

FRAMEWORK CONTRACT (IT)

CONTRACT NUMBER – [20XX/EMSA/OP/04/2017]

Provision of ICT services related to corrective and evolutive maintenance of the STAR tracking system

The European Maritime Safety Agency (hereinafter referred to as "EMSA"), with its seat at Praça Europa 4, 1249-206 Lisbon, Portugal, VAT registration no.: 507 685 326, represented by Markku Mylly, Executive Director,

on the one part, and

[full official name]

[official legal form]

[statutory registration number]

[official address in full]

[VAT registration number]

[appointed as the leader of the group by the members of the group that submitted the joint tender]

(hereinafter referred to as "the Contractor"), [represented by [name in full and function,]]

on the other part,

HAVE AGREED

The **Special Conditions**, and the following Annexes the:

Annex I	General Conditions
Annex II	General Terms and Conditions for Information Technologies Contracts
Annex III	Specific Contract – Templates
Annex IV	Tender Specifications (Invitation to Tender No [complete] of [complete])
Annex V	Contractor's Tender (No [complete] of [complete])
Annex VI	IPR Identification form
Annex VII	Working Procedures and Service Levels

which form an integral part of this contract (hereinafter referred to as “the Contract”).

- The terms set out in the Special Conditions and in the Service Level Agreement shall take precedence over those in the other parts of the Contract.
- The terms set out in the General Conditions shall take precedence over those in the General Terms and Conditions for Information Technologies Contracts.
- The terms set out in the General Terms and Conditions for Information Technologies Contracts shall take precedence over those in the Annexes of the Contract (except for the Service Level Agreement).
- The terms set out in the Framework Contract shall take precedence over those in the Specific Contracts.
- The terms set out in the Tender Specifications (Annex IV) shall take precedence over those in the Tender (Annex V).

Subject to the above, the several instruments forming part of this Contract are to be taken as mutually explanatory. Ambiguities or discrepancies within or between such parts shall be explained or rectified by a written instruction issued by EMSA; subject to the rights of the Contractor under Article 8 should he dispute any such instruction.

SPECIAL CONDITIONS

ARTICLE 1 - SUBJECT

- 1.1 The subject of the Contract is the **provision of ICT services related to corrective and evolutive maintenance of the STAR tracking system**.
The Services covered by this Contract are listed in Annex IV and Annex V.
- 1.2 Upon implementation of the Contract, the Contractor shall provide the Services in accordance with Annex IV and Annex V.
- 1.3 The Contract does not confer on the Contractor any exclusive right to provide the Services referred to in the above paragraph.
- 1.4 Signature of the Contract imposes no obligation on EMSA to purchase. Only the implementation of the Contract through Specific Contracts is binding on EMSA.
- 1.5 All Specific Contracts implementing the Contract shall be in conformity with to the terms set out therein.

ARTICLE 2 - DURATION

- 2.1 The Contract shall enter into force on the date on which it is signed by the last contracting party.
- 2.2 Under no circumstances implementation may take place before the date on which the Contract enters into force. Specific Contracts may under no circumstances be placed before the date on which the Contract enters into force.
- 2.3 For the Services stated in Art 1.1 including the maintenance services related thereto, a period of 48 months with effect from the date on which it enters into force. This contractual period and all other periods specified in the Contract are calculated in calendar days unless otherwise indicated.
- 2.4 The Specific Contracts pursuant to the Contract shall be signed before the Contract which it refers expires. The Contract shall continue to apply to Specific Contracts executed after the Contract expires. Such Specific Contracts shall be executed no later than six (6) months after expiry of the Contract.

ARTICLE 3 - PRICES

- 3.1 The prices of this contract shall be as listed in Annex V.
- 3.2 The maximum amount of this Framework Contract shall be EURO xxx ...[complete].
- 3.3 Prices shall be expressed in Euro.
- 3.4 Prices shall be fixed and not subject to revision.

ARTICLE 4 – PERFORMANCE OF THE CONTRACT

Performance of the Contract for Module 1 – Corrective maintenance including helpdesk for application incident management

- 4.1** Within 10 working days of a request for Services being sent by EMSA, the Contractor shall return an estimate of the resources to be allocated for its execution, with particulars in support.

Within 10 working days of a demand for conclusion of a Specific Contract being sent by EMSA, the Contractor shall return it, duly signed and dated.

Performance of the Contract for Module 2 – Evolutive maintenance of the STAR tracking system

- 4.2** Within 10 working days of a request for services being sent by EMSA, the Contractor shall return an estimate of the resources to be allocated for its execution, with particulars in support.

Within 10 working days of a demand for conclusion of a Specific Contract being sent by EMSA, the Contractor shall return the Specific Contract, duly signed and dated.

Regarding the implementation of Modules 1 and 2, the period allowed for the execution of the tasks shall start to run on the date the contract is signed by the last party, unless a different date is indicated in the specific contract.

ARTICLE 5 – PAYMENT ARRANGEMENTS

Payments under the Contract shall be made in accordance with Article I.6. Reporting and Payments and shall be executed only if the Contractor has fulfilled all his contractual obligations by the date on which the invoice is submitted.

Should the contractor be unable to demonstrate the number of functionalities and the set quality thresholds for each as required under a Specific Contract during the Factory Acceptance Tests (FAT), EMSA may decide to de-scope these functionalities and, thus, not execute the associated payment. The minimum quality thresholds to be reached by the contractor shall be defined in each Specific Contract.

Payment requests may not be made if payments for previous Specific Contracts have not been executed as a result of default or negligence on the part of the Contractor.

Payment modality for Module 1 – Corrective maintenance including helpdesk for application incident management

5.1 Interim payment

The contractor (or leader in the case of a joint tender) shall submit an invoice for an interim payment, equal to 50 % of the total price referred to in the relevant specific contract, in accordance with Article I.6.6.

The contractor (or leader in the case of a joint tender) must send an invoice in paper format for the interim payment as provided for in the tender specifications, accompanied by the following:

- a list of all pre-existing rights to the results or parts of the results or a declaration stating that there are no such pre-existing rights, as provided for in Article I.18.5;
- relevant progress report in accordance with the relevant Specific Contract.

All invoices shall indicate both the contractor's and EMSA's VAT number.

The contracting authority must approve any submitted documents or deliverables and pay within 60 days from receipt of the invoice.

If the contracting authority has observations to make, it must send them to the contractor (or leader in the case of a joint tender) and suspend the time limit for payment in accordance with Article I.6.7. The contractor (or leader in case of a joint tender) has 10 days to submit additional information or corrections or a new version of the documents if the contracting authority requires it.

The contracting authority must give its approval and pay within the remainder of the time-limit indicated unless it rejects partially or fully the submitted documents or deliverables.

5.2 Payment of the balance

The contractor (or leader in the case of a joint tender) may claim the payment of the balance in accordance with Article I.6.6.

The contractor (or leader in the case of a joint tender) must send an invoice in paper format for payment of the balance due under a specific contract, as provided for in the tender specifications and accompanied by the following:

- a list of all pre-existing rights to the results or parts of the results or a declaration stating that there are no such pre-existing rights, as provided for in Article I.18.5;
- relevant final report .

All invoices shall indicate both the contractor's and EMSA's VAT number.

The contracting authority must approve the submitted documents or deliverables and pay within 60 days from receipt of the invoice.

If the contracting authority has observations to make, it must send them to the contractor (or leader in the case of a joint tender) and suspend the time limit for payment in accordance with Article I.6.7.

The contractor (or leader in the case of a joint tender) has 10 days to submit additional information or corrections or a new version of the documents if the contracting authority requires it.

The contracting authority must give its approval and pay within the remainder of the time-limit indicated unless it rejects partially or fully the submitted documents or deliverables.

Payment modality for Module 2 - Evolutive maintenance of the STAR tracking system

The payment modalities will be determined in the relevant specific contract(s).

ARTICLE 6 – BANK ACCOUNT

Payments shall be made to the Contractor's bank account denominated in euro, identified as follows:

Name of bank: [complete]
Address of branch in full: [complete]
Exact designation of account holder: [complete]
Full account number including codes: [complete]
IBAN code: [complete]

ARTICLE 7 – GENERAL ADMINISTRATIVE PROVISIONS

Any communication relating to the Contract or to its implementation shall be made in writing and shall bear the Contract and specific contract numbers. Ordinary mail shall be deemed to have been received by EMSA on the date on which it is registered by the department responsible indicated below.

Communications shall be sent to the following addresses:

EMSA:

European Maritime Safety Agency
Markku Mylly
Executive Director
Praça Europa, 4
1249-206 Lisbon
Portugal

Contractor:

Mr/Mrs/Ms [complete]
[Function]
[Company name]
[Official address in full]

Invoices shall be sent to the following address:

EMSA:

European Maritime Safety Agency
Invoice Registration (IR)
Unit A.2 – Legal and Financial Affairs
Praça Europa, 4
1249-206 Lisbon
Portugal

ARTICLE 8 – APPLICABLE LAW AND SETTLEMENT OF DISPUTES

- 8.1** The Contract shall be governed by Union law, complemented, where necessary, by the national substantive law of Portugal.
- 8.2** Any dispute between the parties resulting from the interpretation or application of the Contract which cannot be settled amicably shall be brought before the courts of Lisbon, Portugal.

ARTICLE 9 – DATA PROTECTION

Any personal data included in the Contract shall be processed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Such data shall be processed solely for the purposes of the performance, management and monitoring of the Contract by Ivo Kupsky, Head of Unit Digitalisation and Application Development, acting as data controller without prejudice to possible transmission to the bodies charged with monitoring or inspection task in application of Union law.

ARTICLE 10 – INTELLECTUAL PROPERTY RIGHTS

10.1 Ownership of the results

The ownership of the results as defined in the tender specifications (Annex IV) shall be fully and irrevocably transferred by the contractor to EMSA in accordance with Article I.18.2.

10.2 Licence or transfer of pre-existing rights

All pre-existing rights incorporated in the results, if any, are licensed to EMSA as set out in Article I.18.3.

10.3 Intellectual property rights identification

The contractor must provide EMSA with an exhaustive list of intellectual property rights applicable to the results and of pre-existing rights, including incorporated trade secrets and third parties' rights, as set out in Article II.18.5, together with the invoice for payment of the balance at the latest. To that effect, Annex VI - IPR Identification Form - shall be duly completed and signed by the contractor.

ARTICLE 11 – TERMINATION BY EITHER CONTRACTING PARTY

Either contracting party may, of its own volition and without being required to pay compensation, terminate the Contract by serving six (6) months formal prior notice. Should EMSA terminate the Contract, the Contractor shall only be entitled to payment corresponding to the goods and services ordered before the termination date, provided that they have duly delivered in conformity with the Contract and the relative Specific Contract(s). On receipt of the letter terminating the Contract, the Contractor shall take all appropriate measures to minimise costs, prevent damage, and cancel or reduce his commitments. He shall draw up the documents required by the Special Conditions for the goods delivered and Services rendered up to the date on which termination takes effect, within a period not exceeding sixty (60) days from that date.

ARTICLE I.12 – E-PROCUREMENT

The execution of the contract between EMSA and the contractor may be automated by the use of one or more of the following applications: e-Request, e-Catalogue, e-Ordering and e-Fulfilment and e-Invoicing.

At the request of EMSA, the use of the above applications may be mandatory during the lifetime of the contract.

ARTICLE 13 – OTHER SPECIAL CONDITIONS

According to the terms included in the FWC contract the following price reductions may be applied in case of service non-compliance, for services provided under the corrective maintenance and help-desk services specific contracts (Module 1):

- For non-compliances related to “Critical” issues: A reduction to the contracted value equivalent to (for each day of breaching the SLA) the price of two person days of a senior programmer rate, up to a maximum 10% reduction to the contractual value.
- For non-compliances related to “Urgent” issues: A reduction to the contracted value equivalent to (for each day of breaching the SLA) the price of one person day of a senior programmer rate, up to a maximum a 7% reduction to the contractual value.
- For non-compliances related to “Normal” issues: A 5% reduction to the contracted value if, during the course of the contract, at least 10 breaches of the SLA for “Standard” issues are recorded.

ARTICLE 14 - SPECIFIC QUALITY STANDARDS

Specific quality requirements will be stated in a Service Level Agreement which will form an integral part of the Special Conditions of the Framework contract (Annex VII).

SIGNATURES

For the contractor,

For EMSA

[*Company name/forename/surname/function*]

Markku Mylly
Executive Director

signature: _____

signature: _____

Done at:

Done at Lisbon

Date:

Date:

In duplicate in English.

ANNEXES
to
IT Framework Contract
[...]/EMSA/OP/04/2017

ANNEX I

I – GENERAL CONDITIONS

ARTICLE I.1 – GENERAL PROVISIONS IN CASE OF PROVISION OF GOODS

Delivery

- a) Time allowed for delivery

The time allowed for delivery shall be calculated in accordance with Article 4.

- b) Date, time and place of delivery

EMSA shall be notified in writing of the exact date of delivery within the period indicated in Article 4. All deliveries shall be made at the agreed place of delivery during the hours indicated in Article 4.

The Contractor shall bear all costs and risks involved in delivering the goods to the place of delivery.

- c) *Consignment note*

Each delivery shall be accompanied by a *Consignment note* in duplicate, duly signed and dated by the Contractor or his carrier, giving the Specific Contract number and particulars of the goods delivered. One copy of the *Consignment note* shall be countersigned by EMSA (or its representative) and returned to the Contractor or to his carrier.

Certificate of conformity

Signature of the *Consignment note* by EMSA, as provided for in subparagraph c) above, is solely an acknowledgment of the fact that the delivery took place and in no way implies conformity of the goods with the Specific Contract.

Conformity of the goods delivered shall be evidenced by the signature of a certificate to this effect by EMSA no later than one month after the date of delivery, unless otherwise specified in the Special Conditions or in the General Terms and Conditions for Information Technologies Contracts.

Conformity shall be declared only where the conditions laid down in the Contract and in the Specific Contract are satisfied.

Where, EMSA is unable to accept the goods, the Contractor shall be notified in writing at the latest by the deadline for delivery of the conformity certificate.

Conformity of the goods delivered with the Contract

- a) The goods delivered by the Contractor to EMSA must be in conformity in quantity, quality, price and packaging with the Contract and the relevant Specific Contract.
- b) The goods delivered must:

- correspond to the description given in the tender specification and possess the characteristics of the goods supplied by the Contractor to EMSA as a sample or model;
- be fit for any specific purpose required by EMSA and made known to the Contractor at the time of conclusion of the Contract and accepted by the Contractor;
- be fit for the purposes for which goods of the same type are normally used;
- demonstrate the quality and performance which are normal in goods of the same type and which EMSA can reasonably expect, given the nature of the goods and taking into account any public statements on the specific characteristics of the goods made by the Contractor, the producer or his representative, particularly in advertising or on labelling;
- be packaged according to the usual method for goods of the same type or, failing this, in a way designed to preserve and protect them.

Remedy

- a) The Contractor shall be liable to EMSA for any lack of conformity which exists at the time the goods are verified.
- b) In the event of lack of conformity, without prejudice to Article I.5 regarding liquidated damages applicable to the total price of the goods concerned, EMSA shall be entitled:
 - either to have the goods brought into conformity, free of charge, by repair or replacement by the Contractor;
 - or to have an appropriate reduction made in the price.
- c) Any repair or replacement shall be completed within a reasonable time and without any significant inconvenience to EMSA, taking account of the nature of the goods and the purpose for which they are required by EMSA.
- d) The term 'free of charge' in paragraph b) refers to the costs incurred to bring the goods into conformity, particularly but not limited to the cost of carriage, labour and materials.

Reduction in price

- a) Quality standards

If the contractor fails to provide the service in accordance with the FWC or a specific contract ('unperformed obligations') or if it fails to provide the service in accordance with the expected quality levels specified in the tender specifications ('low quality delivery'), the contracting authority may reduce or recover payments proportionally to the seriousness of the unperformed obligations or low quality delivery. This includes in particular cases where the contracting authority cannot approve a report or deliverable as defined in Article I.6 after the contractor has submitted the required additional information, correction or new version.

A reduction in price may be imposed together with liquidated damages under the conditions of Article I.15.

Procedure

The contracting authority must formally notify the contractor of its intention to reduce payment and the corresponding calculated amount.

The contractor has 30 days following the date of receipt to submit observations. Failing that, the decision becomes enforceable the day after the time limit for submitting observations has elapsed.

If the contractor submits observations, the contracting authority, taking into account the relevant observations, must notify the contractor:

- (i) of the withdrawal of its intention to reduce payment; or
- (ii) of its final decision to reduce payment and the corresponding amount.

b) Claims and liability

Any reduction in price does not affect the contractor's actual or potential liability or the contracting authority's rights under Article I.18.

Assembly and installation

If required by tender specification, the Contractor shall assemble and install the goods delivered within a period of one month unless otherwise specified in the Special Conditions or in the General Terms and Conditions for Information Technologies Contracts.

Any lack of conformity resulting from incorrect installation of the goods delivered shall be deemed to be equivalent to lack of conformity of the goods if installation forms part of the Contract and the goods were installed by the Contractor or under his responsibility. This shall apply equally if the product was to be installed by EMSA and was incorrectly installed owing to a shortcoming in the installation instructions.

Services provided to goods

If required by the Contract, services to goods shall be provided accordingly.

Packaging

The goods shall be packaged in strong boxes or crates or in any other way that ensures that the contents remain intact and prevents damage or deterioration. Packaging, pallets, etc., including contents, shall not weigh more than 500 kg, unless otherwise defined in the Specific Contract.

Unless otherwise specified in the Special Conditions or in the tender specifications, pallets shall be considered as one-way packaging and shall not be returned. Each box shall be clearly labelled with the following information:

- EMSA address for delivery;
- name of Contractor;

- description of contents;
- number and date of Specific Contract;
- number of Framework contract;
- EC code number of article.

Guarantee

The goods shall be guaranteed against all defects in manufacture or materials for two years from the date of delivery, unless provision for a longer period is made in tender specification.

The Contractor shall guarantee that any permits and licences required for manufacturing and selling the goods have been obtained.

The Contractor shall replace at his own expense, within a reasonable time limit to be determined by agreement between the parties, any items which become damaged or defective in the course of normal use during the guarantee period.

The Contractor is responsible for any conformity defect which exists at the time of delivery, even if this defect does not appear until a later date.

The Contractor is also responsible for any conformity defect which occurs after delivery and is ascribable to non-compliance with his obligations, including failure to provide a guarantee that, for a certain period, goods used for the purposes for which they are normally used or for a specific purpose will preserve their qualities or characteristics as specified.

If part of an item is replaced, the replacement part shall be guaranteed under the same terms and conditions for a further period of the same duration as that specified above.

If a defect is found to originate in a systematic flaw in design, the Contractor must replace or modify all identical parts incorporated in the other goods that are part of the Specific Contract, even though they may not have been the cause of any incident. In this case, the guarantee period shall be extended as stated above.

ARTICLE I.2 PERFORMANCE OF THE CONTRACT

- a) The Contractor shall perform the Contract to the highest professional standards.
- b) The Contractor shall be solely responsible for taking the necessary steps to obtain any permit or licence required for performance of the Contract under the laws and regulations= applicable.
- c) Without prejudice to Article I.4 any reference made to the Contractor's personnel in the Contract shall relate exclusively to individuals involved in the performance of the Contract.
- d) The Contractor must ensure that personnel performing the Contract possesses professional qualifications and experience required for the execution of the tasks assigned to it.

- e) The Contractor shall neither represent EMSA nor behave in any way that would give such an impression. The Contractor shall inform third parties as appropriate, that he does not belong to the European public service.
- f) The Contractor shall have sole responsibility for the personnel who execute the tasks assigned to him.

The Contractor shall stipulate for the following employment or service relationships with its personnel:

- personnel executing the tasks assigned to the Contractor may not be given orders directly by EMSA;
 - EMSA may not under any circumstances be considered to be the employer and the personnel referred to in point (a) shall undertake not to invoke against EMSA any right arising from the contractual relationship between EMSA and the Contractor.
- g) In the event of disruption resulting from the action one of the Contractor's personnel working on EMSA premises or in the event of the expertise - one of the contractor's personnel fails to correspond to the profile required by the Contract the Contractor shall replace him without delay. EMSA shall have the right to make a reasoned request for the replacement of any such personnel. Replacement staff must have the necessary qualifications and be capable of performing the Contract under the same contractual conditions. The Contractor shall be responsible for any delay in the execution of the tasks assigned to him resulting from the replacement of personnel.
- h) Should the execution of the tasks be directly or indirectly hampered either partially or totally by any unforeseen event, action or omission, the Contractor shall immediately and on its own initiative record it and report it to EMSA. The report shall include a description of the problem and an indication of the date on which it started and of the remedial action taken by the Contractor to ensure full compliance with its obligations under the Contract. In such an event the Contractor shall give priority to solving the problem rather than determining liability.
- i) Should the Contractor fail to perform its obligations under the Contract or Specific Contract in accordance with the provisions laid down therein, EMSA may - without prejudice to its right to terminate the Contract - reduce or recover payments in proportion to the scale of the unperformed obligations. In addition, EMSA may impose penalties or liquidated damages in accordance with Article I.5.

ARTICLE I.3 - LIABILITY

- I.3.1 The Contractor shall be solely responsible for complying with any legal obligations incumbent on it.
- I.3.2 EMSA shall not be held liable for any damage caused or sustained by the Contractor including any damage caused by the contractor to third parties during or as a consequence of performance of the Contract except in the event of wilful misconduct or gross negligence on the part of EMSA.
- I.3.3 The Contractor shall be liable for any loss or damages sustained by EMSA in performance of the Contract, including in the event of subcontracting and for any claim by a third party. EMSA shall not be liable for any act or default on the part of the Contractor in performance of the Contract. Notwithstanding the above, the Contractor shall not be liable for consequential loss and/or indirect damage exceeding the sum as set out for his professional risk insurance provided that this sum is no less than three times the total price/total amount of the Specific Contract(s) the execution of which is relevant for the loss or damage. The Contractor shall remain liable without any

limitation as to the amount if the damage or loss is caused by the gross negligence or wilful conduct of the Contractor or by its employees, and for death caused by negligence or wilful conduct of its employees.

I.3.4 Subject to the maximum amount provided in 3.2, the Contractor shall provide compensation in the event of any action, claim or proceeding brought against EMSA by a third party as a result of damage caused by the Contractor in performance of the Contract.

I.3.5 In the event of any action brought by a third party against EMSA in connection with performance of the Contract including any alleged breach of intellectual property rights, the Contractor shall assist EMSA. Expenditure incurred by the Contractor may be borne by EMSA.

I.3.6 The Contractor shall take out insurance policy against risks and damages relating to performance of the Contract if required by the relevant applicable legislation. It shall take out supplementary insurance as reasonably required by standard practice in the industry. A copy of all the relevant insurance contracts shall be sent to EMSA should it so request.

ARTICLE I.4 - CONFLICT OF INTERESTS

I.4.1 The contractor shall take all necessary measures to prevent any situation of conflict of interest. Such situation arises where the impartial and objective performance of the FWC is compromised for reasons involving economic interest, political or national affinity, family or emotional ties, or any other shared interest.

I.4.2 Any situation constituting or likely to lead to a conflict of interest during the performance of the FWC shall be notified to EMSA in writing without delay. The contractor shall immediately take all necessary steps to rectify the situation.

EMSA reserves the right to verify that the steps taken are appropriate and may require that additional steps be taken within a specified deadline.

I.4.3 The Contractor declares that it has not granted and will not grant, has not sought and will not seek, has not attempted and will not attempt to obtain, and has not accepted and will not accept, any advantage, financial or in kind, to or from any party whatsoever, when such advantage constitutes an illegal practice or involves corruption, either directly or indirectly, in so far as it serves as an incentive or reward relating to the performance of the Contract.

I.4.4 The contractor shall pass on all the relevant obligations in writing to its personnel and to any natural person with the power to represent it or take decisions on its behalf and ensure that it is not placed in a situation which could give rise to conflicts of interest. The contractor shall also pass on all the relevant obligations in writing to third parties involved in the performance of the Contract including subcontractors.

ARTICLE I.5 - LIQUIDATED DAMAGES

EMSA may impose liquidated damages should the contractor fail to complete its contractual obligations, also with regard to the required quality level, according to the tender specifications.

Should the contractor fail to perform its contractual obligations within the time-limits set by the FWC or the relevant specific contract, then, without prejudice to the contractor's actual or potential liability or to EMSA's right to terminate the FWC or the relevant specific contract, EMSA may impose liquidated damages for each and every calendar day of delay according to the following formula:

$0.3 \times (V/d)$

V is the price of the relevant purchase;

d is the duration specified in the relevant specific contract or, failing that, the period between the date specified in Article 4.1 and the date of delivery or performance specified in the relevant specific contract, expressed in calendar days

The contractor may submit arguments against this decision within 30 days of receipt of the formal notification. In the absence of a reaction on its part or of written withdrawal by EMSA within 30 days of the receipt of such arguments, the decision imposing the liquidated damages shall become enforceable.

The parties expressly acknowledge and agree that any sums payable under this article are in the nature of liquidated damages and not penalties, and represent a reasonable estimate of fair compensation for the losses incurred due to failure to fulfil obligations which may be reasonably anticipated.

ARTICLE I.6 – REPORTING AND PAYMENTS

I.6.1 Date of payment

Payments shall be deemed to be effected on the date when they are debited to the contracting authority's account.

I.6.2 Currency

The IT Framework Contract shall be in euros.

Payments shall be executed in euros or in the local currency as provided for in Article 6.

Conversion between the euro and another currency shall be made according to the daily euro exchange rate published in the *Official Journal of the European Union* or, failing that, at the monthly accounting exchange rate established by the European Commission and published on its website, applicable on the day on which the payment order is issued by the contracting authority.

I.6.3 Costs of transfer

The costs of the transfer shall be borne in the following way:

- (a) costs of dispatch charged by the bank of the contracting authority shall be borne by the contracting authority,
- (b) cost of receipt charged by the bank of the contractor shall be borne by the contractor,
- (c) costs for repeated transfer caused by one of the parties shall be borne by the party causing repetition of the transfer.

I.6.4 Invoices and Value Added Tax

Invoices shall contain the contractor's identification, the amount, the currency and the date, as well as the IT Framework Contract reference and reference to the specific contract.

Invoices shall indicate the place of taxation of the contractor for value added tax (VAT) purposes and shall specify separately the amounts not including VAT and the amounts including VAT.

All invoices shall indicate both the contractor's and EMSA's VAT number.

EMSA is, as a rule, exempt from all taxes and duties, including VAT, pursuant to the provisions of Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Union.

The contractor shall accordingly complete the necessary formalities with the relevant authorities to ensure that the supplies and services required for performance of the FWC are exempt from taxes and duties, including VAT exemption.

I.6.5 Pre-financing and performance guarantees

Pre-financing guarantees shall remain in force until the pre-financing is cleared against interim payments or payment of the balance and, in case the latter takes the form of a debit note, three months after the debit note is notified to the contractor. The contracting authority shall release the guarantee within the following month.

Performance guarantees shall cover performance of the service in accordance with the terms set out in the request for services until its final acceptance by the contracting authority. The amount of the performance guarantee shall not exceed the total price of the specific contract. The guarantee shall provide that it remains in force until final acceptance. The contracting authority shall release the guarantee within a month following the date of final acceptance.

Where, in accordance with Article 5, a financial guarantee is required for the payment of pre-financing, or as performance guarantee, it shall fulfil the following conditions:

- a) the financial guarantee is provided by a bank at the request of the contractor and agreement by the contracting authority, by a third party;
- b) the guarantor stands as first-call guarantor and does not require the contracting authority to have recourse against the principal debtor (the contractor).

The cost of providing such guarantee shall be borne by the contractor.

I.6.6 Interim payments and payment of the balance

The contractor shall submit an invoice for interim payment upon delivery of intermediary results, accompanied by a progress report or any other documents, as provided for in Article 5 or in the tender specifications or in the specific contract.

The contractor shall submit an invoice for payment of the balance within 60 days following the end of the period referred to in the specific Contract, accompanied by a final progress report or any other documents provided for in Article 5 or in the tender specifications or in the specific contract.

Upon receipt, the contracting authority shall pay the amount due as interim or final payment, within the periods specified in Article 5, provided the invoice and documents have been approved and without prejudice to Article I.6.7. Approval of the invoice and documents shall not imply recognition of the regularity or of the authenticity, completeness and correctness of the declarations and information they contain.

Payment of the balance may take the form of recovery.

I.6.7 Suspension of the time allowed for payment

The contracting authority may suspend the payment periods specified in Article 5 at any time by notifying the contractor that its invoice cannot be processed, either because it does not comply with the provisions of the IT Framework Contract, or because the appropriate documents have not been produced.

The contracting authority shall inform the contractor in writing as soon as possible of any such suspension, giving the reasons for it.

Suspension shall take effect on the date the notification is sent by the contracting authority. The remaining payment period shall start to run again from the date on which the requested information or revised documents are received or the necessary further verification, including on-the-spot checks, is carried out. Where the suspension period exceeds two months, the contractor may request the contracting authority to justify the continued suspension.

