

**Ref. Frontex/OP/726/2016/AH**

**Multiple Framework Contract for the Provision of  
Services related to SAS software, Microsoft BI and  
ESRI GIS**

**Terms of Reference**

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## 1. Terms and Definitions

The terms in the table below, appearing either in a complete or in an abbreviated form, when used in this document and its appendices, shall be understood to have the following meaning. *General Terms and Conditions for Information Technologies Contracts* provides additional terms and definitions used in this document.

Term	Abbreviation	Meaning
24/7/365	24/7	<i>Used for defining services to be provided around the clock every day of a year when the differentiation of Normal and Extended Working Hours is not applied.</i>
Bespoke software	Custom	<i>Bespoke or custom-developed software is software which is commissioned, designed and developed specifically for Frontex. It is implemented in programming language,</i>
Business Intelligence	BI	<i>For the purpose of the document Business Intelligence shall be understood mainly as a software supporting acquisition and transformation of raw data into meaningful and useful for business analysis purposes</i>
Cascading/Ranking Mechanism	Cascade	<i>The cascading mechanism is a mechanism applied for using multiple framework contracts. Frontex ranks the tenderers in descending order, based on the results of the evaluation, with a view to establishing the list of contractors and the sequence in which they will be offered orders. Frontex always contacts the contractor at the top of the list. If that contractor is unavailable or incapable to respond for reasons which do not entail terminating the contract, the second contractor may be contacted, and then, if necessary and under the same conditions, the third.</i>
Commercial Off-The-Shelf Software	COTS	<i>Commercial software products, components, development libraries, templates, scripts, , management and development tools which are offered in the commercial marketplace. It can be purchased, leased or licensed to the general public.</i>
Customisation		<i>Alignment of the OOTB, COTS and 3rdP functionalities and features to Frontex requirements by configuration, setting and scripting (including sql queries, power shell and java scripts) without Custom development. Customisations shall be delivered in form of templates and power shell scripts for the distribution of the templates.</i>
Extended Working Hours	EWH	<i>Any working hours other than Normal Working Hours.</i>
Fixed Price	FP	<i>Fixed Price assignments as defined in the GTCITC.</i>
Framework Contract	FWC	<i>Contract resulting from this call for tenders (for particular lot).</i>
Frontex	FX	<i>The European Border and Coastguard Agency.</i>
Frontex Headquarters	FX HQ	<i>Frontex premises located in Warsaw, Poland.</i>
Geographic Information System	GIS	<i>Computer system for capturing, storing, checking, analysing and displaying data related to positions on Earth's surface.</i>
Maintenance day		<i>Maintenance day lasts:</i> <ul style="list-style-type: none"><li>• 10 hours for Basic Service Window in NWD</li><li>• 24 hours for Standard Service Window in NWD</li><li>• 24 hours for Critical Service Window for every calendar day</li></ul>

Man-day	<i>md</i>	<i>8 hours of work by one person. Typically md is performed in the hours agreed with Project Manager (e.g. 8:00 - 16:30 or 9:30-18:00) and must include 30 minutes break that does not fall into the 8 hours of work.</i>
Member State	<i>MS</i>	<i>The European Union member state.</i>
MS SharePoint	<i>SP</i>	<i>Microsoft SharePoint 2013 Enterprise Edition or newer.</i>
Normal Working Day	<i>NWD</i>	<i>From Mondays to Fridays inclusive, excluding Frontex holidays. Frontex holidays usually cover Easter Break, 1-3 May, 9 May, Corpus Christi in June, Assumption Day in August 1 and 11 of November, last week of December and 1 day of January. Detailed list will be provided to the Contractor at the end of each calendar year.</i>
Normal Working Hours	<i>NWH</i>	<i>Normal working days from 08:00 to 18:00</i>
Order Form	<i>OF</i>	<i>See GTCITC terms and definitions.</i>
<i>Other Locations</i>		<i>Place of performing tasks contracted under this Contract that are different from Frontex Headquarters and official Contractor's premises.</i>
Out of the Box Software	<i>OOTB</i>	<i>A ready-made software that meets a requirement that works straight after its installation without a special software development effort.</i>
Personal Data		<i>Shall have the same meaning as set out in the Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data , Regulation (EC) No 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.</i>
Quoted Time and Means	<i>QT&amp;M</i>	<i>Quoted Time and Means assignments as defined in the GTCITC.</i>
Security Clearance		<i>Security Clearance- shall be understood as a personal security clearance at the level indicated by Frontex (EU Restricted / RESTREINT UE or EU Confidential / CONFIDENTIEL UE or EU Secret / SECRET UE) or its equivalent in accordance with the comparison table in Appendix 2 of Council Decision of 19 March 2001 adopting the Council's security regulations (2001/264/EC, as last amended) and issued by a National Security Authority of an EU Member State.</i>
Technical Platform	<i>Platform</i>	<i>The Technical Platform includes all ICT tangible elements needed for the implementation and usage of the end-user software solutions. Technical Platform covers all the elements of the TOGAF Technical Reference Model TRM<sup>1</sup> except the business applications.</i>
Time and Means	<i>T&amp;M</i>	<i>Time and Means assignments as defined in the GTCITC</i>

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<sup>1</sup> [http://www.opengroup.org/public/arch/p3/trm/trm\\_dtail.htm](http://www.opengroup.org/public/arch/p3/trm/trm_dtail.htm)

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## 2. Objectives

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This call for tenders is intended to result in the signature of multiple framework contracts for the provision of on-site (intramuros) and off-site (extramuros) services regarding SAS software, Business Intelligence systems (BI), Geographic Information Systems and other information systems in Frontex using the aforementioned technologies. The intended max. number of FWCs is three (3) per lot. The services will cover support, integration and adaptation, development, consultancy and knowledge transfer in the context of Frontex's information systems environment. The services will involve activities such as (not exhaustively listed): project management, pre-analysis, feasibility studies, proof of concept, analysis, advice, design, programming, testing, installation, system administration, customisation, documentation, training, quality check, end-user assistance, 3<sup>rd</sup> level support, transfer of knowledge and information systems consultancy services. Delivery of software licenses is excluded under the contracts resulting from this call for tenders.

The call for tenders is divided into the three lots described below:

Lot	Lot title	Type of framework contract.
Lot 1	Services for SAS software and related technologies	Multiple FWC with cascade mechanism with up to 3 contractors.
Lot 2	Services for Microsoft BI software and related technologies	Multiple FWC with both cascade and reopening of competition with up to 3 contractors.
Lot 3	Services for ESRI GIS software and related technologies	Multiple FWC with both cascade and reopening of competition with up to 3 contractors.

Under Lot 1 all specific contracts shall be awarded based on the ranking mechanism.

Under Lots 2 and 3 the specific Contracts for service delivery in Time and Means mode or Quoted Time and Means mode will be awarded according to the cascade system while Specific Contracts for service delivery in Fixed Price Mode will be awarded by reopening of competition between contractors.

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### 3. Background

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The European Border and Coast Guard Agency (Frontex) was established by Regulation (EU) 2016/1624 of the European Parliament and of the Council of 14 September 2016 on the European Border and Coast Guard and amending Regulation (EU) 2016/399 of the European Parliament and of the Council and repealing Regulation (EC) No 863/2007 of the European Parliament and of the Council, Council Regulation (EC) No 2007/2004 and Council Decision 2005/267/EC (OJ L 251, 16.09. 2016, p. 1).

Frontex promotes, coordinates and develops European border management in line with the EU fundamental rights charter applying the concept of Integrated Border Management.

While the “European Border and Coast Guard Agency” replaces the “European Agency for the Management of Operational Cooperation at the External Borders of the Member States of the European Union”, it has the same legal personality and the same short name: Frontex.

Further information about Frontex can be found on the Agency’s web site [www.frontex.europa.eu](http://www.frontex.europa.eu).

Frontex has several operational areas, which are defined in the Regulation. These areas of activity are:

- Joint Operations: Frontex plans, coordinates, implements and evaluates joint operations conducted using member states’ staff and equipment at the external borders (sea, land and air) of the EU.
- Situation Monitoring: Frontex has the task of providing a constantly updated picture, as near to real time as possible, of Europe’s external borders and migration situation. Additionally the Agency provides situation and crisis monitoring, delivering early alerts and situation reports to internal and external customers. Regarding joint operations, Frontex processes incoming data from all fields of operation, collating and processing it into daily situational pictures of what is happening on the ground along the EU external borders.
- Risk Analysis: Frontex collates and analyses intelligence on the on-going situation at the external borders. These data are compiled from operational information as well as from the member states and open sources including mass media and academic research.
- Training: Frontex is responsible for developing common training standards and specialist tools. These include the Common Core Curriculum, which provides a common entry-level training rationale for border guards across the Union, and mid- and high-level training for more senior officers.
- Research: Frontex serves as a platform to bring together Europe’s border-control personnel and the world of research and industry to bridge the gap between technological advancement and the needs of border control authorities.
- Assisting Member States in joint return operations: When member states make the decision to return foreign nationals staying illegally, who have failed to leave voluntarily, Frontex assists those member states in coordinating their efforts to maximise efficiency and cost-effectiveness while also ensuring that respect for fundamental rights and the human dignity of returnees is maintained at every stage.
- Providing a rapid response capability: Frontex has created a pooled resource in the form of European Border Guard Teams (EBGT) and an extensive database of available equipment which brings together specialist human and technical resources from across the EU. These teams are kept in full readiness in case of a crisis situation at the external border.
- Information systems and information sharing environment: Information regarding emerging risks and the current state of affairs at the external borders form the basis of risk analysis and so-called “situational awareness” for border control authorities in the EU. Frontex develops and operates several information systems enabling the exchange of such information, including the Information and Coordination Network (ICONET) and European border surveillance system (Eurosir).

Frontex monitors the global security environment, especially those political, economic, social, technological, legal and environmental factors which could affect European border security.

In order to carry out situation monitoring and to identify short- medium- and long-term trends, a wealth of data needs to be gathered, processed and analysed by using different IT solutions.

Therefore, the agency collects and fuses data from Member States, EU bodies as well as from public media and other sources within and beyond Europe's borders. Collated data is analysed with the aim to create as clear a picture as possible of the situation at the EU's external borders.



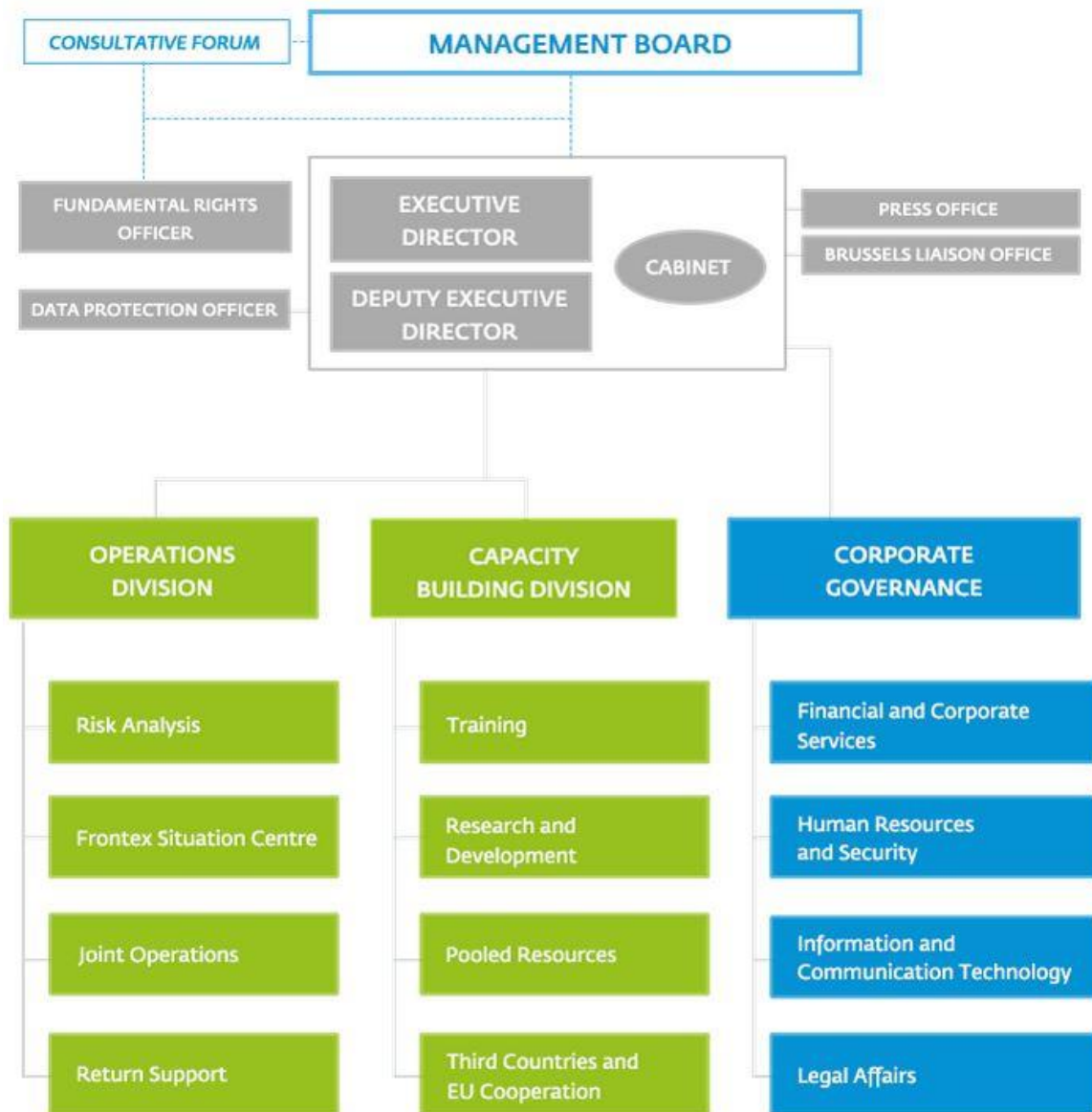


Figure 1 Frontex Organisation Chart

The aforementioned activities are performed in a complex organisational, procedural and technical context. The ICT component is commonly recognised as one of the key enablers for these activities, especially under the strict constraints of limited resources and challenging deadlines.

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## 4. Stakeholders

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From the point of view of the contracts resulting from this call for tenders there are 5 primary stakeholders who will be directly affected by the implementation. These are:

- Frontex business units which shall be considered as users of the software and consumers of the services provided under the contracts. Representatives of the business units will take roles of the product owners, project managers, contract managers for specific contracts under this FWC, user representatives, power users and users for the software solutions built in course of the contracts. The following two business units will be the main customers for the services under the contracts:
  - Frontex Risk Analysis Unit (RAU) which is responsible for providing strategic and operational analytical products and related advice to internal and external stakeholders in a timely manner and in order to enable appropriate operational response;
  - Frontex Situation Centre (FSC) which provides a constantly updated picture, as near to real time as possible, of Europe's external borders and migration situation.
- Frontex ICT Unit which supports business units in the scope of the IT-enabled business projects, employment of IT technologies, delivery and maintenance of IT and communication systems and provision of the related services. ICT Unit shall be considered as internal supplier of the services and software built under the contracts to the Frontex business units. ICT staff members will take role of project managers and team leaders.
- Frontex Corporate Governance Division that is responsible for administering the FWC including financial and procurement matters.
- Various teams performing Specific Contracts under these FWCs that have to harmonize the technical solutions produced by them and coordinate activities.
- Other Contractors acting under various contracts with Frontex for designing, implementing or supporting other related ICT systems. It must be borne in mind that any tasks performed under the contracts may require close cooperation with other contractors.

Other stakeholders who play important roles in the scope of this FWC in its broader sense are: the European Commission, other EU Agencies and Member States who may participate directly or indirectly in the activities related to the contracts and use their results.

The detailed identification of the stakeholders shall be performed for each individual SC.

## 5. Context

### 5.1. Current Situation

#### Lot 1 - Services for SAS software and related technologies

The current implementation of SAS has been developed by RAU and FSC, with full support of the Frontex ICT Unit. In the last years, members of RAU, FSC and ICT have completed trainings on various aspects of the SAS solutions, including high specialized ones. There is now a substantial body of knowledge established in FRONTEX based on the SAS technology.

Frontex uses the following technical environments that are based on Microsoft Windows Server and Microsoft SQL Server and related SAS software licenses:

Environment	Software and subcomponents	Unit
Production	SAS Analytics Suite: <ul style="list-style-type: none"><li>- SAS Business intelligence Server</li><li>- SAS Access to ODBC</li><li>- SAS Access to PC File Formats</li><li>- SAS/ETS</li><li>- SAS/STAT</li></ul>	8 cores
	<ul style="list-style-type: none"><li>- SAS Enterprise Guide</li></ul>	150 users
	SAS Visual Analytics: <ul style="list-style-type: none"><li>- SAS Access to ODBC</li></ul>	16 cores
	SAS JMP	12 users
Test	SAS Analytics Suite: <ul style="list-style-type: none"><li>- SAS Business intelligence Server</li><li>- SAS Access to ODBC</li><li>- SAS Access to PC File Formats</li><li>- SAS/ETS</li><li>- SAS/STAT</li></ul>	4 cores
Failover	SAS Visual Analytics: <ul style="list-style-type: none"><li>- SAS Access to ODBC</li></ul>	16 cores

From RAU and FSC perspective, some core business activities to be completed on time rely on SAS solutions. Different SAS applications are critical for several procedures regarding data processing, data retrieving and for supporting analytical and situational monitoring functions of the Agency with respect to irregular migration and cross-border criminal activity. Additionally, there is a business need in RAU to process the information from a wide variety of sources (Excel files, SQL databases, operational application through interfaces e.g. Eurosur application, etc.) in an efficient way that reduces the time spent in processing and minimizes errors.

#### Lot 2 - Services for Microsoft BI software and related technologies

Frontex operates the EUROSUR Communication Network and performs the maintenance and evolution of its applications following the requirements set out by the EU regulation No 1052/2013 for Establishing the European Border Surveillance System (EUROSUR). Recently the development of tools to establish and maintain a common pre-frontier intelligence picture (CPIP) as well as a European Situational Picture (ESP) has been started. The implementation of CPIP / ESP is focused on building a tailored BI solution with strong integration with Eurosur application. Frontex decided that the solution components and technology, shall be selected out of the already accepted current ICT Baseline instead of building it on open source or technologies new to Frontex. Thus CPIP/ESP tools involve inter alia Microsoft BI technology components. The development of CPIP/ESP tools is covered by the existing framework contract Frontex/RP/429/2010 (Maintenance and Evolution of the EUROSUR). However Frontex uses Microsoft software and technologies in a wide scope and perceives the MS BI technology as natural direction for further developments that maximizes synergy with the existing solutions. Thus Frontex decided to create a dedicated framework contract in order to support software development in this area.

The following items shall be considered as related to the scope of Lot 2: Web based scorecards and dashboards, OLAP analysis, Ad-hoc reporting, operational reporting, statistical analysis, predictive analysis, data mining, text mining and analytics social media analytics, software development, embedding BI components into bespoke software, integration with other systems.

For more details please consult the current ICT Baseline document.

### **Lot 3 - Services for ESRI GIS software and related technologies**

Frontex uses ESRI GIS technology for a wide range of operational activities. Risk Analysis Unit (RAU) analytical activities is wide with diverse profiles of clients for various analytical products. The information and data required to produce these analytical products is collected from different sources, e.g. risk analysis networks (RAN), Joint Operations Reporting Application (JORA) and EUROSUR following diverse information flows. The Frontex Situation Centre (FSC) focuses on situation monitoring and consumes near to real time data.

The current architecture was designed for centralised operations however having different data production instances within the agency.

The current architecture is based on the ArcGIS SOA framework with the following components:

- Authoring tier: ArcGIS Desktop
- Serving/Publishing tier: Map and chart services, geo-processing services and image processing services
- Presentation tier: Web browser clients (ESRI Silverlight API, ESRI JavaScript API), Portal for ArcGIS
- Metadata: ESRI Geoportal Server
- Frontex GIS is making use of following data resources:
  - Frontex internal SDE and SQL Server databases
  - Frontex internal imagery repository
  - ArcGIS online
  - ESRI Data Appliance
  - External OGC WMS/WFS/WCS services
  - External GeoRSS services

Currently Frontex has implemented an ArcGIS for Server two-tier web service platform structure complemented with an additional tier for proxy server.

In addition, Frontex relies on open source GIS (Quantum GIS) for testing services provided in OGC WMS/WFS format from internal (ArcGIS Server) or external resources.

The platform is hosted at Frontex premises and is managed by Frontex ICT Unit with support of the producer and other external Contractors.

The following items shall be considered as related to the scope of Lot 3:

- ArcGIS for Server with Extensions:
  - Portal for ArcGIS Server

- ArcGIS Image
- ArcGIS GeoEvent Processor
- ArcGIS 3D Analyst
- ArcGIS Network Analyst
- ArcGIS Spatial Analyst
- ArcGIS Geostatistical Analyst
- ArcGIS Schematics
- ArcGIS Data Reviewer
- ESRI Geoportal Server
- Multiuser Geodatabases (SDE and SQL Server)
- ESRI Data Appliance for ArcGIS
- ArcGIS for Desktop with Extensions:
  - ArcGIS 3D Analyst
  - ArcGIS Spatial Analyst
  - ArcGIS Geostatistical Analyst
  - ArcGIS Publisher
  - ArcGIS Network Analyst
  - ArcGIS Workflow Manager
- ArcGIS License Manager

## 5.2. Target Situation

These contracts are planned to support Frontex in providing the mentioned support and development by a limited number of awarded Contractors in harmonized and coordinated manner during the next 4 years. By concluding these framework contracts, Frontex can order the development of new solutions and services at a relatively short notice, by companies that specialize in the exact technology and by teams that cooperate with Frontex on a long term and therefore accumulating the required knowledge regarding the business activities of the Agency. This leads to the increased capability to assure service continuity, quick response to business needs, achieving proper level of harmonization and coordination yet sustaining competition.

