ANNEX I.A

Technical specifications for Lot 1

"Web application development, software maintenance and remote support to stakeholders services"

OPEN CALL FOR TENDERS
ACER/OP/ADMIN/12/2012

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1. Introduction

This document contains detailed technical specifications for services requested under Lot 1 "Web development services, software maintenance and remote support to stakeholders services" and describes the following:

- the current situation of existing web applications at the Agency;
- the technical requirements for activities and expected outcomes;
- a list of staff profiles required for the delivery of services;
- the service level requirements and the reports to be provided to verify the fulfilment of service level requirements.

2. Overview of the current situation

2.1 The Agency's software for REMIT

The Agency started developing REMIT web applications in October 2011. At the moment three (3) web applications have been developed, are deployed and are under maintenance by the Agency's IT staff. These applications will, once the complete ARIS platform will reach its mature stage, most probably need a complete re-engineering to comply with higher technical and security standards.

The existing web applications are the following:

- As foreseen by Article 3(4)(b) and 4(2) of the Regulation (EU) No 1227/2011[1] of the European Parliament and the Council on wholesale energy market integrity and transparency (hereafter: REMIT), market participants have to report to the National Regulatory Authorities (NRAs) and the Agency any delays in publishing inside information. The Agency has developed internally a web application to allow market participants to comply with this requirement and to report through one communication channel only;
- As foreseen by Article 15 of REMIT, persons professionally arranging transactions have the obligation to report suspicious transactions to both the Agency and the NRAs. The Agency has internally developed a web application to allow persons professionally arranging transactions to comply with this requirement and to report through one communication channel only.
- The Agency envisages developing an information tool to enable the NRAs all over Europe and potentially EEA countries, to discuss and interact on topics related to REMIT issues.

  All web applications mentioned above have been developed on Microsoft Sharepoint 2010 and are installed inside the Agency's security perimeter.

The Contractor could be asked to take over the existing web applications, and potentially to do a complete re-engineering to set common and higher security and technical standards and to allow the Agency to have an harmonised and homogeneous web application environment for all REMIT projects, to prevent the use of a numbers of different technologies which could potentially result in an increase in costs in the maintenance phase.

[1] OJ L 326, 08.12.2011, p.1

2.2 NRAs software infrastructure

In order to be independent from the NRAs software infrastructure, all new applications shall be developed using web-based platforms. The Agency is not fully aware of the existing infrastructure at the NRAs side; therefore, the adoption of web platforms on the Agency's side, and standardisation in the use of a common browser on the NRA side shall avoid the need of client installations in all the 27 EU Member States and other countries which might join the European Union at a later stage.

The Agency aims to reduce the impact of each software delivery, giving to the NRAs the possibility to use a web-based platform, and, when a NRA asks to host a solution in its own data centre, to have a very soft impact on the existing infrastructures not imposing changes on the existing systems.

2.3 General principles for writing software

The selected Contractor shall take into consideration the affordability of software development, adopting some simple basic principles which should be taken into consideration when developing software for the Agency. There are three (3) main principles which shall be always followed in the development phase as well as when proposing technical options and solutions to the Agency:

- The Agency prefers web solutions. Standard browsers shall be used by the Agency and the NRAs. The selected Contractors shall avoid at any stage of the development to introduce proprietary technologies which could impose client installations on the computers of the NRAs or of the market participants. Standard browsers will be considered among one of the following options: Internet Explorer 6 or superior, Mozilla 3 or superior, Safari in particular for Apple MacOS.

  When developing software, the Contractor should clearly bear in mind that every piece of code should follow the paradigm: "write once and run anywhere" (WORA).

- Due to the fact that the the final governance of the REMIT processes is still under discussion and will be formalised by the European Commission only after the adoption of the Implementing acts according to Article 8(2) and 8(5) of REMIT, the Contractors should use the maximum caution when developing a new piece of software assuming that each atomic piece of software may need to be changed without having drastic impact on the surrounding components as well as taking into account that the deployment, which would initially be planned in a central location, could potentially later be spread in 27 EU Member States due to legal constraints or to specific national laws.

  Therefore the selected Contractors shall pay particular attention to the re-usability of developed software components, and shall avoid any development of components with the same functionality in different branches of the development process.