Where the payment periods have been suspended following rejection of a document referred to in the first paragraph and the new document produced is also rejected, the contracting authority reserves the right to terminate the specific contract in accordance with Article I.13.1(c).

I.6.8 Interest on late payment

On expiry of the payment periods specified in Article 5, and without prejudice to Article I.6.7, the contractor is entitled to interest on late payment at the rate applied by the European Central Bank for its main refinancing operations in Euros (the reference rate) plus eight percentage points. The reference rate shall be the rate in force on the first day of the month in which the payment period ends, as published in the C series of the *Official Journal of the European Union*.

The suspension of the payment period in accordance with I.6.7 may not be considered as a late payment.

Interest on late payment shall cover the period running from the day following the due date for payment up to and including the date of actual payment as defined in Article I.6.1.

However, when the calculated interest is lower than or equal to EUR 200, it shall be paid to the contractor only upon request submitted within two months of receiving late payment.

ARTICLE I.7

Not Applicable.

ARTICLE I.8 –RECOVERY

I.8.1 If an amount is to be recovered under the terms of the Contract, the contractor shall repay EMSA the amount in question according to the terms and by the date specified in the debit note.

I.8.2 If the obligation to pay the amount due is not honoured by the date set by EMSA in the debit note, the amount due shall bear interest at the rate indicated in Article I.6.8. Interest on late payments shall cover the period from the day following the due date for payment up to and including the date when EMSA receives the full amount owed.

Any partial payment shall first be entered against charges and interest on late payment and then against the principal amount.

I.8.3 If payment has not been made by the due date, EMSA may, after informing the contractor in writing, recover the amounts due by offsetting them against any amounts owed to the contractor by EMSA or by calling in the financial guarantee, where provided for in Article 5 or in the specific contract.

ARTICLE I.9

Not applicable.

ARTICLE I.10– FORCE MAJEURE AFFECTING THE CONTRACT OR THE SPECIFIC CONTRACT(S)

I.10.1 Force majeure means any unforeseeable and exceptional situation or event beyond the control of the contracting parties' control which prevents either of them from performing any of their obligations under the Contract, which was not attributable to error or negligence on their part or on the part of a subcontractors which proves to be inevitable in spite of exercising due diligence. Any default of a service defect in equipment or material or delays in making them available, unless they stem directly from a relevant case of force majeure, as well as labour disputes, strikes or financial difficulties cannot be invoked as force majeure.

I.10.2 A party is faced with force majeure shall notify the other party without delay stating the nature, likely duration and foreseeable effects.

I.10.3 The party faced with force majeure shall not be held in breach of its contractual obligations if it has been prevented from fulfilling them by force majeure. Where the Contractor is unable to fulfil its contractual obligations owing to force majeure, he shall have the right to remuneration for the tasks actually executed.

I.10.4 The parties shall take all the necessary measures to limit any damage due to force majeure.

ARTICLE I.11 – SUBCONTRACTING

I.11.1 The Contractor shall not subcontract without prior written authorisation from EMSA nor cause the Contract to be de facto performed by third parties.

I.11.2 Even where EMSA authorises the Contractor to subcontract to third parties, it shall nevertheless remain bound by its contractual obligations and shall be solely responsible for the proper performance of this Contract.

I.11.3 The Contractor shall make sure that the subcontract does not affect rights and guarantees granted to EMSA by virtue of this Contract, notably by Article I.15.

ARTICLE I.12 – ASSIGNMENT

I.12.1 The Contractor shall not assign the rights including claims for payments, and obligations arising from the Contract, in whole or in part, without prior written authorisation from EMSA.

I.12.2 In the absence of such authorisation, or in the event of failure to observe the terms thereof, the assignment of rights or obligations by the Contractor shall not be enforceable against EMSA and shall have no effect on it.

ARTICLE I.13 – TERMINATION OF CONTRACT

I.13.1 Grounds for termination

EMSA may terminate the Contract, in the following circumstances:

- (a) if a change to the contractor's legal, financial, technical or organisational or ownership situation is likely to affect the performance of the Contract or specific contract substantially or calls into question the decision to award the Contract.
- (b) if execution of the tasks under a pending specific contract has not actually commenced within 15 days of the date foreseen, and the new date proposed, if any, is considered unacceptable by EMSA, taking into account article I.16.2;
- (c) if the contractor does not perform the Contract or a specific contract as established in the tender specifications or request for service or fails to fulfil another substantial contractual obligation; termination of three or more specific contracts on this ground shall constitute ground for termination of the Contract;
- (d) in the event of force majeure notified in accordance with article I.10 or if the performance of the Contract, a specific contract has been suspended by the contractor as a result of force majeure, notified in accordance with article II.10.2, where either resuming performance is impossible or the modifications to the Contract or a specific contract might call into question the decision awarding the Contract or a specific contract, or result in unequal treatment of tenderers or contractors;
- (e) if the contractor is declared bankrupt, is being wound up, is having its affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, is the subject of proceedings concerning those matters, or is in any analogous situation arising from a similar procedure provided for in national legislation or regulations;

- (f) if the contractor or any natural person with the power to represent it or take decisions on its behalf has been found guilty of professional misconduct proven by any means;
- (g) if the contractor is not in compliance with its obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which it is established or with those of the country of the applicable law of this Contractor those of the country where the Contract is to be performed;
- (h) if EMSA has evidence that the Contractor or any natural persons with the power to represent it or take decisions on its behalf have committed fraud, corruption, or are involved in a criminal organisation, money laundering or any other illegal activity;
- (i) if EMSA has evidence that the contractor or any natural persons with the power to represent it or take decisions on its behalf have committed substantial errors, irregularities or fraud in the award procedure or the performance of the Contract, including in the event of submission of false information;
- (j) if the contractor is unable, through its own fault, to obtain any permit or licence required for performance of the Contract or a specific contract;
- (k) if the needs of EMSA change and it no longer requires new services under the FWC;
- (l) when due to the termination of the Contract with one or more of the contractors there is no minimum required competition within the multiple framework contract with reopening of competition.

I.13.2 Procedure for termination

When EMSA intends to terminate the Contract or a specific contract it shall notify the contractor of its intention specifying the grounds thereof. EMSA shall invite the contractor to make any observations and, in the case of point (c) of Article I.13.1, to inform EMSA about the measures taken to continue the fulfilment of its contractual obligations, within 30 days from receipt of the notification.

If EMSA does not confirm acceptance of these observations by giving written approval within 30 days of receipt, the termination procedure shall proceed. In any case of termination EMSA shall notify the contractor about its decision to terminate the Contract or a specific contract. In the cases referred to in points (a), (b), (c), (e), (g), (j), (k) and (l) of Article I.13.1 the formal notification shall specify the date on which the termination takes effect. In the cases referred to in points (d), (f), (h), and (i) of Article I.13.1 the termination shall take effect on the day following the date on which notification of termination is received by the contractor.

I.13.3 Effects of termination

In the event of the contractor shall waive any claim for consequential damages, including any loss of anticipated profits for uncompleted work. On receipt of the notification of termination the contractor shall take all appropriate measures to minimise costs, prevent damage, and cancel or reduce its commitments. The contractor shall have 60 days from the date of termination to draw up the documents required by the special conditions or specific contracts for the tasks already executed on the date of termination and produce an invoice if necessary. EMSA may recover any amounts paid under the Contract.

EMSA may claim compensation for any damage suffered in the event of termination.

On termination EMSA may engage any other contractor to execute or complete the services. EMSA shall be entitled to claim from the contractor all extra costs incurred in this regard, without prejudice to any other rights or guarantees it may have under the Contract.

ARTICLE I.14 - CANCELLATION OF SPECIFIC CONTRACTS

Where execution of the Specific Contract has not actually commenced within fifteen (15) days of the date foreseen for the commencement of execution and the new date proposed, if any, is considered unacceptable by EMSA, EMSA may cancel such Specific Contract with no prior notice. Cancellation shall take effect from the day after the day on which the Contractor receives a registered letter with acknowledgment of receipt or equivalent.

EMSA may cancel a Specific Contract at any time during execution thereof on the grounds and under the conditions set out in Article I.13 with respect to the part still outstanding. The Contractor shall accept, as the aggregate liability of EMSA, payment of the price of the goods delivered or services provided by him as at the effective date of cancellation.

ARTICLE I.15 – CHECKS AND AUDITS

- I.15.1 EMSA and the European Anti-Fraud Office may check or carry out an audit on the performance of the Contract. It may be carried out either directly by its own staff or by any other outside body authorised to do so on its behalf.

Such checks and audits may be initiated during the performance of the Contract and during a period of five years which starts running from the date of expiry of the Contract.

The audit procedure shall be deemed to be initiated on the date of receipt of the relevant letter sent by EMSA. Audits shall be carried out on a confidential basis.

- I.15.2 The Contractor shall keep all original documents stored on any appropriate medium, including digitised originals when they are authorised by national law and under the conditions laid down therein, for a period of five years which starts running from the date of expiry of the Contract.

- I.15.3 The Contractor shall allow EMSA's staff and outside personnel authorised by EMSA the appropriate right of access to sites and premises where the Contract is performed and to all the information, including information in electronic format, needed in order to conduct such checks and audits. The contractor shall ensure that the information is readily available at the moment of the check or audit and, if so requested, that information be handed over in an appropriate form.

- I.15.4 On the basis of the findings made during the audit, a provisional report shall be drawn up. It shall be sent to the contractor, which shall have 30 days following the date of receipt to submit observations. The final report shall be sent to the contractor within 60 days following the expiry of that deadline.

On the basis of the final audit findings, EMSA may recover all or part of the payments made and may take any other measures which it considers necessary.

- I.15.5 By virtue of Council Regulation (Euratom, EC) No 2185/96 of 11 November 1996 concerning on-the-spot checks and inspection carried out by the Commission in order to protect the European Communities' financial interests against fraud and other irregularities and Regulation (EC) No 1073/1999 of the European Parliament and the Council of 25 May 1999 concerning investigation conducted by the European Anti-Fraud Office (OLAF), the OLAF may also carry out on the spot checks and inspections in accordance with the procedures laid down by Union law for the protection of the financial interests of the Union against fraud and other irregularities. Where appropriate, the findings may lead to recovery by EMSA.

- I.15.6 The Court of Auditors shall have the same rights as EMSA, notably right of access, for the purpose of checks and audits.

ARTICLE I.16 - AMENDMENTS

- I.16.1 Any amendment to the Contract or specific contract shall be made in writing before fulfilment of all contractual obligations. A specific contract may not be deemed to constitute an amendment to the FWC.

- I.16.2 The amendment may not have the purpose or the effect of making changes to the Contract or to specific contracts which might call into question the decision awarding the Contract or specific contract or result in unequal treatment of tenderers or contractors.

ARTICLE I.17 – CONFIDENTIALITY

- I.17.1 EMSA and the contractor shall treat with confidentiality any information and documents, in any form, disclosed in writing or orally in relation to the performance of the IT Framework Contract and identified in writing as confidential.

The contractor shall:

- (a) not use confidential information and documents for any purpose other than fulfilling its obligations under the IT Framework Contract or specific contract without prior written agreement of EMSA;
- (b) ensure the protection of such confidential information and documents with the same level of protection it uses to protect its own confidential information, but in no case any less than reasonable care;
- (c) not disclose directly or indirectly confidential information and documents to third parties without prior written agreement of EMSA.

- I.17.2 The confidentiality obligation set out in Article I.17.1 shall be binding on EMSA and the contractor during the performance of the IT Framework Contract and for five years starting from the date of the payment of the balance unless:

- (a) the disclosing party agrees to release the other party from the confidentiality obligation earlier;
- (b) the confidential information becomes public through other means than in breach of the confidentiality obligation, through disclosure by the party bound by that obligation;
- (c) the disclosure of the confidential information is required by law.

- I.17.3 The contractor shall obtain from any natural person with the power to represent it or take decisions on its behalf, as well as from third parties involved in the performance of the IT Framework Contract or specific contract an undertaking that they will comply with the confidentiality obligation set out in Article I.17.1.

ARTICLE I.18 – OWNERSHIP OF THE RESULTS - INTELLECTUAL PROPERTY RIGHTS

I.18.1 Definitions

In this contract the following definitions apply:

- (1) 'results' means any intended outcome of the performance of the contract which is delivered and finally accepted by EMSA;
- (2) 'creator' means any natural person who contributed to the production of the result and includes personnel of EMSA or a third party;
- (3) 'pre-existing rights' means any industrial and intellectual property rights, including background technology, which exist prior to EMSA or the contractor ordering them for the purpose of the contract execution and include rights of ownership and use by the contractor, the creator, EMSA and any third parties.

I.18.2 Ownership of the rights in the results

EMSA acquires irrevocably worldwide ownership of the results and of all intellectual property rights under the FWC. The intellectual property rights so acquired include any rights, such as copyright and other intellectual or industrial property rights, to any of the results and to all technological solutions and information created or produced by the contractor or by its subcontractor in implementation of the FWC. EMSA may exploit and use the acquired rights as stipulated in this FWC or specific contracts. EMSA acquires all the rights from the moment it approves the results delivered by the contractor. Such delivery and approval are deemed to constitute an effective assignment of rights from the contractor to EMSA.

The payment of the price as set out in this FWC or specific contracts is deemed to include any fees payable to the contractor about the acquisition of ownership of rights by EMSA including for all forms of exploitation and of use of the results.

The acquisition of rights by EMSA under this contract covers all territories worldwide.

Any intermediary sub-result, raw data, intermediary analysis made available by the contractor cannot be used by EMSA without the written consent of the contractor, unless the contract or specific contract explicitly provides for it to be treated as a self-contained result.

I.18.3 Licensing rights on pre-existing materials

Unless provided otherwise in the special conditions, EMSA does not acquire ownership of pre-existing rights under this FWC.

The contractor licenses the pre-existing rights on a royalty-free, non-exclusive and irrevocable basis to EMSA, which may use the pre-existing materials for all the modes of exploitation set out in this FWC or in specific contracts. All pre-existing rights are licensed to EMSA from the moment the results are delivered and approved by EMSA. Such delivery and approval are deemed to constitute an effective licensing of rights from the contractor to EMSA.

The licensing of pre-existing rights to EMSA under this FWC covers all territories worldwide and is valid for the duration of intellectual property rights protection. Under observance of the limitations, if any, provided by applicable law, the pre-existing materials may be used for any of the following purposes:

- (a)** use for its own purposes:
 - I. making available to the staff of EMSA
 - II. making available to the persons and entities working for EMSA or cooperating with it, including contractors, subcontractors whether legal or natural persons, Union institutions, agencies and bodies, Member States' institutions
 - III. installing, uploading, processing
 - IV. arranging, compiling, combining, retrieving
 - V. copying, reproducing in whole or in part and in unlimited number of copies
- (b)** distribution to the public:
 - I. publishing in hard copies
 - II. publishing in electronic or digital format
 - III. publishing on the internet as a downloadable/non-downloadable file
 - IV. broadcasting by any kind of technique of transmission
 - V. public presentation or display

- VI. communication through press information services
- VII. inclusion in widely accessible databases or indexes
- VIII. otherwise in any form and by any method

(c) modifications by EMSA or by a third party in the name of EMSA:

- I. shortening
- II. summarizing
- III. modifying of the content
- IV. making technical changes to the content:
 - necessary correction of technical errors
 - adding new parts or functionalities
 - changing functionalities
 - providing third parties with additional information concerning the result (e.g. source code) with a view to making modifications
- V. addition of new elements, paragraphs titles, leads, bolds, legend, table of content, summary, graphics, subtitles, sound, etc.
- VI. preparation in audio form, preparation as a presentation, animation, pictograms story, slide-show, public presentation etc.
- VII. extracting a part or dividing into parts
- VIII. use of a concept or preparation of a derivative work
- IX. digitisation or converting the format for storage or usage purposes
- X. modifying dimensions
- XI. translating, inserting subtitles, dubbing in different language versions (including, but not limited to all official languages of the EU and languages of candidate countries)

(d) the modes of exploitation listed in article II.18.4

(e) rights to authorise, license, or sub-license in case of licensed pre-existing rights, the modes of exploitation set out in any of the points (a) to (d) to third parties.

The modes of exploitation may be defined in more detail in the specific contract.

Where EMSA becomes aware that the scope of modifications exceeds that envisaged in the contract, specific contract, EMSA shall consult the contractor. Where necessary, the contractor shall in turn seek the agreement of any creator or other right holder. The contractor shall reply to EMSA within one month and shall provide its agreement, including any suggestions of modifications, free of charge. The creator may refuse the intended modification only when it may harm his honour, reputation or distort integrity of the work.

The payment of the price as set out in in this FWC or specific contracts is deemed to also include any fees payable to the contractor in relation to the licensing of pre-existing rights to EMSA, including for all forms of exploitation and of use of the results.

Where the implementation of the FWC requires that the contractor uses pre-existing materials belonging to EMSA, EMSA may request that the contractor signs an adequate licence agreement. Such use by the contractor will not entail any transfer of rights to the contractor and is limited to the needs of this FWC.

I.18.4 Exclusive rights

EMSA acquires the following exclusive rights:

- (a) reproduction: the right to authorise or prohibit direct or indirect, temporary or permanent reproduction of the results by any means (mechanical, digital or other) and in any form, in whole or in part;
- (b) communication to the public: the exclusive right to authorise or prohibit any display, performance or communication to the public, by wire or wireless means, including the making available to the public of the results in such a way that members of the public may access them from a place and at a time individually chosen by them; this right also includes the communication and broadcasting by cable or by satellite;
- (c) distribution: the exclusive right to authorise or prohibit any form of distribution of results or copies of the results to the public, by sale or otherwise;
- (d) rental: the exclusive right to authorise or prohibit rental or lending of the results or of copies of the results;
- (e) adaptation: the exclusive right to authorise or prohibit any modification of the results;
- (f) translation: the exclusive right to authorise or prohibit any translation, adaptation, arrangement, creation of derivative works based on the results, and any other alteration of the results, subject to the respect of moral rights of authors, where applicable;
- (g) where the results are or include a database: the exclusive right to authorise or prohibit the extraction of all or a substantial part of the contents of the database to another medium by any means or in any form; and the exclusive right to authorise or prohibit the re-utilization of all or a substantial part of the contents of the database by the distribution of copies, by renting, by on-line or other forms of transmission;
- (h) where the results are or include a patentable subject-matter: the right to register them as a patent and to further exploit such patent to the fullest extent;
- (i) where the results are or include logos or subject-matter which could be registered as a trademark: the right to register such logo or subject-matter as a trademark and to further exploit and use it;
- (j) where the results are or include know-how: the right to use such know-how as is necessary to make use of the results to the full extent provided for by this FWC, and the right to make it available to contractors or subcontractors acting on behalf of EMSA, subject to their signing of adequate confidentiality undertakings where necessary;
- (k) where the results are documents:
 - (i) giving access upon individual requests without the right to reproduce or exploit, as provided for by Regulation 1049/2001 of the European Parliament and of the Council of 30 May 2001 regarding public access to European Parliament, Council and Commission documents;
 - (ii) the right to store and archive the results or copies of the results in line with the document management rules applicable to EMSA, including digitisation or converting the format for preservation or new use purposes;
- (l) where the results are or incorporate software, including source code, object code and, where relevant, documentation, preparatory materials and manuals, in addition to the other rights mentioned in this Article:
 - (i) end-user rights, for all uses by EMSA or by subcontractors which result from this FWC and from the intention of the parties;
 - (ii) the rights to decompile or disassemble the software;
- (m) to the extent that the contractor may invoke moral rights, the right for EMSA, except where otherwise provided in this FWC, to publish the results with or without mentioning the creator(s)' name(s), and the right to decide when and whether the results may be disclosed and published.

The contractor warrants that the exclusive rights and the modes of exploitation may be exercised by EMSA on all parts of the results, be they created by the contractor or consisting of pre-existing materials.

Where pre-existing materials are inserted in the results, EMSA may accept reasonable restrictions impacting on the above list, provided that the said materials are easily identifiable and separable from the rest, that they

do not correspond to substantial elements of the results, and that, should the need arise, satisfactory replacement solutions exist, at no additional costs to EMSA. In such case, the contractor will have to clearly inform EMSA before making such choice and EMSA has the right to refuse it.

I.18.5 Identification of pre-existing rights

When delivering the results, the contractor must warrant that, for any use that EMSA may envisage within the limits set in this FWC, the results and the pre-existing material incorporated in the results are free of claims from creators or from any third parties and all the necessary pre-existing rights have been obtained or licensed.

To that effect, the contractor must establish a list of all pre-existing rights to the results of this FWC or parts thereof, including identification of the rights' owners. If there are no pre-existing rights to the results, the contractor must provide a declaration to that effect. The contractor must provide this list or declaration to EMSA together with the invoice for payment of the balance at the latest.

I.18.6 Evidence of granting of pre-existing rights

Upon request by EMSA, the contractor must promptly provide evidence that it has the ownership of or the right to use all the listed pre-existing rights, except for the rights owned or licensed by EMSA. EMSA may request this evidence even after the end of this FWC.

This evidence may refer, for example, to rights to: parts of other documents, images, graphs, fonts, tables, data, software, technical inventions, know-how, IT development tools, routines, subroutines or other programmes ('background technology'), concepts, designs, installations or pieces of art, data, source or background materials or any other parts of external origin.

This evidence must include, as appropriate:

- (a) the name and version number of a software product;
- (b) the full identification of the work and its author, developer, creator, translator, data entry person, graphic designer, publisher, editor, photographer, producer;
- (c) a copy of the licence to use the product or of the agreement granting the relevant rights to the contractor or a reference to this licence;
- (d) a copy of the agreement or extract from the employment contract granting the relevant rights to the contractor where parts of the results were created by its personnel;
- (e) the text of the disclaimer notice if any.

Provision of evidence does not release the contractor from its responsibilities if it is found that it does not hold the necessary rights, regardless of when and by whom this fact is revealed.

The contractor shall also warrant to EMSA that it possesses the relevant rights or powers to execute the transfer or, as applicable, the licensing, of the results and/or of the pre-existing rights to EMSA and that it has paid or has verified payment of all due fees including fees due to collecting societies, related to the final results and/or any pre-existing rights.

I.18.7 Quotation of works in the result

In the result, the contractor must clearly point out all quotations of existing works. The complete reference should include as appropriate, the following: name of the author, title of the work, date and place of

publication, date of creation, address of publication on the internet, number, volume and other information that allows the origin to be easily identified.

I.18.8 Moral rights of creators

By delivering the results, the contractor warrants that the creators will not object to the following on the basis of their moral rights under copyright:

- (a) that their names be mentioned or not mentioned when the results are presented to the public;
- (b) that the results be divulged or not after they have been delivered in their final version to EMSA;
- (c) that the results be adapted, provided that this is done in a manner which is not prejudicial to the creator's honour or reputation.

If moral rights on parts of the results protected by copyright may exist, the contractor must obtain the consent of creators regarding the granting or waiver of the relevant moral rights in accordance with the applicable legal provisions and be ready to provide documentary evidence upon request.

I.18.9 Image rights and sound recordings

If natural, recognisable persons appear or their voice is recorded in a result the contractor shall submit to EMSA a statement of these persons (or of the persons exercising parental authority in case of minors or of the persons legally responsible in case of persons with disabilities determined by a court of law or other competent authority) where they give their permission for the described use of their image or voice on request by EMSA. This does not apply to persons whose permission is not required in line with the law of the country where photographs were taken, films shot or audio records made.

I.18.10 Copyright notice for pre-existing rights

When the contractor retains pre-existing rights on parts of the results, reference must be inserted to that effect when the result is used as set out in Article I.10.1, with the following disclaimer: '© — year — EMSA. All rights reserved. Certain parts are licensed under conditions to EMSA', or with any other equivalent disclaimer as EMSA may consider best appropriate, or as the parties may agree on a case-by-case basis. This does not apply where inserting such reference would be impossible, notably for practical reasons.

I.18.11 Visibility of EMSA funding and disclaimer

When making use of the results, the contractor must declare that they have been produced under a contract with EMSA and that the opinions expressed are those of the contractor only and do not represent EMSA's official position. EMSA may waive this obligation in writing or provide the text of the disclaimer.

I.18.12 Trade secrets

Under observance of the limitations, if any, provided by applicable laws, EMSA shall have the right to disclose trade secrets which are incorporated in the results and/or pre-existing rights to a third party who is modifying the results and/or pre-existing rights in the name of EMSA provided that the trade secrets are used solely in connection with the modification of the result and/or the pre-existing rights on behalf of EMSA. EMSA shall ensure that the third party is bound by the confidentiality obligations contained in this FWC or by essentially corresponding confidentiality terms.

ARTICLE I.19

Not applicable.

ARTICLE I.20 – SUSPENSION OF THE CONTRACT

I.20.1 Suspension by the contractor

The contractor may suspend the performance of the Contract or specific contract or any part thereof if a case of force majeure makes such performance impossible or excessively difficult. The contractor shall inform EMSA about the suspension without delay, giving all the necessary reasons and details and the envisaged date for resuming the performance of the Contract or specific contract.

Once the circumstances allow resuming performance, the contractor shall inform EMSA immediately, unless EMSA has already terminated the Contract or specific contract.

I.20.2 Suspension by EMSA

EMSA may suspend the performance of the Contract or specific contract or any part thereof:

- a) if the Contract or specific contract award procedure or the performance of the FWC prove to have been subject to substantial errors, irregularities or fraud;
- b) in order to verify whether presumed substantial errors, irregularities or fraud have actually occurred.

Suspension shall take effect on the day the contractor receives formal notification, or at a later date where the notification so provides. EMSA shall as soon as possible give notice to the contractor to resume the service suspended or inform the contractor that it is proceeding with the termination of the Contract or specific contract. The contractor shall not be entitled to claim compensation on account of suspension of the Contract or specific contract or of part thereof.

Article I.21 – PROCESSING OF PERSONAL DATA

I.21.1 Any personal data included in the FWC shall be processed pursuant to Regulation (EC) 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Such data shall be processed by the data controller solely for the purposes of the performance, management and monitoring of the FWC without prejudice to its possible transmission to the bodies charged with monitoring or inspection tasks in application of Union law.

I.21.2 The Contractor shall have the right to access to its personal data and the right to rectify any such data. The Contractor should address any queries concerning the processing of its personal data to the data controller.

I.21.3 The Contractor shall have right of recourse at any time to the European Data Protection Supervisor.

I.21.4 Where the Contract requires the processing of personal data by the Contractor, the Contractor may act only under the supervision of the data controller, in particular with regard to the purposes of the processing, the categories of data which may be processed, the recipients of the data, and the means by which the data subject may exercise his rights.

I.21.5 The Contractor shall grant personnel; access to the data to the extent strictly necessary for the performance, management and monitoring of the Contract.

I.21.6 The Contractor undertakes to adopt appropriate technical and organisational security measures having regard to the risks inherent in the processing and to the nature of the personal data concerned in order to:

- a) prevent any unauthorised person from having access to computer systems processing personal data, and especially:

- aa) unauthorised reading, copying, alteration or removal of storage media;
- ab) unauthorised data input as well as any unauthorised disclosure, alteration or erasure of stored personal data;
- ac) unauthorised using of data-processing systems by means of data transmission facilities;
- b) ensure that authorised users of a data-processing system can access only the personal data to which their access right refers;
- c) record which personal data have been communicated, when and to whom;
- d) ensure that personal data being processed on behalf of third parties can be processed only in the manner prescribed by EMSA;
- e) ensure that, during communication of personal data and transport of storage media, the data cannot be read, copied or erased without authorisation;
- f) design its organisational structure in such a way that it meets data protection requirements.

ANNEX II

GENERAL TERMS AND CONDITIONS FOR INFORMATION TECHNOLOGIES CONTRACTS

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II.1 COMMON ADMINISTRATIVE PROVISIONS

II.1.1. Definitions

When used in the Framework Contract with a capitalised first letter and in italics, the following terms shall have the following meaning:

“Benchmarker”:

The independent third party carrying out a *Benchmarking*.

“Commissioned Software”:

Software developed by the Contractor for EMSA under the Framework contract.

“Commissioning date”:

Date on which the Contractor notifies EMSA that a *Product*, a *System* or an *Extension* thereto has been brought into service.

“Compatibility”:

Ability of a *Product* to function in accordance with the *System specifications* or type of equipment into which it will be integrated.

“Complex hardware product”:

Any computer equipment, whether or not it contains *Software*, which requires installation by skilled staff and acceptance by both Parties. These *Products* are explicitly described in Annex I to the Framework contract.

“Consignment note”

Note in duplicate duly signed and dated by the Contractor or his carrier, giving the Specific Contract number and particulars of the goods delivered to be countersigned by EMSA and returned to the Contractor or his carrier. This note acknowledges the fact that the goods have been delivered and in no way implies conformity of the goods with the Specific Contract.