### Lot 1 - Services for SAS software and related technologies

The SAS software is an important tool supporting the daily tasks of Frontex and the system shall be supported and maintained at technical layer as well as in the area of knowledge transfer to the end users of the SAS solutions. The system shall be regularly monitored and maintained in order to ensure business continuity. All the necessary patches shall be implemented according to the releases. The internal Frontex capacity to use and support the system should be reinforced by consultants with a deep knowledge of the SAS solution to fill the knowledge gap regarding the maintenance and support of the SAS solutions in use by the Agency. Frontex staff should receive regular support from the contractor in all the tasks related to the system in use and its development.

There are some needs regarding the improvement of the existing processes as well as some potential new business functionalities for statistical analytical tools identified during the use of SAS solutions by Frontex.

Particularly important areas are the following:

- Centralising statistical information and to provide a single interface for metadata management;
- reinforcing Frontex capacity to verify statistical data and ensure data quality for a vast (and expanding) array of datasets,
- facilitating the use of common, coherent processes for compiling and presenting statistical information;

- allowing a more streamlined procedure for the creation of harmonised reports that can be updated efficiently in order to provide an accurate common picture;
- providing enhanced (statistical) analytical capacity for more complex data analysis and trend modelling in such a framework, These new functionalities should be validated and implemented to the existing Frontex SAS systems / solutions in order to ensure the efficient use of SAS services by Frontex staff members.

#### **Lot 2 - Services for Microsoft BI software and related technologies**

The contract shall enable the most efficient use of the technologies that are available for Frontex in order to support its business needs. The nature of Business Intelligence requires both: well developed basic data structures that reflect known needs as well as scalability and flexibility to respond to the future needs. In addition to technical expertise for daily operations and development of solutions the contract shall provide the capability for creating a central vision for BI solutions development and governance in Frontex. Ideally would be to have implemented Common Data Model for operational data, data sources interfacing and Data Warehouse solution.

#### **Lot 3 - Services for ESRI GIS software and related technologies**

Geographic Information Systems and technologies play an important role in Frontex. Planning, development and maintenance of GIS applications, services and interoperability with other organizations should be taken into account under this contract. As a result of the increasing needs, more map services, geographical data processing, external data sources and intelligence information will be integrated in Frontex GIS System. This will bring more spatial analysis, integration of systems and geographical data sources processing. The target architecture will continue to focus on ESRI technology, for Desktop and Server technology.

The new business requirements and the continuous increase of users, data and scenarios in the current systems will result in the following challenges and needs to be tackled in the timeframe of this FWC: Particularly important are the following:

- Support for Business Units with GIS related daily tasks;
- Maintenance of GIS Frontex systems and applications;
- Design and development of GIS related applications, in line with ESRI development roadmap, based on Business Unit requirements;
- Integration of existing and planned GIS services with Frontex systems;
- Development of spatial analytical tools based on data available;
- Interoperability of geographical data from various transactional systems;
- Management of restricted/confidential data and spatial analysis;
- Increase scalability of the systems and their maintainability;
- Unification of security measures, especially authentication and authorization mechanisms between other Frontex Systems and GIS Systems;
- Sharing of information between Frontex and Stakeholders through analysis tools and layers of information;
- Increasing role of mobile applications in spatial analysis;
- Integration of live and huge gis data streams from remote devices and sensor networks.

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## 6. Scope

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### 6.1. Definition of lots and scope statement

The contracts resulting from this call for tenders shall be considered as a source for generic services related to: Business Intelligence systems (BI), Geographic Information Systems and other information systems in Frontex using the aforementioned technologies, under T&M, QT&M or Fixed Price assignments. These contracts will address Frontex needs regarding custom developed software solutions and maintenance of the existing platforms. It shall be understood in broad meaning with reference to all phases of software life cycle and technical domains of software engineering. Therefore it may cover typical software development as well as maintenance of existing platforms and solutions, refactoring, tuning etc.

Lot	Lot title	Scope statement
Lot 1	Services for SAS software and related technologies	This Contract is considered as a primary source of services related to the SAS software & solutions being in use in Frontex. These services are: configuration, development, implementation and maintenance as well as provision of guidance and transfer of knowledge.
Lot 2	Services for Microsoft BI software and related technologies	This Contract is considered as a primary source of services related to the MS BI software and technologies. These services are: project management, pre-analysis, feasibility studies, proof of concept, analysis, advice, design, programming, testing, installation, system administration, customisation, documentation, training, quality check, end-user assistance, transfer of knowledge and information systems consultancy services.
Lot 3	Services for ESRI GIS software and related technologies	This Contract shall be considered as a source for contracting GIS services. GIS Services shall be understood in broad meaning with reference to all phases of a GIS Service as advice, development, support, tuning and maintenance of GIS Services for desktop, server, mobile technologies and integration with other non GIS Frontex Systems.

### 6.2. Work Breakdown

The following categories define the scope of the services covered by prospective Contracts for all Lots:

- A. Consultancy in relation to all the phases of SDLC,
- B. Software Development
- C. Integration, deployment, administration and maintenance
- D. Prototyping and preparation of feasibility studies
- E. Technical documentation
- F. Training and Knowledge Transfer
- G. Project Management
- H. Cooperation with other Contractors

#### **Lot 1 - Services for SAS software and related technologies**

The following services are envisaged to be delivered under this Contract:

- 1. Development and implementation

- a. Development and implementation tasks (programming and support) for the statistical, analytical and database management tools in SAS software
  - b. Advisory services
- 2. Technical Support
  - a. Preventative actions to ensure the high availability and efficient functioning of the SAS solution
  - b. Reactive support services to resolve issues which cannot be resolved by Frontex or that require 2<sup>nd</sup> or 3<sup>rd</sup> line technical support that exceeds the support level “A” services provided to Frontex according to the software licence agreement with the SAS Institute
- 3. Knowledge Transfer
  - a. Regular workshops
    - i. General topics (i.e. data management);
    - ii. Current modules (i.e. Visual Analytics and Enterprise Guide)
    - iii. New modules (i.e. JMP and Data Integration Studio)
  - b. Coaching

#### **Lot 2 - Services for Microsoft BI software and related technologies**

The following services are envisaged to be delivered under this Contract:

1. BI requirements engineering
2. BI systems architecting, design, system sizing and capacity planning
3. Cross platform integration of BI services
4. Design, development and management of BI services
5. Design, development and management of analytical datasets
6. Integration of BI with GIS systems
7. Software development and testing
8. BI software maintenance services in 1st ,2nd and 3rd line of support
9. Administration of BI systems
10. GUI design for reports and dashboards
11. User trainings

#### **Lot 3 - Services for ESRI GIS software and related technologies**

The following services are envisaged to be ordered under this FWC:

1. GIS business analysis and requirements engineering
2. Improvement, up-scaling and support of GIS System architecture (GIS architecting, design, system sizing and capacity planning)
3. Integration of GIS systems and other Frontex systems
4. Design, development, testing and implementation of
  - a. Bespoke applications
  - b. Spatial analysis tools
  - c. Mobile GIS solution
  - d. Adequate system security
  - e. Systems/Services for external and internal data sources
5. Administration, maintenance and technical support
6. Knowledge transfer, training and training materials related to the domain of the Lot

### **6.3. Work description**

The following items describe the work planned for this Contract and related competences required. The descriptions cover the majority of works however cannot be considered as exhaustive. These descriptions correspond to the Specific Requirements. The scope items listed below are interdependent. For example - Consultancy provides input to Development and the Development may support Consultancy (e.g. via prototyping). It is a contractual obligation that various works under these Contracts are technically harmonized and organizationally synchronized.



#### **6.3.1. Consultancy**

Consultancy shall be understood in a broad meaning by including: development of an Information Architecture, business and system requirements analysis, concept development, architecting the solutions and producing high level technical designs. The outputs of Consultancy are: documents, presentations and repositories e.g.: for the software solutions, for the design of the user interface , for the organization of technical tasks (e.g. test plans, deployment plans etc.), for content, for assistance to change management related to the implementation of the technical solutions (e.g. development of policies & procedures documents), etc. When combined with development it may deliver Proof of Concepts or prototypes.

#### **6.3.2. Development**

Development shall be considered with a reference to the software development lifecycle. It covers the development of complete software solutions but also extensions, plugins, interfaces, administrative scripts, GUI elements as well as customizations and improvements to existing software. This work includes prototyping, elicitation of detailed requirements, detail technical design, production of technical and user documentation, data migration, testing and deploying the solutions. Development services may cover Consultancy services e.g. delivery of Initial Analysis in course of FP assignment for a complete solution.

#### **6.3.3. Maintenance and Administration**

Maintenance and Administration covers 2<sup>nd</sup> Level Support as T&M SC and 3<sup>rd</sup> Level Support as Fixed Price SC for the software delivered by the Contractor or other parties. It may be ordered for: handling and solving incidents and fulfilling service requests escalated by the 1<sup>st</sup> line of support, implementing change requests to the current baseline, providing and administering various environments (e.g. development, staging, production), deploying new solutions, developing and updating technical documentation for maintenance and administration, testing updates and patches, managing users, transferring or migration of data, troubleshooting of any reported incidents and problems, cooperation with external providers of 3<sup>rd</sup> Level Support.

#### **6.3.4. Knowledge transfer and trainings**

Knowledge transfer covers activities which shall result in an increase of Frontex's staff knowledge and awareness in relation to a specific area. These activities are: performing of dedicated workshops focused on Frontex's use cases, coaching in a daily use of a specific technology and/or software to perform tasks in a more efficient and effective way; coaching in advanced functions facilitating the daily tasks performance. Training should be understood as the delivery of custom designed trainings as requested by Frontex for the software components being in the scope of this Contract as well as its administration and maintenance. Training will be delivered to power users, end users and to administrators in form of training sessions with hands-on workshops as well as delivery of training materials in form of workshop handouts, training environments with training data and scenarios or wiki-like guides. Delivery of standard trainings offered by the producers of the technologies covered by this FWC is not included in the scope.

#### **6.3.5. Project Management**

Project Management shall cover all aspects of project management discipline required for the delivery of the solutions and services in scope of this Contract. Project Management may be required as embedded service of the Fixed Price assignment as well as a separate T&M assignment for running projects or for preparation of new projects in the technical scope of this Contract.

#### **6.3.6. Cooperation with other Contractors**

Performing tasks under this contract may require a close cooperation with other Frontex's contractors. The cooperation may require both requesting and delivering some specific information enabling the performance of tasks requested by Frontex. Frontex requires that contractors will maintain reasonable transparency and

support information sharing when needed. Every contractor must respect the right of others for requesting the information and must offer the necessary support. If not offered in advance the contractor may in any case request Frontex assistance in such cases.

Frontex may require an engagement of the contractor into other projects performed by Frontex or by other contractors in the scope of integration of systems, technologies, etc. on various stages of SDLC.

#### **6.4. Indicative Implementation plan for the FWC**

The list below presents the indicative plan of the implementation of the Framework Contract, which is not binding on Frontex and will be adapted during the contractual period. The composition of the plan presents the intended flexibility in ordering and delivering various work items. The same work item may be ordered under different types of contracts according to the current needs of Frontex. In addition, one SC may cover more than one work item.

##### **Lot 1 - Services for SAS software and related technologies**

This indicative plan of this Lot implementation is presented for informational purposes only and may be adapted and/or changed during the Contractual period by Frontex.

1. Integration between SAS and ESRI technology for web applications
2. Integration between SAS and other technologies used for web reporting
3. High-level business use cases and functional requirements identification
4. Technical design of High-level business use cases
5. Development of workflows for data management
6. Security implementation in accordance with ICT security policy and security audits
7. Development of mobile application and services
8. Other products and services

##### **Lot 2 - Services for Microsoft BI software and related technologies**

This indicative plan of this Lot implementation is presented for informational purposes only and may be adapted and/or changed during the Contractual period by Frontex.

1. Analysis and architecting of BI solution - Business Analytical Platform
  - a. Common Data Model,
  - b. Data source interfacing
  - c. Data Warehouse
2. Analytical Reporting System and Data Management
3. Operational analysis BI services and tools
4. Support and maintenance for BI solution

##### **Lot 3 - Services for ESRI GIS software and related technologies**

This indicative plan of this Lot implementation is presented for informational purposes only and may be adapted and/or changed during the Contractual period by Frontex.

1. Integration between SAS or other business intelligent solutions and ESRI technology for web applications already in place
2. Development of spatial tools for various transactional systems
3. High-level business use cases and functional requirements identification

4. Technical design of high-level business use cases
5. Development of workflows for management of spatial analysis with data at EU Restricted level
6. Security implementation on spatial analysis with data at EU Restricted level
7. Development of mobile applications and services
8. Development of web applications and UI interfaces
9. Other products and services

## 6.5. Financial Ceiling

The maximum amount that can be spent under this lot of the FWC cannot exceed amounts indicated in the table below. Nevertheless Frontex reserves the right to conduct exceptional negotiated procedure (in line with art. 134.1.(e) of **COMMISSION DELEGATED REGULATION (EU) 2015/2462 of 30 October 2015 amending Delegated Regulation (EU) No 1268/2012 on the rules of application of Regulation (EU, Euratom) No 966/2012 of the European Parliament and of the Council on the financial rules applicable to the general budget of the Union**) to increase the ceiling with the Contractors by max 50% of the contract value, if such a need occurs.

Lot	Lot title	Financial Ceiling
Lot 1	Services for SAS software and related technologies	1,900,000 EUR
Lot 2	Services for Microsoft BI software and related technologies	600,000 EUR
Lot 3	Services for ESRI GIS software and related technologies	1,100,000 EUR

## 6.6. Key Competencies

Performance of this FWC requires from the contractors professional capacities, expertise, experience and availability of workforce in the following domains (not exhaustively listed):

### Lot 1 - Services for SAS software and related technologies

- Knowledge of SAS BI technologies and products in scope of the required services
- Architecting, designing, planning SAS environments
- Designing, implementing and administering transactional and analytical databases and data transformation tools,
- Web based scorecards and dashboards, OLAP analysis, ad-hoc reporting, operational reporting, statistical analysis, predictive analysis, data mining, text mining and analytics, social media analytics
- Cross-platform and cross-systems integration of BI services
- GUI design for analytical products and BI software

### Lot 2 - Services for Microsoft BI software and related technologies

- Knowledge of MS BI technologies and products in scope of the required services
- Architecting, designing, planning BI enterprise and distributed environments
- Designing, implementing and administering transactional and analytical databases and data transformation tools,
- Web based scorecards and dashboards, OLAP analysis, ad-hoc reporting, operational reporting, statistical analysis, predictive analysis, data mining, text mining and analytics, social media analytics

- Cross-platform and cross-systems integration of BI services
- GUI design for analytical products and BI software

**Lot 3 - Services for ESRI GIS software and related technologies**

- Knowledge on ESRI ArcGIS for Server with extension, ArcGIS for Desktop with extensions, ArcGIS Engine with extensions, Portal for ArcGIS, ESRI Appliance, ArcGIS Runtime with extensions, ArcObjects, ArcGIS Mobile
- Architecting, designing, planning GIS enterprise and distributed environments
- Designing, implementing and administering geo-databases and GIS services
- Near-real time geo-events processing and geo-statistical analysis, geo-simulation modelling (e.g. permeability, drifting)
- Cross-platform and cross-systems integration of GIS services (servers, desktops & mobile installations)

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## 7. General Requirements

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### 7.1. Application of GTCITC

General Terms and Conditions for Information Technologies Contracts, as included in Appendix 1 General Terms and Conditions for Information Technology Contracts Appendix 1, apply to this Contract according to the order of precedence defined in the there. Any definition of a term used in this document, if not included in chapter 1, shall be identified in the GTCITC.

The following derogations apply:

- In derogation to Article II.1.2 of the General Conditions and Article 3.4, Article 4.2 and Article 5.3.4 of the General Terms and Conditions for Information Technology contracts, the two-year guarantee starts from the date of signature by Frontex of the Certificate of Conformity described in Article 3.3 of the General Terms and Conditions for Information Technology contracts.
- When consulting the General Terms and Conditions for Information Technologies Contracts please observe that all references to 'the Commission' shall be read as 'Frontex' and all references to 'Brussels' and 'Luxembourg' shall be read as 'Warsaw'.

### 7.2. Duration

The FWC is expected to have an initial duration of 2 years, starting from the date of its signature by the last contract party, which can be extended, if needed, for up to 2 additional periods of one year, under the sole discretion of Frontex.

### 7.3. Venue

The actual venue for each Order and Specific Contract will be defined in the Order Form or the Request for Specific Contract.

The following categorization of place of performance shall be applied:

- Intramural assignments to be performed at Frontex Headquarters (Warsaw, Poland).
- Extramural assignments to be performed at the Contractor's premises.
- Other Location for assignments to be performed at other locations explicitly indicated by Frontex. Reimbursement incurred for travel and subsistence expenses shall be authorized only in case of 'other locations'.

### 7.4. Guarantee

The guarantee for the Products acquired via this FWC is for minimum 2 years. The guarantee price shall be included in the purchase price. No maintenance fee shall be included in the Product purchase price.

### 7.5. Security

The Contractor shall respect the Frontex Security Rules and the related policies and procedures. Frontex Security Rules and the relevant policies and procedures will be made available at the beginning of each Specific Contract to the involved employees of the contractor and updates, changes in these documents or publication of new documents will be communicated during the execution of the contracts.

The contractor's staff involved in the execution of the contract will be asked to sign a Declaration of Confidentiality prior to the start date of their direct involvement in the Contract.

If the Contractor or his personnel and, where applicable, subcontractors fail to comply with the Frontex security rules. Frontex may, without prejudice to any indemnity due by the contractor to Frontex, terminate the contract with immediate effect by giving notice in writing to the contractor. In these circumstances, no costs or compensation relating to such termination shall be due by Frontex to the contractor.

Frontex reserves the right to request the contractor to demonstrate the valid excerpt of the criminal record of the contractor staff members planned to participate in the execution of the contract and to refuse

participation to any person that has been: convicted of an offence concerning their professional conduct by a judgment, which has the force of res judicata; guilty of grave professional misconduct, the subject of a judgment, which has the force of res judicata for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the Communities' financial interests.

Any classified information shall be handled and protected by the Contractor as described in the Security Aspect Letter (Appendix 2 Security Aspect Letter).

In addition, Frontex reserves the right to require the contractor to initiate security screening for his personnel directly involved in the execution of the FWC or SC to obtain the security clearance at RESTREINT UE, CONFIDENTIEL UE or SECRET UE level in order to provide specific services planned for the course of this FWC.

## **7.6. Working environment and conditions**

Frontex will provide to the Contractor the following resources:

- Access to all necessary premises and elements of infrastructure to conduct the tasks
- Access to all necessary documentation and information in Frontex possession that are necessary to conduct the tasks

and for intramural assignments:

- Office space for the Contractor's staff performing intramural assignments
- Computers, software licenses and other ICT tools for the duration of the SC Frontex may require exclusive use of it
- All software necessary for the accomplishment of the tasks under this Contract will be installed on Frontex hardware and will remain within Frontex without deletion, change, or deletion of configuration at the end of the Contract.
- Contractor's staff may bring their company or own computers in order to perform some tasks not related to the Contract, e.g. tasks requested by their employer. In line with Frontex security policies, these devices will not be authorised to connect to any Frontex networks except the those foreseen for Frontex guests.

## **7.7. Methodologies, best practices and standards**

The Contractor shall perform in accordance with technical norms, standards and procedures based on best professional practice in the informatics and/or telecommunications field.

It is required to follow the best practices offered by Microsoft in MSDN, TechNet and official Microsoft technical publications. Frontex requires compliancy with the following methodologies, best practices and standards by default where applicable: PRINCE2<sup>2</sup> or PM2@EC<sup>3</sup>, ITIL<sup>4</sup>, RUP<sup>5</sup> and Agile<sup>6</sup>, OGC<sup>7</sup> standards,

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<sup>2</sup> PRICE 2 - <http://www.prince-officialsite.com>

<sup>3</sup> PM@EC - project management methodology adopted by EC that may be made available to the Contractors after signature of the FWC

<sup>4</sup> ITIL - <http://www.itil-officialsite.com>

<sup>5</sup> RUP - <http://www-01.ibm.com/software/rational/rup>

<sup>6</sup> Agile - here the iterative and incremental scrum based software development methodology

<sup>7</sup> OGC - <http://www.opengeospatial.org/standards/is>

MOREQ2<sup>8</sup>, OWASP<sup>9</sup>, OSSTMM<sup>10</sup>, ISO/IEC 12207, ISO/IEC 25000 and UML. Additional requirements regarding applicable methodologies, best practices and standards shall follow the specific tasks.

Additional requirements regarding applicable methodologies, best practices and standards shall follow the Specific Requirements or will be laid in the Request for Services.

#### **Lot 1 - Services for SAS software and related technologies**

The Contractor shall perform in accordance with SAS technical norms, standards and procedures based on best professional practice in this field.

The Contractor shall indicate the norms and standards that he is applying for works performed under this FWC by reference.

#### **Lot 2 - Services for Microsoft BI software and related technologies**

The Contractor shall perform in accordance with Microsoft technical norms, standards and procedures based on best professional practice in this field.

The Contractor shall indicate the norms and standards that he is applying for works performed under this FWC by reference.

#### **Lot 3 - ESRI GIS related standards**

The Contractor shall perform in accordance with ESRI technical norms, standards and procedures based on best professional practice in this field.

The Contractor shall indicate the norms and standards that he is applying for works performed under this FWC by reference.

### **7.8. Transparency and handover**

Frontex requires transparency from the Contractor in the provision of services under the Contracts, specifically regarding the organisation and staff engaged, processes and standards used, information and documentation produced in these processes (i.e. bugs repository), and in the methods and tools.

At the request of Frontex the Contractor must hand his tasks over to Frontex staff or other indicated third party contractor by the defined date. The handover shall be planned and the plan shall be submitted to Frontex for acceptance. The handover shall enable the taking-over party to continue the tasks of the Contractor at the levels defined in the respective Specific Contract and to provide further maintenance and evolution of the solution with no additional costs for reengineering, redevelopment of documentation or reimplementation of administrative tools. The contractor is required to: train the taking-over party, present his recommendation for how to continue his tasks, submit all pending reports, return all tools and documents used in the performance of works, archive and handover all information, credentials and documents that are not in the possession of Frontex and might be needed for continuation of the tasks performed by the Contractor.