- Use of existing software, meaning, re-use of Open Source existing components, is a key factor to obtain a more standardised product. In this sense, the Contractors should pay particular attention in suggesting to the Agency the adoption of components which have a potential long lifecycle and which are not at the end of their lifecycle. The Agency is, in general terms, not against Open Source, and it is in favour to balance the adoption of Open Source solutions in replacement of well-established commercial software. In this respect the Agency, taking suggestions from the Contractors, wants to balance between the availability of cheaper open source solutions, and the simplicity to have access to support and maintenance services on the same platforms, especially when the final software platform is intended for enterprise use on a 24/7 basis.

The same principles must be followed when developing software for the Agency's internal purposes.

3. Technical specifications

This lot shall cover four main services:

a. **Software development** and deployment of new or re-engineered web platforms with the aim to allow and facilitate the introduction of REMIT at the European level through the adoption of Information Systems and standards which will avoid any human attended activity on repetitive tasks. The development will have as its main scope the creation of a set of IT platforms with the aim to collect data and to enable them to be analysed by the Market Monitoring Team (MMT) with integrated automatic, semi-automatic or manual screening systems;

b. **Software maintenance** of the platforms mentioned above (see point 2.1 and 3.1 of these technical specifications);

c. **Remote support activities** to internal and external stakeholders of the Agency, with the aim to facilitate, from an IT perspective, the adoption and acceptance of the new web platforms through the delivery of competencies and expertise to every stakeholder as described in REMIT;

d. **Other specific system administration and coordination activities.**

3.1 Requirements for software development and maintenance

The development of web-based information systems include web interface, web interface navigation, business logic and any needed surrounding component, their testing and deployment in production, and their maintenance in service after release (maintenance services shall cover both corrective and proactive maintenance).

This shall concern all types of information systems with structured data, developed with a general purpose Data Base Management System which business logic resides inside and /or outside an application server with related tools (i.e. workflow engines, document management modules as well as other tools and platforms which could be necessary to accomplish the Agency's tasks in respect to the regulation). All the user interfaces must be based on a web interface, available through standard browsers as described under point 2.3 of these technical specifications.

The development of web-based information systems includes three main components:

a. Development expertise in DBMS, application servers and linked tools: It may concern all types of information systems with structured data developed with a general purpose Data Base Management System or an application server with related tools (i.e. workflow);

b. Development expertise in document and content management: It may concern all types of information systems in the fields of document management, web content management, office automation, collaboration and geographical data management;

c. Development expertise in data warehouse, data mining, data reporting and statistical tools. It may concern all types of information systems in the fields of business intelligence, decision support, executive information systems, and statistical systems.

General examples of services covered under development and maintenance services are:

- Functional analysis of new applications or re-engineering of an existing web application;
- Data analysis, modelling and migration;
- Database design, building and development for web-based applications;
- Development of new web-based applications, with the logic mainly deployed in an application server or in the DBMS, should this be required to improve application performances;
- Corrective and proactive maintenance of new and old web-based applications;
- Takeover and handover of existing web-based applications for REMIT, their corrective and proactive maintenance;
- Web-based applications integration;
- Integration of other applications, not based on a web platform;
- Testing and deployment of new platforms;
- Development of advanced web user interfaces able to assure simplicity of the processes, enhanced user experience for specialized groups of users and in more general view, high usability of the same web application;
- Development of the documentation of applications at any level and during the entire software life cycle;
- Training of end users, power users (users with enhanced functionalities and specific additional rights over the platform) and the Agency staff for administration.

The services shall include all the activities related to the *life-cycle of software*:

- Analysis of new software platforms
- Design of new software platforms
- Development
- Prototyping
- Configuration
- Configuration management
- Deployment
- Testing
- Acceptance
- Function point counting
- Technical documentation
- Technical training
- Functional training for users
- Corrective maintenance
- Proactive maintenance
- Technical support on malfunctioning platforms

In addition to the above mentioned technologies, the Contractors will need to assure within the same working teams the following *managerial and collateral services*:

- project management;
- installation and deployment of delivered platforms;
- after takeover, installation and deployment of existing software to new and/or existing infrastructure;
- customisation of platforms which are under development,
- customisation of pre-existing platforms, after an appropriate takeover phase;
- technical documentation for all the existing and new developed platforms (in the first case, only after a proper takeover phase);
- Technical training of staff and potential stakeholders.