“Certificate of conformity”

Certificate signed by EMSA, evidencing conformity of the goods delivered, no later than one month after the date of delivery, unless provision is made in the Special Conditions for a different period.

“Constant discount”:

Fixed percentage of discount on its *Products* and *Services*, awarded by the Contractor to EMSA during the entire duration of the Framework contract, and calculated on the prices as they appear in the *Official Price list*.

“Delivery date”:

Date, determined in the Framework contract, on which a *Product*, a *System* or an *Extension* thereto is to be delivered to EMSA.

“Documentation”:

Instructions and manuals supplied with the *Product(s)* and/or *Service(s)*, whether intended for

support/technical staff or for end-users, and whether in printed or in electronic form.

“Escrow agent”:

The third party providing the safekeeping facilities specified in the *Escrow rider*.

“Escrow rider”:

Agreement between EMSA, the Contractor and a third party, by which such third party provides safekeeping facilities for the source code of the *Software product(s)* covered by the Framework contract and/or for the related Documentation.

“Extension”:

Set of *Products* to supplement or extend a *System*.

“Extended working hours”:

Any working hours other than *Normal working hours*.

“Extra muros”:

Outside EMSA's premises.

“Hardware”:

Any computer equipment purchased, rented, leased or maintained under this Framework contract.

“Informatics Services”:

All *Services* related to information technology, such as (but not limited to) training, consultancy, removal, logistics, integration work, engineering, development, *Maintenance* and writing of *Documentation*, as further described in the Framework contract.

“Installation date”:

Date notified by the Contractor with a *Means of registered communication* on which the Contractor will perform the assembly, the installation and the bringing into service of a *Hardware Product*. This may not be later than fifteen (15) *Normal working days* after the date of its removal from its place of delivery to its place of installation. This date may be extended upon EMSA's decision and may be notified by EMSA with a *Means of communication*.

“Intellectual property rights”:

All industrial and *intellectual property rights*, such as, but not limited to, copyright, the rights of the producer of a database, rights on semi- conductors, patents, patent applications, utility models, trademarks (whether Benelux, Community, international or foreign trademarks), trade names, designs and models.

“Internal use”:

Within EMSA's premises and the use by an EMSA or agentas defined by the Staff Regulations of the Community, elsewhere than in his normal office located in EMSA's premises, but within the context of his I work for the Agency.

“Intra muros”:

Within EMSA’s premises.

“Means of communication”:

Any communication between the Parties relating to the execution of this Framework contract, whether made by letter, facsimile, telegram, e-mail or by any other *Means of communication*, the content of which can be printed on paper. These *Means of communication* also include communication by telephone, SMS, or any other *Means of communication* whose content cannot be printed on paper, provided such communication is confirmed within two (2) *Normal working days* by a communication by one of the means mentioned in the first sentence.

“Means of registered communication”:

Any communication between Parties relating to the execution of this Contract, made by a *Means of communication* the content of which can be printed on paper whereby an independent third party is able to establish that the communication has reached its destination, whether such destination be a postal, an electronic (e-mail) or any other type of address.

“New release”:

Revision of an existing version of a *Software* program, usually amending the reference to the *Software’s* version from, for example, version 0.1 to version 0.2.

“New version”:

New version of a *Software* program, usually amending the reference to the *Software’s* version from, for example, version 0.1 to version 1.1.

“Normal working days”:

From Mondays to Fridays except EMSA holidays. EMSA holidays are usually but not necessarily the same as the national holidays of Portugal. When expressly so provided in the Framework contract or in a Specific Contract, EMSA holidays may be included in the *Normal working days*.

“Normal working hours”:

From 9 a.m. to 17.30 p.m. on *Normal working days*.

“Official price list”:

Price list, which is

- a constant feature of the Contractor’s sales policy;
 - regularly updated by the Contractor;
 - addressed to the public, to the Contractor’s customers or to a part of them;
 - accessible to the public, to the Contractor’s customers or to a part of them,
- e.g. on an Internet site.

“Order Forms”:

Document signed by EMSA and the Contractor ordering *Products* or *Services* pursuant to the Framework contract. Please note that reference to Specific Contracts may be understood, where relevant, as references to Orders.

“Payment request”:

Contractor’s request for a payment, by a *Means of communication*, for the execution of any of its obligations under the Framework contract.

“Person-day”:

Seven-and-a-half (7½) hours.

“Products”:

Any *Software, Hardware or Telecommunications product*. Where a distinction between the three types of *Products* is intended, it shall either be explicit, by the use of one of the three terms, or it may be implicitly deduced from the context of this Framework contract.

“Quality indicators”:

Measurable targets serving as a reference for evaluating the quality of the *Services* to be provided by the Contractor, and determined in the *Service level agreement*.

“Services”:

Informatics and/or Telecommunications Services.

“Service level agreement”:

Document annexed to the Framework contract, which lays down:

- the quality of the *Services* to be provided by the Contractor by reference to the *Quality indicators*;
- the penalties for total or partial non-performance which will apply to the Framework contract if he fails to meet the *Quality indicators*.

“Software”:

Any series of instructions constituting a computer-executable program or programs, and being (part of) the object of the Framework contract.

“System”:

Combination of *Products* serving a complete set of functions.

“Telecommunications products”:

All products and equipment related to the provision of *Telecommunications services*.

“Telecommunications services”:

All *Services* related to the transmission, emission or receipt of signs, signals, writings, images, sounds or data of whichever nature, whether enabled by wire or wireless means or by any other electromagnetic *System*, such as (but not limited to) training, consultancy, removal, installation, administration, management and maintenance, as further described in the Framework contract.

II.1.2. Termination of Information Technologies Contracts

- II.1.2.1. If EMSA terminates the Framework contract pursuant to Article I.13 of the General Conditions and EMSA has been assigned the rights on *Commissioned Software* or has paid for maintenance of *Commissioned Software*, the Contractor shall:
- hand over (immediately and without charge) the source code, build procedures, other *Software* dependencies (e.g. libraries) the *Software* plans, the access keys and the *Documentation* required by EMSA for the proper operation of the *Software*, insofar as the Contractor has a legal right to do so;
 - expressly undertake not to use such developments in the future and to purge any copies of the same from his equipment;
 - undertake to keep every information in relation to the developed *Software* confidential even after the termination of the Framework contract.
- II.1.2.2. If the Framework contract concerns the provision of Products as well as maintenance Services relating to these Products, EMSA has the right, if the circumstances justifying termination only concern the provision of the Products, to terminate only the part of the Framework contract which concerns the provision of Products, while keeping the part of the Framework contract relating to the maintenance Services in force.
- II.1.2.3. In case of rental and leasing the Contractor shall remove the Products or Systems at its expense within the time agreed upon between the Parties. The withdrawal of a Product shall be recorded in a withdrawal report quoting the Framework contract and Specific Contract concerned.
- II.1.2.4. The Contractor shall not provide any Products or Services if the Framework contract is not in force and if no Specific Contract has been entered into.

II.1.3. Formulation of Prices for IT Products, Software and Services

- II.1.3.1. In general, the Contractor agrees to let EMSA, as a most favoured partner, benefit from its most advantageous prices.

II.1.3.2. Products

Contractual prices for purchase of *Products* shall be expressed per unit. The prices quoted shall include delivery, installation and assembly where applicable.

Rental of *Products* shall be distinguished from leasing by the fact that, in the former, the Framework contract shall not include any purchase value at the end of the rental period. In the case of leasing, the Framework contract shall lay down the price for the purchase option at the end of the leasing period.

Maintenance of *Products* shall be expressed as a percentage of the purchase price or as an absolute figure. It may vary in proportion to the level of service as defined in the Contract, which shall be specified in each Specific Contract.

II.1.3.3. Software

The fees for the maintenance of *Software* are either expressed as a percentage of the licence fees or are calculated at a fixed price. Duration of the maintenance shall be specified in each price.

II.1.3.4. Services

Service prices shall be defined at a fixed price or by *Person-day*, and shall include all general expenses and expenses directly connected with the provision of the *Services* such as company management

costs, social security costs, travel and office expenses.

II.1.4. Official price lists

- II.1.4.1. Upon signature of the Framework contract, the Contractor's *Official price list* is appended to the Contract as an Annex. The Contractor will use its best endeavours to supply an *Official price list* which only includes the Products which form the subject of the Framework contract. If the *Official Price list* also includes items other than such Products, then the Contractor agrees to indicate clearly and accurately, for example by highlighting the relevant items in the electronic version of the document, which subset of items of its *Official price list* correspond to the Products forming the subject of this Framework contract. If the Contractor fails to do so, he agrees that he cannot claim payment for, restitution of, nor damages for items delivered to EMSA outside the scope of the object of this Framework contract.
- II.1.4.2. The Contractor agrees to make an updated version of the *Official price list* available to EMSA at the frequency determined in the Special Conditions of the Framework contract.
- II.1.4.3. The updates of the *Official price list* will be made available to EMSA either, and by order of preference, for download by remote access to a website, to an FTP site, to an intranet site, in electronic format (e.g. by e-mail) or in hard copy (or e.g. on CD-ROM), as specified in the Special Conditions of the Framework contract. When it is therein agreed that such updates may be downloaded, then the Contractor shall precisely indicate the location of the download area (such as from an area on the Contractor's website, from an FTP site, etc.) and provide EMSA, by a *Means of communication*, with full and accurate instructions, including access codes, enabling it to perform such downloads. Should the *Official price list* be made available to EMSA by remote access, the Contractor must inform EMSA in advance by a *Means of communication* of the moment on which it will be made available on line.
- II.1.4.4. When the Official price list is treated as confidential information by the Contractor, the Contractor agrees to make the updates of the Official price list available to EMSA not later than on the day it is for the first time made available to any other customer of the Contractor. If not, EMSA may claim damages for total or partial non-performance.
- II.1.4.5. Once the update of the *Official price list* is made available to EMSA, EMSA must accept or refuse it within the time limit set forth in the Framework contract. Such acceptance or refusal will be communicated to the Contractor by a Means of communication. The Contractor agrees to provide the updates in a manner allowing an easy way of comparing the different versions of the Official price list.
- II.1.4.6. The Contractor agrees to make updates of the *Official price list* available to EMSA only when, considering the volumes of each Product already ordered by EMSA, the global average price for all the Products is lower than the preceding versions of the Official price list. Individual products prices already included in the list shall not be increased, unless otherwise agreed in the Framework contract. If this is not the case, EMSA may refuse to apply the proposed update. EMSA will then continue to benefit from the prices of the last accepted version of the Official price list.
- II.1.4.7. When EMSA's acceptance of the update of the Official price list has been communicated to the Contractor by a Means of communication the new prices will be immediately applicable to all orders placed by EMSA on and from the day following such a communication.
- II.1.4.8. The Constant discount rate(s) must be applied to clearly defined groups of Products and/or Services.

II.1.4.9. The Constant discount(s) fixed in the Framework contract are applicable to all the accepted updates of the Official price list.

II.1.4.10. The present Article does not prevent the Parties agreeing on a higher percentage for the Constant discount(s) by Amendment.

II.1.5. Particularities for Invoicing of Information Technologies Contracts

II.1.5.1. The invoices are to be sent to the address stated in Article 7 of the Special Conditions. The payment period shall not be binding on EMSA if any invoice is sent to a different address. An invoice should be submitted not later than six (6) months after delivery of the Consignment note, or, where applicable, the Certificate of Conformity. In accordance with Article I.5 of the General Conditions, the Contractor will be liable to liquidated damages in the case of invoices submitted out of time.

II.1.5.2. *Products*

Purchases shall be invoiced when the relevant Consignment note, or, where applicable, the Certificate of Conformity has been signed.

Invoices in respect of rental, leasing and maintenance shall be submitted quarterly unless otherwise provided for in the Framework contract. The first invoice in respect of rented or leased Products shall cover the period from the date of signature of the Consignment note, or, where applicable, the Certificate of Conformity of the Products, or, as regards maintenance, from expiry of the guarantee, to the last day of the current calendar quarter.

II.1.5.3. *Software*

One-off licence fees shall be invoiced when the relevant Consignment note, or, where applicable, the Certificate of Conformity has been signed.

Yearly licence fees and maintenance fees may be invoiced per calendar year and in advance for the whole year. The first invoice shall cover the period from the date of signature of the Consignment note, or, where applicable, the Certificate of Conformity of the Software, or, as regards maintenance, from expiry of the guarantee, to the end of the current calendar year.

II.1.5.4. *Services*

Invoices in respect of Services consisting in a single performance, for example the provision of a report, a project or a training measure, shall be submitted in accordance with the terms of the Specific Contracts.

Invoices with respect of continuous Services shall be submitted at the end of the calendar quarter. The first invoice shall cover the period from the start date indicated in the Specific Contract until the end of the current calendar quarter. When the invoice relates to an amount of less than €25,000 payment shall be made when the service has been fully provided.

II.1.6. Insurance of rented or leased equipment

II.1.6.1. The Contractor shall insure the Products rented or leased under this Framework contract from the Delivery date until the date the rental or lease have expired. EMSA shall in no case

be considered responsible for any deterioration, destruction, theft or loss of any Products rented or leased by the Contractor under this Framework contract, unless the damage or loss is caused by a serious fault or serious negligence on the part of EMSA.

II.1.7. Appendixes

The following documents are attached to the General terms and conditions for Information Technologies Contracts and shall form an integral part of it:

- Appendix I EMSA System and Application Technical Landscape
- Appendix II Condition of Use for Remote Access
- Appendix III License Agreement for Use of Software

II.2. COMMON TECHNICAL PROVISIONS

II.2.1. Quality and standards

- II.2.1.1. The Contractor shall perform the *Services* and provide the *Products* in full knowledge and consideration of EMSA's computing environment. It shall perform it in accordance with technical norms, standards and procedures based on best professional practice in the informatics and/or telecommunications field, for instance the ISO 9000 standards.
- II.2.1.2. EMSA shall supply, without delay, all the assistance, data and information for providing its *Products* and *Services*.
- II.2.1.3. EMSA and the Contractor shall notify each other by a *Means of communication* of any factor likely to impair or delay the proper execution of the Framework contract.
- II.2.1.4. The Contractor guarantees that *Software* delivered under this Framework contract, whether or not developed in execution of this Framework contract, will not fail to execute its programming instructions due to defects and workmanship when properly installed and used on the device designated by the Contractor. It shall be devoid of any deliberate mechanism which leaves it under the Contractor's control after supply to EMSA. It shall meet the operating requirements, specifications and characteristics specified in the Contractor's documents or laid down in the Framework contract.
- II.2.1.5. The quality of the Contractor's *Products* and *Services* shall be measured by reference to the definitions, quality standards and procedures defined in the present General terms and conditions for Information Technologies Contracts, Framework contract or the Specific Contract, and by reference to the *Quality indicators* defined in the *Service level agreement*. Quality standards may be revised in line with developments on the market.
- II.2.1.6. The Contractor undertakes to comply with those quality standards. Compliance with the standards shall be monitored by EMSA. Unless otherwise stated in the Framework contract, in accordance with Article I.2 of the General Conditions, in the event of non-compliance with one or more of the standards over a sliding period of three (3) months, the Contractor shall submit an improvement plan. In the event of non-compliance with one or more of the standards for three (3) months, consecutive or not, over a sliding period of six (6) months, a Product whose quality has proved substandard may be withdrawn from the Framework contract, or the Contract may be terminated where the overall quality of the *Services* is substandard.
- II.2.1.7. Stand-by *System* (outside the *guarantee* period)
Unless otherwise stated in the Framework contract, in the event of a complete *System* failure lasting more than twenty-four (24) hours from the time it is notified by a *Means of communication* to the Contractor, or in the event of intermittent failures lasting more than forty-eight (48) hours for any reason whatsoever, the Contractor shall, upon a duly substantiated request, make available to EMSA within twenty-four (24) hours at the most, an equivalent *System* or the necessary *hardware* and *software* enabling EMSA to run its applications in the interim. The cost of such equivalent material shall be charged to the Contractor. If the Contractor can demonstrate that the failure is not attributable to it, it may charge the cost to EMSA at the rates shown in the Annexes.

II.2.2. Security

- II.2.2.1. Contractors working in EMSA premises must conform to any internal EMSA security rules. If the Contractor's staff are working in EMSA buildings, the Contractor is required, at EMSA's request, to replace immediately and without compensation any person considered undesirable by EMSA.
- II.2.2.2. The security requirements for each individual project shall be described in the Specific Contracts.
- II.2.2.3. The Contractor agrees to impose the security obligations of this Article upon any of its subcontractors and their staff who perform tasks for EMSA in execution of this Framework contract.
- II.2.2.4. The Contractor recognises that no *Products*, equipment or material whatsoever owned by EMSA or present at EMSA's premises, may be moved or removed without EMSA's express written approval and the signature of a Specific Contract relating thereto. Each move or removal of a *Product*, equipment or material whatsoever, shall be recorded in a note, as specified in the Specific Contract in execution of which these *Products*, equipment's or materials are moved or removed.
- II.2.2.5. The Contractor shall take all appropriate steps for each *Product* to ensure that the data and the magnetic media upon which they are stored are safely preserved. The *Products* supplied shall not contain any mechanism (e.g. viruses) which could compromise their proper operation or that of other *Products*. The cost of repairing the damage caused by such a mechanism shall be borne by the Contractor.
- II.2.2.6. The Contractor undertakes to inform EMSA by a *Means of registered communication* as soon as it has any knowledge of defaults in its *Products* that endanger the security of the configurations of which they form a part. It shall immediately take any measures necessary to restore the security of the configurations and correct the defaults.
- II.2.2.7. The Contractor shall ensure that all security precautions for each *Product* are clearly spelled out in the relevant *Documentation* supplied to EMSA.
- II.2.2.8. Should the Contractor, during the performance of the tasks which are the subject of the Framework contract, need remote access to internal informatics resources from the external domain, he shall be requested to comply with EMSA's internal rules on practical and technical security for remote intervention. This must be achieved by way of accepting in writing the conditions of use for remote intervention provided by EMSA.

II.2.3. Specific Intellectual property rights

- II.2.3.1. As regards all *Software* or other protected material for which the *Intellectual property rights* are the property of EMSA or which have been licensed to EMSA by third Parties, and which the Contractor is likely to use in the execution of its obligations under this Framework contract, EMSA expressly authorises the Contractor to use such *Software* or other protected material, within the limits strictly necessary for the execution of this Framework contract.

In view of the preceding paragraph, the Contractor undertakes:

- not to copy any such *Software* or other protected material without prior written authorisation from EMSA;
- to use such *Software* or other protected material exclusively in the context of this Framework contract;
- to protect and indemnify EMSA against all third-party claims or actions alleging a breach of their *Intellectual property rights*, or a use of such *Software* or other protected material in contravention with the present Article.

II.2.3.2. Pursuant to Article I.18 of the General Conditions and as regards the results or rights obtained in performance of the Framework contract, the Contractor undertakes to obtain written consent from EMSA prior to:

- filing a trademark, patent or design application in relation with any of the results or rights obtained in performance of the Framework contract in his own name or that of a third party;
- claiming a copyright over the results or rights obtained in performance of the Framework contract in his own name or of that of a third party;
- allowing a third party to do such filings or claims.

Failure to obtain permission from EMSA will entitle EMSA to seek damages against the Contractor and will not prevent EMSA from protecting the rights assigned under the Framework contract.

II.2.3.3. The Contractor declares that it is the rightful owner of the *Intellectual property rights* to all *Products* and/or their components delivered under this Framework contract, and that it is entitled to assign or licence those rights in accordance with the terms of this Framework contract. If those *Intellectual property rights* are the property of third Parties, the Contractor guarantees that it has requested and obtained those third Parties' written authorisation to grant to EMSA the assignment or licence of their *Intellectual property rights* to the extent as provided under this Framework contract. The Contractor shall be solely responsible for taking the necessary steps, under the laws and regulations in force to ensure the opposability to third Parties of the assignments or licences granted to EMSA by the Contractor or by such third Parties.

II.2.3.4. The Contractor guarantees that none of the *Products*, *Documentation* or other protected material delivered, whether or not developed in execution of this Framework contract, infringes any third party's *Intellectual property rights*.

II.2.3.5. Each party shall inform the other party of the existence or threat of any third party's action or claim alleging an infringement of its *Intellectual property rights* by EMSA's use of any *Products*, *Documentation* or other protected material delivered under this Framework contract, provided such use is made in conformity with the terms of this Framework contract.

II.2.3.6. In the event of such a dispute or threat thereof, the Contractor undertakes to conduct all litigation, arbitration or negotiations for settlement, in its own name as well as in EMSA's name, at its own and sole expense.

EMSA agrees to provide the Contractor with all information and assistance that may reasonably be required, at the Contractor's own and sole expense.

However, EMSA reserves the right to decide to conduct its own defence or to negotiate its

own settlement, at its own discretion. The Contractor will be responsible for any payment arising out of any settlement or judgement following such a dispute or threat, except for the payment of a settlement made by EMSA without the Contractor's written consent. Such consent may not be withheld without reasonable grounds.

If the infringement of a third party's *Intellectual property right* on a *Product* and its *Documentation* is declared in a judgement, arbitration sentence or party settlement, or if such is likely to happen, the Contractor agrees to (1) or procure for EMSA the right to continue using the *Product* and its *Documentation*, (2) either replace them with substantially equivalent non-infringing *Products*, or, if none of the foregoing is available, (3) grant to EMSA a credit in the amount corresponding to the purchase price of the proportion of the *Product* which can no longer be used.

The Contractor will not be responsible under the present guarantee for any third party claiming an infringement of its *Intellectual property rights* based on (1) EMSA's use of *Products* in combination with equipment not delivered by the Contractor, if such combined use is the cause of the claimed infringement, or (2) EMSA's use of any *Product* and *Documentation* delivered hereunder in a form other than the one delivered by the Contractor, if such change in form is the cause of the claimed infringement.

- II.2.3.7. The guarantee against third party claims is due by the Contractor until five (5) years following the end of the Framework contract, or until five (5) years following the last use by EMSA of the *Product* and its *Documentation* delivered by the Contractor, whichever period ends last.

II.2.4. Co-operation

- II.2.4.1. The Contractor undertakes to develop and install the *Products* and provide the *Informatics Services* in accordance with the document: EMSA System and Application Technical Landscape. The Contractor agrees to co-operate with other suppliers to make the *Products* work with those of these other suppliers. It agrees to attend meetings called for that purpose by EMSA.
- II.2.4.2. The Contractor shall assist and advise EMSA on the use of its *Products* and *Services*. It shall be responsible for *Product* integration as regards its inclusion in the Framework contract, its operation in EMSA's environment and the introduction of *New versions*.

II.2.5. Product developments

- II.2.5.1. Any *Product* delivered under this Framework contract shall have been demonstrated by the Contractor, at its expense, to conform to the technical specifications sent to the Contractor as part of the invitation to tender or the negotiation pursuant to which the present Framework contract has been drawn up.
- II.2.5.2. Any *Product* capable of replacing a previously approved *Product* in the same operational environment, with no loss of performance and at no extra cost to EMSA, may be added to the relevant Annexes of the Framework contract.
- II.2.5.3. Proposals to include new *Products* involving new features or functions not previously available amongst the *Product* listed in the Framework contract's Annexes, shall only be considered in the context of the principal *Product* classifications and specifications covered by the call for tenders referred to in the preamble of the Framework contract.

II.2.5.4. Even if a *Product* is approved by EMSA, any incompatibility with Tender Specifications and/or Service Level Agreement that becomes apparent in the course of its use shall be resolved by the Contractor as swiftly as possible and at no cost to EMSA.

II.2.5.5. Evaluation procedures and trials of new products before inclusion in the price list may be specifically defined in the Framework contract.

II.2.6. *Product life*

II.2.6.1. The Contractor shall ensure that the *Product*, or replacing *Product*, are marketed or available during the lifetime of the Framework contract from the date of their inclusion in the relevant Annex of the Framework contract.

II.2.6.2. The Contractor shall ensure that maintenance of the *Product* delivered under this Framework contract may be requested and provided for a period of at least five (5) years from the date of signature of their *Consignment note*, or, where applicable, of their *Certificate of Conformity*, whichever is the latest.

II.2.7. *Use of Products*

II.2.7.1. From the date of signature of the *Consignment note*, or, if applicable, of the *Certificate of Conformity*, whichever is the latest, EMSA may make unrestricted use of the *Products* under normal operating conditions. EMSA may use the *Products* for *Services* it is carrying out for other Institutions, Agencies or Bodies. If the *Products* are rented or leased, the right of use applies for the duration specified in the Specific Contract. If a guarantee applies, maintenance may not start until the guarantee has expired.

II.2.7.2. The Contractor must ensure that EMSA may add to a *System* or connect to it, either directly or via telecommunications networks, compatible *Products* of any origin.

II.2.7.3. The Contractor shall not exert any right of inspection over EMSA's use of the *Products*.

II.2.8. *Documentation*

The Contractor shall provide EMSA with its Documentation and updates, in as many copies, whether in machine-readable form or on paper, as are stated in the Framework contract or a Specific Contract.

EMSA may reproduce this *Documentation* in full or in part for any *Internal use* by its staff. EMSA shall reproduce all references to *Intellectual property rights* appearing on the originals.

II.2.9. *Identifiers*

EMSA may decide to assign an identifier to a unit of a delivered *Product*. In such case, the Contractor commits itself to using an identifier for every unit of a *Hardware* or *Telecommunications Product* delivered to EMSA. This identifier is communicated to the

Contractor by EMSA when the *Consignment note*, or, if applicable, the *Certificate of Conformity* for such unit has been signed. The identifier(s) shall be given in electronic file(s) in such manner as shall have been agreed by both Parties. The Contractor's original identifier mentioned in its delivery documents is associated with EMSA's identifier. After that, only EMSA's identifier is to be used in all instances when the Contractor refers to the unit in question (for example in all operations relating to the service desk, invoicing of maintenance, technical intervention, etc.).

II.3. SPECIFIC PROVISIONS RELATING TO THE PURCHASE, RENTAL AND LEASING OF COMPLEX HARDWARE PRODUCTS

II.3.1. Additional specifications for *Hardware Delivery*

II.3.1.1. Terms

All *Complex hardware products* shall be tested by the Contractor before their delivery. The Contractor shall be able to demonstrate that the pre-delivery test was satisfactory if EMSA so requests.

The number of copies of *Documentation* to be supplied shall be specified in the Specific Contract, but must be at least equal to one (1) copy per unit of *Complex hardware product*.

The Contractor shall notify EMSA by a *Means of communication* of its packaging terms at least two (2) weeks prior to the *Delivery date*. The Contractor shall remove all packaging material used during delivery.

The height of the Contractor's delivery vans may not exceed 2m and only "EURO"-type pallets shall be used. If the product is to be placed on pallets different than "EURO" type, or be delivered by a higher vehicle it has to be agreed with EMSA in advance.

II.3.1.2. Dates

The *Delivery date* shall be indicated in each Specific Contract.

Failure regarding the *Delivery date* is considered as damage to EMSA as defined in Article I.5 of the General Conditions.

Should the Contractor be unable to deliver on the specified *Delivery date*, it must then supply an equivalent *Complex hardware product* or *System* with EMSA's prior consent.

Where EMSA has incurred costs vis-à-vis a third party by reason of a delay in delivery or commissioning attributable to the Contractor, then the Contractor shall reimburse those costs upon production of supporting documents, provided that EMSA has notified the Contractor by a *Means of communication* of the risk of incurring damages due to the late delivery soon after having been informed of the Contractor's inability to deliver on time.

If a *Delivery date* is overrun by more than forty-five (45) calendar days, EMSA is entitled to immediately terminate the Specific Contract in question.

II.3.1.3. Procedure

The Contractor shall confirm the exact *Delivery date* of each *Complex hardware product* at least eight (8) calendar days in advance to EMSA by a *Means of communication*.

EMSA shall, during *Normal working days* and *hours*, provide access to its premises for delivery on the notified *Delivery date*. Delivery and installation costs shall be borne by the Contractor. Deliveries shall be complete.

Receipt of each delivery of *Products* shall be recorded in a *Consignment note* signed by EMSA as stated in Article I.1. of the General Conditions (including the balance to be delivered for each *Product*)

II.3.2. Product installation

II.3.2.1. Installation requirements

For each *Product* listed in the Annexes of the Framework contract, the Contractor shall specify by a *Means of communication* the technical installation requirements and any refurbishment necessary for the premises intended to house the *Products*.

EMSA shall ensure that from then onwards the premises where the *Products* are installed satisfy the conditions set out by the Contractor regarding access, air-conditioning and electric power supplies and are equipped with the necessary data transmission lines.

EMSA shall grant the Contractor access to its premises for the assembly of *Complex hardware products* on the *Installation date*, which must be duly notified by the Contractor with a *Means of registered communication* within five (5) *Normal working days* upon EMSA's notification referred to in the last paragraph of Article II.3.2.2.

II.3.2.2. Procedure

- Pre-installation meeting

A pre-installation meeting may be organised. A technical representative of the Contractor will be available for each *Specific Contract* for a pre-installation meeting organised on EMSA's premises. The purpose of this meeting is to review practical issues related to installation of the *Products* covered in the relevant *Specific Contract*. The minutes of each pre-installation meeting should be drafted after the pre-installation meeting by the Contractor, unless otherwise agreed in this meeting.