Such a handover takes place by default (without a request from Frontex) at the completion of the FWC.

By the end of the Specific Contract the Contractor is required to: submit all relevant reports, return all tools and documents, handover all on-going tasks to Frontex staff, archive and handover to Frontex all information, credentials and documents that are not already in the possession of Frontex staff and might be needed for the continuation of the tasks performed by the Contractor.

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<sup>8</sup> MOREQ2 - <http://moreq2.eu>

<sup>9</sup> OWASP - [https://www.owasp.org/index.php/Main\\_Page](https://www.owasp.org/index.php/Main_Page)

<sup>10</sup> OSSTMM - <http://www.isecom.org/research/osstmm.html>

## 7.9. Language

All the communication and documentation, both in paper and electronic form and any other deliverables, including software, source codes with its naming conventions and comments, shall be in English (U.K.) and shall adhere to a high standard appropriate for technical documentation, with no ambiguities and no mistakes in grammar or spelling. All members of the Contractor's staff allocated to this contract shall speak and write in English at the levels indicated in their profiles, according to the Common European Framework of Reference for Languages<sup>11</sup>.

## 7.10. Documentation

Technical documentation, whenever applicable, shall apply UML and automated tools for document generation. All applicable tools and standards shall be mutually agreed between Frontex and the Contractor. The Contractor shall adopt Microsoft Manual of Style for Technical Publications (MSTP<sup>12</sup>) for the purpose of producing technical documentation under this Contract.

Frontex requires that all the documents created in the course of the project maintain a high quality. The following criteria shall be adopted when producing the necessary documentation:

- A clear and appropriate document structure, i.e. the document must be organised into chapters, sections, subsections etc. in a clear and logical way.
- Compliance with a writing style that supports a consistent structure, form and style of documents.
- Completeness of documents, i.e. the complete presentation of the entire scope of the described issue without any omission.
- Consistency and coherence of documents, i.e. ensuring mutual accordance of all types of information and lack of logical contradictions of information between the submitted documents or between parts of the same document.
- Proper identification of its title, scope, authors, reviewers, related dates, status, versions, history log, audience, quality or acceptance criteria (if the document is subject to acceptance).

Adoption of the right format and writing style considering the content to convey and the audience. The documentation shall be delivered both in editable electronic and printed format - at least 3 copies. Editable source files for all pictures shall be supplied.

The Contractor shall implement and maintain in perfect order an electronic repository of the technical and project management documentation produced during the course of the FWC. This documentation shall be well organised, identified, kept up-to-date, and marked with its actual status (draft, rejected, approved). The repository shall be whether hosted at Frontex or fully accessible (including its backup copies) from Frontex and the access privileges shall be given to users approved by Frontex.

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<sup>11</sup> [http://www.coe.int/t/dg4/linguistic/Manual1\\_EN.asp](http://www.coe.int/t/dg4/linguistic/Manual1_EN.asp)

<sup>12</sup> ISBN 0-7356-4871-9



## 8. Specific Requirements

The following requirements have to be respected in the FWC (in the management of the FWC, in T&M, in QT&M and in FP Specific Contracts, unless the requirement limits the scope to a specific type of assignment) and shall be reflected in the Tenderer proposal. All the requirements shall be taken into account when preparing the Financial Proposal. No alterations, reservations, alternatives, exclusions in any means including assumptions or constraints are acceptable.

### 8.1. Personnel

No	Title	Description
1	Profiles	<i>All Contractor's staff who take part in the performance of this FWC, related Specific Contracts or Orders, and the candidates offered for it, shall be assigned to one of the profiles specified in this TOR and fulfil the criteria set out there.</i>
2	Alignment to tasks of SC	<i>For the reopening of competition for a Specific Contract, Frontex may verify the offered candidate, who is assessed as compliant to the profile, whether the candidate fits to the tasks planned for the SC. In such a case the Request for Specific Contract will define the evaluation criteria.</i>
3	Interviewing candidates	<i>Frontex reserves the right to interview the candidates for the SC before they take up the duties under the FWC or particular SC. Such interview may take place in form of video conference or physical meeting. Frontex may also test candidates in the field of professional and/or technical competences.</i>
4	Replacement of personnel in T&M or QT&M SC	<ul style="list-style-type: none"> <li>a. <i>When a person, proposed by the Contractor in reply to Request for Specific Contract is no longer available before the start of the contract, the Contractor is obliged to inform Frontex immediately.</i></li> <li>b. <i>In case of replacement in the course of the SC, the Contractor shall give one month's notice to Frontex. The prior agreement of Frontex must be obtained in writing about the principle of the replacement and the replacing staff member.</i></li> <li>c. <i>In case of replacement, the Contractor will provide Frontex with the CVs of proposed substitutes, CV Compliancy Declaration Form and Statements of Intent. The Contractor must propose a minimum of two replacement persons with the required qualifications and experience for the profile and they must have at least the same level of qualifications/education and experience as the person proposed in the original offer.</i></li> <li>d. <i>In case of replacement acceptance by Frontex, the substitute can assume the work at identical financial conditions, if the Contractor ensures the transition of service between the initial consultant and the substitute. The handover period for service transition must be at least 5 working days, free of charge to Frontex. If no handover is possible, and additional training is needed for the replacement person, at least 10 working days (free of charge to Frontex) must be performed by the replacement person.</i></li> </ul>
5	Underperformance	<ul style="list-style-type: none"> <li>a. <i>At Frontex' demand, the Contractor must replace personnel who prove to be incapable of carrying out the specified tasks to the required standards.</i></li> <li>b. <i>The replacement person will be given sufficient training during an adequate handover period, so that he/she becomes immediately operational when the original expert is withdrawn. Any such replacement and training, if required, will be carried out by the Contractor at no additional cost to Frontex.</i></li> </ul>
6	Planned and unplanned absence	<ul style="list-style-type: none"> <li>a. <i>At Frontex' demand, during holidays or other periods of absence of the person involved, the Contractor will be required to provide an adequate replacement.</i></li> <li>b. <i>The replacement person will be given sufficient training and provided with all information necessary to guarantee continuity of the service provided to Frontex.</i></li> <li>c. <i>All such training and handover work will be carried out at no additional cost to Frontex.</i></li> <li>d. <i>Any planned absence shall be agreed by Frontex at least two weeks prior the absence.</i></li> <li>e. <i>Frontex shall be informed about any unplanned absence (e.g. sickness) immediately.</i></li> </ul>
7	Place of work	<ul style="list-style-type: none"> <li>a. <i>The primary place of performance for T&amp;M SCs is the Frontex Headquarters.</i></li> <li>b. <i>The individuals performing the T&amp;M SCs may be tasked to perform their duties in other remote locations for a short period of time.</i></li> <li>c. <i>If the nature of the tasks or service requires regular or long term visits to other places it shall be clearly indicated in the Request for Specific Contract or Order.</i></li> </ul>
8	Normal working hours	<ul style="list-style-type: none"> <li>a. <i>Frontex requires that the T&amp;M services are provided in Normal Working Hours.</i></li> <li>b. <i>At Frontex' demand, in exceptional circumstances or when indicated in the related Request for Specific Contract, the person involved might be asked to work in Extended Working Hours.</i></li> </ul>

9	24/7 for T&M or QT&M	Frontex may require, by clear indication in the Request for Specific Contract, that the services are provided according to the agreed timetable in the 24/7 mode and in total cover 8 hours a day per person on average, counted in one month periods excluding lunch breaks.
10	Duration of the Assignment	Frontex may require that a person is assigned for <ul style="list-style-type: none"> <li>a. Short Term for less than 30 man-days in total</li> <li>b. Long Term for efforts estimated from 30 up to 200 man-days in total</li> <li>c. Very Long Term for 201 man-days or more</li> </ul>
11	Registering time in T&M or QT&M	<ul style="list-style-type: none"> <li>a. Each individual performing services under the T&amp;M and QT&amp;M Specific Contracts is obliged to register the time of work on every entry and leave of the place of work by registering its exact time in a form presented in Appendix 4 Attendance Sheet Form.</li> <li>b. The Attendance Sheets shall be continuously available to Frontex for verification.</li> <li>c. The Contractor is required to submit monthly attendance sheets duly completed and signed by the performing person for acceptance by Frontex.</li> <li>d. All the time shall be dedicated to the tasks contracted.</li> <li>e. Frontex reserves the right to use Frontex time management system for automatic collection of entry/exit times to replace the attendance sheets.</li> </ul>
12	Reporting for T&M and QT&M	<ul style="list-style-type: none"> <li>a. The Contractor is required to report regularly, not less frequently than once a month, on the status of all tasks laid on him in the reporting period and tasks assigned earlier but not yet reported as completed and related issue log.</li> <li>b. The report on tasks shall be submitted for Frontex acceptance. It shall present at the minimum for each atomic task: a short description, reference to the tasks or service of the Specific Contract, time planned, actual time spent, and indication of completion. Appendix 5 Report on Tasks Performed Form shall be taken as an example.</li> <li>c. The issue log shall present an explanation of the issues linked to the tasks, proposals for dealing with the issues, tracks of the history of each issue.</li> </ul>
13	Kick off and inception	<ul style="list-style-type: none"> <li>a. Frontex may require that contracted staff attend a kick-off meeting before starting the delivery of services under a Specific Contract.</li> <li>b. For T&amp;M and QT&amp;M SCs Frontex may indicate in the Request for Specific Contract the duration of the inception phase in which the contracted personnel is required to familiarise themselves with the work environment, methods and tools, and to achieve normal effectiveness in performing the tasks. In case of not achieving the normal effectiveness Frontex may demand from the Contractor to exchange a person or terminate the Contract.</li> </ul>
14	Escalation	<ul style="list-style-type: none"> <li>a. Frontex requires that any irregularities, vulnerabilities or risks observed by the personnel performing the contract are immediately reported to Frontex in writing by means of the issue log.</li> <li>b. Frontex requires that, in relation to the activities performed in direct relation to this FWC, the Contractor implements in his own organisation an effective internal escalation mechanism in order to control and manage risks related to the Specific Contract and the underperformance of its personnel.</li> <li>c. In case of non -acceptance and rejection of the report on tasks in T&amp;M and QT&amp;M SCs the Contractor shall initiate his internal escalation procedure.</li> <li>d. In case of two rejections of the report on tasks for a person the management staff of the Contractor shall propose improvements.</li> <li>e. In case of three rejections or two consecutive rejections of reports on tasks Frontex may demand the exchange of the person or terminate the Specific Contract.</li> </ul>
15	Closure of a Specific Contract	<ul style="list-style-type: none"> <li>a. By the end of each Specific Contract or the engagement of a specific person in the Specific Contract the Contractor is required to: submit all pending reports, return all tools and documents, handover all on-going tasks to Frontex staff, archive and hand over to Frontex all information, credentials and documents that are not in possession of Frontex staff and might be needed for the continuation of the tasks performed by the Contractor.</li> <li>b. Frontex may task the Contractor, within the scope and duration of the Specific Contract, to hand over his duties and transfer all knowledge acquired in performing the task to Frontex personnel or another third party contractor, irrespective of if the handover tasks was explicitly indicated in the Request for Specific Contract or not.</li> </ul>
16	Confidentiality	The staff involved in the execution of any Specific Contracts shall sign a Declaration of Confidentiality before the commencement of work.
17	Excerpt from Criminal Record and Security Clearance	<p>Frontex requires that consultants proposed by the Tenders possess and present certificate of good conduct (clean criminal record certificate) not older than 3 months at the date of the start of the services, in order to grant them access to Frontex premises.</p> <p>Consultants proposed under Lot 1 must possess valid Personal Security Clearance certificate at the level indicated in the profile description at minimum.</p> <p>Furthermore in reference to all Lots, Frontex reserves the right to require the Contractor to initiate security screening for his personnel directly involved in the execution of the FWC or SC to obtain the security clearance at RESTREINT UE, CONFIDENTIEL UE or SECRET UE level in order to provide specific services planned for the course of this FWC.</p>

18	Lot 1 - Required minimum number of staff in the profiles	<ul style="list-style-type: none"> <li>a. Profile of Project Manager: 1</li> <li>b. Profile of Business Intelligence Analyst: 1</li> <li>c. Profile of SAS Subject Matter Expert: 1</li> <li>d. Profile of SAS Technical Expert: 1</li> <li>e. Profile of SAS Senior Application Developer: 3</li> <li>f. Profile of SAS Junior Application Developer: 2</li> </ul>
19	Lot 1 - Profile of Project Manager	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Is certified in project management discipline</li> <li>d. Has got at least 5 years hands-on experience in SAS technologies</li> <li>e. Has got at least 3 years hands-on experience as project manager of implementation of IT systems</li> <li>f. Has got at least 10 years overall work experience after graduation</li> <li>g. Presents good command of English, at least at C1 CEFR level</li> <li>h. Present capability for facilitation of team processes and collaboration with the team to create and execute the project plan, liaison between Frontex and the team, to manage projects, guide project teams and consult business stakeholders</li> <li>i. Is capable of assessment and project definition, writing business cases, plans, concept documents, give presentations and chair workshops for business users</li> </ul>
20	Lot 1 - Profile of Business Intelligence Analyst	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Has got at least 3 years hands-on experience in SAS technologies</li> <li>d. Has got at least 2 years hands-on experience in Relational Database Management Systems</li> <li>e. Has got at least 6 years overall work experience after graduation</li> <li>f. Presents good command of English, at least at C1 CEFR level</li> <li>g. Possesses in-depth knowledge of physical databases, data warehouse architecture, SQL, BI reporting tools, ETL tools, data modelling tools, OLAP and data mining tools.</li> <li>h. Is capable for consult business stakeholders, gather business requirements and translate them in analytical system design specifications, prepare concept documents, give presentations and trainings to business users</li> <li>i. Is capable to guide and support development team in creating, developing, testing, deploying, documenting and maintaining of the data models, databases, OLAP, ETL processes, data warehouses, data mining solutions, reporting applications, reports and documentation.</li> </ul>
21	Lot 1 - Profile of SAS Subject Matter Expert	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Holds at least one SAS Certification credentials relevant to the area of expertise (Foundation Tools, Advanced Analytics, Business Intelligence and Analytics, Data Management, etc.)</li> <li>d. Has got at least 5 years hands on experience in SAS technologies</li> <li>e. Has got at least 10 years overall work experience after graduation</li> <li>f. Presents good command of English, at least at C1 CEFR level</li> <li>g. Has expertise in a SAS solution, industry or technology and experience sufficient for providing expert advice for future project steps, transfer of knowledge, providing technical workshops, quality-check of the SAS-related work performed by the project team, in terms of design, programming efficiency or best practices, implementation of a project using SAS software, software customization.</li> </ul>
22	Lot 1 - Profile of SAS Technical Expert	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Holds SAS Certified Platform Administrator for SAS 9 certificate or equivalent</li> <li>d. Has got at least 3 years hands on experience in SAS technologies</li> <li>e. Has got at least 5 years overall work experience after graduation</li> <li>f. Presents good command of English, at least at B2 CEFR level</li> <li>g. Has a capability including expertise and experience for: providing technical advice concerning architecture, performing software installation and configuration tasks, providing technical support during maintenance phase, performing system optimization from performance, security and quality points of view, documenting of technical solutions, etc.</li> </ul>
23	Lot 1 - Profile of SAS Senior Application Developer	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Holds SAS Certified Advance Programmer for SAS 9 certificate or equivalent</li> <li>d. Has got at least 3 years hands-on experience in SAS technologies</li> <li>e. Has got at least 5 years overall work experience after graduation</li> <li>f. Presents good command of English, at least at B2 CEFR level</li> <li>g. Is an expert in extracting, aggregating and structuring large volumes of data using SAS software.</li> <li>h. Possesses capability for unassisted development of solutions, solving problems, knowledge transfer and to guide junior staff</li> <li>i. Is capable for SAS software customizing and for writing, prototyping, testing, implementing, documenting, performing integrations and maintaining applications using SAS software.</li> </ul>

24	Lot 1 - Profile of SAS Junior Application Developer	<ul style="list-style-type: none"> <li>a. Holds first cycle higher education</li> <li>b. Holds security clearance at EU CONFIDENTIAL level</li> <li>c. Has got at least 1 years hands-on experience in SAS technologies</li> <li>d. Has got at least 2 years overall work experience after graduation</li> <li>e. Presents good command of English, at least at B2 CEFR level</li> <li>f. Is capable for SAS software customizing and for writing, testing, documenting and maintaining applications using SAS software.</li> </ul>
25	Lot 2 - Required minimum number of staff in the profiles	<ul style="list-style-type: none"> <li>a. Profile of Project Manager: 1</li> <li>b. Profile of Business Intelligence Analyst: 1</li> <li>c. Profile of BI Solutions Architect: 1</li> <li>d. Profile of Database Developer/Administrator: 1</li> <li>e. Profile of BI Senior Developer: 1</li> <li>f. Profile of BI Junior Developer: 1</li> </ul>
26	Lot 2 - Profile of Project Manager	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Has got at least 4 years hands-on experience as project manager of implementation of IT systems</li> <li>c. Directly participated in at least 2 projects concluded with successful implementation of solutions based on MS BI or SQL Server platform at its complete lifecycle in at least one of the following roles: business analyst, system analysis, architect and preferably supplemented by experience in testing MS BI solutions</li> <li>d. Presents good command of English, at least at C1 CEFR level</li> <li>e. Is certified in project management discipline</li> <li>f. Present capability to manage projects, guide project teams and consult business stakeholders</li> <li>g. Has teamwork experience in agile teamwork frameworks</li> <li>Is capable of writing business cases, plans, concept documents, give presentations and chair workshops for business users</li> </ul>
27	Lot 2 - Profile of Business Intelligence Analyst	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds in-depth knowledge on physical databases, data warehouse architecture, SQL, BI reporting tools, ETL tools, data modelling tools, OLAP and data mining tools</li> <li>c. Has passed comprehensive training in SQL Server or MS BI platform in scope of its design, configuration and governance</li> <li>d. Has got at least 2 years hands-on experience as business or system analyst in the recent 5 years of professional work</li> <li>e. Directly participated in at least 2 projects concluded with successful implementation of solutions based on MS BI or SQL Server platform at its complete lifecycle in at least one of the following roles: business analyst, system analysis, architect, senior developer and preferably supplemented by experience in testing of the solutions and training its users</li> <li>f. Presents good command of English, at least at C1 CEFR level</li> <li>g. Present capability to guide development teams and consult business stakeholders</li> <li>h. Has teamwork experience in developing software, preferably in agile frameworks</li> <li>i. Is capable of writing specifications, concept documents, end user documentation, give presentations and trainings to business users</li> </ul>
28	Lot 2 - Profile of BI Solutions Architect	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds Microsoft certificate at master level (the retired MSM, MCA, MSCM) or a collection of MCSD and MSCE certificates) or equivalent</li> <li>c. Has got at least 2 years hands-on experience in architecting software systems</li> <li>d. Has got at least 4 years hands-on experience in software development in Microsoft technologies in the recent 6 years of professional work</li> <li>e. Directly participated in at least 2 projects concluded with successful implementation of MS BI or SQL Server based solutions at its complete lifecycle in at least one of the following roles: architect, development manager, analyst, senior developer</li> <li>f. Presents good command of English, at least at C1 CEFR level</li> <li>g. Presents expert degree in architecting MS BI and SQL Server solutions</li> <li>h. Present capability to guide development teams and consult business stakeholders</li> <li>i. Has teamwork experience in developing software, preferably in agile frameworks</li> <li>j. Is capable of writing specifications, concept documents, end user and technical documentation, give presentations to business stakeholders stakeholders on technical and user requirements matters</li> </ul>
29	Lot 2 - Profile of Database Developer/Administrator	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds MCSE certificate or equivalent</li> <li>c. Has got at least 4 years hands-on experience with Relational Database Management Systems in software development in Microsoft technologies in the recent 5 years of professional work</li> <li>d. Has developed or co-developed at least 2 complete end-user solutions in SQL Server and/or MS BI</li> <li>e. Presents good command of English, at least at B2 CEFR level</li> <li>f. Presents high degree of capability and technical knowledge for developing and maintaining solutions in SQL Server and MS BI</li> <li>g. Has experience in database design, configuration, optimisation and integration with applications, preferably in agile frameworks as well as in database administration</li> <li>h. Has experience in data modelling tools, ETL tools, data warehouses, data mining tools,</li> </ul>



