Ground Control Station (LGCS), processes the payload data and make them available to the users and the Agencies. Could be the LGCS itself or dislocated at the Contractor premises (CGCS).
High Intensity Radiated Fields	HIRF	Standard test specified in Eurocae ED14/RTCA DO160 section 20 or equivalent standard test
Hazardous and Noxious Substances	HNS	
Host Country	HC	The country of the requesting user, where the

Term	Abbreviation	Meaning
		Coordination Centre and the base airport are situated.
Infrared wavelength	IR	
Line of Communication	LOC	Equivalent to RLOS, please see there.
Line of Sight	LOS	A related term used to describe that the object is visually detectable without any sort of obstacle between the observer and the object.
Local Ground Control Station	LGCS	A deployed station, served by the service provider crew, capable operate the RPA including take-off and landing. Can also act as CGCS, depending on the set-up of the RPAS.
Long Wavelength Infrared	LWIR	8 - 15 micron spectral band
Mean Take Off Mass	MTOM	
Mid Wavelength Infrared	MWIR	3 - 5(8) micron spectral band
Deployment		An assignment, within by a specific contract, for a certain number of weeks in which RPAS operations will take place.
Near Infrared	NIR	0.75–1.4 micron spectral band
Operation		The operation of the RPAS during a mission
Payload		The load carried by the asset, consisting of sensors, necessary to the purpose of the flight: i.e. Electro-Optical, Infrared, Radar, GPS and AIS receiver with capabilities to relay the data.
Radio Line of Sight	RLOS	Type of communication that can transmit and receive data only when transmit and receive stations are in view of each other without any sort of obstacle between them.
Satellite Communications	SATCOM	When a signal is transferred between the sender and receiver with the help of satellite. In this process, the signal which is basically a beam of modulated microwaves is sent towards the satellite. Then the satellite amplifies the signal and sent it back to the receiver's antenna present on the earth's surface.
Search and Rescue	S&R	
Sulphur Emission Control Area	SECA	Sea areas in which stricter controls are established to reduce or minimise SOx emissions from ships.
Service		It is the subject of a specific contract.
Sulphur oxides	SOx	
Synthetic Aperture Radar	SAR	
Short Wavelength Infrared	SWIR	1.4 - 3 micron spectral band
Thermal Infrared	TIR	Covering the range of MWIR and LWIR, please see there.
Vertical-Take-Off-and-Landing	VTOL	

27 ANNEX B: Experience of staff to be working on this contract

The Contractor is requested to fill the table below (Tender enclosure IV) for all staff being involved in the execution of the contract. All information has to be backed up by the CV's provided with the bid.

Company						
Signature					**Date:**	
Name	**Years of experience in flight management**	**Years of flight experience as pilot (separated in years on manned aircraft and RPA)**	**Certification for aircraft piloting (separated in years on manned aircraft and RPA)**	**Years of experience of aircraft maintenance**	**Certification for aircraft maintance**	**Comments**

28 ANNEX C: Operational Experience related to this contract

The Contractor is requested to fill the table below (Tender enclosure V) summarising operational experience relevant for this contract.

Company					
Signature				**Date:**	
Project Name	**Aircraft type (size, weight, endurance)**	**Sensors operated**	**Acceptance procedures undertaken**	**Flight hours undertaken for the project**	**Description of project**