- Installation

Installation will be done in conformity with the relative *Specific Contract* and/or *Service Level agreement* and with the minutes of the pre-installation meeting and in accordance the methodology agreed in the pre-installation meeting if appropriate.

If the place of delivery is not the place of installation, EMSA shall arrange for *Products* to be moved at its own risk from the place of delivery to the place of installation within fifteen (15) *Normal working days* from the day of signature of the *Consignment note* and undertakes to notify the Contractor of the place of the move by a *Means of communication* within five (5) *Normal working days* upon successful move of the *Products* to the installation site.

II.3.3. Acceptance

II.3.3.1. The Commissioning date

The assembly of *Complex hardware products* and the bringing into service of a *System* shall be executed by the Contractor at its own expense, unless otherwise agreed in the Framework contract.

A *Complex hardware product* or *System* shall be assembled, installed, and brought into service no later than fifteen (15) *Normal working days* after the date of notification by EMSA of its removal to the installation site unless another time limit is laid down in the *Specific Contract*.

Upon successful installation, the Contractor shall notify EMSA by a *Means of communication* of the date on which the *Complex hardware product* or *System* has been brought into service, which date will be the *Commissioning date* for this particular *Product* or

System.

II.3.3.2. The acceptance period

The acceptance period will run up to seventy-five (75) *Normal working days* from the *Commissioning date*.

During this acceptance period, EMSA shall notify any defaults in the *Complex hardware product* or *System* to the Contractor by a *Means of communication*. As from the date of such notification, the running of the acceptance period will be suspended up to the date on which the Contractor notifies by a *Means of communication* that it has remedied the notified default, this date will reinstate the acceptance period for the rest of the seventy-five (75) *Normal working days* period, with a guaranteed minimum period of twenty-five (25) *Normal working days* after the last notification by the Contractor that it has remedied a default.

Upon the expiry of the acceptance period, acceptance of a *Product* will be recorded in a *Certificate of Conformity*, as stated in Article I.1 of the General Conditions that shall indicate inter alia the detailed nature of the accepted *Complex hardware products* and the reference number of this Framework contract and of the Specific Contract concerned.

If no *Certificate of Conformity* has been issued at the end of the acceptance period and if no notification of faulty operation is pending, EMSA is considered as having accepted the *Complex hardware product*.

II.3.3.3. Termination

If, due to faulty operation by the Contractor, acceptance cannot be completed within a maximal time limit of hundred and fifty (150) calendar days from the *Commissioning date*, unless a different time limit has been specified by Specific Contract, EMSA shall be entitled to terminate the Specific Contract after giving the Contractor a thirty (30) calendar days' notice by a *Means of communication* to meet its obligations. This provision is without prejudice to EMSA's other rights under Article I.13 of the General Conditions.

II.3.4. **Guarantee specifications for *Complex hardware products***

The Contractor shall guarantee all goods delivered in conformity with Article I.1 of the General Conditions. During the two years guarantee period stated in Article I.1 of the General Conditions the Contractor shall provide *maintenance* at its own and sole expense.

The guarantee period shall be automatically extended by the total duration of stoppages attributable to the Contractor during that period, as recorded under the maintenance procedures. For this purpose only stoppages lasting eight (8) consecutive *Normal working hours* or more shall be counted. One day's extension therefore corresponds to a stoppage of eight (8) consecutive *Normal working hours*, which may be interrupted by a period of hours not defined as *Normal working hours*.

If failures during the guarantee period are such as to make a *Product* unusable for an uninterrupted period of more than one (1) calendar week, EMSA shall be entitled to have the *Complex hardware product* replaced free of charge by the Contractor.

If the aggregate unavailability of a *Product* during *Normal working hours* exceeds forty-eight (48) hours, EMSA is entitled to terminate the part of the Specific Contract relating to that *Product*.

II.3.5. Leasing and Rental formula

- II.3.5.1 Determination of the periodic rental/leasing to be paid n times at the beginning of each period for an investment of PV with no residual value FV at the end of the n periods:

$$PMT = PV \frac{i}{\left(1 - \frac{1}{(1+i)^n}\right)} \frac{1}{1+i}$$

- II.3.5.2 Determination of the periodic rental/leasing to be paid n times at the beginning of each period for an investment of PV with a residual value FV at the end of the n periods:

$$PMT = (PV - FV) \frac{i}{\left(1 - \frac{1}{(1+i)^n}\right)} \frac{1}{1+i} + FV \frac{i}{1+i}$$

- II.3.5.3 Determination of the periodic rental to be paid n times at the end of each period for an investment of PV with no residual value FV at the end of the n periods:

$$PMT = PV \frac{i}{\left(1 - \frac{1}{(1+i)^n}\right)}$$

- II.3.5.4 Determination of the periodic rental to be paid n times at the end of each period for an investment of PV with a residual value FV at the end of the n periods:

$$PMT = (PV - FV) \frac{i}{\left(1 - \frac{1}{(1+i)^n}\right)} + FV \cdot i$$

Abbreviation	Description
PMT	Periodic payment
Ni	Nominal annual interest rate at order time
Mi	Margin on annual basis as defined in the Framework contract
i	Interest rate per period as defined in the Framework contract
NY	Number of payments per year
N	Total number of payments
PV	Investment amount = Present Value
FV	Residual Value = Future Value as defined in the Framework contract
P-P ³	Percentages as defined in the Framework contract

II.3.5.5. Determination of the interest rate applicable for a term smaller than one year. For the calculation of the periodic interest rate applicable for a term smaller than one year, the formula is as follows: *[complete]*

II.3.5.6. Determination of the residual value. The residual value to be used for the sole purpose of computing a rental is given for the different horizons:

Rental horizons	Residual value
4 years	P % of PV
3 years	P ¹ % of PV
2 years	P ² % of PV
1 year	P ³ % of PV

II.3.6. Termination of the Contract for rental and leasing of *Complex Hardware products*

If one of the Parties terminate the Framework contract or Specific Contract on its own volition, the other party shall be compensated in accordance with the relative formula stated in 3.5 above.

II.3.7. Withdrawal of rented or leased *Complex hardware products*

Upon termination of a rental or leasing Specific Contract or Framework contract, the *Product* will be withdrawn by the Contractor at its own expense.

II.4. SPECIFIC PROVISIONS RELATING TO THE PURCHASE, RENTAL AND LEASING OF *HARDWARE PRODUCTS*

II.4.1 Configuration and delivery

II.4.1.1 Configuration

In respect of each order

- (1) the other than *Complex hardware products* shall be specified in the Specific Contract and its Annexes;
- (2) installation of other than *Complex hardware products*, including *Software*, shall be carried out in accordance with the specifications annexed to the Specific Contract or the relevant *Service level agreement*.

II.4.1.2. Delivery

The *Delivery date* shall be set at maximum thirty (30) calendar days from the date of signature of the Specific Contract, unless a different term has been specified in the Special Conditions of the Framework contract or in the Specific Contract.

If the *Delivery date* is overrun by more than twenty-one (21) calendar days, EMSA shall be entitled to terminate the Specific Contract in question.

A failure regarding the *Delivery date* is considered as damage to EMSA as defined in Article I.5 of the General Conditions.

The place of delivery shall be specified in each Specific Contract. There may be more than one place of delivery in a Specific Contract.

At the time of delivery, the incoming *Products* may be subject to quantitative and qualitative checks by EMSA within five (5) working days. The receipt of each delivery of *Products* shall be then recorded in a *Consignment note* signed by EMSA. Such *Consignment note* will be established as stated in Article I.1 of the General Conditions.

If no *Certificate of Conformity* has been issued at the end of the one month acceptance period stated in Article I.1 of the General Conditions and if no notification of faulty operation is pending, EMSA is considered as having accepted the other than *Complex hardware product*. Unless expressly requested by EMSA, partial delivery of an item of a Specific Contract is not allowed.

II.4.2. Guarantee specifications for other than *Complex hardware products*

The Contractor shall guarantee all goods delivered in accordance with Article I.1 of the General Conditions.

When, under the terms of a Specific Contract, other than *Complex hardware products* are delivered on several dates, the guarantee period shall for all the components of the other than *Complex hardware products* expire with the end of the guarantee period of the final component of the other than *Complex hardware product* delivered in accordance with the Specific Contract.

During the two year guarantee period stated in Article I.1 of the General Conditions, the

Contractor shall provide maintenance at its own and sole expense.

II.4.3. Leasing and Rental formula

See II.3.5 above

II.4.4. Termination of the Contract for rental and leasing of other than *Complex hardware products*

If one of the Parties terminates the Framework contract or Specific Contract on its own volition, the other *Party* will be compensated in accordance with the formula stated in the Framework contract.

II.4.5. Withdrawal of rented or leased other than *Complex hardware product*

Upon termination of a rental or leasing Specific Contract or Framework contract, the *Products* will be withdrawn by the Contractor at its own expenses.

II.5. SPECIFIC PROVISIONS RELATING TO LICENSED SOFTWARE

II.5.1. Delivery - installation - *Documentation*

- II.5.1.1. The *Delivery date* of the *Software* shall be set at maximum ten (10) working days from the date of signature of the Specific Contract, unless a different term has been specified in the Framework contract or Specific Contract.

A failure concerning the *Delivery date* is considered as a damage to EMSA, as defined in Article I.5 of the General Conditions. EMSA may decide to claim the payment of damages, under the provision stated in the Framework contract.

- II.5.1.2. EMSA shall be permitted to request additional assistance from the Contractor to install the *Software* on the adequate *hardware* equipment and for training of its personnel at the time of production start-up. Those additional expenses shall be charged to EMSA at the prices mentioned in the Framework contract.

- II.5.1.3. EMSA and the Contractor shall each designate in due time one person each in charge of decisions regarding the delivery and installation of the *Software*.

- II.5.1.4. The manner in which the *Software* shall be delivered shall be agreed upon in the Framework contract or Specific Contract.

When it is agreed that the *Software* shall be delivered as material support, the *Software* shall be delivered on a machine-readable medium (diskette or other) reproducing the original *Software* kept in the Contractor's or EMSA's archives. It shall be sent with one copy of the *Documentation* per licensed copy unless agreed otherwise between the Parties. Any additional copy of the *Documentation* shall be invoiced to EMSA at the price shown in the Framework contract.

When it is agreed that the *Software* may be downloaded by EMSA, then the Specific Contract shall precisely indicate the location of the download area (such as from an area on the Contractor's website, from an FTP site, etc.) and provide EMSA, by a *Means of communication*, with the accurate and complete instructions, including access codes, enabling it to perform such downloads.

- II.5.1.5. Delivery of the *Software* shall be recorded in a *Consignment note*, presented by the Contractor for signature by EMSA. In the event that the *Software* is downloaded, EMSA will issue the *Consignment note* based on the communication of the Contractor with the downloading instructions.

- II.5.1.6. If no *Certificate of Conformity* has been issued at the end of the one month acceptance period stated in Article I.1 of the General Conditions and, if no notification of faulty operation is pending, EMSA is considered as having accepted the *Software*.

- II.5.1.7. The Contractor authorises the Commission to reproduce the *Documentation* for any *Internal use* provided that any copyright indication in the *Documentation* is also reproduced.

II. 5.2. Trial - acceptance

- II.5.2.1. Upon request of EMSA the Contractor shall grant for each new licensed *Software* or each *New version* of the *Software* a one (1)-month trial period during which the *Software* shall be available for non- productive use. Longer test periods and their conditions may be convened in the Framework contract or by Specific Contract.

- II.5.2.2. The trial period shall begin on the day of the installation of the *Software* by the Contractor on the appropriate *hardware* equipment, or if EMSA does not require installation of the *Software* by the Contractor, fifteen (15) calendar days after signature of the Consignment *note*.
- II.5.2.3. At the end of the trial period, acceptance of the *Software* shall only result from the signature, by both Parties, of the *Certificate of Conformity* as stated in Article I.1. of the General Conditions.
- II.5.2.4. At any moment during the trial period, EMSA may terminate the testing licence upon notification by a *Means of communication* with immediate effect if the *Software* does not perform and conform to its description, its specifications or its *Documentation*. Additional acquisitions of *Software* already tested by EMSA shall be accepted by signature of the *Consignment note*.
- II.5.3. Guarantee specifications for *Software***
- II.5.3.1. The Contractor shall guarantee all goods delivered in conformity with Article I.1. of the General Conditions.
- II.5.3.2. The Contractor warrants that:
- (1) the *Software* is in conformity with the *Documentation* supplied;
 - (2) the *Software* is capable of performing the functions described in the aforementioned *Documentation* and conform to the specifications described in the Framework contract or Specific Contract under consideration.
- II.5.3.3. The Contractor does not warrant that the *Software* will enable EMSA to achieve its target aims, productivity levels or time savings.
- II.5.3.4. Guarantee period
- During the two-year guarantee period stated in Article I.1. of the General Conditions, the Contractor shall provide maintenance at its own and sole expense.
- II.5.4. Use**
- II.5.4.1. The Contractor hereby grants, and EMSA accepts, a non- exclusive licence to use the *Software*, under the conditions set hereunder.
- II.5.4.2. EMSA may acquire "floating licences" for use by external, service-providing companies working under contract on projects for EMSA. At the end of the project, EMSA shall reclaim these licences and may either add them to the existing licence scheme or reallocate them to another company.
- II.5.4.3. EMSA undertakes not to reproduce the *Software* in part or in whole, except for the purposes of back-ups and archives, and after taking all the necessary precautions.
- II.5.4.4. The Parties may by Framework contract agree that the licence be an exclusive licence for EMSA to use the *Software*.
- II.5.4.5. For the purpose of this Article II.5.4., the *Software* shall be read as including its *Documentation*.

II.5.5. *Compatibility*

The Contractor guarantees to EMSA that at the date of signature of each Specific Contract the *Software* is compatible with all *Hardware* or *Software* described in the Specific Contract under consideration.

II.5.6. *Intellectual property rights concerning Software — confidentiality*

II.5.6.1. The *Intellectual property rights* attached to the *Software* and its *Documentation* shall remain the Contractor's exclusive property.

II.5.6.2. EMSA undertakes:

- (1) to take all measures necessary vis-à-vis its end user personnel and persons having access to the *Software* and its *Documentation*, to ensure that the confidentiality of the *Software* is observed;
- (2) not to pledge, assign, sub-license, transfer or lend, for payment or otherwise, the *Software* and its *Documentation* except in the manner set out under Article II.5.4;
- (3) to inform the Contractor immediately in the event of seizure, to protest against it and to take all necessary steps in order to safeguard the integrity of the Contractor's *Intellectual property rights*.

II.5.6.3. In the event of unauthorised disclosure of confidential information by either party, the other party shall address it a warning by a *Means of Registered communication*, requesting the first party to confirm that it will no longer disclose the said information. If no satisfactory response is obtained within the requested time limit, the other party is entitled to terminate this Framework contract. The parties recognise that damages may not constitute sufficient compensation for the other party, who may require reparation by injunction or other relief judged appropriate or necessary by the appropriate court of law.

II.5.7. *Escrow rider*

II.5.7.1. Except as set forth in Article II.5.7.4., EMSA and the Contractor shall appoint by mutual agreement an *Escrow agent* who will provide appropriate safekeeping facilities for the *Product* and its *Documentation*. The *Escrow rider* shall be concluded between the Contractor, the *Escrow agent* and EMSA. The *Escrow rider* shall provide that the Contractor must deposit with the *Escrow agent* a copy of all necessary *Software* and *Documentation*, source code and that EMSA shall have access to this copy as provided under Article II.5.7.2.

II.5.7.2. The *Escrow rider* shall provide that if the Contractor discontinues the maintenance of the *Product*, EMSA may instruct the *Escrow agent* to deliver a copy of the actual source code for the *Products* involved, including associated control statements required for operation, maintenance and use of the source code, each in programmer-readable form (collectively: "the Source code"), along with any associated *Documentation* including updates, to the relevant installation site. If EMSA receives the Source code in the manner provided hereunder, no additional fees shall be charged. Title to the Source code shall remain with the Contractor.

II.5.7.3. EMSA shall have the right at any time to contact the *Escrow agent* for the purpose of confirming the existence of the Source code and associated *Documentation* including updates thereto and for verification of the instructions to the *Escrow agent* to release the Source code under the circumstances specified under this Article.

- II.5.7.4. The Contractor may propose to apply or to enter into a two-party escrow agreement with a third party escrow. In this case, the Contractor shall provide, prior to applying or entering into such agreement, a copy of the proposed agreement to EMSA without charge and all fees in relation to it will be afforded by the Contractor. Should the Contractor fail to provide this copy, EMSA shall be entitled to claim execution of Article II.5.7.1.
- II.5.7.5. When EMSA considers that the terms of the proposed escrow agreement offer sufficient guarantees to it, it will authorise the Contractor to apply or enter into such agreement with this third party escrow. If EMSA is not entirely satisfied, it may request additional guarantees before authorising the Contractor to enter into the agreement.
- II.5.7.6. After having applied or entered into the authorised agreement, the Contractor shall notify EMSA in advance by a *Means of registered communication* and request its consent for the following:
- the implementation of any change in the terms of this agreement,
 - its termination by the third party escrow,
 - its replacement by a new Contract,
 - a change in third party escrow, or any other change materially affecting the contractual guarantee offered to EMSA,
- EMSA may offer its comments and may withhold its consent should it find that the change may result in the absence of the necessary guarantees of access to the Source code within the duration of the Framework contract.
- II.5.7.7. In the event of the escrow agreement being terminated by the third party escrow, or its terms being changed such that the contractual guarantee is materially affected, the Contractor shall immediately notify EMSA of such fact by a *Means of registered communication*. The Contractor shall then seek a new escrow agreement meeting the requirements of this Article, subject to EMSA's consent prior to the signature of such agreement.
- II.5.7.8. Should the Contractor fail to notify EMSA of any change in accordance with the present Article, EMSA shall be entitled to terminate the Framework contract at the Contractor's expense. EMSA shall also be entitled to seek damages and interest from the Contractor resulting from the Contractor's failure to fulfil its obligations under this Article.

II.6 SPECIFIC PROVISIONS RELATING TO HARDWARE AND SOFTWARE MAINTENANCE

II.6.1. Common provisions

- II.6.1.1. Contractual maintenance shall commence on the day after expiry of the guarantee period applying to the *Products* delivered, unless another date is specified in the Framework contract or Specific Contract.
- II.6.1.2. The Contractor shall at all times comply with the quality standards and the maintenance security rules contained in the Framework contract.
- II.6.1.3. The maintenance shall be provided during *Normal working hours* on *Normal working days*. EMSA may require the Contractor to offer maintenance outside these times (*Extended working hours*), provided that there is an explicit provision in the Framework contract or Specific Contract stating the applicable rates in this case.
- II.6.1.4. Maintenance is deemed to comprise all operations necessary to maintain a *Product* in perfect working order, or to restore a defective *Product* or one of its components to perfect working order, inclusive of the costs of travelling, parts and labour.
- II.6.1.5. The provisions on *Informatics Services* consisting of maintenance apply to maintenance of both *Software* and *Hardware*, except where it is apparent from the provision that only one type of *Product* is concerned.

II.6.2. One –shot repair of *Hardware*

Where the Framework contract does not explicitly cover maintenance of *Hardware*, the Contractor agrees to perform one-shot repairs to *Hardware* at EMSA's request. In response to such a request, the Contractor shall prepare without delay an estimate of the price of the repair and a timetable for its execution. The estimate and the timetable shall be provided free of charge to EMSA, regardless of whether or not the repair is executed. If EMSA accepts the estimate and timetable, a Specific Contract or Order Form shall be signed between the Parties. The Contractor shall not start to repair until it has received the relevant order signed by EMSA. It is explicitly agreed that all other conditions of the Framework contract shall also apply to a one-shot repair.

II.6.3. Maintenance

II.6.3.1. Terms

The Contractor undertakes to maintain the *Products* covered by this Framework contract in perfect working order.

In order to do this, the Contractor shall at all times have a stock of spare parts or shall obtain the necessary parts at its own and sole expense.

The Contractor shall provide maintenance service on site within four (4) hours at EMSA's request. This time limit is reduced to two (2) hours in the case of a blocked server. These time limits may be within either *Normal* or *Extended working hours*, depending on the choice made in accordance with Article II.6.1.3.

If the Contractor is of the opinion that a repair will not be possible within the maximum repair time from its arrival, it shall make a substitute *Product* available to EMSA for the duration of the

repair.

Repairs, *Extensions* and modifications to the *System* shall be carried out only by the Contractor or the firms authorised by it.

Preventive maintenance operations shall be scheduled periodically, by agreement between EMSA and the Contractor.

The Contractor shall carry out corrective maintenance involving debugging, repair or replacement of faulty *Products* at EMSA's request. The Contractor undertakes, during these operations, to comply with EMSA's current central service desk action procedure when the failure occurs, as is described in Annex I.

The Contractor will formally close each maintenance operation. At the same time it will supply the information needed to measure the quality of the service and the *Products* against the standards laid down in the Framework contract. Where computer security has been affected it will submit a report.

The Contractor shall compile a monthly management report giving the following particulars of corrective maintenance carried out, without prejudice to the relative *Service Level Agreement*:

- (1) a list of outstanding problems, with the cause and the expected date of resolution;
- (2) an analysis of problems encountered by type of failure and *Product*;
- (3) various statistics as requested by EMSA to enable it to produce an internal audit report.

II.6.3.2. *Hardware*

On the part of EMSA, *Hardware* maintenance shall involve the obligation to use the *Products* as specified in the *Documentation* and the installation requirements, and not to alter or repair them itself.

On the part of the Contractor, without prejudice to the relative *Service level agreement*, corrective *Hardware* maintenance shall involve:

- (1) diagnosing the cause of failures affecting *Products* or *Systems*, whether they are due to its *Products* or not;
- (2) correcting faults as rapidly as possible;
- (3) replacing components, printed circuits and electronic units that prove defective in the course of normal use, and effecting any alterations deemed necessary by it to improve operation of the *Systems*;
- (4) acting as the link with its own central maintenance departments;
- (5) reprogramming or replacing *Software* in the event of error;
- (6) providing "hot-line" support to resolve urgent problems and *System* failures;
- (7) providing drivers for correct function of *Hardware products*. Maintenance shall not include the complete repair of all or part of any *Hardware products* that are no longer functional as a result of everyday wear and tear. If EMSA decides not to carry out the restoration proposed by the Contractor, the *Hardware products* in question will be withdrawn from the Framework contract.

II.6.3.3. *Software*

On the part of EMSA, without prejudice to the relative *Service level agreement*, *Software* maintenance shall involve:

- (1) preparing and sending the Contractor all documents and additional information at its

- disposal which the Contractor might reasonably request in order to detect and correct errors;
- (2) testing and accepting, when it is reasonable to do so, *New versions* or *New releases* of *Software*, as proposed by the Contractor. One year after the date of such an acceptance, the Contractor is no longer required to provide maintenance for previous versions or releases of *Software* and any dependent *Products*;
- (3) installing any preventive corrections provided by the Contractor as long as it is agreed that such corrections are necessary.

On the part of the Contractor, without prejudice to the relative *Service level agreement Software* maintenance shall involve:

- (1) diagnosing errors or faults encountered by the Contractor or EMSA in the content of the *Software* and making any necessary corrections; the Contractor shall effect corrections only if the error can be reproduced or if EMSA provides the Contractor with sufficient information from which the error can be diagnosed;
- (2) providing EMSA with successive *Software* versions and releases and the relevant reference *Documentation*; installing *New releases* and *New versions* free of charge on the existing *hardware* at EMSA's request; where necessary, adapting *Products* and/or information *Systems* that were using the previous version of the *Software*, free of charge;
- (3) effecting all the *Software* corrections (including patches) needed to ensure that the *Systems* operate as specified in the *Documentation* within thirty (30) *Normal working days* of receipt of a notification by a *Means of communication* from EMSA giving details of a problem;
- (4) rewriting the *Software* where necessary so as to correct all known problems or faults diagnosed by the Contractor;
- (5) providing telephone support for EMSA during *Normal working hours* to advise it on the use of *Software*;
- (6) providing "hot-line" support to resolve urgent problems and
- (7) *System* failures.

II.6.3.4. The Contractor undertakes to provide EMSA, upon request, with any remote maintenance service, which it operates or intends to set up. The remote maintenance service must comply with the rules set out in the Framework contract. All terminal connection, utilisation and communication charges shall be borne by the Contractor.

II.6.3.5. Responsibility for diagnosis

The Contractor has sole responsibility for diagnosing and determining the origin of failures affecting all or part of the *System* or *Products*. As part of this obligation, the Contractor shall, in the event of a diagnosis error, reimburse any costs incurred by EMSA as a result of needless corrective action carried out by another supplier.

II.6.3.6. The expenses due to an intervention of the Contractor necessitated by a serious error of EMSA, recognised as such by EMSA, shall be borne by EMSA, according to the conditions and prices in the Framework contract.

II.6.3.7. Technical modifications by the Contractor

The Contractor may propose modifications on its own initiative. It will implement them, with EMSA's consent, at times agreed by both Parties. These modifications may not entail any additional cost to EMSA or cause any deterioration in performance or loss of function.

II.6.3.8. Equipment

Test equipment, tools, documents, programs and files kept on EMSA's premises for maintenance purposes shall remain the property of the Contractor and shall be insured by the

Contractor.

II.7. SPECIFIC PROVISIONS RELATING TO ALL INFORMATICS SERVICES

II.7.1. Types of Services

II.7.1.1. Unless the Framework contract specifies to the contrary, *Informatics services* shall be provided, both *Intra muros* and *Extra muros*, during EMSA's *Normal working hours* on *Normal working days*.

II.7.1.2. Training relating to the use of the *Products*

Training shall be provided at the sites of EMSA in Lisbon, unless otherwise specified. Training shall be addressed to users of the *Product* and to the technicians responsible for support within EMSA. The number of participants for each course shall be determined by mutual agreement between the Parties at the time of signature of the Specific Contract. Training and course materials must be available English.

When training is provided on EMSA premises, the infrastructure necessary to the courses (buildings, data-processing equipment, video equipment etc.), the administrative organisation of the courses (planning, notifications, and evaluation) and the reproduction of course *documentation* shall be provided by EMSA.

II.7.1.3. Consultancy relating to the use of the *Products*

Consultancy *Informatics Services* consist of transmitting know-how for the use of the *Products* covered by the Framework contract. They shall be provided in Lisbon unless otherwise specified.

II.7.1.4. Technical *Documentation* of the *Products*

These *Informatics Services* shall relate to the drafting of any technical *Documentation* in relation to the *Products* covered by the Framework contract.

Technical *Documentation* shall be available in English. It shall be intended for users, both experienced and inexperienced, and for EMSA's technicians responsible for support or maintenance. The Contractor shall produce the *Documentation* on the basis of the content and structure specifications notified to it by EMSA. Reproduction of *Documentation* shall not form part of the service.

II.7.1.5. Integration work

This type of service not being covered by maintenance Specific Contract aims at ensuring the correct operation of the Contractor's *Products* in an evolving multi-manufacturer environment. *Informatics Services* are performed on the basis of integration specifications communicated by EMSA. They may be provided on site in Lisbon unless otherwise specified.

II.7.1.6. Informatics engineering and maintenance

Informatics engineering consists of building and implementing projects of data-processing infrastructure (*system software*, telecommunications networks etc.) and maintenance on the basis of specifications provided by EMSA. Work shall be provided on site in Lisbon unless otherwise specified.

II.7.1.7. *Software* development, maintenance and related activities

This consists of *Software* development, maintenance and related activities (e.g. studies, consultancy, *Documentation*, quality assurance etc.) using the standard EMSA System and

Application Technical Landscape, on the basis of specifications provided by EMSA. Details of work to be carried out will form part of the Specific Contract. Work shall be provided on site in Lisbon unless otherwise specified.

II.7.1.8. Removals

Removals consist of transferring any *Products* from one specified place to the other, whether or not within the same building or city; they can take place during *Normal* or *Extended working hours*.

II.7.2. Time-and-means Contracts

- II.7.2.1. *Informatics Services* shall be provided on a time-and-means basis when the Parties agree in the Specific Contract that a specified daily sum is to be paid for a given number of days in return for the provision of the means to perform the *Informatics Services*. In all cases, the Specific Contract shall state the purpose of the provision of the *Services*; this may involve an obligation for the Contractor to achieve a specific result.
- II.7.2.2. At the request of EMSA, the Contractor shall supply all the necessary personal information regarding the staff providing the service.
- II.7.2.3. Every day during which *Services* are provided, the Contractor or its staff shall record the time worked. The records shall be set up in the manner defined by EMSA's technical representative named in the Specific Contract. At the end of each month, the Contractor or its staff shall complete and sign the attendance sheet proposed by EMSA and forward it to EMSA's technical representative who shall be in charge of checking the consistency between the daily records and the monthly attendance sheet.