		<i>Is capable of writing end user and technical documentation, and communicate fluently with stakeholders on technical and user requirements matters</i>
30	Lot 2 - Profile of BI Senior Developer	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds MCSD certificate or equivalent</li> <li>c. Has got at least 4 years hands-on experience in software development in Microsoft technologies in the recent 5 years of professional work</li> <li>d. Has developed or co-developed at least 2 complete end-user solutions in SQL Server and/or MS BI</li> <li>e. Presents good command of English, at least at B2 CEFR level</li> <li>f. Presents high degree of capability and technical knowledge for developing MS BI solutions unassisted and to guide junior staff</li> <li>g. Has teamwork experience in developing software, preferably in agile frameworks</li> <li>h. Is capable of writing end user and technical documentation, and communicate fluently with stakeholders on technical and user requirements matters</li> </ul>
31	Lot 2 - Profile of BI Junior Developer	<ul style="list-style-type: none"> <li>a. Has got at least 1 year hands-on experience in software development in Microsoft technologies in the recent 2 years of professional work</li> <li>b. Has developed or co-developed at least 1 complete end-user solutions in SQL Server (MS BI)</li> <li>c. Presents good command of English, at least at B2 CEFR level</li> <li>d. Presents technical capability for developing solutions in MS BI under surveillance of senior staff</li> <li>e. Is capable of writing technical documentation and communicate with teammates effectively</li> </ul>
32	Lot 3 - Required minimum number of staff in the profiles	<ul style="list-style-type: none"> <li>a. Profile of Project Manager: 1</li> <li>b. Profile of GIS Architect: 1</li> <li>c. Profile of Systems Analyst: 1</li> <li>d. Profile of GIS Administrator: 1</li> <li>e. Profile of GIS Senior Developer: 1</li> <li>f. Profile of GIS Junior Developer: 1</li> <li>g. Profile of Application Tester: 1</li> <li>h. Profile of GIS analyst: 2</li> </ul>
33	Lot 3 - Profile of Project Manager	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Has got at least 4 years hands-on experience as project manager of implementation of IT systems</li> <li>c. Directly participated in at least 2 projects concluded with successful implementation of solutions based on ESRI GIS or SQL Server platform at its complete lifecycle in at least one of the following roles: business analyst, system analysis, architect and preferably supplemented by experience in testing ESRI GIS solutions</li> <li>d. Presents good command of English, at least at C1 CEFR level</li> <li>e. Is certified in project management discipline</li> <li>f. Presents capability to manage projects, guide project teams and consult business stakeholders</li> <li>g. Has teamwork experience in agile software development frameworks</li> <li>Is capable of writing business cases, plans, concept documents, give presentations and chair workshops for business users</li> </ul>
34	Lot 3 - Profile of GIS Architect	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Holds Microsoft certificate at master level (the retired MSM, MCA, MSCM) or a collection of MCSD and MSCE certificates or Oracle Certified Professional Java EE Developer certificate or equivalent, or passed some exams towards MCSD certificate or equivalent.</li> <li>c. Has got at least 2 years hand on experience in architecting GIS systems</li> <li>d. Has got at least 5 years hand on experience in software development</li> <li>e. Presents excellent command of English, at least at C1 level</li> <li>f. Is an expert in GIS systems architecting, planning capacity and security, designing, optimizing, implementing and administering enterprise level GIS systems and geo-data sets</li> <li>g. Holds excellent technical knowledge about: databases, application servers, communication middleware, web servers, GIS services, directory services, systems security on Microsoft platforms, systems integration and Integrated Development Environments</li> <li>h. Present capability to guide development teams and consult business stakeholders</li> <li>i. Has teamwork experience in developing software, preferably in agile frameworks</li> <li>Is capable of writing specifications, concept documents, end user and technical documentation, give presentations to business stakeholders stakeholders on technical and user requirements matters</li> </ul>
35	Lot 3 - Profile of Systems Analyst	<ul style="list-style-type: none"> <li>a. Holds second cycle higher education</li> <li>b. Has passed comprehensive training in ESRI GIS technology in scope of its design, configuration, and governance.</li> <li>c. Has got at least 2 years hands-on experience as business or system analyst in the recent 5 years of professional work</li> <li>d. Directly participated in at least 2 projects concluded with successful implementation of solutions based on ESRI GIS technology at its complete lifecycle in at least one of the</li> </ul>

		<p>following roles: business analyst, system analysis, architect and preferably supplemented by experience in testing ESRI GIS based solutions and training its users</p> <p>e. Presents good command of English, at least at C1 CEFR level</p> <p>f. Presents expert degree in using and configuring ESRI GIS systems</p> <p>g. Present capability to guide development teams and consult business stakeholders</p> <p>h. Has teamwork experience in developing software, preferably in agile frameworks</p> <p>Is capable of writing specifications, concept documents, end user documentation, give presentations and trainings to business users</p>
36	Lot 3 - Profile of GIS Administrator	<p>a. Holds first cycle higher education</p> <p>b. Holds ESRI Enterprise Administration certificate or equivalent and/or Oracle Certified Professional Java EE Developer certificate or equivalent and/or any Microsoft Software developer certification, or passed some exams towards MCSD certificate or equivalent.</p> <p>c. Has got at least 3 years hands-on experience in systems administration</p> <p>d. Has got at least 2 years hands-on experience in administering the ArcGIS Platform</p> <p>e. Presents good command of English, at least at B2 CEFR level</p> <p>f. Is an expert in administering and maintaining enterprise level GIS systems, GIS web services, geospatial databases, geo catalogues and metadata</p> <p>Has experience in database design, configuration, optimisation and integration with applications, preferably in agile frameworks</p>
37	Lot 3 - Profile of GIS Senior Developer	<p>a. Holds second cycle higher education</p> <p>b. Holds Oracle Certified Professional Java EE Developer certificate or Microsoft MCSD certification or equivalent, , or passed some exams towards MCSD certificate or equivalent.</p> <p>c. Has got at least 6 years hand on experience in systems development</p> <p>d. Has got at least 3 years hand on experience in designing and developing enterprise level web GIS</p> <p>e. Presents excellent command of English, at least at C1 level</p> <p>f. Is an expert in developing enterprise level GIS, GIS web services, geo catalogues and metadata, GIS related applications as well as integrating GIS services with applications</p> <p>g. Possesses capability for unassisted development of solutions, solving problems, knowledge transfer and to guide junior staff</p> <p>h. Is capable for writing, prototyping, testing, implementing, documenting, performing integrations and maintaining applications using ESRI GIS technology.</p>
38	Lot 3 - Profile of GIS Junior Developer	<p>a. Holds first cycle higher education</p> <p>b. Has got at least 1 years hands-on experience in GIS technologies</p> <p>c. Has got at least 2 years overall work experience after graduation</p> <p>d. Presents good command of English, at least at B2 CEFR level</p> <p>e. Is capable for writing, testing, documenting and maintaining applications using ESRI GIS technology.</p>
39	Lot 3 - Profile of Application Tester	<p>a. Holds first cycle higher education</p> <p>b. At least ISTQB Certified Tester at Advanced Level or equivalent</p> <p>c. At least 3 years of experience in systems development</p> <p>d. At least 2 years of experience in testing complex systems</p> <p>e. Expert in testing including unit testing, integration testing, functional testing, performance and stress testing, acceptance testing and regression testing</p> <p>f. Well versed in software testing tools, both automated and graphical ones</p> <p>g. Expert in designing testing environments and automating tests at least in MS Visual Studio</p> <p>h. Presents good command of English, at least at B2 CEFR level</p>
40	Lot 3 - Profile of GIS Analyst	<p>a. Holds second cycle higher education</p> <p>b. Directly participated in at least 2 projects concluded with successful implementation of solutions based on ESRI GIS or SQL Server platform</p> <p>c. Holds GISP certificate from GISCI or ArcGIS Desktop Certification</p> <p>d. Python and /or Visual Basic programming skills</p> <p>e. ArcGIS desktop advance + extensions</p> <p>f. RDBMS skills including development skills</p> <p>g. Training in ESRI GIS technology</p>

## 8.2. Project Management

No	Title	Description
41	PM Artefact	<p>The following artefacts are required:</p> <ul style="list-style-type: none"> <li>Project Management Plan (PMP)</li> <li>Stage/Iteration Plan (S/IP)</li> <li>Minutes of Meetings (MoM)</li> <li>Project Reports (RE)</li> </ul>

		<ul style="list-style-type: none"> <li>Project Logs (LOG)</li> </ul>
42	Project Management Plan [PMP]	<p>The Project Management Plan should cover the totality of project management aspects during the entire duration of the Contract. In addition to the Contractor's typical elements of the project plan the following shall be covered and agreed with Frontex:</p> <ul style="list-style-type: none"> <li>Goals and priorities</li> <li>Product description</li> <li>Description of project repository</li> <li>Description of configuration and change management</li> <li>Planned quality assurance and control</li> <li>Project team, roles and organisation structure</li> <li>Project tolerances</li> <li>Scope management</li> <li>Risks management Assumptions and constraints</li> <li>Master schedule</li> </ul>
43	Stage/Iteration Plan [S/IP]	<p>Project Stage/Iteration Plan shall be considered as very practical projection of the PMP for the particular stage of the project. In specific it: contains decisions to be taken and critical issues, covers all deliverables and activities required, balances the resources in visible way, allows planning of meetings and engagements of Frontex staff in at least 1 week in advance, books Frontex resources, reflects the schedule baseline (initially approved schedule) and the actual plan in one chart, contains the actual list of team members, their roles and % of dedication to the project, is maintained continuously to reflect the current progress and status of the project.</p>
44	MoM	<p>The Contractor shall be responsible for drafting and disseminating minutes of the meetings within 3 working days from the end of the meeting. Minutes must be a tangible record of the meeting for its participants and a source of information for people who were unable to attend. They must capture in a clear, unbiased and concise way the essence of the meeting, its agenda, positions presented during the meeting, decisions taken, action items set and reviewed. Capturing the minutes live during the meeting and visible to all participants on the screen is a preferred method of drafting.</p>
45	RE	<p>Regular bi-weekly (or if agreed by Frontex - monthly) Highlight Reports as well as: End Stage, End Project, Exception Reports, Lessons Learned Reports are required.</p>
46	LOG	<p>The contractor shall maintain continuously the following registers: Risk Log, Issue Log, Quality Log, Daily Log and Configuration Item Record.</p>
47	Product Descriptions	<p>Product Descriptions shall be prepared by the Contractor and agreed with Frontex prior to the development of the product.</p>
48	Escalation	<p>Frontex recognizes the need for escalation when issues need senior-level's awareness or intervention, especially if there is a risk of going beyond the project tolerances, or there is a risk or event breaching the terms and conditions of the contract, security or safety rules, or the decisions cannot be taken in a timely manner according to standard project management procedures. In such cases the Contractor must immediately escalate the issue, in the first instance, to the Frontex Project Manager, in the second instance to the Project Board. The escalation shall be accompanied by unbiased and clear documentation and recommendations.</p>
49	Conciseness of plans	<p>PMP shall convey content which is specific for the project. No voluminous presentation of standards is allowed. Static parts (methodology) shall be separated from dynamic parts (schedule).</p>
50	Compliance of the PM methodology	<ol style="list-style-type: none"> <li>The project management methodology applied by the Contractor shall be compliant with Prince2.</li> <li>Frontex may require the Contractor to apply processes and templates specified by Frontex.</li> </ol>
51	Frontex staff availability	<p>The Contractor shall precisely address his requirements for contributions from Frontex staff by definition, level of details and deadlines while respecting the time limitations of staff due to missions and other assignments.</p>

52	Role of SC Contract Board	<p>Most of the FP SCs are established in correspondence to Frontex IT Enabled Projects. In these cases the FP SC covers a part of the scope of the Frontex IT Enabled Project. For these projects Frontex establishes project management structure according to his internal policies. The following roles are established: Project Executive (Owner), Senior User, Senior Supplier, Project Manager and optionally support of Contract Officer, PMO and ICT Support to PM.</p> <ol style="list-style-type: none"> <li>A SC Contract Board shall be established for each FP SC for effective sponsorship at both sites, surveillance of the progress and quality of SC, communication between Frontex and the Contractor at managerial level, consultation regarding management of the contractual changes and for dealing with issues escalated from project managers or users.</li> <li>The SC Contract Board shall be composed of Senior Supplier and optionally Project Executive from Frontex and Contractor's Executive from the Contractor site.</li> <li>The SC Contract Board shall be supported by Contracting Officers from both sites.</li> <li>The SC Contract Board shall be supported by Project Managers from both sites.</li> </ol>
53	Role of SC Contractor's Executive	<ol style="list-style-type: none"> <li>The Contractor shall nominate SC Contractor's Executive who will be ultimately representing the Contractor's company and subcontractors vis a vis Frontex for the supervision of all the FP SC, overall performance of the Contractor, change management and escalation of issues not solved at the level of the individual contracts.</li> <li>The role of SC Contractor's Executive may be played by the FWC Executive.</li> <li>The SC Contractor's Executive shall assure sponsorship for Contractor resources.</li> <li>The SC Contractor's Executive shall be available for meetings of SC Contract Board meetings on short notice (the same calendar week) when requested by Frontex.</li> </ol>
54	Role of PM	<ol style="list-style-type: none"> <li>The Contractor shall nominate his Project Manager that should perform this role during the complete duration of the FP SC. He coordinates and manages for the Contractor the execution of Specific Contracts and the Contractor's resources. PM is responsible for delivery of the all contractual deliverables and work packages in the conditions of the SC.</li> <li>The nominated PM shall take the responsibilities described for his profile.</li> <li>PM shall be entitled to represent the Contractor in daily cooperation with Frontex and to decide the allocation and tasks of the Contractor project team members.</li> <li>The Contractor PM shall work in close cooperation with the Frontex PM, report, advise, assist and support him in favour of the Frontex project that the Specific Contract is contribution to.</li> <li>The Contractor PM shall work with the project team at Frontex premises or, if the project is performed at other locations, he should work at that location with regular frequent visits to Frontex Headquarters.</li> <li>The Contractor PM may be required to provide planned or ad hoc presentations of the projects that he is managing to Frontex and MS stakeholders.</li> </ol>
55	Synchronization and Harmonization	<ol style="list-style-type: none"> <li>Projects under this FWC will be performed in the context of other projects and service delivery processes. Therefore the Contractor shall define and maintain relations with other projects synchronise related activities and harmonise the processes to the greatest possible extent. The Contractor shall foresee the synchronisation and harmonisation efforts in planning and reporting.</li> <li>It is required that all the projects being performed by the FWC Contractor are managed in a unified way. It is required that the Contractor periodically presents to Frontex unified portfolio level reports on the ongoing and planned projects, their status, dependencies, shared risks and issues, resources used, projected benefits delivery plan and plan of new releases and roadmaps of already operational systems.</li> </ol>
56	Dedication of resources	<p>The Contractor shall present in the project plan the resources allocated to the project. A situation where the same key project resources are assigned to more than one project should be avoided.</p>
57	Project repository	<p>All project management documentation shall be handle in electronic format in project repository fully accessible to Frontex. The recoverable copy of the repository shall be handed over to Frontex.</p>
58	Quality reviews and docs	<p>The Contractor shall perform internal quality reviews and the related documentation shall be accessible to Frontex.</p>



### 8.3. Consultancy

Consultancy services and the related artefacts are not predefined on the FWC level. They will be defined in the actual request for Specific Contract. Consultancy may refer to delivery of individual artefact from other areas, analysis, planning, recommendations, verification of any items defined in this TOR. For example: development of IA, planning of testing, recommendations for performance improvements or verification of ARCH designed by Frontex. Therefore all the other requirements presented in the TOR are binding for Consultancy.

### 8.4. Software Development

The following understanding of deliverables shall be assumed when developing software (including changes and updates) based on Fixed Price Specific Contracts. Frontex will decide about which specific artefact will be mandatory for each SC.

No	Title	Description
59	Artefacts in Software Development	<p><i>The following artefacts are required in software development:</i></p> <ul style="list-style-type: none"><li>○ <i>Architecture (ARCH)</i></li><li>○ <i>Information Architecture (IA)</i></li><li>○ <i>Business and System Requirements Document (BRD/SRS)</i></li><li>○ <i>Technical Design Document (TDD)</i></li><li>○ <i>Source code (CODE) including data files, scripts and other files needed for executable system</i></li><li>○ <i>Executable software (EXE)</i></li><li>○ <i>Unit Tests (UT)</i></li><li>○ <i>Automated Tests (AT)</i></li><li>○ <i>Technical Documentation (TD)</i></li><li>○ <i>Administrator Documentation (AD)</i></li><li>○ <i>User Manual (UM)</i></li><li>○ <i>Test Plan (TP) including testing traceability matrix</i></li><li>○ <i>Test Cases and Test Scenarios (TC/S)</i></li><li>○ <i>Test Log (TL)</i></li><li>○ <i>Test Summary Report (TSR)</i></li><li>○ <i>Application deployment (DEP)</i></li></ul>
60	IA	<p><i>The IA Information Architecture shall be delivered as the recommended design covering at least:</i></p> <ul style="list-style-type: none"><li>• <i>web applications/ site collections /sites / libraries / lists structures</i></li><li>• <i>definition of the taxonomies with the related taxonomy management rules and draft metadata management policy documents</i></li><li>• <i>definition of actual nodes in navigation and visualisation of navigation means implemented in the Solution</i></li><li>• <i>definition of the content types and related policies</i></li><li>• <i>communication channels</i></li><li>• <i>search refiners</i></li><li>• <i>possible ways of personalisation</i></li><li>• <i>values for labelling user interface and the hints for mouse hover</i></li><li>• <i>definition of the landing pages</i></li><li>• <i>document libraries structure</i></li><li>• <i>views for lists and libraries</i></li><li>• <i>definition of personas for the Solutions and user roles</i></li><li>• <i>contribution to Frontex policies and procedures concluding from the IA</i></li></ul>
61	ARCH	<p><i>Architecture documents shall convey at the minimum the following information or equivalents:</i></p> <ul style="list-style-type: none"><li>• <i>Vision of the system</i></li><li>• <i>Architectural goals</i></li><li>• <i>Architecturally significant requirements and constraints</i></li><li>• <i>Key abstractions</i></li><li>• <i>Architectural decisions and options</i></li><li>• <i>Architectural mechanisms and patterns</i></li></ul>

		<ul style="list-style-type: none"> <li>• Operational model and deployment approach</li> <li>• Architecturally significant design elements</li> <li>• Critical system interfaces</li> <li>• Capacity, performance and scaling</li> <li>• Security</li> <li>• Assets to be reused</li> <li>• Guidance for developers</li> </ul>
62	BRD/SRS	<p>The combined Business Requirements Document and System Requirements Specification shall convey at the minimum the following information or equivalents:</p> <ul style="list-style-type: none"> <li>• Vision of the system</li> <li>• Business case and justification</li> <li>• Scope definition (inclusions, exclusions)</li> <li>• Business use cases and use case specifications</li> <li>• Actors and roles</li> <li>• Business rules</li> <li>• Requirements register*, system use cases and use case specifications or user stories and storyboards (including priorities, dependences and sourcing)</li> <li>• Use case realisation model</li> <li>• UI mock-ups</li> <li>• Business domain model and taxonomies</li> <li>• Non-functional requirements</li> <li>• Quantitative analysis</li> <li>• Initial specification of test cases</li> <li>• Effort estimates</li> </ul> <p>* The register shall be maintained as electronic repository of the requirements that allows on-line collective commenting, track history, editing, breakdown and traceability of the requirements to other artefacts for both the Contractor and Frontex. The requirements shall be further broken down to the granularity needed for implementation and testing meeting SMART characteristic. Traceability of the requirements shall be maintained at least for decomposition to more granular requirements, for test cases and releases.</p>
63	TDD	<p>Technical Design Document shall be composed of following elements or equivalents:</p> <ul style="list-style-type: none"> <li>• Use case realisation model refinements</li> <li>• Mock-ups, navigations, UI or functional prototype</li> <li>• Technology prototypes or technology evaluation report</li> <li>• System component model</li> <li>• System domain model (including taxonomies and lifecycles of data items)</li> <li>• Internal interfaces description</li> <li>• External interfaces control documents</li> <li>• Security, authentication and authorisation model</li> <li>• Deployment model and connectivity</li> <li>• Data migration</li> <li>• HW sizing, capacity and performance model</li> <li>• Assumptions and constraints</li> <li>• Refined test cases</li> <li>• Requirements - design components - test cases traceability matrix</li> </ul>
64	TD	<p>Technical Documentation shall be at the minimum composed of following elements or equivalents:</p> <ul style="list-style-type: none"> <li>• Source code structure and description</li> <li>• Low level design documents if used (e.g. state machine diagrams, sequence diagrams, deployment diagrams)</li> <li>• Standards used</li> <li>• Detailed physical data models</li> <li>• Description of interfaces and APIs</li> <li>• Deployment manual and configuration</li> <li>• Release notes</li> <li>• Reports on unit tests</li> <li>• Specification of Open Source software or any third party software used and its configuration</li> </ul>

		<ul style="list-style-type: none"> <li>Requirements - design components - test cases traceability matrix</li> <li>Updates to TDD reflecting “as implemented” status with clear indications on the departure from the approved TDD</li> </ul>
65	AD	<p>Administrator Documentation shall be at the minimum composed of:</p> <ul style="list-style-type: none"> <li>A description of the environment configuration (hardware and software)</li> <li>A description of the deployment of new versions including how to switch the application in maintenance mode</li> <li>A description of the application configuration (setting up the application configurable parameters)</li> <li>Standard operating procedures (SOPs) describing how to perform common administrative tasks such as, disaster recovery procedures, database administrative tasks, monitoring performance, installation of new versions of the application.</li> <li>Information about backup/restore procedures (what to backup, how often, type of backup, etc.)</li> <li>Contractor’s recommendation regarding configuration management</li> <li>A description of troubleshooting procedures in general and for specific most frequent incidents</li> <li>A description of important parameters to monitor</li> <li>A description of basic tests to be performed by the system administrators in order to check if the application is up, running and behaving properly after system shutdown and re-launch</li> <li>A description of the application log management procedure (when, how often and how the application log files shall be managed)</li> </ul>
66	TP	<p>Contractor shall provide Test Plan for all testing activities to be performed in all stages of production and delivery and the acceptance test performed by Frontex. Test Plan:</p> <ul style="list-style-type: none"> <li>defines test approaches and methods</li> <li>provides traceability of tests to the requirements</li> <li>defines the testing environments, tools and administrative procedures for testing environments including management of test automates and test data</li> <li>defines procedure and repository for ticketing the bugs</li> <li>defines roles and procedures for testing</li> <li>defines reporting</li> <li>defines coverage and test criteria</li> <li>provides test cases and test scenarios</li> <li>schedules test activities</li> </ul>
67	Qualification to UAT	<p>The qualification to user acceptance test UAT is based on the documented results of tests performed by Contractor and the test results validated against the pass criteria:</p> <ul style="list-style-type: none"> <li>Agreed user story tests, use cases or detailed requirements at the defined coverage</li> <li>System test (testing the whole system via UI)</li> <li>Agreed Load and Performance tests</li> <li>Complete Integration and Regression testing</li> <li>Security testing</li> </ul> <p>Frontex may include any of these tests in UAT.</p>
68	Deployment of the Solution DEP	<p>a. The qualification for deployment on Staging environment is based on the documented results of test performed by Contractor:</p> <ul style="list-style-type: none"> <li>Automated deployment test</li> <li>Sanity test (after recovery, deployment or restart)</li> </ul> <p>b. The Contractor is required to deploy the Solution on Staging and Training environment.</p> <p>c. The deployment of the Solution on the Production environment will be performed following positive results of UAT by Frontex with on-site assistance of the Contractor and according to the documentation provided by the contract. The documentation shall be sufficient for the unassisted similar deployments in future.</p>