This lot may require expertise in the following (non exhaustive) IT technologies, programming languages, technical standards and IT products:

Frameworks, programming languages, standards, methodologies and protocols:

- C
- C++
- SQL
- PL/SQL
- .NET
- C#
- J2EE
- Java
- Rational Unified Process (RUP)
- Agile Programming
- JavaScript
- HTML
- XML
- UML
- CSS
- PDF
- MS-Office file formats (DOC, DOCX, XLS, XLSX and others)
- SOAP
- W3C
- TCP/IP
- SSL
- PKI
- Networking computing

In addition, the portfolio of products and technologies which could eventually be used on back-end and server side includes:

Operating systems

- Windows
- Linux
- Solaris
- AIX

Data bases

- Oracle RDBMS
- SQL Server
- IBM DB2 Database
- MySQL
- PostGres SQL

Application and web servers

- JBoss
- Oracle WebLogic
- IBM WebSphere Application Server
- Apache web server and Microsoft Internet Information Server
- Internet Information Server
- MS Sharepoint and .NET Custom Applications

Document Management tools

- Alfresco
- Documentum

Business Intelligence tools

- Business Objects
- SAS
- Pentaho

Specific tools for market monitoring and market surveillance

- Commercial tools for financial market monitoring (e.g. AWACS, Capital Markets Compliance, Scila Surveillance, TransacTzar, Fovea, Capizar MSS & RCP, Radar, MIT Surveillance, SMARTS Integrity Platform, SMARTS.broker, Actimize, Trade Exception Radar, Mantas, Market Surveillance & Monitoring Accelerator, Red Eye, SIA Eagle, Protegent)

The portfolio of products and technologies which could eventually be used on front end and client side includes:

- Microsoft Windows for desktop from XP and above
- Linux for desktop
- MacOS starting from version 10.5
- MS Office (Word, Excel, Powerpoint, Visio, Outlook) and Acrobat
- Internet explorer >= V. 6, Mozilla Firefox >= V. 3, Safari per MacOS

The selected Contractors should be able to cover all the areas of requirements when proposing the available profiles in the context of a project proposal, namely:

1. General examples of activities covered under development and maintenance services;
2. Life-cycle of software;
3. Managerial and collateral activities;
4. Frameworks, programming languages, standards, methodologies and protocols;
5. Products and technologies which could be eventually used on back end and server side;
6. Portfolio of products and technologies which could eventually be used on front end and client side.

3.2 Requirements for remote support

The Contractor shall be able to provide remote support to all potential stakeholders (mainly NRAs, other EU institutions and bodies and market participants) from the date of release of new applications.

Stakeholders within REMIT implementation framework are:

- National Regulatory Authorities (NRAs);
- Financial Securities Authorities;
- European Securities and Market Authority (ESMA);
- National Competition Authorities;
- Organised markets places and trading venues;
- Trade-matching and trade-reporting systems
- Trade repositories;
- Reporting channels which shall be defined following the adoption of the Implementing acts according to Article 8(2) and 8(5) of REMIT;
- Market participants (e.g. brokers and traders);
- IT and service providers of other IT systems interconnected with the Agency's IT system;

- Other EU institutions and bodies;
- Any other entity, organisation, company or body which could be identified as a stakeholder while performing REMIT tasks (in the EU Member States and potentially in the EEA states).

Remote support services should focus on supporting stakeholders in making the Agency's and stakeholders' information systems fully functional when the counterpart is interacting with the Agency. The remote support can be related to the following activities:

"Stakeholders" support activities:
- Stakeholder support and coaching in the use of information systems;
- Support in information system installation on the stakeholder's side;
- Preparation and provision of specific user training.

Administration:
- Installation, configuration and troubleshooting of an IT system which should interact with the Agency's IT systems, starting from the operating system to the application layer;
- Recovery of a remote service in the REMIT framework with the assistance of the stakeholder if necessary;
- Provisioning of a central information system help-desk which would report to the Agency's REMIT IT project office which will have to authorise any intervention (planned maintenance, unplanned maintenance and any corrective action);
- Reporting on activities.

Coordination:
- IT service management;
- Coordination of a support team;
- Coordination of user communities with the aim to simplify and improve the provisioning of IT services;
- Integration of feedbacks provided by users communities, ending in one or more proposals for a request for changes in development, to be authorised by the Agency;
- Provision of user information (e.g. news, FAQ, feedback of requests).

These services exclude infrastructure administration, creation and entry of contents and non-informatics operational services.

Assistance services need mandatory expertise in the ITIL and COBIT frameworks as well as expertise in Customer Relationship Management tools and platforms (CRM). Depending on the specific project and order, expertise in one or more fields described under point 3.1 could be requested.