II.7.3. Quoted time-and-means Contracts

- II.7.3.1. The "Quoted Time & Means" method may be used for service providers outside EMSA premises.
- II.7.3.2. For Quoted Time & Means projects, the work will be ordered for a total number of days and will be divided into various sub-tasks (or "quoted time & means").
- II.7.3.3. EMSA will provide the Contractor with a detailed description of each sub-task. The Contractor will then send EMSA an estimate of the number of days needed to carry out the sub-task and the expected *Delivery date*.
- II.7.3.4. Once the estimate has been accepted by EMSA, only the number of days indicated in the estimate will be chargeable.
- II.7.3.5. The invoicing, approved by EMSA, will be carried out on the basis of each sub-task accepted and signed for by EMSA using a specific form.

II.7.4. Fixed-price Contracts

- II.7.4.1. *Informatics Services* shall be provided at a fixed price when the Parties agree in the Specific Contract that an overall sum, which must be justified using the agreed daily rates in the Framework contract, is to be paid following express acceptance of the work by EMSA.

II.7.4.2. The work shall be undertaken by the Contractor in accordance with the specifications set out in the Specific Contract. The specifications shall comprise in particular a description of the work, the timetable, reports, standards, reference manuals and details of the results and deliverables required.

II.7.4.3. Each result and deliverable shall be subject to acceptance by EMSA, in order to ensure conformity with the specifications. The acceptance period will run up to a maximum of seventy-five (75) *Normal working days* from the day of signature of a *Consignment note*. During this acceptance period, EMSA may notify any defaults in the result or deliverable to the Contractor by a *Means of communication*. As from the date of such notification, the running of the acceptance period will be suspended up to the date on which the Contractor notifies by a *Means of communication* that it has remedied the notified default, which date will reinitiate the acceptance period for the rest of the seventy-five (75) *Normal working days* period, with a guaranteed minimum period of twenty-five (25) *Normal working days* after the last notification by the Contractor that it has remedied a default. Upon successful expiration of the acceptance period, EMSA will sign a *Certificate of Conformity* as stated in Article I.1 of the General Conditions for each delivered result or deliverable. If no *Certificate of Conformity* has been issued at the end of the acceptance period and no default is pending, EMSA is considered as having accepted.

II.7.5. Stability of Services

II.7.5.1. Prior to any Specific Contract, EMSA and the Contractor shall exchange the information needed for the *Informatics Services* to be provided. Throughout the term of the Framework contract they shall maintain the required level of information and make it available to the other party for the purpose of providing the *Informatics Services*. The updating of information shall not give rise to any payment.

II.7.5.2. In accordance with Article I.2 of the General Conditions, throughout the term of the Framework contract the Contractor shall ensure that a stable service is maintained as required for the proper implementation of the Specific Contracts.

II.7.5.3. When a change of staff or *Informatics Services* is agreed by the parties there should be a ten-day period of adjustment when both the replacement and original personnel should work side by side for training and transfer of relevant information. The costs of this period of adjustment shall be borne by the Contractor.

In no event shall the Contractor be able to plead a change of staff as a reason for not meeting any of its obligations, in particular with regard to deadlines and quality.

II.7.5.4. In the case of a time-and-means Framework contract, EMSA must be notified in advance of staff changes and reserves the right to refuse them. The Contractor agrees to organise these changes at no extra cost for EMSA and to provide for a transition period necessary for the outgoing staff to duly instruct and train the incoming staff.

II.7.6. Timetable

II.7.6.1. The timetable for the performance of the *Informatics Services* shall be laid down in each Specific Contract.

II.7.6.2. The Contractor shall propose a full and detailed timetable for *Software* development or related tasks. If such a timetable cannot be prepared for projects of longer duration, the Parties shall first fix a provisional timetable. The final timetable shall be fixed at a date stated in the Specific Contract.

II.7.6.3. The time needed by the Contractor to install and prepare *Software* or a *System* for

operation shall be stated in the Specific Contract. If no time is specified, the period shall be fifteen (15) calendar days.

II.8. SPECIFIC PROVISIONS RELATING TO DEVELOPMENT AND MAINTENANCE OF COMMISSIONED SOFTWARE

II.8.1. Compliance with technical specifications

When providing *Services* of development or maintenance of *Commissioned software* to EMSA, the Contractor undertakes, in addition to the general quality requirements as specified in the Framework contract, to observe inter alia the latest version of EMSA's document: EMSA System and Application Technical Landscape.

Except where expressly stated, the present Article II.8 shall also apply to the development and maintenance of a *System* commissioned by EMSA.

II.8.2. Acceptance

II.8.2.1. The *Commissioned software* shall be developed in accordance with its specifications as agreed upon under the Specific Contract, and the maintenance *Services* shall be provided in accordance with the conditions specified in the Specific Contract.

II.8.2.2. Delivery of the *Commissioned software*, or as the case may be, its different versions, shall be recorded in a *Consignment note* in accordance with Article I.1 of the General Conditions, presented by the Contractor for signature by EMSA.

II.8.2.3. Acceptance period

The acceptance period will run up to a maximum of seventy-five (75) *Normal working days* from the day of signature of the *Consignment note*. During this acceptance period, EMSA shall notify any defect in the *Commissioned software* to the Contractor by a *Means of registered communication*. As from the date of such notification, the running of the acceptance period will be suspended up to the date on which the Contractor notifies by a *Means of registered communication* that it has remedied the notified default, which date will reinitiate the acceptance period for the rest of the seventy-five (75) *Normal working days* period, with a guaranteed minimum period of twenty-five (25) *Normal working days* after the last notification by the Contractor that it has remedied a default.

II.8.2.4. The *Certificate of Conformity*

Upon the expiry of the acceptance period, acceptance of the *Commissioned software* will be recorded in a *Certificate of Conformity*, as stated in Article I.1 of the General Conditions, which shall indicate inter alia any reservations EMSA may have regarding the *Commissioned software*. If no *Certificate of Conformity* has been issued at the end of the acceptance period and, if no notification of faulty operation is pending, EMSA is considered as having accepted the *Software*.

II.8.2.5. If, after three (3) attempts at acceptance, the *Commissioned software* still fails to meet the terms of the Framework contract, EMSA shall have the following options:

- (1) to require the Contractor to supply, without charge, a replacement or additional set of *Software*;
- (2) to accept and retain part of the *Commissioned software*, at a reduced price agreed between EMSA and the Contractor;
- (3) to refuse the *Commissioned software* and cancel the Framework contract or Specific Contract on reimbursement of any sums unduly paid.

II.8.2.6. The *Certificates of conformity* shall be annexed to the corresponding Specific Contract.

II.8.3. Guarantee of proper operation of *Commissioned software*

II.8.3.1. Except in the case of hidden defects, for which its liability shall be of unlimited duration, the Contractor shall guarantee the proper operation of *Commissioned software* in conformity with Article I.1 of the General Conditions. It shall be held responsible for the immediate repair, at its own expense, of any breakdowns that occur during the guarantee period, unless it can prove that such breakdowns have occurred for reasons other than mistakes made in performance of the service, or other than manufacturing or design errors in that portion of the work for which it was responsible.

II.8.3.2. EMSA shall notify by a *Means of communication* the Contractor of the type and scale of any failure as soon as it occurs. If the Contractor does not repair the *Commissioned software* without delay, EMSA may have it repaired by a third party, on the responsibility and at the own and sole expense of the Contractor.

II.8.3.3. The Parties shall jointly define and duly record in minutes the major problems that might affect the *Commissioned software*.

II.8.3.4. The duration of the guarantee shall be extended by the period which elapses between the notification of a major problem to the Contractor duly sent by EMSA during the stated guarantee period and the date at which EMSA accepts the corrected work.

II.8.4. Intellectual property rights and ownership of source code

II.8.4.1. Pursuant to the relevant Article of the General Conditions, the Contractor hereby assigns to EMSA, which accepts, all *Intellectual property rights* on the *Commissioned software*, for the entire world, for the entire duration of the *Intellectual property rights* involved, and on an exclusive and definite manner.

II.8.4.2. EMSA shall become the owner of source code, results, *Documentation* and sets of tests that correspond to payments already made, except when the same relate to pre-existing *Software*. Further to Article II.2.3.4, the use of pre-existing *Software* shall be subject to EMSA's prior written consent.

II.8.4.3. EMSA shall have the right to disseminate and distribute a *Commissioned software* to third Parties, even if it contains pre-existing *Software*, subject to observance of any licence terms in respect of third party *Software*.

II.8.5. User manuals and *Documentation*

II.8.5.1. The Contractor shall prepare the manuals and *Documentation* needed for the appropriate and proper operation of the *Commissioned software* and shall make them available to EMSA. It shall comply with the provisions under Article II.10 in preparing such manuals and *Documentation*.

II.8.5.2. The material shall as a rule comprise:

- (1) an installation manual;
- (2) a "Getting Started" manual;

(3) an administration, operation and maintenance manual;

(4) a user manual;

(5) implementation *Documentation*.

II.8.5.3. The manuals and the *Documentation* shall be in the file format of a word processing *Software* used by EMSA and prepared so that they may be published on EMSA's intranet.

II.8.5.4. The user manuals and the *Documentation* shall be supplied in English, unless otherwise agreed.

II.8.5.5. The Contractor shall update and, if necessary, replace the user manuals and *Documentation* files for the maximum length of the Framework contract.

II.8.6. Interfaces and *Compatibility*

II.8.6.1. Where the Specific Contract mentions interfaces that need to be observed, the Contractor shall not modify such interfaces without EMSA's written agreement. Such agreement shall not be unreasonably withheld.

II.8.6.2. Where the *Commissioned software* supplied utilises *Software* from a third party and where that *Software* is updated, the Contractor shall adapt the *Commissioned software* in accordance with terms jointly agreed.

II.8.6.3. The Contractor shall ensure that all the *Commissioned software* supplied under the Framework contract is compatible and operates by means of interfaces with all other *Software* specified in the Framework contract.

II.9. SPECIFIC PROVISIONS RELATING TO TRAINING ORGANISED FOR EMSA

II.9.1. Instructors

Instructors shall be proposed to EMSA on the basis of their professional experience and their ability to provide the *Services*. Instructors accepted shall appear on EMSA's authorised list. EMSA must be notified in advance of staff changes and reserves the right to refuse them.

II.9.2. Organisation of courses

- II.9.2.1. The Parties shall draw up a schedule of courses and preparatory measures for a period of several months, normally six (6) months. The schedule shall outline the content of the courses and measures their duration, the dates on which they are to take place, the intended instructors, the number of participants, and the cost.
- II.9.2.2. The Parties shall make a final decision on all the data no later than four (4) weeks prior to the date on which training is to take place. The Contractor shall then specify, at the latest, the timetables for the courses and undertakes to adhere to it. If the schedule is disrupted by one or other party, that party shall endeavour to find an equivalent solution.
- II.9.2.3. When an instructor is not available, a course may be cancelled or postponed no later than ten working days prior to its commencement. If three courses have been cancelled or postponed without meeting these conditions, EMSA shall be entitled to terminate the Framework contract pursuant to the provisions under Article I.13 of the General Conditions.

II.9.3. Instructor's manual Article

The Contractor shall comply with EMSA's standard practice as regards:

- (1) the preparation and holding of courses;
- (2) administrative regulations;
- (3) health and safety regulations.

II.9.4. Provision of training Software

- II.9.4.1. Training *Software* that has been developed specifically for EMSA shall be owned in full by EMSA.
- II.9.4.2. The provision of training software shall be covered by a site licence, whose terms shall be consistent with the nature and subject of the training.

II.10. SPECIFIC PROVISIONS RELATING TO DOCUMENTATION PRODUCED FOR EMSA

- II.10.1.1. The *Intellectual property rights* in the *Documentation* that has been developed specifically for EMSA shall rest exclusively with EMSA.
- II.10.1.2. The provision of reference *Documentation* shall be covered by a site licence, the terms of which shall be consistent with the nature and subject of the *Documentation*.

APPENDICES
to
Annex II of the IT Framework Contract
[...]/EMSA/OP/04/2017

ICT Architecture

System and Application Technical Landscape

Document History

Title

System and Application Technical Landscape

Version

29 from 06/06/2016

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Definitions, Acronyms and Abbreviations

Definition	Description
AJAX	Asynchronous JavaScript and XML
BCF	Business Continuity Facility
BMP	Bean-Managed Persistence
CMP	Container-Managed Persistence
DAO	Data Access Object
DTO	Data Transfer Object
DB	Database
DC	Data Centre
DHTML	Dynamic HTML
DMZ	Demilitarized zone
DNS	Domain Name System
EIS	Enterprise Information System
EJB	Enterprise Java Bean
EMSA	European Maritime Safety Agency
ESB	Enterprise Service Bus
FTP	File Transfer Protocol
GIS	Geographic Information System
GUI	Graphical user interface
HA	High Availability
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol over Secure Socket Layer
IPSEC	Internet Protocol Security
ISP	Internet Service Provider
JCA	JAVA EE Connector Architecture
JDBC	Java Database Connectivity
JDK	Java Development Kit
JEE	Java Enterprise Edition
JMS	Java Message Service
JSF	Java Server Faces
JSP	Java Server Pages
JVM	Java Virtual Machine
LDAP	Lightweight Directory Access Protocol
Mbps	Megabit per second
MOM	Message Oriented Middleware
NAT	Network Address Translation
OAM	Oracle Access Management
OIM	Oracle Identity Management
OES	Oracle Entitlement Server
OS	Operating System
OSB	Oracle Service Bus
OWASP	Open Web Application Security Project
POJO	Plain Old Java Objects
R. Proxy	Reverse Proxy
RAC	Real Application Clusters
REST	Representational State Transfer
RIA	Rich Internet Applications
RMI	Remote Method of Invocation
SAN	Storage Area Network
SANS	SysAdmin, Audit, Network, Security Institute

sFTP	Secure File Transfer Protocol
SMTP	Simple Mail Transfer Protocol
SRM	Site Recovery Manager
SOA	Service Oriented Architecture
SSL	Secure Socket Layer
TB	Tera Bytes (i.e. 10^{12} bytes or 1 million mega bytes)
UDDI	Universal Description Discovery and Integration
VLAN	Virtual Local Area Network
VM	Virtual Machine
WLI	WebLogic Integrator
WLS	WebLogic Server
XHTML	Extensible Hypertext Markup Language
XWS	WS Security implementation from Sun Microsystems

1. Introduction and Objectives

This document describes EMSA System and Application landscape. Its main objective is to document the technical solutions used by EMSA at System level and to provide directions on options and preferable technologies to be considered at Application Level.

Although the System and Application Landscape described in this document are EMSA guiding lines, this does not mean that no deviations are allowed.

Exceptions can be proposed and they will be considered on a case by case basis; if it is found that is the best technical implementation for the requirement or there is no other way of doing it, this exception will be accepted.

Also suggestions for innovation are welcome and if they bring added value to the landscape, they will be included.

The document is organized in several chapters:

- Chapter 1: Introduction and Objectives.
- Chapter 2: Describes the System Landscape and the Technical solutions implements at systems and network levels.
- Chapter 3: Describes the Application Landscape and preferable options to be used at the Application level.
- Chapter 4: Describes the conceptual Service Oriented Architecture (SOA) to which the applications should comply
- Chapter 5: Describes the LDAP structure to be used by all Maritime Applications
- Chapter 6: Describes the software versioning scheme
- Chapter 7: Presents a summary of the system and application landscape

2. System Landscape

2.1. HIGH LEVEL NETWORK SCHEMA

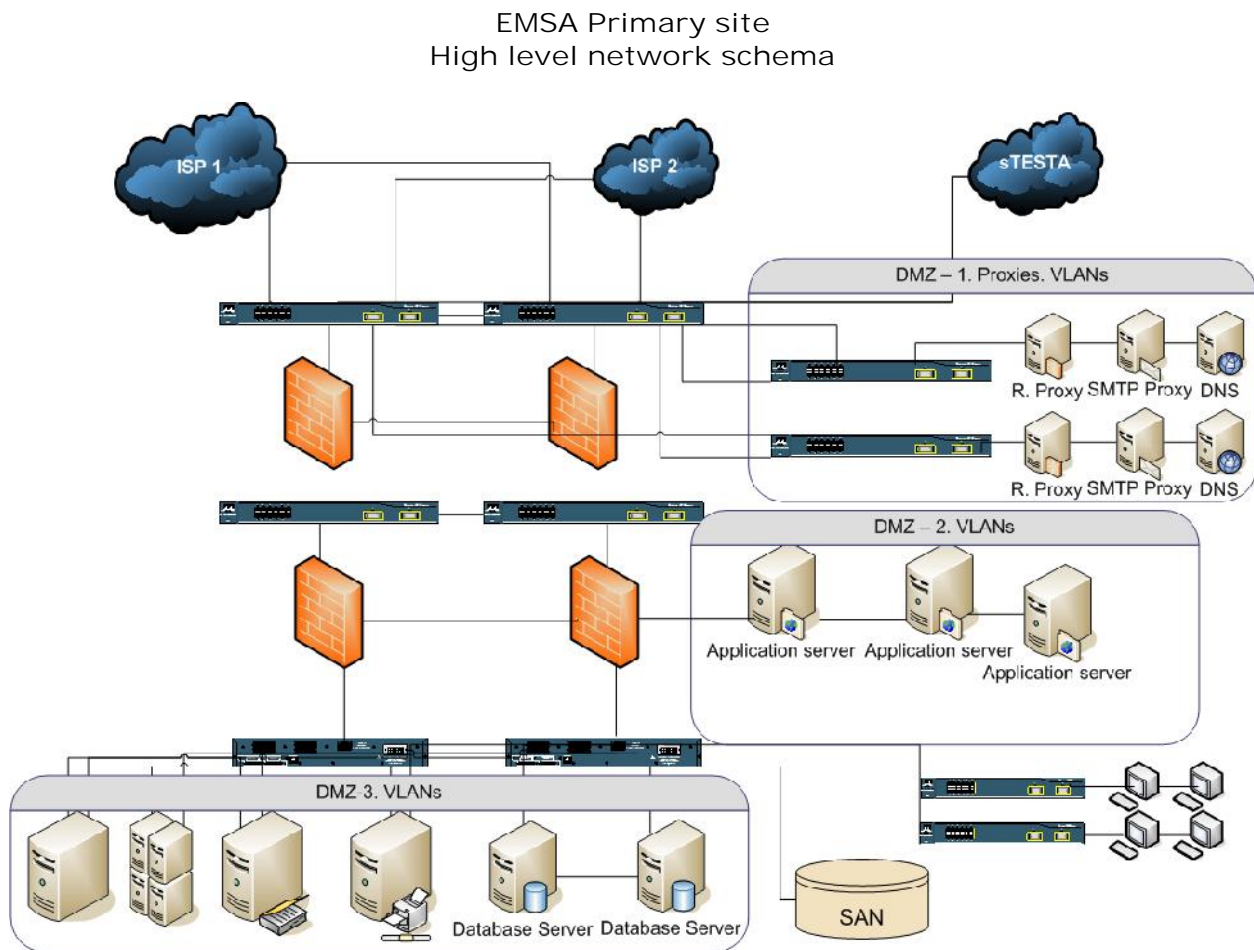


Figure 1 - Primary site. High level network schema

2.2. DATA LINKS

Data Links

- 2 Internet ISP
 - active/active using BGP
 - BGP autonomous system and routing fully managed by EMSA
 - 100 Mbps each
 - 256 Provided independent IP addresses
- 1 sTESTA link
 - EU private network
 - 2 Mbps
- 1 GEANT link
 - Reserved to the CleanSeaNet project for high speed image transfer
 - 1 Gbps

2.3. NETWORK SECURITY

Two layers of firewall protection:

- Checkpoint R75.40 2-nodes clusters;
- Cisco ASA;

Reverse proxies for incoming connections (currently handling the following protocols: HTTP, HTTPS and SFTP). The network is segmented using VLAN's.

DMZs
•DMZ-1: reverse proxies, DNS servers, other services exposed to Internet
•DMZ-2: application servers and database servers (Front/Back End VLANs)

Monitoring of security events is currently achieved through a SIEM (Security Information Event Management) system including Suricata, Splunk, F5 ASM module on top of EMSA F5 reverse proxy.

2.4. PROXY POLICY

The following rules should be followed:

- Accessing EMSA web applications should be always through HTTPS;
- Reverse proxies are used for all incoming connections from outside networks (Internet and sTESTA);
- All incoming connections shall pass through our reverse proxies;
- All incoming SSL connections are terminated in the reverse proxies;
- Proxies are always responsible for the SSL encryption and decryption;
- Proxies are always responsible for creation of the SSL connections;
- 1-way SSL is used for human to system interfaces while 2-way SSL should be used for system to system interfaces;
- All SSL outgoing connections shall use the proxy. Any outgoing SSL connection shall be initiated as plain HTTP by the applications to the proxy, where the SSL will be initiated for the outgoing SSL connection. The protocol used to request the proxy the creation of an outgoing HTTPS connection, involve the usage of an EMSA URL naming convention (<standard_URL>.f5 URL's) and some F5 configurations.

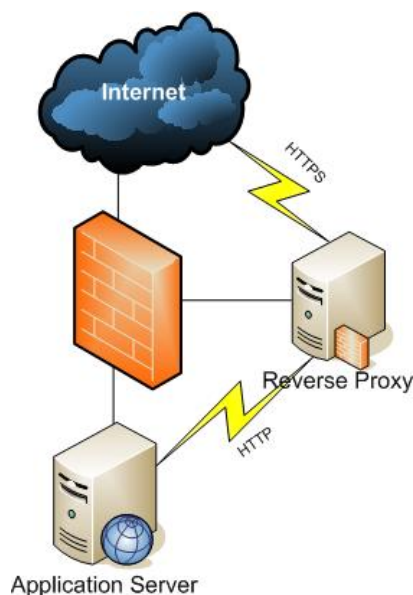


Figure 2: Proxy policy

Proxy Devices
• 2 x F5 Big IP v5000 Series

2.5. NETWORK LOAD BALANCING

The F5 appliances form a redundant cluster that can perform load balancing for web applications in any VLAN on EMSA network. The design of any new system or application should preferably implement load balancing with node fail detection on this equipment.

2.6. HIGH LEVEL VIRTUAL INFRASTRUCTURE SCHEMA

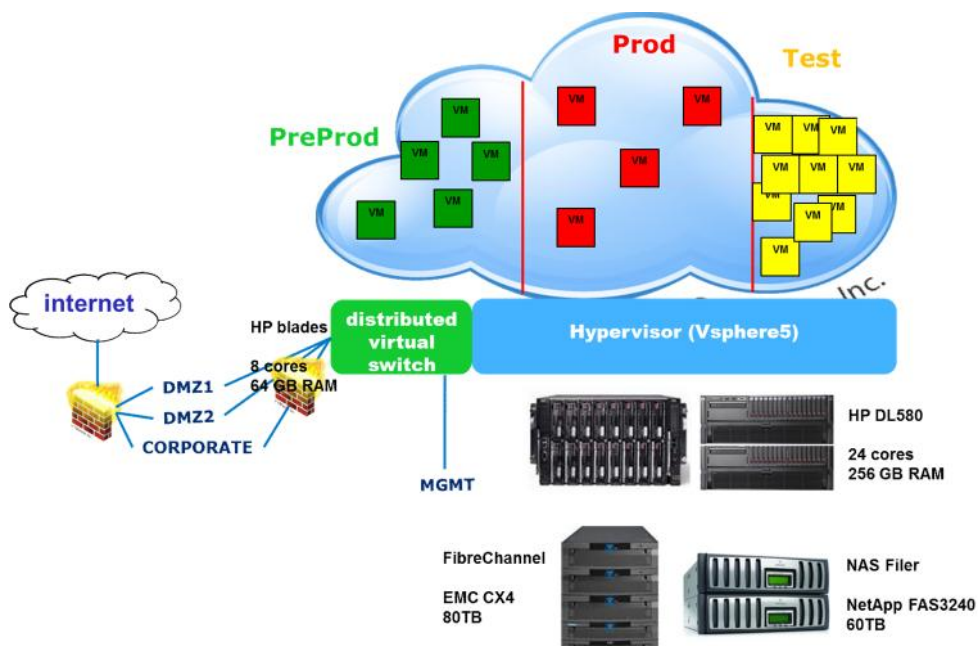


Figure 3 - High Level infrastructure

2.7. VIRTUAL INFRASTRUCTURE SERVICES

The following services are offered to VMs and application environments:

- Basic monitoring with Nagios;
- Performance monitoring with vCenter Operations;
- VM-level backup with Networker or Netapp SnapMgr for Virtual Infrastructure. Exceptionally also Networker agent-based backup can be implemented.
- Deployment of a VM or environment¹;
- Cloning of a VM or environment;
- Snapshotting of a VM or environment²;
- Exporting as OVF a VM or environment;
- Hardware resource allocation changes³;

¹ Subject to being included in the EMSA Template catalogue, currently including:

- Linux Red Hat Enterprise Server or CentOS in version 5 or version 6;
- As above, with WebLogic or with Oracle DBMS;
- Latest Microsoft Windows servers.

² Subject to the following policy: the snapshot must be rolled back, or removed, in one week time to avoid performance penalties;

- Upgrade of VMware tools and virtual hardware;
- Troubleshooting.

2.8. APPLICATION REQUIREMENTS FOR VIRTUAL INFRASTRUCTURE

Applications and systems hosted in the EMSA Virtual Datacentre must respect the following requirements:

- Base OS must be chosen out of the current EMSA template catalogue⁴;
- Compatibility with the latest VMware virtual hardware specifications (currently version 8);
- Hardware provisioning done according to a principle of fit-for-purpose;
- Compatibility with vMotion.

2.9. ENVIRONMENTS

EMSA has defined 6 possible different types of environments for the Maritime Applications. The following picture presents an overview of them.

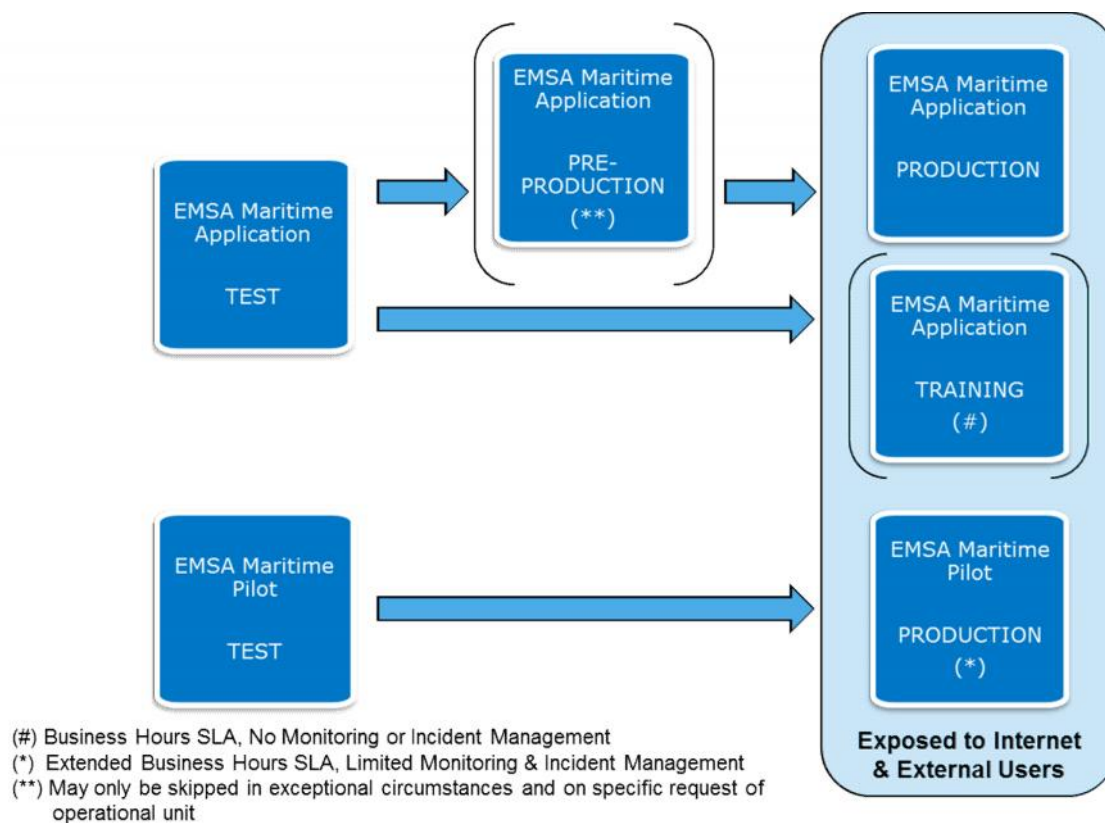


Figure 4: Types of Environments

The following figure shows detailed information related to each type of environment.

³ Subject to the following policy: CPU, Memory, disk and network for any VM should be fit for purpose, and oversized VMs should be avoided to reduce contention issues and overhead. Granting more resources is subject to a trend analysis of the use of current resources also looking at vCenter Operations performance indicators, and takes into account its recommendation. VMs oversized are reported on a regular basis and are subject to downsizing.