69	User Manual UM	A User Manual shall include all the information needed to learn the application. Basic computer knowledge (Windows, Office and Internet Explorer) shall be sufficient to understand the manual. The User Manual should be delivered at least in form of searchable and structured electronic content page that can be made available on Intranet.
70	Delivery	<ol style="list-style-type: none"> <li>All the deliverables shall be submitted to Frontex in accordance with the project Schedule. The official submission shall be confirmed by Frontex representative in form of a Consignment Note. Each deliverable shall be submitted to Frontex in:</li> <li>regarding software deliverables: complete copy of all source code including the related data files, scripts and other files needed for building the executable and operational Solution, executable software, administrative scripts and the related release notes - all delivered in a form of installable release package and archived copy of the code repository.</li> <li>regarding document deliverables: one colour printed document and one electronic copy in editable formats (mainly MS Office formats)</li> <li>a complete copy of the project repositories in an installable form.</li> </ol>
71	Model for Software Development Lifecycle	<ol style="list-style-type: none"> <li>Software development shall be primarily conducted in accordance with SCRUM methodology.</li> <li>The Contractor shall propose his recommendation for a software development process in compliance with Frontex requirements. Frontex and the Contractor will adjust the proposed methodology to the actual needs and constraints on the commencement of the Contract.</li> <li>In specific circumstances, agreed upon by Frontex and the Contractor for a Specific Contract, it might be needed to organise software development according to Rational Unified Process.</li> </ol>
72	Compulsory Reports from software development	<p>The following reports shall be maintained continuously during the software development process at minimum:</p> <ol style="list-style-type: none"> <li>Product backlog</li> <li>Sprint backlog</li> <li>Burn down chart</li> <li>Quality log</li> </ol>
73	Identification of Deliverables	<ol style="list-style-type: none"> <li>All deliverables shall be identified and marked as configuration items (CI). Each deliverable submitted for acceptance shall carry the CI identification number, versions, and versions history log. The deliverables submitted for acceptance shall correspond to each other by allocation to the same configuration baseline.</li> <li>Each deliverable shall be subject of quality check by the Contractor. The deliverable shall carry information on when and who personally performed the quality check prior its submission.</li> <li>For each document type of deliverable there should be an evidence of all Frontex comments collected in working level reviews and how they are addressed.</li> <li>For each software type of deliverable there should be an evidence of all defects discovered to them by Frontex and the Contractor and how they are addressed.</li> </ol>
74	Source Code Control	<p>All development source code, along with relevant documentation and all software assets, including configuration data and scripts, shall be uploaded and stored in a source control repository at Frontex premises. This can be done either by working directly on the Frontex source code repository or by uploading stable source code snapshots in the event that the supplier is working remotely. All check-ins must have a clear English description of the modifications in the form of (where XXXX stands for unique identification):</p> <ul style="list-style-type: none"> <li>bug XXXX: description - if the check-in is related to a bug fix</li> <li>story XXXX: description - if the check-in is associated with a user story</li> <li>other: description - if the check-in is not related to a bug or a story number</li> </ul>
75	Installation Packages	Each release of software shall be handed over to Frontex in the form of installation packages accompanied by appropriate release notes, an installation manual, configuration data and other elements needed for successful installation. Updates to manuals and self-explanatory power point presentation of the changes and the new features together with screenshots shall be delivered prior the release.
76	Defects DB	<ol style="list-style-type: none"> <li>Any issues, bugs or defects identified in the system under development shall be recorded in the Defects DB</li> <li>The Contractor shall implement this database</li> </ol>

		<p>c. Any issues, bugs or defects identified in operational use of the system shall be recorded in the Defects DB hosted at Frontex premises</p> <p>d. The Defects DB must provide reporting capability to reflect the status of the issues as well as to provide statistical data on bugs and the tempo of resolving them</p> <p>e. Any resolved issue, bug or defect registered in the Defects DB must be accompanied by the reference to the version, versions, release in which the issue is resolved</p> <p>f. Frontex shall have full access to the Defects DB</p>
77	Artefacts Repository	<p>a. Each incremental build that is of release quality and contains new functionality must be archived into an Artefact Repository tagged by build number</p> <p>b. The Artefacts Repository shall be hosted at Frontex premises</p>
78	Release Notes	Any new releases of software shall be accompanied by Release Notes that provide clear reference to the implemented stories, change requests, issues, bugs and defects corrected in it.
79	Development Infrastructure	<p>a. For all intramural developments the infrastructure composed of software and hardware that is needed for software development shall be designed by the Contractor, agreed with Frontex, and provided by Frontex</p> <p>b. The Contractor shall provide administration of their development environment by default. However Frontex reserves the right to take over the administration of the entire development environment or selected components</p> <p>c. For all extramural developments the infrastructure composed of software and hardware shall be provided by the Contractor and the related costs shall be included in price</p>
80	System Health Checks	Frontex may at any time perform on their own, or by use of a third party, checks on the system's health. In case the results indicate failures in the implementation and compliance to the required standards and practices the Contractor will be required to correct the system immediately at his cost.
81	Process Audit	<p>a. Frontex may require an audit of the actual software development processes being executed by the Contractor against the plans, applicable standards and requirements</p> <p>b. Any such audit shall last no longer than 2 working days in 12 months</p> <p>c. Any observed deviations from the plans, applicable standards and requirements shall be rectified or, if justified for Frontex interest, can be waived by Frontex</p>
82	Testing Scope	<p>a. Automated tests delivered by the Contractor covers:</p> <ul style="list-style-type: none"> <li>• Unit tests</li> <li>• Agreed user story or use cases tests</li> <li>• Sanity tests (after recovery, deployment or restart)</li> <li>• Agreed Load and Performance tests</li> </ul> <p>b. The following tests apply for the solution as a whole and shall be performed by the Contractor:</p> <ul style="list-style-type: none"> <li>• Regression testing</li> <li>• Security testing</li> <li>• Load and Performance testing</li> </ul> <p>c. All the tests shall be documented by the Contractor. The documentation of the tests, including the results, shall be handed over to Frontex</p>
83	Acceptance Tests UAT	<p>a. The Product shall be free of defects</p> <p>b. Frontex decides about eligibility for acceptance testing based on the reported results of the tests performed by the Contractor</p> <p>c. The acceptance of the Product shall be granted based on the positive results of the Acceptance Tests</p> <p>d. The results of the Acceptance Tests shall be qualified by Frontex</p> <p>e. The scenarios and test cases for the Acceptance Tests shall be delivered by the Contractor for Frontex acceptance. Frontex may extend the scope of the acceptance testing on his decision.</p> <p>f. The test success criteria have to be approved by Frontex.</p> <p>g. Frontex reserves the right to decide if the Acceptance Test is performed: by Frontex with continuous support and assistance of the Contractor, by the Contractor with Frontex control, or by third party with Frontex control and the Contractor assistance.</p> <p>h. The Acceptance Tests shall be performed on the environment simulating the final production environment, preferably on the Staging Environment</p>

		i. The testing tools and scripts shall be delivered by the Contractor.
84	Unit Tests	The minimum required unit test coverage for business or other operational logic (e.g. web services, UI Logic) shall be agreed by Frontex in the project plan, however by default it should not be less than 70%.
85	Security Testing	<p>a. The deliverables (software/server) need to pass the attack vectors defined in the OSSTMM (Open Source Security Testing Methodology Manual) in its current version. If the deliverables include web-applications or other web-based technologies, they need to pass all the vulnerability tests defined in the OWASP standard (Open Web Application Security Project). The most current version is OWASP 4.0, which is constantly adjusted to cover new threats and attack vectors. Therefore, the current OWASP version at the time of signing the contract should be used as the reference.</p> <p>b. Security Test shall cover at least the following:</p> <ol style="list-style-type: none"> <li>SQL injection to ensure that the SQL queries are parameterised and that any input used in a SQL query is validated</li> <li>Cross-site</li> <li>Cross-site request forgery</li> <li>Data access to look for improper storage of database connection strings and proper use of authentication to the database</li> <li>Input/data validation to ensure all client-side validation is backed by server-side validation, to avoid poor validation techniques such as reliance on file names or other insecure mechanisms, and to make security decisions and output that is based on user input encoded using appropriate library</li> <li>Authentication to ensure that minimum error information is returned in the event of authentication failure and to ensure that credentials accepted from users are securely stored (hashed with a key) and check if authentication attempts are audited</li> <li>Authorisation to limit database access and to separation privileges</li> <li>Sensitive data to avoid mismanagement of sensitive data by disclosing secrets in error messages, code, memory, files, or the network</li> <li>Auditing and logging to ensure the application is generating logs for sensitive actions and has a process in place for auditing log files periodically</li> <li>Code that uses cryptography to check for a failure to clear secrets and improper use of the cryptography APIs themselves</li> <li>Threading problems to check for race conditions and deadlocks, especially in static methods and constructors</li> </ol>
86	Penetration Test	Frontex may at any time perform on their own, or by use of a third party, a security penetration test. In case the results indicate obvious security gaps or vulnerabilities or failures in the implementation and compliancy to the required standards and practices the Contractor will be required to correct the system immediately at his own cost.
87	Effort Estimation	It is required to provide an effort estimate for each software development assignment based on Fixed Price and to decompose the estimate down to deliverables, split into profiles and provide traceability to requirements or group of requirements. The decomposition shall not be considered as any type of limit of efforts.
88	Development Team	<p>a. The team engaged in software development shall be composed of professionals who are accepted to the FWC Team and who meet the requirements set for the profiles</p> <p>b. The composition of the team, profiles, roles and planned level of engagement shall be indicated in the response to the Request for Specific Contract and reflected in the Project Management Plan</p> <p>c. Contractor is free in defining roles within the team</p>
89	Comprehensiveness of Configuration Management	<p>a. The Contractor is responsible for harmonised management of the configuration for all configuration items related to all activities related to the FWC</p> <p>b. The Contractor is responsible for maintaining the consistency of the source code across all software development activities under various assignments of the FWC and merging all simultaneous or overlapping versions and branches</p>

## 8.5. Third Level Support

Third Level Support will be ordered as Fixed Price SC.

No	Title	Description
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90	Role of Frontex	Frontex provides 1st Level Support and 2nd Level Support to Frontex users by its own teams or by T&M contractors. In case none of these levels can solve an incident or a problem it is addressed to the Contractor providing 3rd Level Support.
91	Guarantee	The 2 years guarantee is provided by default at the price of the software product and component provided or developed with no additional cost to Frontex for corrective and adaptive maintenance at the levels offered to wide market by the vendor of the product or component.
92	Role of Contractor	The primary role of the 3 <sup>rd</sup> Level Support is ensuring that the software product and it's all components, remain fully operational or can be restored to full operation under the defined conditions and service level requirements. The service shall also keep the system aligned with technological changes of its environment. It includes Preventive, Corrective and Adaptive Maintenance at the levels established in this TOR or individually in SC. Contractor is required to provide single point of contact and coordination for all offered Maintenance Services to Frontex, including those coming from 3rd parties.
93	Scope	3 <sup>rd</sup> Level Support shall be provided for all software components including server and client software, all layers including business and middleware, the bespoke application, 3 <sup>rd</sup> party software of the delivered systems or being a subject of this service.
94	Integration and harmonization	3rd Level Support shall be integrated within the tools and infrastructure and harmonised with the processes of other levels of support, software development and HW maintenance activities.
95	External access	External access to Frontex systems will not be granted by default. Frontex may decide, if in his interest, to grant temporary remote access to Staging Environment and define mandatory security requirements that have to be met by the Contractor. In exceptional situations, when solving an urgent incident which cannot be replicated in other environments, an assisted remote session to the Production Environment can be established for the Contractor's named staff. The named staff accessing the Production Environment must be previously authorised by Frontex. Such an exception may be applied temporally and under full control of Frontex. Contractor may access and manipulate merely the minimum of data for diagnostic and repair. The Contractor must not copy, must not delete and must not alter neither any data nor logs. Any operation performed by the personnel accessing the Production Environment remotely, including view of data, must be logged for auditing.
96	Place of work	Primarily the services shall be provided extramural, however all on-site interventions shall be done at Frontex Headquarters.
97	Preventive Maintenance	The Contractor shall carry out regularly corrective maintenance tasks on his initiative to lower the risk of failures or to mitigate security vulnerabilities. That shall include, but is not limited to: distribution of patches, performing health checks, reconfiguration.
98	Adaptive Maintenance	The Contractor shall implement all necessary modifications to the released software that are necessary for sustaining its full operational capability due to the modifications of underlying software products such as the upgrade of operating system, database or other infrastructure software.
99	Corrective Maintenance	The Contractor shall repair all failures (including degradation of performance below thresholds), vulnerabilities and bugs of the delivered product and software components in order to restore it and keep in perfect working order.
100	Reproduction and diagnosing	<ul style="list-style-type: none"> <li>a. The Contractor shall maintain the environment necessary for reproducing faults at his own premises</li> <li>b. If the fault has to be diagnosed in the Frontex environment the Contractor has to be assisted by Frontex staff</li> <li>c. The Contractor will not be allowed to make changes directly to the production environment</li> </ul>
101	Work around	Any work-around shall eventually be exchanged for the final systemic solution that should be delivered as a regular release or patch.
102	New Versions	Any new release shall be compliant with the requirements set for software development, including the scope of testing, assisting documentation, and the sequence of deployment to specific environments.
103	Hot-line support	The Contractor shall provide hot-line support for solving urgent problems and failures that cannot be solved by the lower levels of support.
104	Distribution	Distribution of patches, documentation, media and other related goods shall be included in the price of the Service.
105	Documentation	Any solution provided by Third Level Support shall be duly documented and reflected in the regular users, administrator and technical documentation.

106	Service window	<p>Third Level Support shall be available in 3 options:</p> <ul style="list-style-type: none"> <li>• Basic available in Normal Working Hours</li> <li>• Standard available in the Normal Working Hours and Extended Working Hours on Normal Working Days</li> <li>• Critical available 24/7</li> </ul>
107	Single Point of Contact (SPoC)	<p>The Contractor shall nominate and inform Frontex about his Single Point of Contact for addressing all communications regarding third Level Support. This person will be responsible for the coordination of all related activities (including prioritization, escalation and managing contract with third party vendors, monitoring thresholds) and reporting.</p>
108	Incident management process	<p>a. On T1, if needed, Frontex will escalate and send a Request for Intervention to the Contractor SPoC e-mail. Within T2 hours, the Contractor shall send a Request for Intervention Acknowledgement back to Frontex. The Contractor shall confirm that the incident description was received, communicate the unique incident number (ticket number) and indicate T3.</p> <p>b. If On-Site-Intervention is required then per a request from Frontex: Within T5 hours, the Contractor shall arrive in Frontex with proper tools for solving the specific incident. Within T3 the incident shall be resolved by the Contractor and verified by Frontex; Frontex will send a message to the Contractor SPoC e-mail stating the incident's closure. The Contractor shall send a message to Frontex clearly specifying the T1, T2, T3, T4, T5, the problem diagnosis and the actions carried out by the Contractor to solve the incident.</p> <p>c. If Remote Assistance is required and permitted by Frontex, then: Within T6 hours, the Contractor shall be available by phone for Frontex with the relevant information needed for solving the specific incident. Within T3 the incident shall be resolved by the Contractor and verified by Frontex; Frontex will send a message to the Contractor SPoC e-mail stating the incident's closure. The Contractor shall send a message to Frontex by e-mail clearly specifying the T1, T2, T3, T4, T5 (if exists), T6, problem diagnosis and actions carried out by the Contractor to solve the incident.</p>
109	Service level requirements for incidents	<p>Definitions:</p> <ul style="list-style-type: none"> <li>• T1: any time during service availability</li> <li>• T2: Incident-Notification-Acknowledgement-Time</li> <li>• T3: Incident-Planned-Resolution-Time</li> <li>• T4: Incident-Actual-Resolution-Time</li> <li>• T5: On-Site-Intervention-Time</li> <li>• T6: Remote-Intervention-Time</li> </ul> <p>Requirements:</p> <ol style="list-style-type: none"> <li>T2 must be less than 4 maintenance hours</li> <li>T3 must be less than 24 maintenance hours</li> <li>T4 must be less than 40 maintenance hours</li> <li>T5 must be less than T2+16 maintenance hours</li> <li>T6 must be less than T2+4 working hours</li> </ol> <p>Frontex may set different service levels in a request for Specific Contract.</p> <p>Temporary solution shall be considered as meeting the required threshold of T4 if: the technical solution is coordinated and technically accepted by Frontex, is implemented in T4 with no degradation in functionality and performance and the deadline for delivering permanent solution is agreed.</p>
110	Problem management process	<ol style="list-style-type: none"> <li>Frontex may organise an ad-hoc meeting notifying the SPoC via e-mail, in order to acknowledge the problem's existence and assess its impact.</li> <li>Within T1, the Contractor shall establish a register containing all incidents (and/or all devices impacted) associated with the problem.</li> <li>Within the T2 timeframe, the Contractor shall send to Frontex an action plan to solve the problem. The outcome of the action plan must be guaranteed by the Contractor who is supposed to have tested it before delivering the plan to Frontex. The relevant Test Reports shall be delivered to Frontex in advance, as the Contractor responsibility.</li> <li>Frontex may approve or refuse the action plan and the solution.</li> <li>If approved, then: Frontex shall send to the Contractor an e-mail of approval and within the T3 timeframe, while monitoring the implementation, the problem shall be solved by the Contractor.</li> <li>The progress on the action plan shall be monitored daily and reported weekly by the Contractor to Frontex.</li> </ol>



		g. If refused, then: The Contractor shall propose a new solution with the additional help of manufacturers, or shall provide evidence proving that there is no acceptable solution to the problem.
111	Service level requirements for problems	<p>Definitions:</p> <ul style="list-style-type: none"> <li>T1: days allowed for preparing the register containing all information related to the problem</li> <li>T2: days allowed for delivering an action plan to solve the problem</li> <li>T3: days allowed for solving the problem</li> </ul> <p>Requirements:</p> <ol style="list-style-type: none"> <li>T1 must be less than 5 maintenance days</li> <li>T2 must be less than 5 maintenance days</li> <li>T3 must be less than 10 maintenance days</li> </ol> <p>Frontex may set different service levels in a request for Specific Contract.</p> <p>Temporary solution shall be considered as meeting the required threshold of T4 if: the technical solution is coordinated and technically accepted by Frontex, is implemented in T4 with no degradation in functionality and performance and the deadline for delivering permanent solution is agreed.</p>
112	Reporting 3 <sup>rd</sup> REP	<p>Contractor shall monthly report to Frontex on 3<sup>rd</sup> Level Support regarding:</p> <ol style="list-style-type: none"> <li>Outstanding problems and incidents with related statistics and tracked history</li> <li>Detailed statistics of service level requirements showing the departure from the targets</li> </ol>
113	Penalties	<p>In case the Contractor does not meet the required Service Levels requirements the Contractor is due the penalties equal to the fraction of the value of the yearly maintenance fee:</p> <ol style="list-style-type: none"> <li>0.5% for a day of delay of T4 in case of delays for software of the production system that stops business processes in the solution.</li> <li>0.2% for a day of delay of T4 in case of delays for software of the production system that in the case of other delays.</li> </ol> <p>Frontex may set different levels for penalties in a request for Specific Contract.</p> <p>The penalties described here do not limit Frontex from applying the measures indicated in the GTCITC.</p>

## 8.6. Training

No	Title	Description
	Training artefact	<p>The following artefacts are required for trainings:</p> <ul style="list-style-type: none"> <li>Training Plan (TRAINP)</li> <li>Training (TRAIN)</li> <li>Training Materials (TRAINM)</li> <li>Training Environment (TRAINE)</li> <li>Training Report (TRAINR)</li> </ul>
114	Training for Power users (TRAIN)	Power users shall be trained in the requested scope in a form of workshops performed in the Training Environment with practical use cases appropriate for Frontex processes. Training shall effectively prepare the Power users to use the solution, participate in design and implementation, provide support to end users or training to end users. The maximum number of Power users for each training session shall not exceed 10.
115	Training for End users (TRAIN)	End users shall be trained in the requested scope in form of workshops performed in the Training Environments with practical use cases. Training shall effectively prepare the Power users to use the solution. The training methods and examples used in the workshop shall fit to the context of the actual tasks of the end users. The maximum number of End users per training session is 10.
116	On-job Training (TRAIN)	Frontex may order On-job Training which will be provided to selected Power users, End users or Administrators. The training shall be delivered in a form of assistance to daily tasks of the attendees. The trainer is expected to assist the attendees by solving their problems, replying questions and proactively explaining the best methods of performing the tasks and explaining its context.
117	Training for Administrators	Administrators (including Frontex Help Desk) shall be trained in form of practical workshops in scope of administrative tasks. Training shall effectively prepare the Administrators to administration of the solution, providing 1 <sup>st</sup> and 2 <sup>nd</sup> Level Support,

	(TRAIN)	performing SOPs, and participate in design and implementation. The maximum number of Administrators for each training session shall not exceed 10.
118	Training Plan (TRAINP)	<p>Contractor is required to develop TRAINP that covers:</p> <ul style="list-style-type: none"> <li>• Training needs</li> <li>• Training prerequisites for the attendees</li> <li>• Training prerequisites for Training Environment</li> <li>• Training programme</li> <li>• Training schedule</li> <li>• Method of assessing effectiveness of training</li> </ul>
119	Training Environment (TRAINE)	Training Environment is foreseen for provision of the training to Administrators, Power users and End users. Training Environment emulates the staging environment regarding its infrastructure and applications available. Contractor is required to customize the Training Environment with the training data and scenarios needed to fulfil the Training Programme.
120	Training Materials (TRAINM)	<p>Contractor is required to provide training materials in paper and electronic form to each attendee at the beginning of the training session the latest.</p> <p>Frontex may require to deliver training materials as electronic content available to all from Frontex intranet in form of (wiki or web pages form so the participants or other stakeholders can use the materials at any time.</p>
121	Trainers	<p>Trainers must have experience in providing trainings in technologies covered by the specific lot, understand business context of the specific training and be fluent in English (at least at C1 level).</p> <p>Trainers for Power users and End users trainings should hold professional certification in education e.g. Microsoft Certified Trainer.</p>
122	Training Report TRAINR	Contractor is required to report on the course of the training, attendance, assess effectiveness of the training in 10 days from the end of the training. Contractor shall report on his observations and recommendations regarding the continuation of education of the attendees.
123	Place of training	The trainings shall be hosted in Frontex. Frontex provides computers and other media facilities necessary to conduct the training.