⁴ See note 1 on the previous page.

Type	InfraX grade	A.3 Monitoring	A.3 Incident Management	External access	Backup / Restore services (1)	Decommission Date	Ownership	VLANS
Test (t)	Test	No	No	No	Non Prod	No	Ops. Unit / Contractor - A.3 provides infraX + grant privileges - Ops.Unit handles it afterwards	Test
Pre-Production (pp)	Pre-Prod	No	Yes (Business Hours)	No or with IP Filtering	Non Prod	No	A.3	Pre-Prod
Training (l)	Pre-Prod	No	No	Yes	Non Prod	No	Ops. Unit - A.3 provides infraX + grant privileges - Ops.Unit handles it afterwards - A.3 act as support if needed	Pre-Prod
Production (p)	Prod	Yes (InfraX and application outputs)	Yes (24 x 7)	Yes	Prod	No	A.3	Prod
Test Pilot (t)	Test	No	No	No	Non Prod	Yes (max. 1 year)	Ops. Unit / Contractor - A.3 provides infraX grant privileges - Ops.Unit handles it afterwards	Test
Pilot (i)	Prod (2)	Limited (max 5 checks per env, based on app outputs)	Yes (Extended Business Hours) MSS – normal A3 – major	Yes	Non Prod	Yes (max. 1 year)	Ops. Unit - A.3 provides infraX + grant privileges - Ops.Unit handles it afterwards - A.3 act as support if needed	Pilot

(1) - Backup/Restore services:

- Non-Prod: VM: weekly + DB (RAC): constant / DB (non-RAC): weekly + File System (data): weekly
- Prod: VM: weekly + DB (RAC): constant + File System (data): daily

(2) – Production for Pilot Projects:

- only uses VMs with standard A.3 templates
- No clustering / load balancing
- Single instance DB (no RAC)

Figure 5: Characteristics per Type of Environments

The basic infrastructure that supports the environments is as follows:

Environments <ul style="list-style-type: none"> • Production • Training: ideally 50% of the production capacity • Pilot Production: ideally 50% of the production capacity • Pre-Production: ideally 50% of the production capacity • Test/Quality: ideally 25% of the production capacity
Server Infrastructure <ul style="list-style-type: none"> • EMSA Datacenter is fully virtualised with VMWare technologies • Those include: <ul style="list-style-type: none"> - VMware ESXi VSphere 5 - VMware HA, DRS and Failover
High availability technologies <p>Service fail-over: Weblogic Active-Active, Oracle EXADATA, Oracle RAC Server fail-over: VMware FailOver and VMware HA Site fail-over: VMWare Site Recovery Manager;</p> <p>Data replication: Asynchronous data replication via FCIP; backup storing off-site</p>
Service Clustering <ul style="list-style-type: none"> • Weblogic Active/Active clustering • Oracle EXADATA
SAN Storage <ul style="list-style-type: none"> • Brocade fabric based on Sanswitch DS5300 • EMC Clariion CX4-240 • Netapp filer FAS3240 (only CIFS/NFSv3)

Environment	Test / Test Pilot	Pre-Production	Training	Pilot Production	Production
Purpose	This environment allows software contractors to perform testing and integration of their applications in the EMSA environment.	This environment offers a chance for EMSA application users to review and test applications in development or having past SAT.	This environment is used to perform training sessions with the end-users and MS commissioning tests.	This environment is used to implement new applications to validate new concepts before implementing a full-production system.	Shall only be provided for applications whose deliveries have been formally accepted. When an application is no longer in use, the application owner shall inform unit A.3 of this change in status.
Infrastructure performance & scaling	Equivalent to 25% of production capacity	Equivalent to 50% of production capacity	Equivalent to 50% of production capacity	Equivalent to 50% of production capacity	
Responsibility and installation	In test environment the contractor will have the necessary privileges (limited to areas directly related to the development) in order to be able deploy the application under development without help from A.3 staff. On request A.3 may make available staff to support the contractor.	The environment shall also be used to test installation procedures. Before any applications are installed or before configuration changes, data fixes, etc are performed, the contractor will deliver to EMSA all source code, installation scripts, installation procedures, release notes, etc, as described in the release management procedure. A.3 will be responsible for installation and therefore the contractor or EMSA project officer will need to arrange with A.3, sufficiently beforehand, a date for installation.	In training environment the Operational Units will have the necessary privileges (limited to areas directly related to the development) in order to be able deploy the application under development without help from A.3 staff. On request A.3 may make available staff to support the contractor.	In Pilot Production environment the Operational Units will have the necessary privileges (limited to areas directly related to the development) in order to be able deploy the application under development without help from A.3 staff. On request A.3 may make available staff to support the contractor.	All software or scripts being run in the production environment shall first be installed in pre-production environment. Both EMSA business responsible and EMSA IT responsible shall have formally accepted the software in accordance with Software Release Management Procedure. Installation and maintenance will be performed solely by A.3 or its contractors.

2.10. DISASTER RECOVERY

EMSA's Business Continuity Facility (BCF) is hosted in Porto in the premises of a commercial hosting provider. The BCF is a fully equipped replica of the main site in terms of servers, network equipment, internet connectivity, storage and middleware, and as such it may function as either the main production site for an application, or as back-up site. This choice may be made on a per application basis and depends on the EMSA needs, the application's replication design and capabilities, and the desired SL.

Any new system or application must conform by design to one of the business continuity approaches foreseen so far:

1) ON/OFF model:

The servers and services that constitute the system or application are active and visible on the network only in the main site. They are kept in sync in the secondary site with some middleware or low level replica technology like Dataguard for backends, or virtual machine cloning or storage array based replication for front ends. But the replicated systems are always inactive on the secondary site in an off-state and not visible on the network unless the recovery procedure is executed. Taking over in that case means executing a procedure to stop the systems in the main site (if possible), execute a last synchronisation (if possible), stop the synchronisation flows, then restart the replicated systems in the secondary site changing all the parameters that differ in the two sites like network configuration, internal DNS entries, pointers to database or cartographic servers or to any other horizontal service platform always available in both sites like LDAP, Single Sign On, DNS etc.... Eventually, the external DNS entry should be changed to point external Internet users to the public IP of the system or application in the new site.

According to this model, it is still possible to have the same internal FQDN for the application servers in both sites, as servers are active and visible on the network only in one site at a time, and when taking over, the A records of the internal DNS can be changed to reflect the different IP address space in the new site.

2) ON/ON model:

The servers and services that constitute the system or application are active and ready to take over at any time in both sites. Synchronisation rely on the features of the application or middleware used rather than on a low-level cloning and transferring of the virtual machines, offering either a fully multi-master active/active approach like Active Directory, or some type of distributed geo-cluster, or anyway an autonomous system which keeps data and configuration in sync between the two legs in the two sites. Taking over in that case is a simpler procedure like activating some built-in system or application feature to switch to the other site, possibly requiring some internal and external DNS changes, or can be even fully transparent.

According to this model, different FQDNs and IPs for the application servers in the two sites must be chosen, as servers are active and visible on the network in both sites at any time.

Note: it is not accepted to design ON/ON systems where the virtual machines on the two sides have the same internal DNS FQDN.

The ON/ON model, when supported by the application or middleware, might guarantee faster and seamless fail-over procedure, hence it is the preferred approach.

The following figure exemplifies how the interconnection of current EMSA's production environment with the BCF is envisaged and also points to the use of several replication/back-up systems at different levels of the infrastructure:

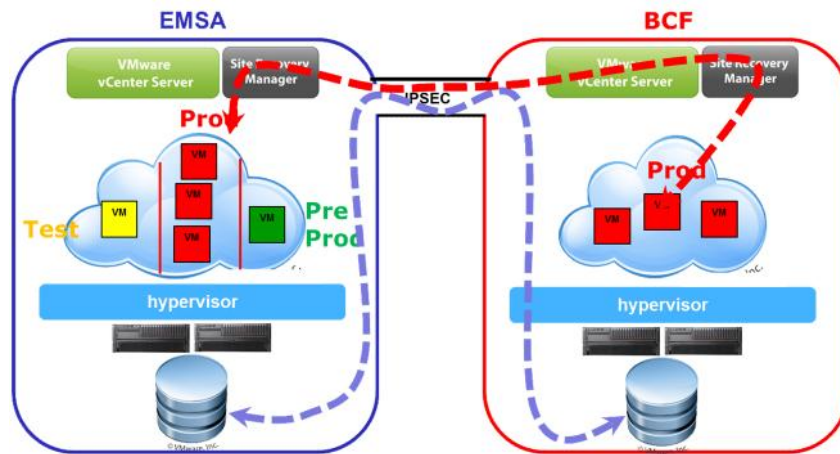


Figure 6: EMSA DC connection with BCF

The figure presented hereafter depicts the connection between the applications currently deployed at EMSA and the data replication to BCF performed by Oracle database:

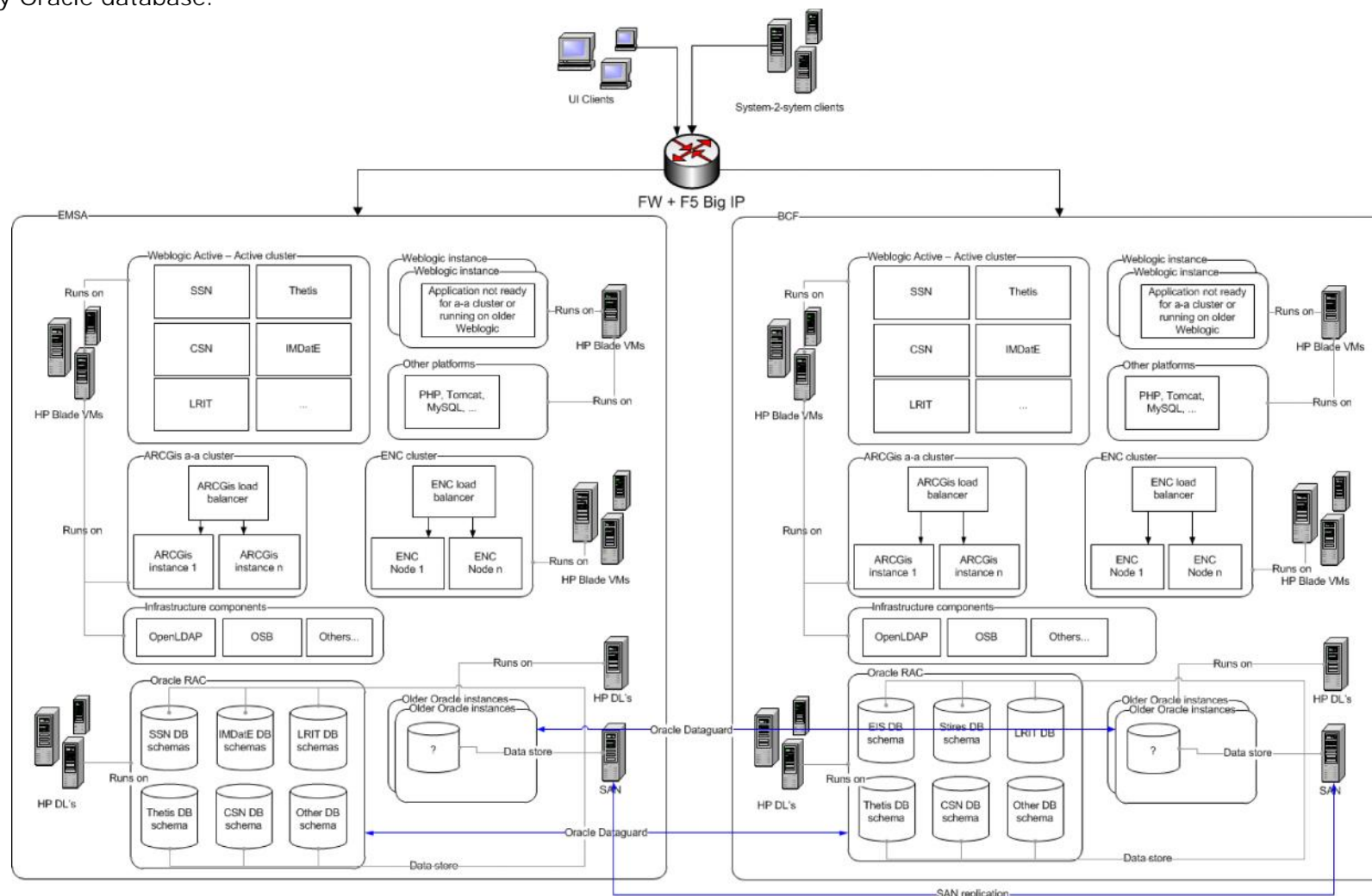


Figure 7: Business Continuity Facility

Key elements of the actual BCF architecture are:

- 1) the two sites are connected through an IPSEC tunnel over an high performance link
- 2) the two sites use different private and public IP address ranges
- 3) the internal DNS zone emsa.local, containing server's FQDN, is shared between the two sites;
- 4) the external IP address space in each of the two sites is a different C-class of Provider Independent IPs whose routing advertisements is managed directly by EMSA routers
 - a. 91.231.216.0/24 => Primary site;
 - b. 91.231.217.0/24 => Secondary site;
- 5) the external DNS zone "emsa.europa.eu" is unique across the sites, it is delegated to EMSA, and it is kept in sync between the two sites with master-slave DNS replication;
- 6) data and systems are kept in sync through either:
 - a. Oracle Dataguard for backend;
 - b. Storage array replication for most of the front end virtual machines;
 - c. Ad hoc application built-in replication technologies, like active directory replication, or Microsoft continuous cluster replication for Exchange and SQL.
 - d. Ad hoc scripts for data transfer.
- 7) Rerouting of Internet users to the BCF is done with DNS technologies

New applications development should always be BCF friendly by being compliant with the following requirements:

- Bandwidth required for data and system alignment should be kept to a manageable amount to allow continuous replication over a non-dedicated medium bandwidth link. A bandwidth estimation for data synchronization between EMSA DC and BCF, through Oracle Data Guard and other technologies, shall be provided;
- A fail-over procedure to BCF shall be provided together with one to fail back to EMSA;
- A list of all the application dependencies which need to be resolved in the BCF and main production site for the application to run shall be provided:
 - Web services
 - Data sources
 - Other application(s)
 - Security constraints
 - Infrastructural services
 - Etc...
- Connections to other machines should always be configured by referring to the machine name, never by referring to the IP address directly.

3. Application Landscape

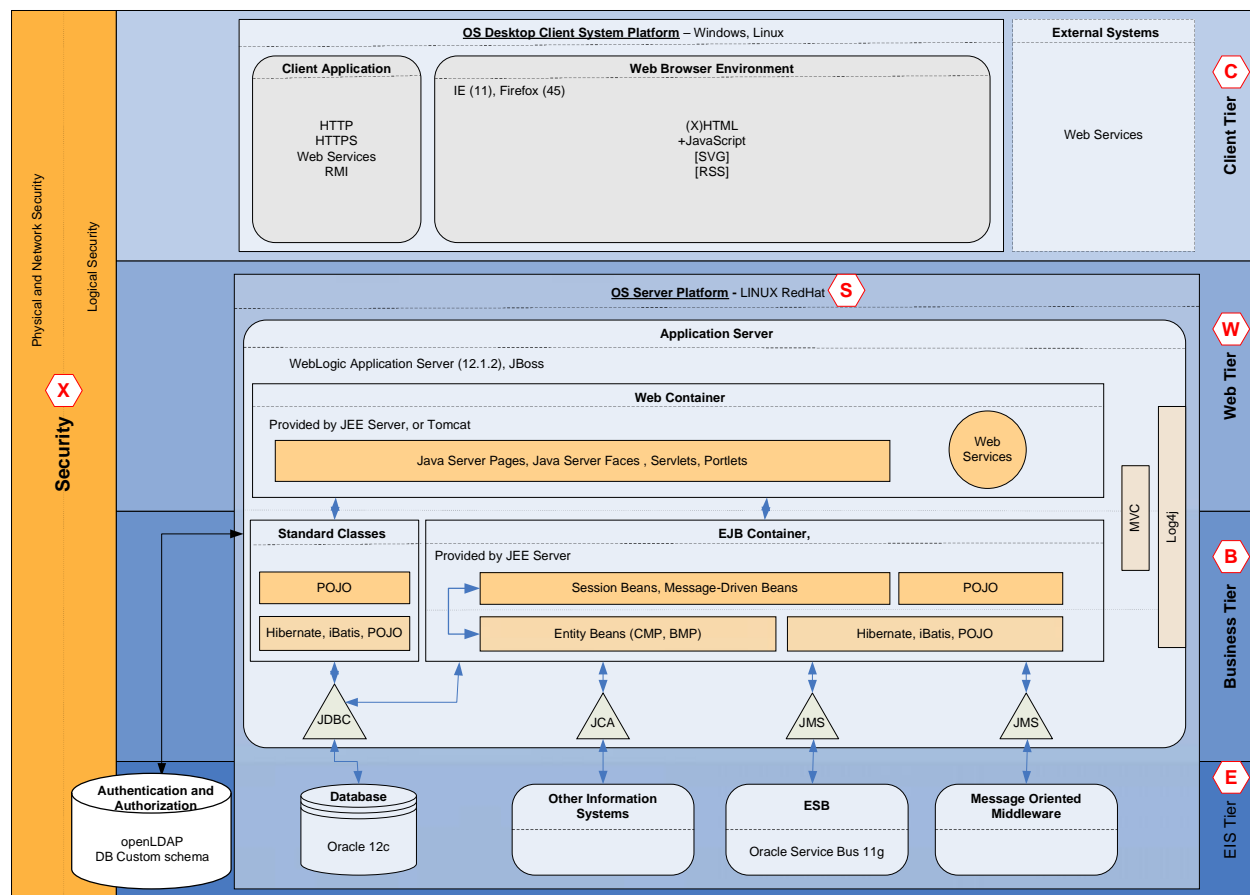


Figure 8: Application landscape

3.1. ARCHITECTURE OVERVIEW

EMSA IT systems should follow state of the art JAVA PLATFORM, ENTERPRISE EDITION VERSION 7 n-tier architecture. Figure 8 represents the preferable EMSA IT architecture where the major tiers are:

Client Environment

Client Tier:

Client Tier is a JEE application front-end that provides communication with human users or with others external systems.

For details, refer to chapter 3.2

Server Environment

Web Tier:

Web Tier connects user interface on a Client Tier with business logic on a Business Tier.

For details, refer to chapter 3.3.1, (a)

Business Tier:

Business Tier provides transaction processing logic (business logic) and data processing logic (data management). Business processes and business components should not be implemented outside this tier.

For details, refer to chapter 3.3.1, (b)

EIS Tier:

EIS (Enterprise Information System) Tier consists of all enterprise information systems, such as databases or other information systems. ESB and Message Oriented Middleware are also included in this tier.

For details, refer to chapter 3.3.2

Client Tier is the only tier of the Client Environment and it's by definition a distributed and separated tier.

Web Tier, Business Tier and EIS Tier are part of the Server Environment hosted at EMSA; EIS Tier (and its components) is usually a separated tier implemented on top of a separated server environment and depending on the complexity, the system architect may decide between a complete distributed architecture where all tiers are distributed in separated server environments or a mixed architecture where some tiers may share one server environment.

Operation systems options for the different environments are:

Client Environment
<ul style="list-style-type: none"> • Windows 7 • LINUX distribution (RedHat, Suse, Ubuntu or Fedora) desktop
Server Environment
<ul style="list-style-type: none"> • LINUX Redhat server 7 (64 bits) • Windows Server 2008

3.2. CLIENT ENVIRONMENT AND CLIENT TIER

3.2.1. Web Browser Environment

The majority of EMSA applications are delivered to the final user via a browser based interface. A Web UI's advantage is that no additional software needs to be installed on client side and minimal demands are placed on the client platform.

Because a HTML Thin Client GUI is limited by markup language / JavaScript capabilities, others resources can add to build Rich Clients providing better user experience through the Web Browser. Applications must be 100% compatible with, at least, the following browsers or higher versions:

Web Browsers
<ul style="list-style-type: none"> • Microsoft Internet Explorer 11 and later • Mozilla Firefox 45 and later

HTML page serves as a host for Rich Clients built with different technologies:

Client Tier Technologies
<ul style="list-style-type: none"> • HTML 5 • Javascript • Tag Libraries • AdobeAir (to be allowed only on case by case basis) • WebGL
Preferred JavaScript Libraries
<ul style="list-style-type: none"> • Ext JS • jQuery

Technologies used to implement Rich Internet Applications in the Client Tier can also have strong relationships with the technologies used in the Web Tier (e.g. Tag Libraries) described in chapter 3.3.1.

Usage of Java Applets should be limited to very particular situations and the decision to allow this will be taken on a case by case basis.

3.2.2. Client Application

Due to some business requirements (e.g. operation in disconnected mode, access to the local file system, ...), some applications may require a Fat Client.

In order to create a unified technology platform, and to support all operating platforms in use at EMSA or EMSA clients, preference will be for using the Java language. As an alternative, EMSA may allow use of Adobe AIR technology.

A mechanism for deploying and updating the client application at the remote PC will be needed (Java Webstart will be preferred). Dependencies on runtime components not already part of standard EMSA PC configurations will be regarded as negative.

Because EMSA needs to support other organisations within the Member States, any application to be installed on a client will need to be cross-platform, covering at least the platforms listed earlier in this document⁵.

Usually, a client application will need also to connect to the server side of the system in order to perform business actions (e.g. data synchronization). Several technologies can be used to address this client-server connection:

Client-Server connection technologies
<ul style="list-style-type: none">• HTTP or HTTPS• Web Services<ul style="list-style-type: none">• OGC WMS, WFS and KML• JSON• SOAP, with WS-*

Communications to servers shall be done using web services, exceptions may be granted on request. Exposed Web Services shall always be protected with Authentication and Authorization. Important business data should always be stored on servers managed by A.3, if this requirement cannot be met (due to business requirements, impossibility to connect, ...) a procedure for providing data back-ups needs to be foreseen.

In case development of a fat client is proposed, this needs to be discussed with A.3 and agreements on installation requirements, connection technology and data back-up need to be reached before starting development.

Mobile application platforms
<ul style="list-style-type: none">• iOS 7 and up• Android 4.0 and later

Increasingly mobile devices are used for accessing web based information systems. Where possible, in order to avoid creating multiple platform dependent solutions, such developments should be based on simple website access, with appropriate changes applied to the UI to take into account the smaller screen size, reduced bandwidth and touch based controls used by mobile devices. In cases where business requirements cannot be reached using a mobile optimised website, at least the application platforms and version mentioned above need to be supported.

3.2.3. External Systems

External systems will also act as clients to EMSA systems creating the need of integrating different software systems used by different organizations (business partners). The system integration helps to automate collaboration processes and improve business performance. De-facto standard technologies should be used to inter-connect external systems with EMSA systems:

⁵ If the application is to be used only by EMSA this requirement can be reduced to supporting Windows 7. An application installer compatible with EMSA's MS System Center needs to be provided.

External systems integration technologies
<ul style="list-style-type: none"> • Web Services <ul style="list-style-type: none"> • OGC WMS, WFS and KML – should follow INSPIRE Directive 2007/2/E • SOAP, with WS-* • sFTP /FTP

WS-* standards will be the preferred way for securing, and enabling QoS, reliability, etc. for these web services.

3.3. APPLICATION ENVIRONMENT

3.3.1. Application Server

EMSA architecture is based on the standard JEE version 5. The following Application Servers should be used as the base Web and EJB containers:

Application Servers
<ul style="list-style-type: none"> • Weblogic Application Server (latest version) • JBoss (latest version)

New development or 'significant'⁶ changes to existing applications should always target the latest version of the application server in use at EMSA. For existing applications, EMSA will assess the desirability vs the risks of upgrading the underlying application server on a case by case basis.

Simple applications, where distribution is not foreseen, the EJB container is not needed; see below for details.

(a) Web Tier

The delivery of Rich GUI based on Web Browsers is achieved by a set of components located in this tier and in close relationship with the Client Tier. Those components may vary depending on the technical solution adopted and level of complexity required for the Rich GUI; major technologies are presented in the next table:

Web Tier Technologies
<ul style="list-style-type: none"> • JSP – Java Server Pages • JSF – Java Server Faces • Portlets • Rich server side components⁷

Portal technology
<ul style="list-style-type: none"> • Liferay Enterprise Edition

Simple applications, that only require a Web Container can use:

Web Container
<ul style="list-style-type: none"> • Tomcat (latest stable version)

Web Services are used to provide communication between loosely connected system components and are the preferable mechanism to expose services to external systems/applications. Several technologies could be adopted:

Web Services technologies
<ul style="list-style-type: none"> • AXIS 2 • Spring Web Services

⁶ Significant shall be understood as any change resulting in a change of either major or minor versioning number (see further for a description of the version numbering scheme in use at EMSA)

⁷ No preferable solution yet. On a case by case, other technologies that enable Rich Web base clients can be used

- | |
|---|
| <ul style="list-style-type: none"> • UDDI • XWS |
|---|

Where needed the WS-* family of web service specifications as defined by OASIS will be preferred for implementing web service reliability, security, etc.

(b) Business Tier

System functionalities are always implemented in the Business Tier and several technical options can be used to implement the Business components.

A software layer approach must be followed, implementing at least, two layers:

Business Layer: Responsible for the delivery of the business functionalities and orchestration of the business processes

Data Access Layer: Responsible for isolation of data access and actions executed over the persistent data storage (typically a relational database). Usually, Data Access Object (DAO) design pattern is mapped into this layer.

To support data transfer between layers and even between tiers a complete set of objects according to the Data Transfer Objects design pattern must be implemented.

For simple applications where an EJB container is not required:

- | |
|---|
| Business Layer technologies |
| <ul style="list-style-type: none"> • POJO (Plain Old Java Objects) |

- | |
|--|
| Data Access Layer technologies |
| <ul style="list-style-type: none"> • JPA • JDBC • Hibernate • springJDBC |

For systems requiring an EJB container (that will be provided by the selected Application Server):

- | |
|--|
| Business Layer technologies |
| <ul style="list-style-type: none"> • Session EJBs • Message Driven EJBs • POJO (Plain Old Java Objects) |

- | |
|--|
| Data Access Layer technologies |
| <ul style="list-style-type: none"> • Hibernate • springJDBC • Entity EJBs |

3.3.2. EIS Tier

(a) Database

EMSA stores data in relational databases.

- | |
|--|
| Relational Database Management System |
| <ul style="list-style-type: none"> • ORACLE 12c |

New development or significant upgrades should enable the application to use the latest RDBMS version in use at EMSA.

(b) Message Oriented Middleware

To provide messaging services for integrated systems or asynchronous operations, EMSA relies on a Message-Oriented Middleware that increases the interoperability, portability, and flexibility by isolating the exposed services from the internal implementation and allowing distribution over multiple platforms (among other advantages).

Asynchronous messaging is the preferred method for exchanging data between internal applications. JMS will be the preferred manner for consuming and producing messages. The use of asynchronous message should enable better decoupling between applications (compared to web services), allow a more up-to-date system state (compared to batch processing), increased scalability (due to MOM underpinnings) and improved configurability and oversight of the system integrations (through use of the ESB). Asynchronous messaging over JMS will also be the preferred method for request/reply messaging paradigm.

Message Oriented Middleware

- | |
|--|
| <ul style="list-style-type: none"> • WebLogic JMS |
|--|

(c) Other Information Systems

Any other Information Systems inside EMSA is considered to be in the EIS tier.

Integration can be done using several techniques; preferable methods of integration are:

Internal systems integration technologies

- | |
|--|
| <ul style="list-style-type: none"> • JCA – JAVA EE Connector Architecture • Web Services (like an external system in the Client Tier)), those can be based on either SOAP, REST or JSON |
|--|

For services that are to be consumed by other systems inside of EMSA or to the outside the more formally defined SOAP web services are preferred. Asynchronous communication (based on call backs) should be used where possible.

Compared to the JMS based integration described above, more effort will be required to ensure the consumers / producers deal with service unavailability, scalability or reliability issues, therefore integration using asynchronous JMS is encouraged.

(d) Authentication and Authorization

EMSA applications that require user authentication and authorization should rely on a directory to store user credentials, roles and access privileges.

User directory technologies

- | |
|--|
| <ul style="list-style-type: none"> • openLDAP |
|--|

Although the use of a database schema to cope with these functions is a common practice, it has several disadvantages and should be avoided.

EMSA owns a centralized system for Identity Management that encompasses two different aspects: SSO for authentication and central user management based on Oracle technology. For new applications development, developers should focus on:

- Relying on SSO for authentication
- Using JAAS for in-app authorization
- Weblogic App Server needs to be configured accordingly (JAAS + OAM agent)
- Use an RBAC model
- All administration of security principals will be handled through the Oracle Identity Manager.

The following figure gives an overview of the current Identity Management implementation.

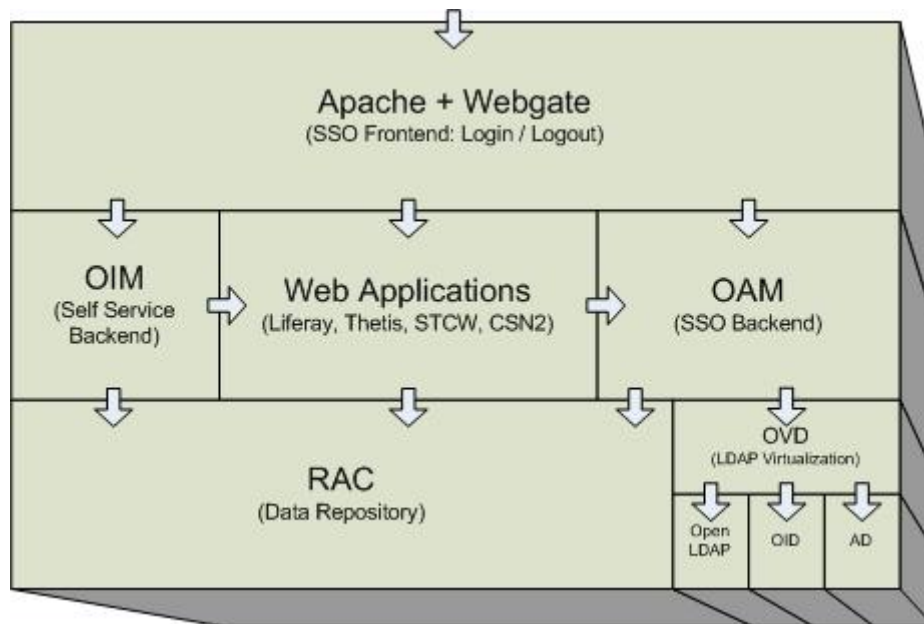


Figure 9: Identity Management high level diagram

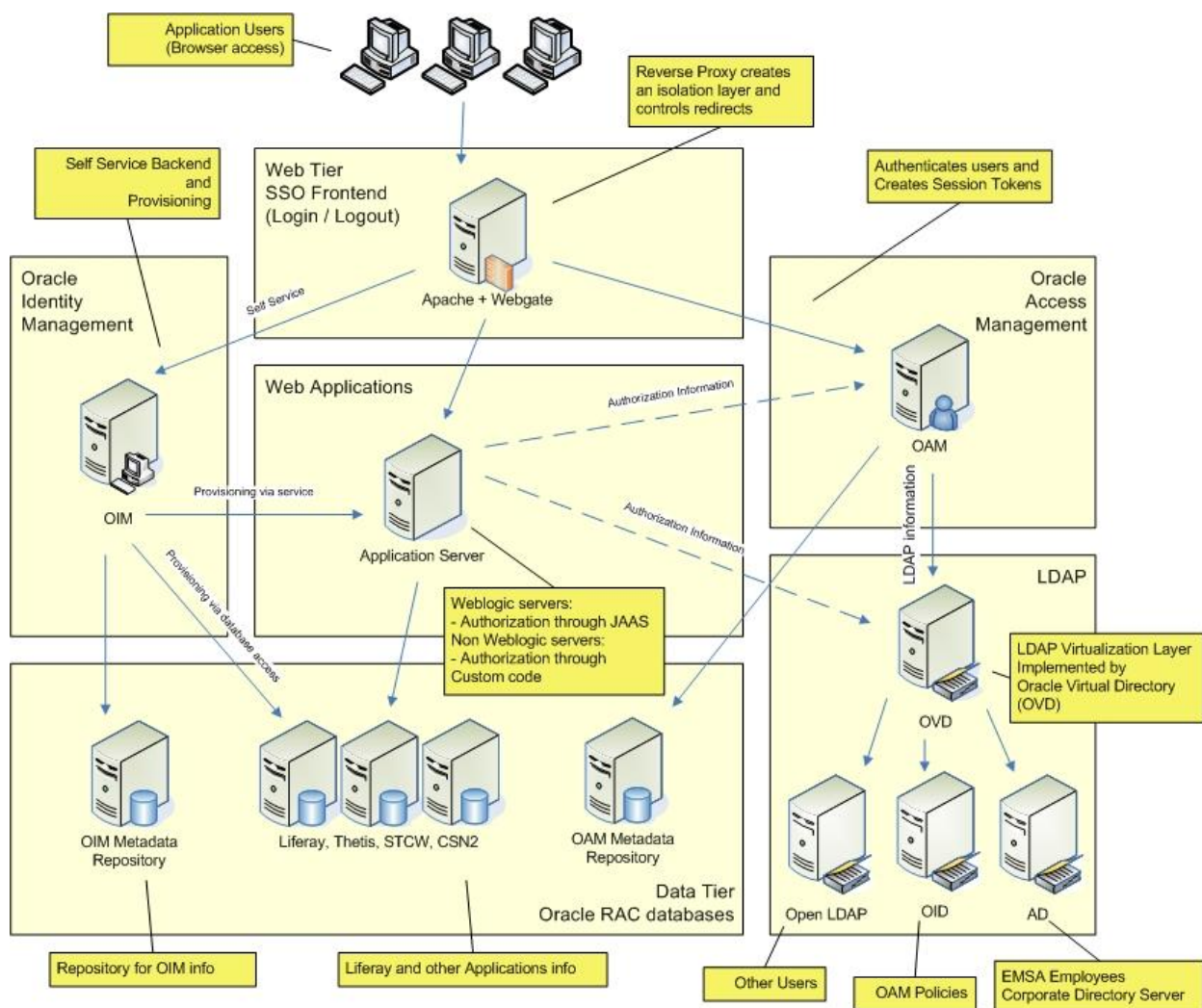


Figure 10: Identity Management Logical Overview

3.4. SECURITY

The implementation of EMSA applications shall follow and be compliant with the best practices for secure programming. The following recommendations and standards are mandatory and must be taken into consideration:

- SANS Institute recommendations for JAVA/JAVA EE Secure Software Programming (see Annex 1 or http://www.sans-ssi.org/blueprint_files/java_blueprint.pdf);
- OWASP Application Security Verification Standards (with minimum application security of "2A") (<http://www.owasp.org/index.php/ASVS>);

All applications shall be assessed against those recommendations and standards.

3.5. REPORTING PLATFORM

Reporting Platform
<ul style="list-style-type: none"> • JasperReports • Jasper BI

3.6. GEOGRAPHIC INFORMATION SYSTEM

GIS Platform
<ul style="list-style-type: none"> • ESRI Arc GIS • Jeppesen C-Map Professional + • GeoServer

Where applicable, the OpenGIS WMS (v1.3.0) and OpenGIS WFS (v1.1.0) standards shall be used for exchanging geographical data between applications. Additionally, OpenGIS KML (v2.2) may be used. These standards should follow the INSPIRE Directive 2007/2/E when possible.

3.6.1. Electronic Nautical Charts

EMSA distributes Electronica Nautical Charts to EMSA Maritime Applications, using OGC WMS standard. The ENC system is based on a 2 tier system:

- Application/distribution tier: Geoserver
- ENC database tier: IIS and Jeppesen C-Map Professional +

This system is redundant using a load-balancing approach implemented in the F5.

3.7. LOGGING

Log4J shall be the preferred library for generating application logs. All application logs should use the same log message format, as described below:

```
<param name="ConversionPattern" value="%d{yyyy-MM-dd/HH:mm:ss.SSS/zzz} %-5p [%-t] [%l] %x - %m%n" />
```

Mandatory fields and format:

- %d – date in the specified format
- %-5p - Priority of the logging event.
- %m - application supplied message associated with the logging event.
- %-t - name of the thread that generated the logging event.
- %l - location information of the caller which generated the logging event.
- %x - NDC (nested diagnostic context) associated with the thread that generated the logging event.

The following conversion patterns should be avoided as much as possible for Production environments, due to increased processing needs:

- C
- F
- 1, L
- M

The logging level should be changeable without requiring a restart of either the application or the application server. As for all configuration files, the log configuration file must reside outside of the packaged application.

Definition and implementation of log rotation and clean-up rules/processes is mandatory for every single logfile generated by the systems and its components.

3.8. STORING TIMES AND DATES

All EMSA servers, regardless of their function, shall use NTP to maintain accurate and aligned system clocks.

In order to prevent mismatches between data stored in different applications, all data shall in all cases be stored in Coordinated Universal Time (UTC). It is important to note that UTC, as opposed to local time, does not change with a change of seasons.

When a time is displayed to a user, used for triggering workflows or generating reports, it shall be the responsibility of the application to convert, if so desired, the stored UTC time to local time for the user. The final decision on if, or how the conversion shall happen, depends on the business requirements and will be an application decision. It is recommended for the user to be informed whether UTC time, user local time or source local time is displayed.

3.9. OTHERS

The following points are generic mandatory requirements that shall be respected:

- Root or rooted administration accounts shall not be used.
- All system components shall be used by the same OS user.
- Software distribution cannot be done using rpm or any other solution that requires root privileges.
- In case it is necessary to have authentication on middleware components (e.g. application server, JMS) a dedicated user must be used. This user cannot be administration user of the components.
- When using non-compiled languages (e.g. php, perl) the versions of these languages shall be aligned with the version distributed bundled in OS version
- Configuration files shall not include passwords in clear text. Solution to cope with this requirement may vary and must be agreed with EMSA.

If any deviation is foreseen, it shall be detailed and justified. EMSA has the last word in the decision process.

4. Service Oriented Architecture

EMSA applications should be compliant with the Enterprise Service Oriented Architecture with the objective of providing business and data services to others applications and being flexible and agile in order to easily adapt to change in short time.

EMSA Service Oriented Architecture is supported by a state of the art Service Oriented Infrastructure that follows the architectural best practices of the SOA metamodel.

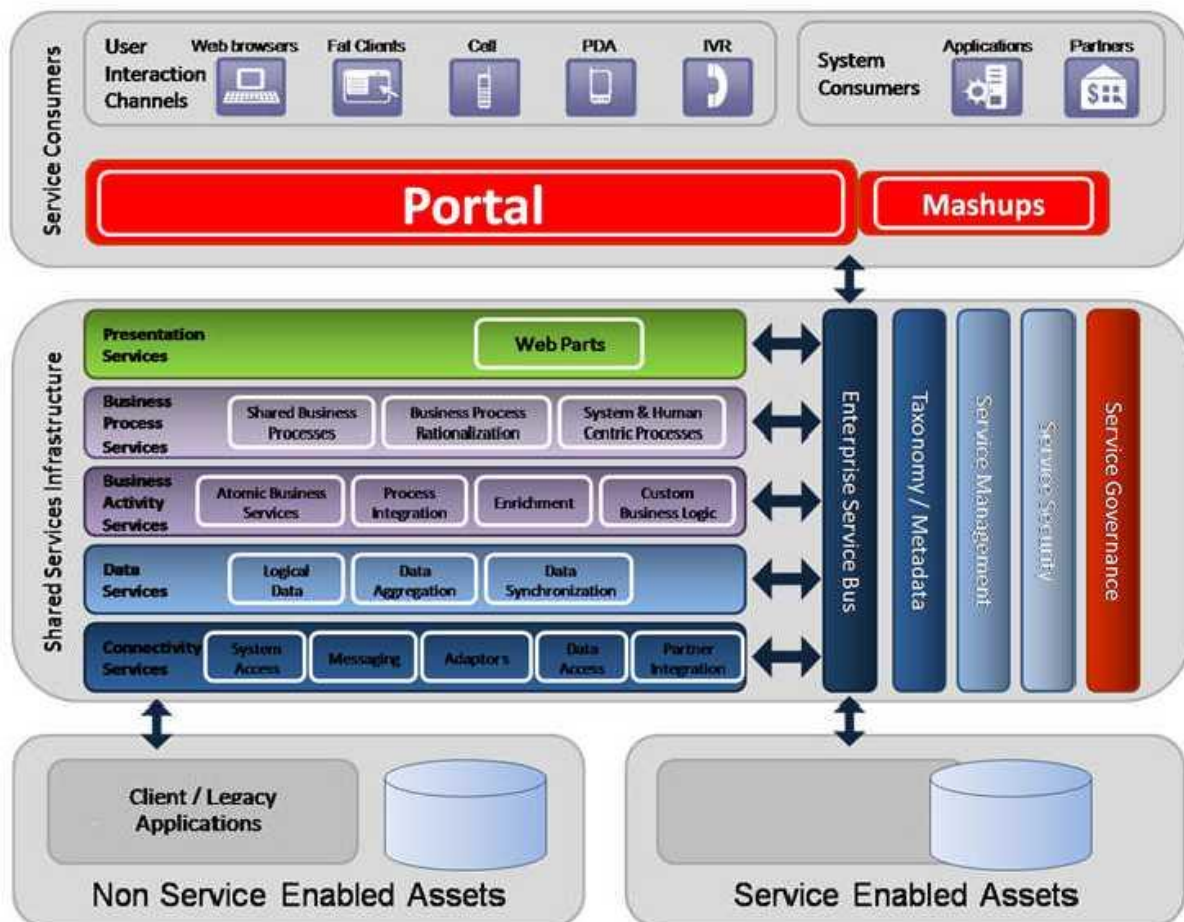


Figure 11: SOA architecture

The two major components supporting EMSA Service Oriented Architecture are:

EMSA SOA key components
<ul style="list-style-type: none"> • Liferay Portal, version 6.2 Enterprise Edition⁸ • Oracle SOA Suite 11g (includes OSB 11.1)

The fundamental building block of Service Oriented Architecture is a service. A service is a component that can be interacted with through well-defined interfaces or message exchanges. Services must be designed to perform simple, granular functions with limited knowledge of how messages are passed to or retrieved from and for flexibility, agility, availability and stability.

EMSA principles of service orientation, which must be followed while designing services, are:

⁸ Liferay 6.2: Weblogic 12c and JDK 1.7

1. Services are loosely coupled components
2. Services are independent components
3. Services are self-contained
4. Services boundaries are explicit
5. Services are autonomous
6. Services share schema and contract
7. Services are independent deployable (logical aggregation can be considered)

Services designed based on these principles are much more likely to be reused within EMSA growing SOA infrastructure.

4.1. SERVICE CONSUMERS

Service consumers or composite applications are the applications that are developed to handle business actions or events initiated by business initiators. Business event initiators are entities that initiate business actions or events (either human users or other systems).

4.2. SHARED SERVICE INFRASTRUCTURE

Shared service infrastructure defines the framework to shared services. It is based on Validate, Enrich, Transform, Route, and Operate or invokes (VETRO) patterns

Shared services are shared and reusable services that are used in service orchestration while creating business processes. Examples of shared services types are:

- Presentation services that present the data to the user.
- Business services that represent core business capabilities. Business services can range from relatively simple to very complex cross-functional, inter-enterprise business process.
- Data services that are entity services which provide access to enterprise data. Simple data services have a Validate, Create, Retrieve, Update, and Delete (CRUD) interface but more complex data services could be responsible for data aggregation or data synchronization.

5. LDAP Structure for Maritime Applications

5.1. LDAP STRUCTURE

The following figure provides an overview of the LDAP structure to be used for the different Maritime applications:

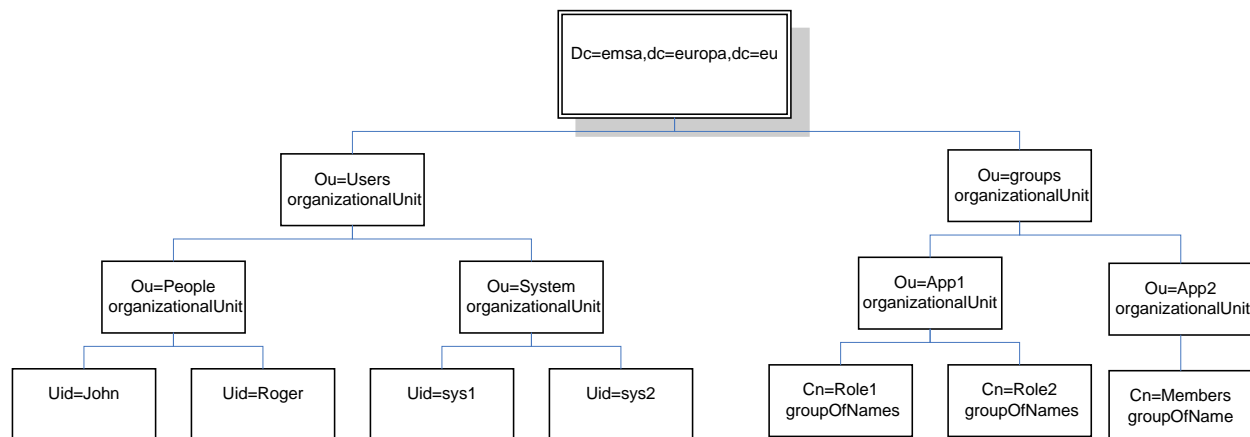


Figure 12 - LDAP structure overview

In this first implementation stage, this LDAP shall provide authentication services for users and systems and one first level of information to authorization services.

Domain Component DC=emsa,DC=europa,DC=eu		
OU=Users		This Organizational Unit will contain all the users registered to access any of the Maritime Applications. See also chapter "Authentication service"
	OU=People	Human users will belong to this Organization Unit
	OU=System	Systems (non-human users) will belong to this Organization Unit
OU=Groups		Information and groups stored below this OU will provide the first level of information to authorization services. See also chapter "Authorization service"
	OU=App1	Organizational Unit for Maritime Application (or system) called App1. All users and systems with granted access to App1 are under this group.
	OU=App2	Organizational Unit for Maritime Application (or system) called App2. All users and systems with granted access to App2 are under this group.

Table 1 - LDAP main elements

5.2. AUTHENTICATION SERVICE

Registered users are stored under OU=Users. A separation is made between Human Users and System Users:

- Human Users are registered under OU=People, OU=Users
- System Users are registered under OU=System, OU=Users

5.3. AUTHORIZATION SERVICES

Each Maritime Applications that must have its correspondent organizational unit under OU=Groups. Registered Users that have privileges to access a specific application must be member of that application to have access authorization granted.

Two different scenarios can be implemented:

1. Applications that requires only a global authorization

It is enough to know that access to the application has been granted to the user. In this scenario, it is suggested to create a group of name called "members" under the application organizational unit. All users authorized are members of this "GroupOfNames"

2. Applications that requires roles/groups authorization

There is the need to know that access to the application has been granted to the user and, in addition, what role/group does the user belong.

In this scenario, it is suggested to create several groups of names, one for each role/group under the application organizational unit. Users are members of one or more "GroupOfName"

6. Software Versioning Scheme

All applications being developed for or by EMSA shall use the following versioning scheme:

- [major].[minor].[revision]<.internal number>

Follows a description of the fields:

- Major will start 0 and will be increased by 1 every time significant new functionality is added to the application, or when significant changes to the implementation and/or organisation of the code have happened, such as:
 - When delivery of a new application or a major new version has been accepted, the major number will be increased by 1, other version numbers will be reset to 0;
 - Development of the next major version starts by increasing major version number by 1 and resetting all other version numbers to 0;
 - The above rules mean that all even numbered versions (+0) will be development releases for major new versions, whilst all odd numbered versions will be stable, production releases. E.g. if a software with version number 0.2.65 has been accepted for use in production environment, its version number will be 1.0.0. Development for the next major release will start at 2.0.0 and the production accepted release of this will carry a 3.0.0 version;
- Minor will be increased by 1 whenever less important new functionality or user interface changes are introduced;
- Revision will be increased by 1 whenever a new application version containing only bug fixes is delivered for deployment in EMSA pre-production environment;
- The internal number is an optional element that may be used by the contractor.

7. Summary

Area	Description	Technology	SW Version	Comment
Application Server		Oracle WebLogic	12.1.2 12.2	Active / Active Weblogic clustering is foreseen for critical applications
		Tomcat	6	
Backup	SW	VMware VM backup; Legato Networker	7.6 SP3	
	HW	HP MSL8096 and Dell PVT Tape Libraries	N/A	
Business Continuity	HW/SW systems to guarantee different degrees of service availability	Local scale: VMware HA and FailOver Geographical scale: Asynchronous data replication through the Storage Array; VMWare Site Recovery Manager;	ESXi V 5	
Clustering	Service fail-over	Front-end: Weblogic Active/Active Back-end: Oracle EXADATA	12c 12c	
Database		Oracle	EXADATA 12c	
Data Links	Internet connectivity	2 Internet circuits Internet IP connections	N/A	Each link: 100 Mbps, 256 Provided independent IP addresses
GIS		ESRI ArcGIS	10	Upgrade to a newer planned until the end of 2014
HW Servers	VM hardware	VMware Hardware revision 8 (vSphere 5)		Only production database is not virtualised and runs on blades as well.
	VM Host hardware	HP Blade and DL series servers	N/A	
ESB and SOA suite	Business processes integration	Oracle SOA suite	11g	
Monitoring System		Nagios	N/A	
Network Security	Security DMZ	Checkpoint blades	R75.40	2 node clustered configuration with Mobile Access VPN
Operating Systems		Linux and MS Windows	RedHat Enterprise Linux 5/6 Windows Server 2008	
Proxy	Security DMZ	F5 Big IP v5000 series proxies	11.4.0	Clustered configuration with 2 nodes
Reporting Platform		Business Objects	Enterprise XI R2	2 CPU Unlimited users
		Jasper Reports Jasper BI	6.2	
SAN Storage	Storage Area Network	Brocade Fabric; EMC Clariion Model CX4-240;		

		Netapp FAS3240		
Virtualisation		VMWare	vSphere 5	
Electronica Nautical Charts		Geoserver, IIS, Jeppesen C-Map Professional +	2.2 V360	For redundancy purposes: 2 nodes load-balanced in the F5

Annex 1

GSSP (GIAC Secure Software Programmer)

Java/Java EE Implementation Issues

www.sans.org

Task 1: Input Handling - Java programmers must be able to write programs that read input from their interfaces and properly validate and process these inputs including command line arguments, environment variables, and input streams. As these sources may ultimately derive from user input or other untrusted sources, Input Handling has security repercussions.

01.1.1 Input Validation Principles - Java programmers must understand that input cannot be trusted, regardless of the interface, i.e., HTTP Requests, Applet sockets, serialized streams, configuration files, backend datastores, etc. Java programmers must understand the white-list approaches and black-list approaches and the tradeoffs between them.

01.1.2 Input Validation Sources - Java programmers must recognize common sources of input to Java applications. This enables them to know when to question the trust level of certain data and weigh it to decide if input validation is warranted.

01.1.3 Input Validation Techniques - Java programmers must understand how to validate common data types such as String data as well as uncommon input structures. Familiarity with Regular Expressions, `doValidate()` and other tools of Java and J2EE to perform input validation are required.

Task 2: Authentication & Session Management - Java application programmers must have a basic understanding of Java and J2EE authentication APIs as well as a mastery of authentication principles for local and remote applications. For the purposes of this examination, Session Management is considered the process of maintaining an end-user's authenticated identity for an extended period. It is required that Java programmers understand the threats to common authentication and session management operations in order to properly protect these operations.

01.2.1 When to Authenticate - Java programmers must understand that authentication is needed not only for end-users, but also 3rd party services, backend systems, etc.

01.2.2 Authentication Protection - Java programmers are required to know how to use encryption and certificates to protect various authentication processes. This includes an understanding of strength-of-function, credential expiration, credential recovery/reset, and re-authentication.

01.2.3 Session Protection. For the protection of session tokens, Java programmers are required to understand the implications of several topics, including encryption, strength-of-function, lifespan of tokens, and re-issuance.

01.2.4 Rule 4: Authentication Techniques - Java programmers must be familiar with the more common authentication techniques and APIs available within Java and J2EE technologies. This includes the Java Authentication and Authorization Services (JAAS), backend credential storage, and various front-end authentication alternatives such as certificate, forms, and basic authentication. This familiarity assumes the programmer will understand the threats and tradeoffs for each technique.

01.2.5 Authentication Responsibilities - Java programmers must have a complete understanding of what services and protections are provided by using common APIs and what is not provided. For example, maximum session length, re-authentication, and encryption are protections that are not enabled automatically.

Task 3: Access Control (Authorization) - Java application programmers must be able develop applications that guarantee the confidentiality of user data. These applications must also prevent users from performing certain functions. Developers must understand that access control must actively be enforced, not ignored or left to backend systems.

01.3.1 Restricting Access to Resources - Java developers must understand the need for a clear and complete access control policy for system resources: for example, user data objects that should only be accessed by the owner of the data.

01.3.2 Restricting Access to Functions - Java developers must understand the need to restrict access to functions such as privileged functions and privileged URIs, etc.

01.3.3 Declarative Access Control - An understanding of the common APIs (and their tradeoffs) that supports access control according to configuration files.

01.3.4 Programmatic Access Control - Java developers must understand how and when to manually perform access control checks in their custom code.

01.3.5 JAAS - Java developers must understand how the Java Authentication and Authorization Service can be used to implement access control.

Task 4: Java Types & JVM Management - Java programmers must understand the security implications of built-in data types and Java-specific memory management.

01.4.1 java.lang.String - Java programmers must have a complete mastery of the String class's immutability and how to compare String objects.

01.4.2 Integer and Double Overflows - Java programmers must understand the limitations of Java's numerical data types and the resulting security implications.

01.4.3 Garbage Collector - Java programmers must have an understanding of how the Java Garbage Collector works and the resulting security implications.

01.4.4 ArrayList vs Vector - Java programmers must understand the differences and the resulting security considerations between the ArrayList and the Vector.

01.4.5 Class Security - Java programmers should be familiar with accessibility modifiers, the final modifier, class comparisons, serialization, clone-ability, and inner classes.

01.4.6 Code Privileges - Java Programmers must understand how to manage the privileges of code as well as the different protection domains. This includes an understanding of the Security Manager and its policy file.

Task 5: Application Faults & Logging - All Java application programmers need to be able to properly handle application faults.

01.5.1 Exception Handling - Java application developers must understand Java's try/catch/finally construct to appropriately handle application and system exceptions. Developers must determine how much information should be logged when an exception is encountered depending on the nature of the exception.

01.5.2 Logging - Developers must understand the principles behind logging security-relevant events such as login, logoff, credential changes, etc. Developers should also be familiar with Java's logging package, java.util.logging.

01.5.3 Configuration of Error Handling - J2EE developers should be familiar with the configuration to return a default error page for HTTP 404 and 500 errors.

Task 6: Encryption Services - Java programmers must understand when and how to use encryption to protect sensitive data.

01.6.1 Communications Encryption - Java application developers must be familiar with the Java Secure Sockets Extension (JSSE) packages as well as how to configure SSL communication for J2EE applications. Developers are also responsible for knowing which of their application's external links should be protected with encryption.

01.6.2 Encryption of Data at Rest - Java developers must understand how to store sensitive data in encrypted format.

Task 7: Concurrency and Threading - Java programmers must understand how to properly structure multi-threaded programs.

01.7.1 Race Conditions - All Java application developers must understand race conditions and how they affect system security. This includes avoiding caching security relevant information that can be accessed by multiple threads.

01.7.2 Singletons & Shared Resources - Java developers must understand how to implement the Singleton pattern in Java and how to protect other resources that are accessed by multiple threads.

Task 8: Connection Patterns - Java programs must be able to securely interface with other applications. Developers must be familiar with parameterized queries, output encoding, and fail-safe connection patterns.

01.8.1 Parameterized Queries / PreparedStatements - Java programmers must understand the security risks introduced by using dynamic queries and how to safely use the PreparedStatement to safely and securely interact with databases based on user-supplied input.

01.8.2 Output Encoding - Java programmers must understand when and how to use output encoding to display data to user interfaces, as this is a primary mitigation technique to UI injection attacks, e.g. Cross-site Scripting.

01.8.3 Fail-safe Connection Patterns - Java programmers must properly form connection patterns using Java's try/catch/finally to prevent resource leaks. Resource leaks can occur as a result of failures while operating with connections to external systems.

Task 9: Miscellaneous

01.9.1 Class/Package/Method Access Modifiers - All Java programmers must understand how the Java access modifiers (public, private, protected) can be used to protect class members and methods.

01.9.2 Class File Protection - Java programmers must understand how JAR sealing is used.

01.9.3 J2EE Filters - J2EE programmers must be familiar with J2EE Filters and how they can be used to implement many of the tasks listed above.

CONDITIONS OF USE REMOTE ACCESS TO EMSA IT NETWORK

EMSA provides remote access to its IT systems to selected contractors in order to facilitate the performance of services. Contractors are required to accept and observe the current Conditions of Use in order to ensure the EMSA IT systems are not compromised in the course of using the remote access facility.

1. Physical and logical protection measures of the Contractor

As defined in its ICT Security Policy in Annex II of this agreement, the Contractor protects its IT network and sub-networks from which remote access to the EMSA IT network is performed efficiently against intrusion, malware, malicious code and other threats. All tasks are carried out in a physically protected environment with logically protected information technology equipment, which EMSA representatives may inspect at request.

The Contractor's network is connected to any other network through a firewall corresponding to the latest industry standards.