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## 9. Implementation of FWC

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### 9.1. Types of assignments

The work items performed under this FWC, following the definition provided in the GTCITC, may be contracted on the basis of Specific Contracts of the following types:

- Time and Means (T&M)
- Fixed Price (FP)
- Quoted Time and Means (QT&M)

Each assignment of T&M or QT&M under the FWC will be classified as:

- Short Term for less than 30 man-days in total ;
- Long Term for efforts estimated from 30 up to 200 man-days in total ;
- Very Long Term for 201 man-days or more

By default services shall be provided during Normal Working Hours, however Frontex may request the Contractor to perform in Extended Working Hours or on a 24/7 basis. The type of assignment shall be indicated in each Request for Specific Contract and Order.

### 9.2. Ordering process - Specific Contracts

- The primary method of ordering Services in this FWC is Specific Contract.
- Under Lot 1 each SC will be awarded according to the cascade system.
- Under Lots 2 and 3 each SC in T&M or QT&M mode will be awarded according to the Cascade system while each SC in FxP mode will be awarded by Reopening of Competition based on Frontex Request for Service and Contractors' Proposals.
- In case of T&M services the Request for Service will define: the profiles of team member(s) requested, number of required team members and volume of work, tasks to be performed with acceptance criteria, duration of the assignment, reporting requirements, venue of the assignment and other relevant conditions. FWC Contractors will be addressed based on their ranking and they, within the deadlines indicated by Frontex, which are by default 10 calendar days, shall submit their proposals in reply to the Request for Services by offering candidates for each required profile. Number of offered candidates shall not be lower than requested but not higher than double of the requested volume. The required number of candidates must be compliant with the requested profiles. The candidates shall also fit to the particular tasks foreseen for the assignment. The proposals shall provide Frontex with the description of tasks, reporting, quality assurance measures and other requested documentation. The proposals must list the names of candidates who have been already accepted for the FWC or provide complete documentation for the new candidates, the same as required in the competition for this FWC (namely CVs, compliancy forms and diplomas). The offered prices must not exceed those defined in the FWC. The offer shall be valid for the duration indicated in the request but not for less than 30 calendar days to enable its evaluation by Frontex. First Frontex will evaluate compliancy of the proposals to the requirements, in specific - compliancy of the offered candidates to the FWC definition of the requested profiles. Incompliancy will result in rejection of the proposal. Then Frontex will evaluate capacity of the offered candidates for performing the tasks foreseen for this Specific Contract against the criteria defined in the Request. Frontex may require to verify the candidates' compliance, capacity and suitability (e.g. level of English, technical knowledge) in an interview and a practical technical test. Such interview will take place in Frontex premises or by means of audio-video remote MS Lync sessions (in that case video stream from the candidate is required, no personal or computer-based assistance to the candidate is allowed). The candidates will be offered with 2 alternative dates for the interview and one of them must be accepted. All candidates offered by one Tenderer must be interviewed the same day. If the proposal

does not meet or exceeds the threshold for suitability to SC tasks, it will be not eligible for award. Then Frontex will evaluate financial proposals of the eligible offers. The T&M Specific Contract shall be awarded to the Tenderer offering the lowest price.

- QT&M assignments will be processed as T&M ones with the following differences. In addition to the content of the Request for Services applicable to T&M assignments Frontex will describe volume of outputs (e.g. data to transferred, number of test cases to be performed, screens to be designed) and/or characteristics of the output. Regardless the actual effort spent by the Contractor to fully perform the required tasks at the defined volume and meet the acceptance criteria, only the contractual price will be paid.

In case of FP assignments Frontex shall specify the requirements for those services, objectives, deliverables, acceptance criteria, schedule, place of performance and other conditions. The request will provide detailed evaluation criteria for the proposals, which shall account for the technical merit at the level of 60% and the total price at 40%. Frontex will define mandatory requirements which must be met by the proposals in order to be evaluated for award. Frontex may define minimum threshold for technical merit. An example of evaluation criteria for FP assignment is presented in the table below. Depending on nature and scope of SC some of its elements might be not applicable (e.g. 3<sup>rd</sup> level support) therefore the actual list of criteria may change, subsequently the distribution of points may change. The items may be broken down to lower level of details or limited in order to stress out importance of some aspects.

Item	Title	Indicative evaluation criteria in Reopening of Competition	Indicative distribution of points to earn
1	Solution offered	Completeness and quality of the technical solution. Addressing the key design considerations in clear way. Effectiveness of the proposed solution, its interoperability with other systems, maintainability and reuse of components, safety and scalability. Level of fulfilling the non-functional requirements. Correspondence of the proposal to the purpose, organizational and technical context, and practical constraints for the work item.	55
2	Team offered	Expertise and experience of the offered personnel in correspondence to specific tasks foreseen in the SC. Time to start services. Proposed duration and activities for the inception of tasks specified in the request. Balanced composition of the offered team.	15
3	Project Management Plan	Expertise and experience of the proposed PM in reference to the specificity of the goals, scope and constraints of the SC. Quality of the proposed project management plan including the proposed schedule and alignment of the project management methods to the specificity of the SC. Adequacy the risks recognized by the Tenderer and effectiveness of the proposed countermeasures for risks and assurance of the quality. Usability of the plan to control the project.	10
4	Software Development Plan	Alignment of the software development methodology to the purpose, scope, constraints and goals of the SC. Duration and effectiveness for inception of already used systems for implementing changes, new versions, extensions or interfaces. Understanding of the goals and constraints of the subject of SC expressed in effectiveness and appropriateness of the quality assurance proposed and mitigation of the risks.	10

		Composition of the team proposed for the SC and tools and the way the tools are to be used for the SC. Usability of the plan to control the development.	
5	3 <sup>rd</sup> Level Support offer	Alignment of the organization and controls for 3 <sup>rd</sup> to the SC. Duration and effectiveness for inception of new systems for 3 <sup>rd</sup> Level Support. Proposed and mitigation of the risks. Composition of the team proposed for the SC and tools and the way the tools are to be used for the SC.	10
TOTAL MAXIMUM POINTS:			100

Contractors, within the deadlines indicated by Frontex, which are by default 20 calendar days (but can be longer if duly justified by the complexity of the assignment) shall submit their proposals by offering delivery of the services and products according to the specification and at the price not higher than those resulting from a summary of the prices of the FWC and effort estimated for delivery of the Service or Product. The proposal shall provide: a draft project plan, description of tasks, quality assurance measures, and technical description of the proposed solution and other elements requested. If, after the receipt of Frontex Request for Services, the Contractor requires clarifications these clarifications shall be prepared without delay and distributed to all Contractors. Such requests for clarifications shall not be admissible on the last five days before the deadline for submitting the specific proposal. Unless the clarifications imply modification of the initial request for services, the deadline for submitting proposals shall not be extended. The offers shall be evaluated and the results of this evaluation shall be communicated to the contractors which have submitted them. The contractor which submits the most economically advantageous offer shall be awarded the Specific Contract.

- For all types of assignments, the awarded Contractor must sign the Specific Contract within 5 working days of its receipt. Once the SC is signed by both parties the work shall start immediately unless the Contract specifies a later date of commencement. The implementation of the Specific Contract shall progress in coordination with Frontex without unjustified periods of inactivity.

### 9.3. Acceptance

The work contracted in Specific Contracts under this FWC will be considered accepted upon the acceptance of all products and tasks of this Specific Contract expressed officially in writing by Frontex.

The acceptance of deliverables shall be confirmed by handing over of an acceptance form signed by a Frontex representative. The model form is available in Appendix 3 Acceptance Form.

In general, the acceptance process shall follow the terms and conditions of the GTCITC unless the Specific Contract has provided for different timings and steps for acceptance.

### 9.4. Other costs

The prices included in the FWC and in the related SCs are fully inclusive. No additional costs are eligible. This includes but is not limited to ordering, processing, logistics, communication, secretariat, customs, training, tooling and equipment used by the Contractor staff.

Reimbursements of incurred travel and subsistence expenses will be authorised only in case of the place of performance being Other Locations.

### 9.5. Payments

Payments for Specific Contracts will be executed based on Contractor's invoice and following the described below rules:

- 1) If the total amount of the Specific Contract does not exceed 25,000 EUR an invoice for the whole amount shall be issued at the completion of the work, based on a written acceptance form (see Appendix 3) issued and signed by Frontex (to be attached to the invoice).

- 2) If the total amount of Specific Contract exceeds 25,000 EUR and, for FP, T&M and QT&M SCs only, its duration exceeds 6 calendar months, the Tenderer may request to implement in the Specific Contract one of the listed below invoicing procedures followed by payment of the balance at the completion of the work:
- a) Pre-financing payment of 30% of the total value of the Specific Contract on basis of the counter-signed Specific Contract;
  - b) Interim payments on the basis of approved Attendance Sheets, after the end of a calendar quarter. At the request of Frontex, an interim payment for the 4<sup>th</sup> quarter may be divided as follows: a separate interim payment for October and November and a separate interim payment for December, which may also be combined with the next quarterly payment.

If applicable the chosen invoicing procedure shall be indicated by the Tenderer in his financial proposal for Specific Contract and this preference shall be reflected in the Specific Contract, too. Every invoice shall be issued solely in relation to the single Specific Contract.

Invoice may be issued upon completion of the related work and when the following documents are duly completed and signed: Appendix 3 Acceptance Form, Appendix 4 Attendance Sheet Form, Appendix 5 Report on Tasks Performed Form for the invoiced period.

The Contractor shall nominate a FWC Contract Officer who shall act as a single contact point vis a vis Frontex for the FWC matters for the duration of the FWC and must be available for Frontex requests. All the contractual correspondence and related coordination will be addressed to him.

The Contractor will nominate a FWC Executive who will be ultimately representing the Contractor's company and subcontractors vis a vis Frontex for the supervision of all the Specific Contracts, overall performance of the Contractor, change management and escalation of issues not solved at the level of the individual specific contracts.

## **9.6. Reporting and quality monitoring**

Throughout the duration of the FWC, Frontex shall conduct an accurate appraisal of whether the Contractor is executing the tasks assigned to him in accordance with the provisions of the FWC. In order that Frontex can regularly identify the progress made in execution of the tasks in accordance with the Tender Specifications and the TOR, the Contractor shall set up the appropriate monitoring, assessment and supervisory procedures. For these purposes, the Contractor shall propose all necessary details for the monitoring and reporting procedures, in particular the following:

- Schedule of interim and final reports
- Terms for approval, structure and content of each document
- Other consideration if addressed in best practices for monitoring this type of FWC

Frontex shall monitor the quality of the service provided by the Contractor. The elements that will be monitored include:

- Responsiveness to the released Requests for Specific Contracts
- The effectiveness of providing staff with the appropriate skills as requested
- The quality of the staff and the adherence to the profile requirements
- The speed and agility of responding to Orders
- The compliance of the offers in response to the Request for Specific Contract
- The adherence to deadlines
- The quality of the deliverables.

## **9.7. Underperformance**

In case the Contractor:

- is not respecting its contractual obligations
- is not responding to Orders
- is not submitting compliant proposals against the Request for Specific Contract
- performs below the agreed levels
- his performance is frequently sub-standard
- his quotations for FP Specific Contracts repeatedly exceeds market offers

it will be recognized as a breach of the Contractor's obligations under the FWC, in which case Frontex may consequently terminate the FWC in line with the provisions of the Contract without prejudice to other measures foreseen in the FWC.

### **9.8. Obligation to perform**

The conclusion of the FWC does not impose on the Contractor the obligation to submit a proposal in reply to each Request for Services; however, Frontex reserves the right to terminate the FWC in the following cases:

- a) in the event the contractor fails to submit the proposal for the third time,
- b) in the event the submitted proposal is evaluated to be below the minimum required levels for the third time.

### **9.9. Exclusivity**

The conclusion of the FWC does not confer on the contractor any exclusive rights in relation to the provision of services or supply of goods specified therein.

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## 10. Proposal

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### 10.1. The offers for this Contract shall be submitted in line with the *Invitation to tender.Hypothetical Scenario - a practical case for tenders' evaluation purposes*

The hypothetical scenario shall be considered as a fixed price assignment for development, deployment and provision of 3<sup>rd</sup> Level Support of a hypothetical software component. The scenario is established to provide practical case for evaluation of the offers for this FWC, however it potentially may be ordered from the awarded Contractor based on Order Form at the offered price.

#### 10.1.1.Scope of a hypothetical scenario

The scope of the assignment covers the following services:

- A) Development - of the software component including the elaboration of requirements, design, development, integration, testing and deployment of the component that meets the requirements.
- B) Training - of 6 power users who will provide the subsequent training to other users. The training shall be organized in form of practical hands-on workshop and delivered in Frontex HQ in one session no longer than 5 hours.
- C) Maintenance - a 3<sup>rd</sup> Level Support service in Basic Service Window.
- D) Project Management - for management of the all activities necessary for successful delivery of the requested solution.

The following artefact are required in execution of the hypothetical scenario and must be included in the price and schedule:

Project Management:

- E) Project Management Plan (PMP)
- F) Project Reports (RE)
- G) Project Logs (LOG)

Software Development:

- H) Business and System Requirements Document (BRD/SRS)
- I) Technical Design Document (TDD)
- J) Source code (CODE)
- K) Executable software (EXE)
- L) Unit Tests (UT) at min 60% of coverage
- M) Automated Tests (AT) for Sanity Tests and Regression Tests covering 15 selected user stories
- N) Technical Documentation (TD)
- O) Administrator Documentation (AD)
- P) User Manual (UM)
- Q) Test Plan (TP) including testing traceability matrix
- R) Test Cases and Test Scenarios (TC/S) for acceptance testing
- S) Test Log (TL)
- T) Test Summary Report (TSR)
- U) Deployment (DEP)

Training:

- V) Training (TRAIN) for 6 power users
- W) Training Materials (TRAINM)
- X) Training Report (TRAINR)

Maintenance

- Y) 3<sup>rd</sup> Level Support in Basic Service Window



## 10.2. Hypothetical Scenario 1 (for Lot 1)

The main product of this hypothetical scenario is a solution enabling automatic and periodic loading of data.

### 10.2.1.Scope of Hypothetical Scenario 1

The scope of the assignment is as described in chapter 10.1.1

### 10.2.2.User requirements for Hypothetical Scenario 1

Frontex receives on a monthly basis specific datasets from Member States in the form of XLS files - all based on the same template. The task is to prepare a process for automatic and periodic loading of those files and maintaining an up-to-date SAS database containing the data from the files together with a reporting solution.

Currently, SAS Enterprise Guide and SAS batch server processing components are used for processing the data. SAS Add-in for Microsoft Office and SAS Visual Analytics are the tools used for reporting.

- [HS1-1] The Provided Solution should be capable of loading data from excel files.
- [HS1-2] Different data should be read from different sheets within one excel file (for example: different types of events reported in separate sheets).
- [HS1-3] Data provided for the solution can have different structures within different sheets - a separate list of attributes/columns.
- [HS1-4] The provided solution should work properly also on partially incomplete data, unless critical data is missing.
- [HS1-5] The provided solution should be capable of reading desired information/attribute from multiple locations whenever it is possible.
- [HS1-6] The data entered in the excel files can be in a not-validated form. The provided solution should read as much information as possible.
- [HS1-7] The provided solution must have various validation checks implemented at different levels securing and alerting to avoid incompleteness/inaccuracy.
- [HS1-8] The solution should be able to extract geographical locations (as accurately as possible) from the description of certain events.
- [HS1-9] Different mapping dictionaries (nationalities, countries, airports) available in different external databases should be taken into account when evaluating final reports.
- [HS1-10] E-Mail should be used as an alert reporting channel for all alert situations when loading and processing source data.
- [HS1-11] The solution should also propose a procedure for implementing changes in the source data templates (changes of structures).
- [HS1-12] Reports for the gathered data should be made available to end users.
- [HS1-13] Reporting of different statistics for events should be made available through the reporting platform together with KPI's charts and other graphical ways of presenting the data.
- [HS1-14] Reporting and aggregating data using different dimensions should be possible (wherever applicable): citizenship, border type, member state.
- [HS1-15] The calculation of different additional measures categories and indicators must be possible.
- [HS1-16] The adding or changing the set of additional measures/categories/indicators in the solution must be possible by users after the project is finished without additional help from the solution supplier.
- [HS1-17] Delivered reports can be delivered through different channels (www, excel form, online / offline).
- [HS1-18] The gathered data should be gathered and prepared in such a way that allows the end user to create his own arrangements of data, define custom aggregation levels and custom evaluated variables.

[HS1-19] Users from different groups must have access to different reports and should be able see different data inside one report.

### 10.3. Hypothetical Scenario 2 (for Lot 2)

The main product of the hypothetical scenario for Lot 2 is the Frontex data unification component that will be working in the Frontex environment and will integrate data from different data sources (not necessarily on Microsoft technologies).

This FWC does not enable ordering and delivering software components and tools which can be used as delivered or further customized, or embedded into the contracted solutions. Thus, for the purpose of the hypothetical scenario, the Tenderers shall assume the architecture presented in the specific hypothetical scenario as existing and propose solution based on full custom development without using any COTS or 3<sup>rd</sup> party components and based on the Microsoft stack.

For the hypothetical scenario the following architecture shall be considered:

- Find, Cleanse, Merge Data - SQL Server Integration Services, Power Query
- Modelize Data - SQL Server Analysis Services, Power Pivot
- Visualize, Analyze Data - Excel, Power View
- Learn, Predict - Data Mining
- Share, Consume - SQL Server Reporting Services, SharePoint

#### 10.3.1. Scope of Hypothetical Scenario 2

In addition to the generic description of the scope presented in chapter 10.1.1. the following conditions and requirements shall be taken into consideration by tenderers when preparing an offer.

The scope of the assignment covers the following services:

- 1) Installation and configuration of the SharePoint 2016 BI Stack
  - a. Install Analysis Services in SharePoint Mode
  - b. Register Analysis Services in Excel Online
  - c. Deploy PowerPivot Add-in (Data refresh, PowerPivot Gallery)
  - d. Deploy Reporting Services Integrated Mode
- 2) Development - of the software component including the elaboration of requirements, design, development, integration, testing and deployment of the component that meets the requirements.
- 3) Training - of 6 power users who will be responsible on the maintenance of this BI solution and potential integration of new data sources. The training shall be organized in form of practical hands-on workshop and delivered in Frontex HQ in one session no longer than 5 hours.
- 4) Maintenance - a 3<sup>rd</sup> Level Support service in Basic Service Window.
- 5) Project Management - for management of the all activities necessary for successful delivery of the requested solution.

The following artefacts are required in execution of the hypothetical scenario and must be included in the price and schedule:

Project Management:

- A) Project Management Plan (PMP)
- B) Project Reports (RE)
- C) Project Logs (LOG)

Software Development:

- D) Business and System Requirements Document (BRD/SRS)
- E) Technical Design Document (TDD)
- F) Source code (CODE)
- G) Executable software (EXE)
- H) Unit Tests (UT) at min 60% of coverage
- I) Automated Tests (AT) for Sanity Tests and Regression Tests covering 15 selected user stories
- J) Technical Documentation (TD)

- K) Administrator Documentation (AD)
- L) User Manual (UM)
- M) Test Plan (TP) including testing traceability matrix
- N) Test Cases and Test Scenarios (TC/S) for acceptance testing
- O) Test Log (TL)
- P) Test Summary Report (TSR)
- Q) Deployment (DEP)

Training:

- R) Training (TRAIN) for 6 power users
- S) Training Materials (TRAINM)
- T) Training Report (TRAINR)

Maintenance

- U) 3rd Level Support in Basic Service Window

### 10.3.2. User requirements for Hypothetical Scenario 2

The final product of the hypothetical scenario shall meet the list below user requirements. In case a requirement is risky it shall be implemented and the related risks shall be documented in the proposal. Tenderers are free in the visual design of the solution however it should be compliant with the Frontex CVI. In case of missing precision or requirement the Tenderers are allowed to take assumptions and list them in their proposals. In no way the mentioned assumption can alleviate the requirements already listed by Frontex.

- [HS2-1] As a member of various projects and working group sites I want to see a unified event record combining information from different data sources
- [HS2-2] As an analyst I want to run queries on this combined data source.
- [HS2-3] As an analyst I want to drill down and explore the data.
- [HS2-4] As an analyst I want to create different reports representing data in various domains (time, geographical, and others)
- [HS2-5] As an analyst I want to create a forecasting mechanism and explore different scenarios.
- [HS2-6] As an analyst I want to be able to view the data on a dashboard.
- [HS2-7] As an analyst I want to search into documents in the data sources.
- [HS2-8] As an analyst I want to be able to export data in different formats.
- [HS2-9] As an ICT administrator I want to have the flexibility to include more different data sources.
- [HS2-10] As an ICT administrator I want to distribute the reports via web or email.
- [HS2-11] As a ICT administrator I need to maintain the ETL mechanism and to respond to changes in the data sources.
- [HS2-12] As a superuser I want to change the frequency of data source update, report creation, notification triggering.