The Contractor implements strictly its IT Security Policy which has been submitted to EMSA. Any changes to this policy and any incident that calls the efficiency of its security policy in question shall be reported with no delay to EMSA.

The Contractor performs the remote access to EMSA's VPN through professional Personal Computers specially designated for that purpose, and not through any other private or public Personal Computer.

These Personal Computers operate at all time during the use of the remote access facility with an operating system compatible with the EMSA VPN client software with the latest security patches, are configured with industry standard anti-virus software using the latest anti-virus signatures files and are malware free when scanned by the EMSA VPN anti-malware scanner.

2. Connecting to EMSA network

The Contractor's specifically designated staff and other collaborators access EMSA networks solely from the Contractor's network. The Contractor ensures that remote access will not be implemented from any other network or stand-alone host by introducing adequate measures, including an adequate physical control and protection of the physical protection devices (tokens) that are provided by EMSA.

The Contractor maintains a register of designated authorised staff and other collaborators and provides a list of such to EMSA. Any changes to the list of designated authorised staff and other collaborators shall be communicated to EMSA.

The Contractor informs the designated authorised staff and other collaborators about these Conditions of Use and requires an undertaking in writing by the designated authorised staff and other collaborators to comply with the rules and standards in place at any time when accessing EMSA IT networks under the remote access arrangements. Any failure to accept such undertaking in writing shall lead to the exclusion of the staff and other collaborators from the project carried out under the service contract.

The Contractor ensures that the software and hardware measures and mechanisms to ensure identification and authentication of any remote access defined and provided by EMSA are properly installed and used in compliance with this agreement and solely for the purposes of the contractual tasks defined in this agreement and the service contract.

The Contractor is responsible for the internal management and assignment of the authentication and identification mechanism(s) to its designated authorised staff and other collaborators.

The Contractor is liable for the consequences of the misuse or loss of the authentication and identification mechanism(s) allowing the use of EMSA systems by persons not belonging to the designated authorised staff and other collaborators.

3. Specific duties of the Contractor

The Contractor undertakes:

- to use the resources provided by EMSA for no other purpose than to execute the tasks for which they are provided;
- to destroy all data, which he has transferred to his premises or other data storage facility under his control in order to perform the tasks defined by this agreement once they are no longer needed for the tasks required by EMSA,
- not to put out of service the mechanisms set up in the course of this agreement,
- to apply best efforts to remedy as soon as possible any fault, problem, weakness that could appear and for which he is responsible, including those not foreseen in the course of this agreement and inform the EMSA IT Security Coordinator of any such incidences,
- not to disclose to any third party or any member of staff unless on a strict need-to-know basis and technical information or data that may facilitate unlawful or malicious intrusion into EMSA networks. Such information shall be kept under strict physical control (safe) and shall be protected against undetected copying.

4. Designated authorised staff and other collaborators

Members of the designated authorised staff and other collaborators:

- conform to the security rules and policies of the Contractor;
- do not disclose any information held by the Contractor on behalf of EMSA to third parties, except on a need-to-know basis where authorised;
- make use of all reasonable means of controlling access provided by the Contractor and in balance with the sensitivity of the information system concerned to prevent unauthorised persons from using the resources at their disposal, in particular by ensuring that computer terminals are not accessible during absences, however short these absences may be;
- do not access services for which they have not been explicitly granted authorisation, whether or not the services in question belong to the Contractor or to EMSA;
- do not disclose authentication procedures or share them with third parties unless strictly required to do so by the needs of the service and following consultation of the EMSA IT Security Coordinator;
- do not install or use on computers (work stations, local or central servers, etc.) any equipment or programmes, from portable storage media (diskettes, optical disks, etc.) or downloaded from electronic bulletin boards, e-mail systems or telecommunications networks belonging to third parties, unless explicitly authorised by the Contractor;
- do not install or have installed connections with networks without explicit authorisation from the Contractor;
- do not set up electronic bulletin boards, e mail systems, modem connections or any other type of information communication system that could enable unauthorised persons gaining access to the Contractor's or EMSA's systems;
- do not use equipment or software that is their private property when connected to the Contractor's and/or EMSA's network without prior explicit authorisation from the Contractor;
- notify their superior as soon as they suspect any failure or incident affecting the security of their own IT Network environment or of other systems;
- take all possible steps in respect of availability, confidentiality and integrity to safeguard the security of their working environment, particularly as regards working methods they have introduced or developed themselves.

5. Obligations

The contractor and EMSA undertake:

- to inform each other of any attack on the security mechanisms of their systems that could affect the security of the other;
- not to hold each other liable for delays occasioned by shutdowns of their systems in order to enforce security or repair damage caused by attacks from a third party whether known or unknown;
- to act immediately to cease data communication with the other if in good faith they believe that the security of either of the networks for which they are responsible is at risk and until that risk is identified and countered.

6. EMSA remote access environment

An authentication mechanism and an access control mechanism managed by EMSA are set up at the connection point with EMSA's internal network. These mechanisms ensure that only the designated authorised staff and other collaborators of the Contractor have access to EMSA's internal resources when it is granted to perform contractual tasks. EMSA staff is able to interrupt remote interventions immediately and at any time from its premises. The remote intervention process grants only the access rights assigned by EMSA staff from their premises. An audit trail is generated in the EMSA environment.

7. Authentication and identification

At the boundary of EMSA's network, the mechanism for authentication and identification is based on a two factors authentication using credentials (username + password) plus a one-time-password which is currently provided by a hardware RSA token. EMSA reserves the right to change schema and technologies involved in the authentication process at any time, informing in advance the Contractor. The one-time-password device will be sent to the representative of the Contractor. The associated credentials will only be sent after reception (by means of a fax) of the acknowledgement of reception for the token(s). This document with acknowledgement of receipt must be signed by a duly authorised representative of the Contractor. When a member of the designated authorised staff and other collaborators wants to connect to an EMSA ICT resource (inbound connection), a VPN tunnel shall be initiated establishing a session with the VPN gateway of EMSA. The VPN gateway sends back an authentication request. This request must be answered by sending the credentials together with the value shown on the one-time-password device. If the authentication is successful, the connection to the EMSA resource is open. The tokens are under the sole responsibility of the Contractor.

The establishment of the VPN tunnel imposes the usage of a specific VPN client. Currently EMSA delivers client software for Microsoft Windows only - that the Contractor is required to use. Access by other means such as third party clients or web based clients, is explicitly forbidden. The VPN client software launches a security compliance checking during the VPN tunnel establishment. The windows machine is required to have the latest service pack and security patches installed and an updated anti-virus with on-access scanner capabilities. A quick audit of the client machine is also performed searching for traces of malware. If the windows client machine is found to be non-compliant, the remote access to EMSA is denied.

All costs linked to the remote access to the EMSA network, like telephone costs, costs of leased line, costs of routers and costs of spare hardware VPN client must be borne by the Contractor.

8. Access & Contact Grids

In Appendix 1 of this agreement are detailed the following:

1. Contractor's contacts for remote access setup and incident handling;
2. Contractor's staff for which remote access tokens are requested;
3. EMSA Contacts for remote access setup and general project and ICT security incident handling;
4. To which EMSA applications and information assets the contractor will be granted access;
5. Relevant contractor's data transmission network details.

Accepted:

For the Contractor

Annex I

ACCESS & CONTACT GRIDS

CONTRACTOR'S CONTACTS		
Project Manager <i>Set-up and management of the connection</i>	Name	
	Function	
	Telephone	
	Email	
Contact person/team <i>Incident handling during working hours (including operational and security incidents)</i>	Name	
	Function	
	Telephone	
	Email	
Contact person/team <i>Incident handling outside working hours (including operational and security incidents)</i>	Name	
	Function	
	Telephone	
	Email	
Escalation procedure	Name	
	Function	

<i>Incident handling (including operational and security incidents)</i>	Telephone	
	Email	

Requested token and authorized staff			
<i>Typically EMSA will provide a single token. Should the contractor require additional tokens, it should be reflected on the table below. Additional tokens will only be provided under exceptional circumstances with proper justification.</i>			
Token number		Member staff and role	
		Member staff and role	
		Member staff and role	

EMSA'S CONTACTS		
Project Officer <i>Set-up and management of the connection</i>	Name	
	Function	
	Telephone	
	Email	
ICT Service Desk <i>Set-up and management of the connection</i>	Name	Roar Fondse
	Function	ICT Service Desk
	Telephone	+351 21 1209 321
	Email	ICT.servicedesk@emsa.europa.eu
Contact person/team <i>Incident handling 24/7 (including operational and security incident)</i>	Name	Maritime Support Service (MSS)
	Function	24/7 Maritime Support
	Telephone	+351 21 1209 415
	Email	maritimesupportservices@emsa.europa.eu

INBOUND NETWORK ACCESS TO EMSA'S ICT RESOURCES

For each resource, indicate the services required to perform the tasks described in the specific agreement.
Use one line per service even if several services are hosted on the same server.

Inbound Connections to EMSA's ICT Resources (Normally completed by EMSA PO with the Input from the contractor)											
ID	Application (and DC Rfc number if applicable)	Associated Application Data Assets (e.g. SSN ship coordinates, user database)	Component (Oracle, WebLogic, Linux account, etc.)	IP Address or NAME (Name or DNS Name or Generic service)	Location (DMZ or Data Centre or EMSA Intranet)	Service Port ¹	Port Description ²	Access Starting Date ³	Latest End Date ⁴	Description	Authenti- cation Type
1											
2											
3											

¹ Application port number (ex: TCP 80, TCP 443, TCP 2010 ...). UDP based applications protocols are not permitted.

² Application (protocol) name (ex: HTTP, HTTPS ...). For custom protocols, enter the name of the protocol (if exist) or the name of the application accessed through this protocol.

³ Access to the specific resource will be **opened** as from this day on.

⁴ Access to the specific resource will be **blocked** as from this day on

Inbound Connections to EMSA's ICT Resources
(Normally completed by EMSA PO with the Input from the contractor)

ID	Application (and DC Rfc number if applicable)	Associated Application Data Assets (e.g. SSN ship coordinates, user database)	Component (Oracle, WebLogic, Linux account, etc.)	IP Address or NAME (Name or DNS Name or Generic service)	Location (DMZ or Data Centre or EMSA Intranet)	Service Port¹	Port Description²	Access Starting Date³	Latest End Date⁴	Description	Authenti- cation Type
4											
5											
6											
7											
8											

CONTRACTOR'S OUTBOUND ACCESS NETWORK AND ICT RESOURCES USED FOR THE ACCESS TO EMSA'S ICT RESOURCES

Data Transmission Network <i>(This information will be used for compliance checking and troubleshooting purposes)</i>	
Inbound Internet Link Bandwidth <i>("P" for primary connection and "B" for back-up connection)</i>	
Outbound Internet Link Bandwidth <i>("P" for primary connection and "B" for back-up connection)</i>	
Operational System where VPN client will be installed <i>(Specify if Windows XP, Windows Vista or Windows 7)</i>	

Annex II

DESCRIPTION OF THE CONTRACTOR'S SECURITY POLICY

The following table details the list of attachments that constitute the contractor's Security Policy. A copy of all listed documents is included in Annex II.

[illegible]

License Agreement for Use of Software

1. EMSA shall provide the Contractor with the following Software and related Documentation (further referred to as '*Software*'), which enables installation on the Contractor's test side:
[complete]
2. As regards to the *Software* for which the intellectual property rights are the property of EMSA or which have been licensed to EMSA by third Parties, and which the Contractor is likely to use in the execution of its obligations under this Contract, EMSA expressly authorises the Contractor to use such *Software* within the limits strictly necessary for the execution of this Contract.

In view of the preceding paragraph, the Contractor undertakes:

- not to copy any such *Software* without prior written authorisation from EMSA;
 - to use such *Software* exclusively in the context of this Contract;
 - to protect and indemnify EMSA against all third-party claims or actions alleging a breach of their Intellectual property rights, or a use of such *Software* in contravention with the present Article;
 - to take all measures necessary vis-à-vis its end user personnel and persons having access to the *Software*, to ensure that the confidentiality of the *Software* is observed;
 - not to pledge, assign, sub-license, transfer or lend, for payment or otherwise, the *Software*;
- to inform EMSA immediately in the event of seizure, to protest against it and to take all necessary steps in order to safeguard the integrity of EMSA's intellectual property rights.
3. Each party shall inform the other party of the existence or threat of any third party's action or claim alleging an infringement of EMSA's intellectual property rights by Contractor's use of the *Software* delivered by EMSA under the Contract, provided such use is made in conformity with the terms of this Contract.
 4. In the event of unauthorised disclosure of confidential information by either party, the other party shall address it a warning by a 'Means of Registered communication', requesting the first party to confirm that it will no longer disclose the said information. If no satisfactory response is obtained within the requested time limit, the other party is entitled to terminate this Contract. The parties recognise that damages may not constitute sufficient compensation for the other party, who may require reparation by injunction or other relief judged appropriate or necessary by the appropriate court of law.

The Contractor shall return to EMSA the *Software* as stated in Article 1 of this 'License agreement for use of Software' upon completion of the Contract at the latest, in accordance with Article *[complete]* of Specific Contract n° *[complete]* implementing Framework Contract n° *[complete]*. Nevertheless EMSA may request the Contractor at any time before this date to return the *Software* as stated in Article 1, without being required to pay compensation.

ANNEX III

SPECIFIC CONTRACT N° [complete] implementing Framework Contract No [20xx/EMSA/OP/04/2017] (Time & Means)

The European Maritime Safety Agency (hereinafter referred to as "EMSA"), with its seat at Praça Europa 4, 1249-206 Lisbon, Portugal, VAT registration no.: 507 685 326, represented by Markku Mylly, Executive Director

on the one part,

and

[official name in full]

[official legal form]

[statutory registration number]

[official address in full]

[VAT registration number]

(hereinafter referred to as "the Contractor"), [represented by [name in full and function,]]

on the other part,

HAVE AGREED

Article III.1: Preamble

This Specific Contract is based on the Contractor's bid dated XX.XX.XXXX (reference). Once signed by the parties, the Specific Contract shall be governed by the Framework Contract. This Specific Contract does not amend the provisions of that Framework Contract.

Article III.2: Subject

III.2.1 The subject of this Specific Contract is *[short description of subject]*. ><This Specific Contract relates to lot *[complete]* of the Framework Contract.>

III.2.2 The Contractor undertakes, subject to the terms set out in the Framework Contract and in this Specific Contract and its Annexes, which form an integral part thereof, to perform the tasks specified in Annex I.

Article III.3: Duration and location

III.3.1. This Specific Contract shall enter into force at the earliest on the date it is signed. The execution of the tasks shall end on or before *[complete date]*. The period of execution of the tasks may be extended beyond indicated period only with the express written agreement of the parties before such period elapses by means of an amendment to this specific contract. In no case shall the tasks be executed later than six (6) months after expiry of the Framework Contract.

III.3.2 If the number of days agreed has not been fully taken up, EMSA shall not be obliged either to use or to pay for the days not worked and the Contractor shall not be entitled to claim damages for them.

Article III.4: Performance

III.4.1. Every day the service provider shall - according to procedures laid down by the competent technical person in EMSA as specified in the Specific Contract - notify EMSA of the time spent working under the Specific Contract. At the end of every month, the service provider shall complete and sign the time sheet contained in Annex 3 and send it to the competent technical person in EMSA for verification.

III.4.2. The service providers are:
XXXXX
XXXXX

Article III.5: Prices and Payments

III.5.1. EMSA undertakes to pay the Contractor, in consideration for the services rendered under this Specific Contract.

- an amount of EUR XXX per day of actual services rendered, for XX days for profile (specify profile and - if relevant- level), i.e. a total of EUR XXXXX, by following service providers:

* (name of service provider) *[where appropriate add: for XX days, i.e. a total of EUR XXXXX]*

* (name of service provider) *[where appropriate add: for XX days, i.e. a total of EUR XXXXX]*

* (name of service provider) *[where appropriate add: for XX days, i.e. a total of EUR XXXXX]*

(specify the profile (and possibly level) of the service providers in accordance with the profiles listed in the Annex V to the Framework Contract)

When a profile includes more than one service provider and a number of days has been indicated for each service provider, the total number of days executed by each service provider can be modified, provided that the total number of days for the profile is not exceeded and following a written agreement or notification by mail, fax or e-mail by one of EMSA responsible persons.

If, during the Factory Acceptance Tests (FAT), the Contractor fails to successfully demonstrate the following functionalities at the following quality thresholds:

- [-xxx;
- xxx ...],

these functionalities may be subject to de-scoping and, accordingly, the associated payment shall not be executed.

III.5.2. The total amount to be paid by EMSA under this Specific Contract shall be EUR XXX [amount in figures] covering all tasks executed. This amount shall cover all expenditure incurred by the Contractor in performing this Specific Contract.

[III.5.3.] In conformity with Article II.1.5.4 of the General terms and conditions for Information Technologies contracts, the invoicing procedures for the services, once accepted by the Commission, are as follows:

<Amounts in the Specific Contract over EUR 25 000:>

- at the end of each calendar quarter, on the basis of time sheets signed by EMSA and the service provider using the form in Annex 3 (these time sheets must be attached to the invoice)

<Amounts in the Specific Contract below EUR 25 000:>

- once the work has been completed, on the basis of time sheets signed by EMSA and the service provider using the form in Annex 3 (these time sheets must be attached to the invoice)]

Article III.6: Use of results

[Not applicable]

[Insert details on the intended use of results linked to the specific request for service supplementing or replacing clause 9 of the Special Conditions]

ANNEXE[S]

Annex A - Statement of Contractor concerning right to delivered result

Annex B - Statement of creator / intermediary in delivery

Annex 1 – Technical Annex

Annex 2 – Contractor's specific Tender (no [complete] of [complete])

Annex 3 – Time Sheet

SIGNATURES

For the Contractor,
[Company name/forename/surname/function]

For EMSA
[forename/surname/function]

signature[s]: _____

signature:_____

Done at, on

Done at Lisbon, on

In duplicate in English.

ANNEX IV

Tender Specifications

ANNEX V

Contractor's Tender (No [complete] of [complete])

ANNEX VI

IPR Identification Form

1. CONTRACT INFORMATION

Contract

number:

Contractor:

2. RESULTS

Do results incorporate
pre-existing rights?

YES ☐

(If yes, please complete part 3)

NO ☐

Do results/pre-existing rights
incorporate trade secrets?

YES ☐

(If yes, please complete part 4)

NO ☐

3. PRE-EXISTING RIGHTS (if applicable)

Please indicate below separately the different pre-existing rights incorporated in the results.
(In order to add another pre-existing IPR, please press the box "Add item")

Pre-existing IP
(+short
description)

IPR applicable

(Please identify IPR: copyright and/or related rights; database right; patent, trademark; design; ...)

Registered IPR?

YES ☐

NO ☐

(If Yes, please provide proof of registration)

IPR duration
(according to
national law)

IP ownership

CONTRACTOR ☐

THIRD PARTY ☐

PROPRIETARY license ☐

OPEN SOURCE license ☐

Add Item

X

4. TRADE SECRETS (if applicable)

Please indicate below separately the different trade secrets incorporated in the results/pre-existing rights.

(In order to add another trade secret, please press the box "Add item")

Trade secret
(+short
description)

Ownership

CONTRACTOR ☐

THIRD PARTY ☐

Add Item



I, **[insert name of the authorised representative of the contractor]**, declare that this statement is true and accurate.

Date, place and signature:

This form should be provided to EMSA at the same time with the delivery of the results (and pre-existing rights), duly completed and signed by the authorised representative of the Contractor.

Annex VII To IT Framework Contract

**Working
Procedures and
Service Levels
for Help-desk and
corrective
Maintenance**

Specific requirements for corrective maintenance and help-desk services

Withstanding the requirements mentioned in the tender specifications, the following specific requirements apply:

1. The contractor within this type of service may be requested to carry out, under a specific contract, one or more of the following tasks:
 - Receive notifications on service failures, control the processing of the reported incidents and keep EMSA informed about the status of issues;
 - Provide helpdesk according to the priority levels set in here-in;
 - Analyse the incidents causing unforeseen service interruption and provide feedback to orient the required interventions for repair or maintenance by EMSA or by its contractors;
 - Incorporate minor change requests to the application code to correct blocking or serious errors and/ or address a change of requirements by the MS
 - Support the back-up and recovery in case of failure;
 - Analyse performance bottle-necks;
 - Analyse backup needs for production environments;
 - Analyse monitoring needs for production environments;
 - Implement monitoring parameters/interfaces as required by EMSA.

These tasks will be performed respecting at least the minimal procedures and minimum service levels prescribed in the “Service level agreement for corrective maintenance and help desk services”

2. Minimum reports and deliverables per type of service:
 - a. Provision of the services required respecting the requirements, procedures and service levels.
 - b. Inclusion of the results of analysis of each incident in TeamForge (the tool used by the Agency for Application Lifecycle Management).
 - c. Quarterly reports for the services provided.

Service level agreement for corrective maintenance and help desk services

Scope of SLA

The SLA covers all the software components for service (s) covered by the specific contract for help-desk and corrective maintenance. These software components may be hosted at EMSA or another location managed by a Member State and/ or a third party chosen by EMSA.

The SLA covers all the functional, non –functional and security related issues, detected by EMSA staff, another Contractor of EMSA, the software development contractor and MS following the placement of a patch release in production. A functional issue may relate to:

1. A “bug” (deviation of the system from the agreed specifications); and/ or
2. Changes of minor scale in the system behaviour (i.e. those related to the change of an applicable business rule) addressing an existing operational requirement that was not foreseen in the implementation contract for the release that is in production and/ or a change in the system behaviour requested by the MS.

It should be noted that bug resolution should normally take place under warranty. The aim of the SLA is to ensure that the resolution of bugs will take place in a timely manner in accordance to their priority (refer below). Resolution of bugs for software components not covered by warranty shall be covered under the a specific contract drawn for corrective maintenance and help-desk services.

Priority definitions

The priority levels (scheduled, low, normal, urgent, or critical) for all system interventions (for maintenance and reported bugs) shall be classified by EMSA Staff. The priority will determine the procedure for processing and solving any issues including those detected or system incidents reported by users. The classifications are based on an assessment of the importance and urgency of the issue as well as the consequences for the Agency and the Member States exchanging data using a service covered by the specific contract for help desk and corrective maintenance services.

The priority definitions are defined in the table below:

Priority	Definition
1: Critical	An incident causing total loss of the primary functions of the service (s) covered by the specific contract for help-desk and corrective maintenance.
2: Urgent	An incident with blocking effects on the work-flow of an individual or a small group of users of the service (s) covered by the specific contract for help-desk and corrective maintenance.
3: Normal	An incident affecting an individual user or a small group of users causing interruptions to the normal work-flow of the service (s) covered by the specific contract for help-desk and corrective maintenance.
4: Low	A minor incident affecting only an individual or a small group of people with minor consequences to the work-flow of the service (s) covered by the specific contract for help-desk and corrective maintenance.
5: Scheduled	Issues or maintenance requiring a scheduled intervention in agreement with EMSA. This can be an issue requiring an intervention addressing minor faults or to pre-empt any service quality degradation, for those service (s) covered by the specific contract for help-desk and corrective maintenance..

Response to issues reported for analysis/ resolution

For the purpose of this contract the following definitions apply:

Acknowledgement time	The time elapsed from the moment the request was received by the contractor's Helpdesk until the acknowledgement by mail or phone.
Analysis Time	The analysis time includes analysis of the call, provision of impact to the application and resolution planning.
Resolution Time	Resolution time is the time between the completion and publication of the call analysis until completion of a successful intervention that re-establishes the affected function which triggered the incident.
Processing Time	The processing time is the total time in which the user can expect resolution of the reported incident. It starts after the incident is reported to the contractor by phone or e-mail or detected by an user or a member of EMSA or regional server operator staff. This covers the time for acknowledgement, analysis as well as the resolution time.
Normal working hours	Working hours of EMSA (Monday to Friday is from 08:30 to 18.00 (UTC), in accordance with EMSA official calendar)
Time base	Period during which the above mentioned acknowledgement/ analysis/ resolution actions related to an issue reported to the contractor must be completed. For example if the priority of an issue is "Normal", the time base is from Monday to Friday, normal working hours, the analysis time for an incident happening on Friday evening, one hour before end of normal working hours will include one hour on Friday plus the additional time spent on Monday as from 8h00.

The acknowledgement time should be less than 15 minutes. The maximum acceptable analysis and resolution time, depending on the priority level of an intervention or incident, is identified in the table below:

Priority	Analysis Time	Resolution time
Critical	2 working hours	1 working days
Urgent	4 working hours	5 working days
Normal	2 working days	15 working days
Low	5 working days	30 working days

Procedures for issue analysis and resolution

The bugs detected during an incident affecting an operational service shall be reported following the procedures and workflow applicable for incident or problem management.(refer to the relevant annex of the tender specifications) . The procedure for the bug analysis, resolution and reporting is outlined below.

The actions to be undertaken are:

	Action	Remarks	Responsible
1	In the event that the incident was detected by EMSA staff and/or reported by a MS to MSS: Incident is reported to the contractor by e-mail (sent by MSS or the Application team) and then registered in Teamforge. All the actions taken by the contractor to resolve the incident shall be recorded in TeamForge (by the contractor ¹).	EMSA shall set the priority level.	EMSA
3	Investigation and diagnosis.	Analysis time as above.	Contractor (and EMSA)
4	Resolution and recovery.	Resolution time as above.	Contractor
5	Incident is closed.	EMSA is informed by e-mail.	Contractor
6	A report on the incident is recorded in TeamForge and (if the nature of incident was critical/ Urgent) e-mailed to EMSA.	Deadline for this report is the next working day after the incident, latest by 12:00 o'clock UTC.	Contractor

The priority definitions/response/acknowledgement times are applied as specified above.

For critical/urgent incidents, a report will be recorded in TeamForge and e-mailed to **EMSA/[project officer responsible for the specific contract for corrective maintenance and Help Desk Services]** the next working day after the incident, by 12:00 UTC the latest.

Content of the Incident Report as per Point 6 will include as a minimum:

- TeamForge artifact number as well as the EMSA ticketing tool reference (NUMARA) if this reference was previously recorded in the TeamForge artifact by the reporting officer that opened the artifact.
- Date and time of the incident being reported via email/telephone by EMSA to the contractor.
- Contact information of the EMSA contact person (First and last name, telephone number).
- Date and time of Acknowledgement.
- Classification of the incident.
- Analysis date and time.
- Resolution date and time.
- Processing time of the incident.
- Incident closure date and time.
- Root cause of the incidents.
- Actions taken.
- Suggested supplementary actions.
- Availability statistics (per MS connection).

¹ As a normal practice, the contractors shall be granted access to TeamForge to update the description of artifacts.

- Justification in case of violation of times.
- Enclosures to the report.
- Report date and time.

Every quarter, a summary report is to be provided by the Contractor via e-mail to the **EMSA/[project officer responsible for the specific contract for corrective maintenance and Help Desk Services]** during the first five working days of the relevant month, by 16:00 UTC at the latest. The report shall include references to the TeamForge artifacts opened for the issues reported by EMSA to the contractors. The template used for the report should be agreed with the Agency.

If decided by EMSA, two exercises per year an exercise could be planned, coordinated and executed by the contractor and the Agency. The objective is to determine the staff preparedness and readiness in relation to the performance requirements. The content of the exercise shall be agreed between the contractor and EMSA. A joint post-exercise evaluation will follow to agree, as appropriate, an action plan for possible improvements (if any).

SLA monitoring

Performance of the Contractor against the SLAs as defined above (refer to response to issues). will be assessed on quarter basis with Maintenance reports including the following statistics (all timing based on UTC):

- Median and mean average time of TtA and TtS (see definitions below) shall be provided, grouped per priority, over the reporting period. Outliers have to be reported as well.
- List and statistic of all issues which are not closed, grouped by priority. The contract status (within or outside SLA) has to be provided
- All issues which have been closed or are in process in the reporting period. The TtA and TtS shall be provided, grouped per priority. The compliance with the SLA has to be indicated.

Definitions

Time to acknowledge (TtA): The time the contractor is informed of the problem until the contractor provides an initial investigation and analysis of the problem

Time to solve (TtS): The time the contractor is informed of the problem until the moment the problem is solved and a hotfix was provided.

Penalties

According to the terms included in the FWC contract the following price reductions shall be applied in case of service non-compliance, for services provided under a corrective maintenance and help-desk services contract:

- (i) For non-compliances related to “Critical” issues: A reduction to the contracted value equivalent to (for each day of breaching the SLA) the price of two person days of a senior programmer rate, up to a maximum 10% reduction to the contractual value.
- (ii) (For non-compliances related to “Urgent” issues: A reduction to the contracted value equivalent to (for each day of breaching the SLA) the price of one person day of a senior programmer rate, up to a maximum a 7% reduction to the contractual value.
- (iii) For non-compliances related to “Standard” issues: A 5% reduction to the contracted value if, during the course of the contract at least 10 breaches of the SLA for “Standard” issues are recorded.