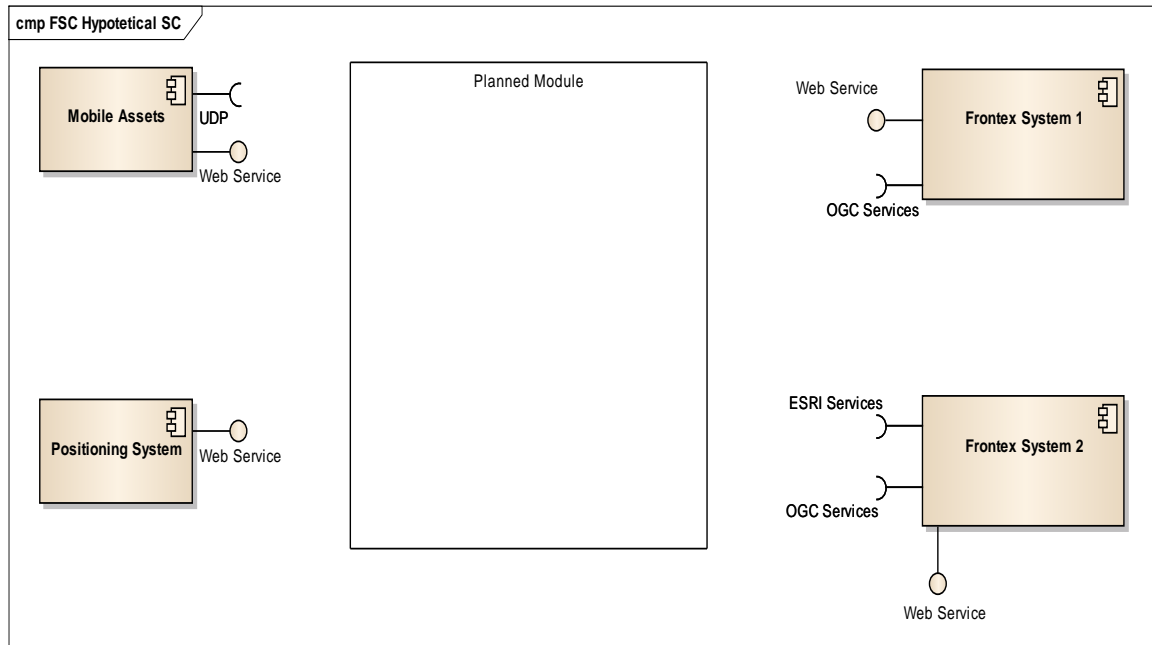
### 10.4. Hypothetical Scenario 3 (for Lot 3)

The main product of the hypothetical scenario is a service or application that will receive and integrate near real time data into existing systems. This huge and constant stream of geodata (using UDP sockets and web services) will come from devices installed on mobile and static assets or existing IT systems with organized local database and exposed web services. The service or application will load, process and aggregate this constant flow of data into a database. This huge volume of data will be exposed to existing GIS systems (presented below at diagram as **Frontex System 1** and **Frontex system 2** via standardized GIS services.

This FWC does not enable ordering and delivering software components and tools which can be used as delivered or further customized, or embedded into the contracted solutions. Thus, for the purpose of the

hypothetical scenario, the Tenderers shall assume the architecture presented in the specific hypothetical scenario as existing and propose solution based on fully custom development without using any COTS or 3<sup>rd</sup> party items.

For hypothetical scenario the following architecture shall be considered as existing:



#### 10.4.1.Scope of Hypothetical Scenario 3

The scope of the assignment is as described in chapter 10.1.1 however the following items are excluded from the scope of Hypothetical Scenario 3: B), V), W) and X).

#### 10.4.2.User requirements for Hypothetical Scenario 3

The final product of the hypothetical scenario shall meet the liste below user requirements. In case a requirement is risky it shall be implemented and the related risks shall be documented in the proposal. Tenderers are free in the visual design of the solution however it should be compliant with the Frontex CVI. In case of missing precision or requirement the Tenderers are allowed to take assumptions and list them in their proposals. In no way the mentioned assumption can alleviate the requirements already listed by Frontex.

- [HS3-1] As a member of a sea operation I want to see in my map client application live asset positions for all assets in the operation.
- [HS3-2] As a member of a sea operation I want to see in my map client application live vessel positions of all vessels in the area of operation collected by bodies managing AIS data receivers.
- [HS3-3] As a member of a sea operation I want to filter the data I see by time in my map client application
- [HS3-4] As a member of a sea operation I want this near real time data to be displayed fast in my client application.
- [HS3-5] As a member of a sea operation I want this near real time data to be automatically updated in my client application.
- [HS3-6] As a Systems Architect I want my system to collect the data using using UDP sockets for somesame data sources.
- [HS3-7] As a Systems Architect I want my system to collect data using web services for some data sources.
- [HS3-8] As a Security Officer I want the data streams to be secured.

- [HS3-9] As a GIS manager I want the geodata to be loaded in a MSSQL database,
- [HS3-10] As a GIS manager I want to offer this data to client applications using map services
- [HS3-11] As a GIS manager I want this data to be queryable.
- [HS3-12] As a System Administrator I want to configure data sources through management console.

## 10.5. Composition of Technical Proposal

The Technical Proposal prepared by the Tenderer must be consistent with the Terms of Reference, reflect the best practices recommended by the Tenderer and contain all information as requested below. When preparing the Technical Proposal, it is important to bear in mind, that the proposal will be evaluated against the criteria presented in chapter 11. If the tenderer intends to submit offers for two or more lots must prepare and submit separate Technical Proposals for chosen lots.

The Tenderers are not allowed to refuse or disregard any requirements presented either in the FWC Tender or future Requests for Specific Contract. Any reservations, assumptions, or constraints that limit the requirements, or make them conditional, will be considered as causing non-compliance by default.

The Technical Proposal of the Tenderer must clearly contain the information described in this chapter grouped and titled in exactly the way as in the table presented in this chapter. Tenderers must use the forms and templates provided in TOR. If required, please repeat the same information in more than one item of the proposal. Table of contents shall be included at the beginning of the proposal. The required statements based on the templates for Statement of Intent, Statement of Compliancy to the Profile and copies of personal certification must be attached to the Technical Proposal in form of appendices or as a direct part of the appropriate item of the related component of the Technical Proposal.

Offers must address all requested items. No partial proposals are allowed unless a specific item is clearly declared by Frontex as not mandatory. Lack of completeness of the proposal and/or lack of clarity which hinders the assessment of its completeness will result in non-eligibility of the proposal.

Wherever in the following subchapters it is requested to present the composition of the team for the performance of the specific task, the Tenderer shall present the structure of the team, indicate the profiles of the members as defined in the TOR and provide the names of the individuals out of the pool of candidates offered by the Tenderer. The proposal on the composition of the team shall reflect the understanding of the task. It is recommended to not exceed the number of pages indicated.

The Technical Proposal shall provide all the following items ordered and named as in the table:

Component of Technical Proposal	Description	No of pages
		No limit
		No limit
<i>Description of Quality Assurance For T&amp;M and QT&amp;M SCs</i>	<p><i>The description shall address at least:</i></p> <ul style="list-style-type: none"> <li><i>a. Risks for T&amp;M and QT&amp;M contracts and proposed counter measures</i></li> <li><i>b. Selection and assignment of staff to a T&amp;M and QT&amp;M SCs</i></li> <li><i>c. Description of how the Contractor's firm sustains motivation to work and professional development of the individuals engaged in VLT T&amp;M assignments</i></li> <li><i>d. Procedures for exchanging personnel in the course of a T&amp;M SCs</i></li> </ul>	6
<i>3<sup>rd</sup> Level Support</i>	<i>Description of the processes, controls and SLA targets for the 3<sup>rd</sup> Level Support offered for the software being in the scope of a particular Lot and in line with the requirements set in chapter 8.</i>	5

<i>Approach to configuration management and testing</i>	<i>Description of the Tenderer approach to testing and configuration management of software developed in course of the FWC in order to assure high quality of the technical platform, efficiency of repetitive testing, order in the code repositories under simultaneous developments.</i>	<i>6</i>
<i>Draft BRD/SRS for the Hypothetical Scenario</i>	<i>Draft Business/System Requirements Document for the hypothetical scenario in a form and scope recommended by the Tender as appropriate for this hypothetical scenario.</i>	<i>Not limited</i>
<i>Draft TDD for the Hypothetical Scenario</i>	<i>Draft Technical Design Document for the hypothetical scenario in a form and scope recommended by the Tender as appropriate for this hypothetical assignment.</i>	<i>Not limited</i>
<i>Draft TP for the Hypothetical Scenario</i>	<i>Draft Test Plan for testing the products of the hypothetical scenario (see chapter 10.1) and the entire Solution in a form and scope recommended by the Tender as appropriate for this hypothetical scenario assignment.</i>	<i>6</i>
<i>Project Master Schedule for the Hypothetical Scenario</i>	<i>Project Master Schedule for the hypothetical scenario. The schedule shall present the timeline for all activities, their synchronization, engagement of resources as planned and works as a tool for tracking the actual progress of work. The schedule shall support Frontex in planning its engagement and offer sufficient time for testing. The schedule shall leave flexibility in assigning low level task and deal with dependencies. The schedule shall support Frontex in early understanding of how the developed product looks like and how it behaves to potentially implement corrections.</i>	<i>2</i>
<i>Risks for the Hypothetical Scenario</i>	<i>Assessment of important risks specific for the hypothetical scenario and the recommended mitigation actions in a form and scope recommended by the Tender as appropriate for this hypothetical assignment.</i>	<i>2</i>

## 10.6. Composition of Financial Proposal

Tenderers shall submit in his offer a Financial Proposals composed of the elements requested in this chapter in the best market prices. The correctness of the calculation may be verified by FRONTEX. Financial Proposal shall be submitted using the forms provided in this chapter completely filled out and duly signed. Forms shall contain all the necessary information and shall be fully compliant and consistent with the corresponding requirements and proposals of the Technical Proposal . Please note that:

- The unit prices must be fixed and shall be inclusive of all costs and expenses
- Prices should be quoted in EUR as net prices (without VAT).
- When submitting their specific proposals the future Contractors mustn't exceed any of the unit prices quoted in the FWC Financial Proposal - these shall become the binding maximum amounts.
- Each page shall be numbered continuously and signed by the authorized representative of the Tenderer.

### 10.6.1. Personnel Prices and Hypothetical Team Reference Price

The **maximum** prices for all personnel profiles in relation to particular types of assignments foreseen by the FWC must be provided by the Tenderer in the table below - cells A1 to J7.

For the purpose of evaluation Frontex combines the prices for profiles into one amount called Hypothetical Team Reference Price. Composition of the Hypothetical Team Reference Price is explained below.

The symbols of the columns stand for the following unit prices:

- A Price of one man-day for Time and Means Short Term assignment in the Normal Working Hours
- B Price of one man-day for Time and Means Long Term assignment in the Normal Working Hours
- C Price of one man-day for Time and Means Very Long Term assignment in the Normal Working Hours
- D Price of one man-day for Quoted Time and Means Short Term assignment in the Normal Working Hours
- E Price of one man-day for Quoted Time and Means Long Term assignment in the Normal Working Hours

- F Price of one man-day for Quoted Time and Means Very Long Term assignment in the Normal Working Hours
- G Price of one man-day for Time and Means Short Term assignment in the Extended Working Hours
- H Price of one man-day for Time and Means Long Term assignment in the Extended Working Hours
- I Price of one man-day for Time and Means Very Long Term assignment in the Extended Working Hours
- J Price of one man-day for Fixed Price assignment
- K Indicator which reflects number full time equivalents of the profile in the Hypothetical Team.
- L The Reference Price for the Profile, for each row from 1 to 7, expressed as a sum of prices provided for the profile multiplied by the Weight of the Type Of Assignment (indicated in row 0 for each type of assignment) and then multiplied by the Hypothetical Team Ratio (the number given in column K).

for example (lot 1):

The Reference Price for the Profile of SJAD = 2 \* [(price of 1 md T&M ST NWH)\*1,5 +(price of 1 md T&M LT NWH)\*2 +(price of 1 md T&M VLT NWH)\*1 +(price of 1 md QT&M ST NWH)\*0.5 +(price of 1 md QT&M LT NWH)\*0.25 +(price of 1 md QT&M VLT NWH)\*0.25 + (price of 1 md T&M ST EWH)\*0,5 +(price of 1 md T&M LT EWH)\*0,25 +(price of 1 md T&M VLT EWH)\*0,25 +(price of 1 md FP)\*3]

In addition to that:

- The cell L99 stands for the Hypothetical Team Reference Price which is equal to the sum of the all Reference Prices for Profiles presented in cells L1 to Ln.

### Lot 1 - Services for SAS software and related technologies

[illegible]



## Lot 2 - Services for Microsoft BI software and related technologies

	6.	5.	4.	3.	2.	1. 	0	
Hypothetical Team Reference Price	Project Manager <i>(PM)</i>	Business Intelligence Analyst <i>(BIA)</i>	BI Solutions Architect <i>(SARCH)</i>	Database Developer/ Administrator <i>(DBDA)</i>	BI Senior Developer <i>(SD)</i>	BI Junior Developer <i>(JD)</i>	Weight of the type of Assignment	A
							1.5	T&M ST NWH
							2	T&M LT NWH
							1	T&M VLT NWH
							0.5	QT&M ST NWH
							0.25	QT&M LT NWH
							0.25	QT&M VLT NWH
							0.5	T&M ST EWH
							0.25	T&M LT EWH
I							0.25	T&M VLT EWH
J							3	FP
K	1	1	1	1	1	1	Hypothetical Team Ratio	
L							Reference Price for the Profile	

### Lot 3 - Services for ESRI GIS software and related technologies

[illegible]

8.	Project Manager (PM)											1	
99.	Hypothetical Team Reference Price												

#### 10.6.2.Price of Hypothetical Scenario

Tenderers shall present fixed prices, full inclusive, without VAT, for delivering the hypothetical scenario assignment requested in chapters **Error! Reference source not found.** 10.1, 10.2 and 10.3 respectively for lots 1, 2 and 3.. The price offered shall cover the required guarantee. The presented price shall be broken down to reflect individual prices of the groups of deliverables indicated in the requirements set in chapter 8 and the description and the requirements and the actually requested scope of the hypothetical scenario. The effort estimated for each group of deliverable shall be decomposed into the profiles defined in TOR. Price of 3<sup>rd</sup> Level Support for 1 year in the Basic Service Window shall be expressed as a % of the subtotal price of all other deliverables. The Hypothetical Scenario Price is considered as sum of the prices for all its components including the price of 3<sup>rd</sup> Level Support.

The following tables shall be used for presentation of the price.

Lot 1 - Services for SAS software and related technologies							
Group of deliverables	Effort per Profile in md						Price [EUR]
	PM	BIA	SME	STE	SSAD	SJAD	
Project Management							
Software Development							
Training							
Subtotal							..... <sup>a1</sup>
3 <sup>rd</sup> Level Support at Basic Service Window				[.....] % of subtotal price <sup>a1</sup>			..... <sup>a2</sup>
Hypothetical Scenario Price [EUR] <sup>(a1 + a2)</sup>							.....

Lot 2 - Services for Microsoft BI software and related technologies
---

Group of deliverables	Effort per Profile in md						Price [EUR]
	PM	BIA	SARCH	DBDA	SD	SAD	
Project Management							
Software Development							
Training							
Subtotal							..... <sup>a1</sup>
3 <sup>rd</sup> Level Support at Basic Service Window				[.....] % of subtotal price <sup>a1</sup>			..... <sup>a2</sup>
Hypothetical Scenario Price [EUR] <sup>(a1 + a2)</sup>							.....

Lot 3 - Services for ESRI GIS software and related technologies										
Group of deliverables	Effort per Profile in md									Price [EUR]
	PM	GARCH	SA	GADM	GSD	GJD	TST	TRA	GA	
Project Management										
Software Development										
Training										
Subtotal										..... <sup>a1</sup>
3 <sup>rd</sup> Level Support at Basic Service Window							[.....] % of subtotal price <sup>a1</sup>		..... <sup>a2</sup>	
Hypothetical Scenario Price [EUR] <sup>(a1 + a2)</sup>										.....

### 10.6.3.Price of 3rd Level Support

Tenderers are requested to offer fixed rates for any software which shall be developed by them under FP assignments during the FWC. The price shall be quoted for one year of 3<sup>rd</sup> Level Support services at all 3 Service Windows options: Basic, Standard and Critical. FRONTEX requests to price 3<sup>rd</sup> Level Support as % of the price of the actual software to be covered by this support.

The Reference Price for the 3<sup>rd</sup> Level Support is composed of 2 years of Basic support and 1 year of Standard support and 0.5 year of Critical support of application delivered at the price of 50 000 EUR.

	BASIC	STANDARD	CRITICAL
Price of 3 <sup>rd</sup> Level Support for application as % of the price of the application	....%	....%	....%
3 <sup>rd</sup> Level Support prices for application at nominal price of development equal 50 000 EUR [EUR]	.... <sup>c1</sup>	.... <sup>c2</sup>	.... <sup>c3</sup>
3 <sup>rd</sup> Level Support Reference Price (2 x c1 + 1 x c2 + 0.5 x c3)			

#### 10.6.4.Reference Price

For the purpose of selection of the winning Tenderer a set of preselected prices will be considered to calculate a *Reference Price*.

The *Reference Price* is composed of:

	A	B
	Components	Tenderer price in EUR
1.	Hypothetical Team Reference Price in chapter 10.6.1	[ ]
2.	Hypothetical Scenario Price as in chapter 0	[ ]
3.	3 <sup>rd</sup> Level Support Reference Price as in chapter 0	[ ]
4.	actual REFERENCE PRICE of the Tenderer	.....

Where cells:

- B1, B2 and B3 shall be filled by the Tenderer with his prices in EUR without VAT tax
- B4 shall be filled as a sum of values from cells B1, B2 and B3

## 11. Evaluation

### 11.1. Selection Criteria - Technical and personnel capacity

The following selection criteria will be applied by Frontex to identify eligible offers.

Component	Evaluation criteria	Result
Personnel capacity	All the following criteria must be met: a. Compliancy to the Profile requirements b. Number of eligible candidates in all profiles are not below the minimum required (please consult req. no 18 for Lot 1, req. 25 for Lot 2, req.32 for Lot 3)	Pass / Fail
Company experience	Compliancy of the presented 3 references to the requirements	Pass / Fail

The following documents must be provided in relation to the abovementioned criteria.

Component	Documentation to be provided
Personnel capacity	<i>List of named personnel available for this FWC. For each offered persons there shall be attached the following documents: CV, Statement of Intent, Statement of Compliancy presented in forms displayed in appendixes to the TOR. The number of the eligible personnel shall not be less than indicated in chapter 8.1. The maximum number of candidates submitted for a profile cannot exceed the double amount of the minimum required number of eligible persons in it. Candidates will be verified in the order on the list.</i>
Company experience	<i>Three confirmed references for successful projects of characterization similar to the scope of the Lot to which they relate, completed by the Tenderer in the most recent 3 years and of the overall net value of all the presented projects of at least:</i> <ul style="list-style-type: none"><li>- 300,000 EUR for Lot 1</li><li>- 100,000 EUR for Lot 2</li><li>- 200,000 EUR for Lot 3.</li></ul> <i>The reference shall convey information about the number of users, technology used, dates of implementation and main functionalities.</i> <i>The proof of sales is understood as a self-declaration of the Tenderer signed by the authorized person which declares the volume of sales.</i>

### 11.2. Technical Evaluation

Each component of the Technical Proposal for the FWC from a specific Tenderer will be evaluated against the scoring method and evaluation criteria which is presented in the following table. The points earned for each component of the Technical Proposal will be summed up. The maximum number of points is 100.

The minimum acceptable number of points earned from component Technical Proposals for the FWC is 50. Any Technical Proposal scored lower than this threshold will not be considered as eligible and will be rejected from further evaluation.

Component of Technical Proposal	Evaluation criteria	Maximum number of points
<b>Description of Quality Assurance For Time and Means and Quoted Time and Means Specific Contracts</b>	<p>Frontex will assess comprehensiveness and effectiveness of the proactive and reactive quality assurance measures for T&amp;M and QT&amp;M assignments, company experience in dealing with the practical challenges occurring in this type of assignments, how the proposed controls are systemic, mature and embedded into the Tenderer organization culture.</p> <p>Zero points will be assigned in case the offer does not demonstrate Tenderer practice or is limited to theoretical approach and reactive measures with no support embedded into the companies' processes.</p> <p>Maximum points for practical, proactive, systemic solutions embedded into company formal processes.</p>	20
<b>3<sup>rd</sup> Level Support</b>	<p>Frontex will assess the level of integration and harmonisation of 3rd Level Support with other levels of support, software development and HW maintenance activities in the context of multivendor environment. Frontex will assess the SLA targets.</p> <p>Zero points will be assigned to those proposal with SLA targets below the expected or support processes not taking into account the specificity of the technical and organizational environment at Frontex.</p> <p>Maximum points will be allocated to those proposal that offer higher SLA targets than required and align the processes to Frontex specificity.</p>	15
<b>Approach to configuration management and testing</b>	<p>Frontex will assess efficiency and effectiveness of the proposed configuration management and testing, its alignment to the technological constraints and the situation where multiple changes from multiple vendors may being developed simultaneously. Frontex will focus on keeping the solution being used by the users in perfect order so the faulty changes are not deployed and the applied changes do not segregated the working system.</p> <p>Zero points will be scored to these proposals that are not specific for the case, lack precision and control over the quality and lead to significant risk of failure, conflict of versions or cost of rework, or rolling back from production, or the proposals are not feasible in the technology applied or in the organization constraints of Frontex.</p> <p>The maximum points will be given to the proposals that offer comprehensive, reusable, easy to control, measure and interpret configuration management and tests specific for this case at low level of efforts for Frontex supported by practical examples.</p>	15
<b>Draft BRD/SRS for the Hypothetical Scenario</b>	<p>Frontex will assess the degree of ability to manage the requirements in order to fulfil the project goals, fit for purpose of the end product and support the development and maintenance processes on the practical case of the hypothetical scenario. Compliancy to the user requirements, ability to support the design-development-testing process in the specific Frontex environment, ability to be applied by business users and technical staff.</p>	15



	<p>Zero points will be assigned to proposals which don't provide added value to the requirements specification already presented in this TOR or not compliant with these requirements.</p> <p>Maximum points will be scored to the proposals which is compliant with the requirements and support the design-development-testing processes in specific Frontex environment in the practical and effective way while assuring good communication between business and technical stakeholders.</p>	
<b>Draft TDD for the Hypothetical Scenario</b>	<p>Frontex will assess the solution proposed for the hypothetical scenario and the TDD document itself for its use in development and maintenance.</p> <p>Zero points will be assigned to offers which do not implement the requirements or the presented TDD does not work for its role.</p> <p>Maximum points will be granted to the proposals which design the solution meeting the requirements, which are compliant with the best practices for MS SharePoint 2013, which integrates and reuse the concepts and components of the platform, which can be applied, deployed and managed in various sites for various purposes and which is presented in concise, precise and communicative way that can be updated along the developments easily.</p>	15
<b>Project Master Schedule for the Hypothetical Scenario</b>	<p>Frontex will assess the offered time for delivery of the solution and the compliancy of the presented schedule to the requirements.</p> <p>Zero points will be assigned to the proposals which do not meet the requirements for the schedule</p> <p>Maximum points will be given to the proposals which offer the shortest delivery time and the schedule meeting the requirements.</p> <p>Other offer will be scored by the fraction of maximum score equal the proportion of the shortest delivery time with the actual delivery time.</p>	10
<b>Description of risks and mitigations for the Hypothetical Scenario</b>	<p>Frontex will assess the Tenderers ability to identify risks for the hypothetical scenario and offer effective counter measures.</p> <p>Zero points will be granted to proposals which recognize only the theoretical risks and not effective or efficient countermeasures.</p> <p>Maximum points will be scored to the proposals which focus on very practical risks for this assignment and propose effective yet efficient countermeasures.</p>	10
	<b>Maximum Technical Score</b>	<b>100</b>

Technical Score of the evaluated proposal will be calculated as a sum of points received for each of the evaluation criteria listed in the table above

### 11.3. Financial Evaluation

Financial evaluation shall be conducted on the basis of the Financial Proposals. The final financial score shall be calculated on the basis of the Reference Prices defined in chapter 0. The following formula will be used to score offers:

$$\text{Financial Score} = 100 * \frac{\text{Lowest REFERENCE PRICE of an eligible offer}}{\text{REFERENCE PRICE of the evaluated offer}}$$

#### 11.4. Final Evaluation

The most economically advantageous offers are established by weighting technical quality against price on 60/40 basis. It shall be established by the application of the following formula:

$$\text{Final Score} = 60 \times \text{Technical score} + 40 \times \text{Financial score}$$

The Contract as a result of the competition will be awarded to the maximum 3 Tenderers who submitted offer with the highest Final Scores.

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## 12. Appendices

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### Appendix 1 General Terms and Conditions for Information Technology Contracts

Please refer to:

[http://ec.europa.eu/taxation\\_customs/resources/documents/common/tenders\\_grants/tenders/it\\_general\\_conditions.pdf](http://ec.europa.eu/taxation_customs/resources/documents/common/tenders_grants/tenders/it_general_conditions.pdf)

## Appendix 2 Security Aspect Letter

### Security Aspects Letter (SAL) for RESTREINT UE/EU RESTRICTED Contracts

1. *The performance of the Contract may involve national or EUCI up to the level of **RESTREINT UE/EU RESTRICTED** or its national equivalent.*
2. *All Contractor's personnel as well as sub-contractors' personnel involved in work under this Contract shall hold the nationality of an EU Member State unless otherwise agreed in advance with Frontex.*
3. *For the purpose of this Security Aspects Letter the following definitions shall apply:*
  - a. *'**EU classified information**' (EUCI) means any information or material designated by an EU security classification, the unauthorised disclosure of which could cause varying degrees of prejudice to the interests of the European Union or of one or more of the Member States.;*
  - b. *'**National Classified information**' shall mean information provided in connection with the Contract requiring protection in the interest of the originating EU Member State, and which has been applied a national security classification marking as shown in the table of equivalent security classifications in Appendix 1;*
  - c. *'**Document**' means any recorded information regardless of its physical form or characteristics;;*
  - d. *'**Material**' means any document or item of machinery or equipment, either manufactured or in the process of manufacture;*
4. *Classified Information at **RESTREINT UE/EU RESTRICTED** level shall be handled and protected as described in Appendix 1 to this Annex of the Contract.*
5. *The Agency reserves the right to request the responsible security authorities to monitor at the Contractor's facilities the implementation of any security requirements as stipulated in this contract.*
6. *If the Contractor fails to observe the security provisions described and regulations referred to under this Annex Frontex shall have the right to terminate the Contract with immediate effect in accordance with the relevant provisions of the General Terms and Conditions for Contracts*
7. *For work performed on the Agency's premises, the Contractor and its personnel shall comply with the security requirements as described in Appendix 3 to this Annex of the Contract.*

## **APPENDIX 1 Handling and protection of RESTREINT UE/EU RESTRICTED Information**

Documents or material containing RESTREINT UE/EU RESTRICTED information, any national classified information of the EU Member States or classified information originated by another international organisation classified at equivalent level, which has been generated or provided in connection with the Contract shall be handled and protected in accordance with the provisions described hereafter unless more stringent handling procedures are prescribed by applicable national security laws and regulations.

The provisions of this document also may be supplemented by specific security provisions applicable to a given multinational project or programme.

### **1. Access by Personnel**

RESTREINT UE/EU RESTRICTED information shall only be made accessible to contractor personnel requiring such information for the performance of the Contract ("Need-to-Know-Principle"). All persons having access to RESTREINT UE/EU RESTRICTED information shall be made aware of their responsibilities for the protection of such information according to these provisions and the consequences of failure to comply.

A Personnel Security Clearance shall not be required.

### **2. Restrictions on Use and Release to Third Parties**

RESTREINT UE/EU RESTRICTED information furnished to or generated by the Contractor shall not be used for purposes other than those defined by the Contract and shall be released only to EU Government establishments or contractor facilities located in an EU Member State, whose access is necessary in connection with the performance of the Contract.

Release to any other government, international organisation or representatives thereof or to contractors not located in an EU Member State requires prior approval by the Agency or the originator, as appropriate.

### **3. Security Classification and Marking of Documents and Material**

RESTREINT UE/EU RESTRICTED documents or material provided to the Contractor shall maintain the security classification markings assigned by the Agency or any other originator of the classified information. Accordingly, copies and reproductions of documents or material shall be assigned the security classification and the marking of the original document or material, if appropriate.

However, documents or material and derivatives and reproductions thereof generated by the Contractor in connection with the Contract shall be classified and marked to identify the RESTREINT UE/EU RESTRICTED information as provided for in the Security Classification Guide or any other guidance on security classification described by the Agency.

Documents (hard copies and electronic files), copies or reproductions thereof containing RESTREINT UE/EU RESTRICTED information will be stamped, typed, printed or written in bold and capital letters at the top and bottom centre of each front cover or cover letter, page, and of all annexes and attachments with the appropriate classification marking as thus:

EXAMPLE:

**RESTREINT UE/EU RESTRICTED**

Material or computer storage media and other optical, acoustical or electronic recordings containing RESTREINT UE/EU RESTRICTED information shall be marked properly either on the material itself or - if not possible - on the container holding the material in such a manner that any recipient will know RESTREINT UE/EU RESTRICTED information is involved (e.g. by affixing a tag or sticker).

#### **4. Downgrading or Declassification**

*Documents containing classified information at RESTREINT UE/EU RESTRICTED must not be downgraded or declassified without the prior written consent of the Agency or the originator, as appropriate.*

#### **5. Handling and Storage**

*Documents or computer storage media as well as interim material containing RESTREINT UE/EU RESTRICTED information must not be left unattended or handled in a manner that could result in unauthorised access. Such RESTREINT UE/EU RESTRICTED material must be stored in locked desks, cabinets or similar containers or may be secured in locked rooms/offices provided access to the room is restricted only to persons authorised to have access to the information.*

*During travel the documents or data storage media must remain under the permanent personal custody of the holder and must not be left unattended in hotel rooms or vehicles and not be displayed in public.*

#### **6. Reproduction and Destruction**

*Reproductions of documents or material containing RESTREINT UE/EU RESTRICTED information shall be produced under conditions that can prevent unauthorised persons from gaining access.*

*Material, including interim material, such as working drafts, shorthand notes or spoilt copies, containing RESTREINT UE/EU RESTRICTED information must be destroyed in a manner to ensure that it cannot be easily reconstructed.*

*Documents and computer storage media containing RESTREINT UE/EU RESTRICTED information should be reviewed on regular intervals to determine whether they can be destroyed.*

*To prevent unnecessary accumulation of RESTREINT UE/EU RESTRICTED information, documents or data storage media containing such information, which is superseded or no longer needed, and provided there is no residual interest, should be destroyed as soon as practicable or returned to the originator.*

#### **7. Transfer**

*RESTREINT UE/EU RESTRICTED information shall normally be transferred in a single envelope either by*

- Commercial courier services;*
- Personal carriage by staff members without formal courier orders.*

*However, the envelope must not bear a classification marking.*

#### **8. Sub-Contracts involving RESTREINT UE/EU RESTRICTED Information**

*All sub-contractors must be contractually required, under penalty of termination of their contract, to comply with the security requirements for the handling of RESTREINT UE/EU RESTRICTED information as prescribed in this document.*

*Appropriate statements or supplementary documentation (e.g. "Security Aspects Letter"), identifying the information or those parts of the contract / sub-contract involving RESTREINT UE/EU RESTRICTED must be part of any contractual arrangement.*

*A Facility Security Clearance shall not be required for contractors/sub-contractors requiring access to RESTREINT UE/EU RESTRICTED information during the performance of contracts/sub-contracts or in pre-contractual stage unless explicitly required under applicable national laws and regulations.*

*Frontex may - in co-ordination with the responsible NSA/DSA - conduct inspections at contractor facilities to verify the implementation of the security requirements for the handling of RESTREINT UE/EU RESTRICTED information.*

## **9. Loss, Unauthorised Disclosure or Violation of Procedures**

Holders of RESTREINT UE/EU RESTRICTED information shall investigate all cases in which it is known or there is reason to suspect that RESTREINT UE/EU RESTRICTED information has been lost or disclosed to unauthorised persons. Any cases of loss, unauthorised disclosure of RESTREINT UE/EU RESTRICTED information or any violation of provision described in this document must be reported to EU Member States' NSA's/DSA's concerned, the Agency and/or the originator of the information, as appropriate. Action may be taken by the competent authorities, as deemed necessary.

## **10. Termination of Contract**

All RESTREINT UE/EU RESTRICTED information provided or generated under this Contract shall continue to be protected in accordance with the provisions of this article in the event of termination of the Contract. Such information shall be destroyed as described in Section 6 and 9 above or shall be returned to the Agency, if requested.

### **Appendix 2 Minimum requirements for protection of EUCI in electronic form at the level RESTREINT UE/EU RESTRICTED handled in contractor's CIS (Communication and Information Systems)**

The contractor will nominate qualified IT or other staff responsible for the implementation of the security requirements described in this document.

The use of privately-owned equipment of contractor's personnel (hardware and software) for processing RESTREINT UE/EU RESTRICTED information is not permitted.

1. Areas in which CIS are used to display, store, process or transmit RESTREINT UE/EU RESTRICTED information or areas housing servers, network management system, network controllers and communications controllers for such CIS should be established as administrative areas with an appropriate access control system. Access to these CIS areas should be limited to specifically authorised persons.
2. Portable computing devices such as laptops, notebooks, tablet PCs or smart phones  
  
not using approved encryption may only be used or stored in an appropriately secured location. Portable computing devices and all removable media containing RESTREINT UE/EU RESTRICTED information that do not use approved encryption should not be taken outside the contractor's premises.  
  
Approved encryption for a portable computing devices must be EU Member State approved or an EU approved full disk encryption product.  
  
Any token, touch memory device or password(s) associated with the encryption product must be kept separate from portable computing devices whenever it is not in use, left unattended or in transit.
3. Removable computer storage media containing RESTREINT UE/EU RESTRICTED information in an unencrypted form are required to be labelled with that classification marking. Measures must be in place to prevent unauthorised access to RESTREINT UE/EU RESTRICTED removable computer storage media in order to maintain the need-to-know principle.



4. *Passwords, which are part of most identification and authentication security measures must be a minimum of 9 characters long and must include numeric and “special” characters (if permitted by the system) as well as alphabetic characters.*  
*Passwords must be changed at least every 180 days. Passwords must be changed as soon as possible if they have or are suspected to have been compromised or disclosed to an unauthorised person.*
5. *All systems must have internal access controls to prevent unauthorised users from accessing or modifying data. Users are to be automatically logged off the system if their terminals have been inactive for some predetermined period of time, or systems must activate a password protected screen saver after 15 minutes of inactivity, to prevent an attacker making use of an unattended terminal.*  
*The CIS must be automatically locked after 3 incorrect login attempts.*
6. *The following events must always be recorded:*
  - (a) All log on attempts whether successful or failed;*
  - (b) Log off (including time out where applicable);*
  - (c) Creation, deletion or alteration of access rights and privileges;*
  - (d) Creation, deletion or alteration of passwords.*  
*For each of the events listed above, the following information is to be recorded:*
  - (a) Type of event,*
  - (b) User ID,*
  - (c) Date & Time,*
  - (d) Device ID.*  
*The accounting records must have a capability to provide the contractor’s security responsible or IT manager with a hard copy of all or selected activity.*  
*All security records should be regularly checked to identify potential security incidents. The accounting records must be protected from unauthorised deletion or modification.*
7. *Software must be implemented allowing detection of malware. Such software must be frequently updated, preferably should be certified by competent national information security authorities or must be of an acceptable industrial standard.*
8. *Only nationally or EU approved encryption system may be used to protect RESTREINT UE/EU RESTRICTED information transmitted or accessed electronically. Wireless*

*technology may not be used unless an approved encryption system is used.*

9. *Where a CIS processing or storing RESTREINT UE/EU RESTRICTED is connected to the Internet or other public CIS (e.g. using web browsers, e-mail exchange services or other messenger or information exchange services) specific boundary protection services must be implemented so as to reduce the risk of cyber attacks via the Internet.*
10. *Boundary protection components for desktop PCs, laptops or other mobile devices must comprise the following hard- and software components:*
  - (a) Anti-virus software;*
  - (b) Firewall;*
  - (c) Intrusion detection and prevention tools;*
  - (d) Approved encryption system for electronic transmission;*
  - (e) Hard disk encryption for mobile devices.*
11. *Local networks connected to the Internet in addition must have the following boundary protection components:*
  - (a) Proxy servers,*
  - (b) DNS server;*
  - (c) Demilitarised Zone (DMZ).*

*Boundary protection components must meet national or international baseline information protection standards.*
12. *For CIS or data storage media that has at any time held RESTREINT UE/EU RESTRICTED information the following sanitisation must be performed to the entire system or storage media prior to its disposal:*
  - (a) Random data in flash memory (e.g. USB sticks, SD cards, solid state drives, hybrid hard drives) must be overwritten at least three times or using approved deletion software;*
  - (b) Magnetic media (e.g. hard disks) must be overwritten or degaussed;*
  - (c) Optical media (e.g. CDs and DVDs) must be shredded or disintegrated.*
13. *RESTREINT UE / EU RESTRICTED information unencrypted on fixed data storage media must be deleted by overwriting using approved software tools prior to delivering IT equipment or components for maintenance or repair work outside access controlled areas or to Sub-Contractors. If deletion is not possible the data media must be removed and retained.*

14. *External facilities involved in the maintenance/repair work must be obliged, on a contractual basis, to comply with the applicable provisions for handling of RESTREINT UE/EU RESTRICTED information as set out in this Document.*
15. *The risks to the CIS resulting from general normally foreseeable accidents/mishaps and known recurrent problems such as loss of power or power supply variations must be identified and the CIS must provide for general protection against such.*
16. *A Business Continuity Plan must be developed for each CIS.*
17. *There must be a means to assess and verify the proper functioning of the CIS over the life-cycle in order to ensure that it continues to be consistent with the requirements of this document.*
18. *The compromise or suspected compromise of RESTREINT UE / EU RESTRICTED information using CIS must be reported to the Contracting Authority. The report must contain a description of the information involved and a description of the circumstances of the (suspected) compromise. All users of the CIS must be made aware of how to report any actual or suspected security incidents to the local IT Manager or contractor's security responsible.*
19. *If, in exceptional circumstances, one or more of the minimum security requirements described are not met then a security risk assessment must be performed to prove that mitigating measures have been put in place eligible to reduce the risk of not implementing the minimum security requirements to an acceptable level.*  
  
*In such a case the security risk assessment must be included in the statement of compliance to the Contracting Authority.*

### **Appendix 3 ACCESS TO THE AGENCY'S PREMISES**

1. *The contractor or sub-contractor and its personnel shall comply with the Agency's internal security and safety rules and regulations and shall follow any instructions given by the Agency's security personnel.*
2. *Any failure to comply with the Agency's security or safety instructions may result in access to the premises being denied or the personnel being expelled from Frontex premises.*
3. *Unless otherwise agreed with the Agency, contractor or sub-contractor personnel performing work on the Agency's premises or in Member States Authorities' premises, except attendance of meetings with Frontex representatives, shall hold the nationality of an EU Member State.*
4. *Any information or material provided to the contractor's or sub-contractor's personnel shall be treated as if supplied officially by the Agency.*
5. *The contractor shall notify the Agency's designated department at least 5 working days in advance with the names, date of birth, nationality, and where appropriate the details of vehicles, of all contractor or sub-contractor personnel temporary performing work on the Agency's premises.*

6. *The Agency shall be entitled to refuse access to its premises to any contractor or sub-contractor personnel without giving justification, as deemed necessary for security reasons.*
7. *Any security-related notices or communication to the Agency shall be addressed to:*

*Security Officer*

*Frontex*

*Place Europejski 6*

*Warsaw 00-844*

*Email: [security-post@frontex.europa.eu](mailto:security-post@frontex.europa.eu)*

### Appendix 3 Acceptance Form

#### Model of Task / Deliverable Acceptance Form

FOR SPECIFIC CONTRACT No ..... UNDER FWC No .....

*Original document - duly signed - to be attached to the invoice*

#### TASK / DELIVERABLE DESCRIPTION

*Please give reference to the Terms of Reference and short description of the task or deliverable.*

*Please describe observations and reservations if any.*

*In case of Task/Deliverable rejection please detail reasons.*

#### TASK / DELIVERABLE is ACCEPTED / REJECTED

*To be filled in by Frontex:*

Official responsible for acceptance (in block capitals):	
Date and signature	
Official responsible for final validation (in block capitals):	
Date and signature	

Appendix 4 Attendance Sheet Form

Warsaw, \_\_\_\_\_

Year	
Month	
Specific Contract	
Frontex Project Name	
Name of Contractor	
Name of Consultant	
Frontex Project Manager	

phone: \_\_\_\_\_  
for approval

	Signature of Consultant	1 <sup>st</sup> Entry Time	1 <sup>st</sup> Exit Time	2 <sup>nd</sup> Entry Time	2 <sup>nd</sup> Exit Time
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## Appendix 5 Report on Tasks Performed Form

Report on Tasks											
SC No. .. under FWC Frontex/ /201											
Reporting Period (week numbers)		Version		1							
Originator		Addressee		FRONTEX PM							
Filename		filename.xls									
Follow-up to / submitted for											
seq no	allocation to SC Task	Task Name	Planned Start Date	Planned Finish Date	Actual Start Date	Actual or Estimated Finish Date	Deviation from planned finish date	Time spent on task (h)	Reference to the output	Comments	Last update date
1, 2,...	Task no 1, 2,..5	Description of the task	dd.mm.yy	dd.mm.yy	dd.mm.yy	dd.mm.yy	md	h	repository item, environment.	approved or comments	dd.mm.yy
Report prepared by:			Date:	Report accepted			Date:		Signature:		

## Appendix 6 Statement of Intent Form

Open Tender procedure: Frontex/ / /201

Framework Contract for .....

### Statement of Intent

To: \_\_\_\_\_ (*Name of the tendering company*)

I, \_\_\_\_\_ (*Name and surname*) the undersigned, do hereby grant authority to the company \_\_\_\_\_ (*company name*) to submit my Curriculum Vitae for the purposes of submitting the tender for the call for tenders, Frontex/ / /201

I also confirm that in the event that \_\_\_\_\_ (*Name of tendering company*) is successful in securing this contract, I shall make my services available to this company for the contract with Frontex.

Should any elements concerning my availability change during the tendering process, I will immediately report this to \_\_\_\_\_ (*Name of tendering company*).

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_



## Appendix 7 Statement of Compliancy Form

Open Tender procedure: Frontex/ / /201

Framework Contract for .....

### Statement of Compliancy to the Profile

To: \_\_\_\_\_ (*Name of the tendering company*)

I, \_\_\_\_\_ (*Name and surname*) the undersigned, do hereby certify that I'm fully aware of the requirements for the personnel profile that I'm assigned to for the performance of the contract concluding from the call for tenders, Frontex/ / /201 .

I also confirm that I fully fulfil the requirements.

Date: \_\_\_\_\_

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

## Appendix 8 CV template

<b>Name:</b>			
<b>Date of birth:</b>		<b>Date IT career started:</b>	
<b>Type of contract:</b>	<i>Check the appropriate:</i> <input type="checkbox"/> Permanent <input type="checkbox"/> Non-permanent		Number of months working for the Tenderer: .....months
<b>Highest relevant educational degree:</b>			
<b>Languages:</b> (indicate CEFR level)			
<b>Summary</b> (use this area to briefly indicate the major facts which Frontex should know about this individual, indicate the candidate expertise and qualities in correspondence to the requirements):  			

PROFFESIONAL CERTIFICATION		
Name and level of the certificate:	Certifying Authority and dates of certification:	Comments (justification for equivalency):

PROJECT EXPERIENCE	
<b>Project identification:</b>	
<b>Customer sector:</b>	
<b>Contractor:</b>	
<b>Dates of the project:</b>	
<b>General project description:</b>	
<b>Candidate Roles &amp; Responsibilities in the project and duration of his engagements:</b>	
<b>ICT technologies used by the <u>candidate</u> during the project relevant of the scope of Lot:</b>	