While performing these services the Contractors should provide an issue tracking system platform which must be able to track any malfunctioning and any support request from internal and external stakeholders on REMIT IT platforms. The system must provide an unattended web interface. The Contractor should also provide a telephone hot line available at the European level to receive incoming calls to create and track any request for support.

The tracking system and the related procedures must be able, with the help and support of Contractor's operators, or through the use of a web interface, to:
- Identify and retrieve an open support request;
- receive requests through a number of communication channels (at least phone, e-mail, web site and other);
- record date and time of opening of the support request;
- record the person who requested the intervention and the person who recorded the request;

- categorise the support request (request information / clarification, malfunction, ...);
- allow the operator or the web user to create a description of the requested support. When the operator is the end-point, he should follow a predefined pattern to help in the diagnosis phase; the pattern must be defined before the provisioning of the service is in place for stakeholders;
- track the level of severity; in case the support request is marked as malfunctioning, the operator and the stakeholders must be able to give a priority to the request, especially if the support request is linked to a blocking issue;
- have specific fields to allow development teams and/or the Agency staff to analyse and issue a diagnosis of the problem;
- redirect the request to second level support where the solution could not be provided by the operator at the first level;
- force the operators to provide a description of the solution once the support request is closed;
- record closing date and time of the support request, which shall end when the information is communicated to the user who opened the issue and the user has accepted the solution.

A specific infrastructure for hosting the tracking system is required. The infrastructure must be provided by the Contractor and can reside also outside the Agency's premises. Due to the nature of information that the system could host, the Contractor must guarantee the maximum level of confidentiality and the separation of the proposed system from any other company system. The Contractor will be requested to notify the Agency where the data are stored, who are the people accessing the data and which are the security rules and procedures in place to avoid any unauthorised access to the information, as well as which is the business continuity plan which should be in line with the Agency's rules.

3.3 Requirements for other specific system administration and coordination activities

The Agency intends to outsource and host externally the entire hardware infrastructure needed for the delivery and placing in production the web applications delivered under this lot 1.

Therefore a project manager for a specific contract under Lot 1 shall coordinate certain activities with the Agency's hosting provider and shall provide the following services:

- Support the hardware capacity planning for the implementation of each web application/platform as well as the requested environments (the minimum is development and production, in addition this might include also test and stage);
- Hardware sizing and quality specifications for IT infrastructures needed to host the web application under the specific contract and in accordance with the Agency's instructions;
- Define, based on the outcome of the functional analysis, and after interviewing the business owners, a Service Level Agreement for the Agency's hosting provided;
- Assist and support in defining the specific contract on the basis of the capacity planning and hardware size;
- Issue, after the installation of the needed hardware and software infrastructure, technical acceptance for the provided IT infrastructure;
- Coordinate, with the project manager of the Agency's hosting provider, the installation activities for on-going operations which shall include, prior to placing the order, a proposal for a responsibility matrix and procedures;
- Coordinate, with the project manager of the Agency's hosting provider, the activities for on-going operations in case of emergency and crisis which shall include a proposal for a responsibility matrix and procedures in case of emergency and crises;
- Notify the Agency's REMIT project office by e-mail of any dispute regarding a

responsibility, which will not be covered or defined under the responsibility matrix. The Agency's REMIT project office shall establish within 2 working days under which party the specific responsibility shall be put.

4. Types of specific contracts

Under the framework contract five (5) different types of order could be placed, depending on a type of a project, namely:

- Fixed price projects
- Time-and-means projects
- Function point measured projects
- Person-day quoted projects
- Remote support

The type of the order shall be clearly indicated in the request for services the Agency shall send to the Contractors. Detailed descriptions of the types of orders are defined below.

For all types of specific contracts the following normal working days hours shall apply

- A normal working day corresponds to 7 hours 30 minutes per day (37 hours 30 minutes per week). The normal working time of the Agency is between 8:00 am and 20:00 with core hours from 9:30 to 12:00 and from 15:00 to 16:30.

  The Contractor shall define a formal agreement with the Agency on their working hours at the Agency's premises. Any recuperation on the working hours is not admissible.

  In exceptional circumstances (e.g. continuous support services from 8:00 to 20:00), the Agency shall retain the right to have the services delivered during a specific time frame (e.g. from 8:00 to 16:00 and from 12:00 from 20:00 with a pause of 30 minutes).

In exceptional cases, the Agency may request delivery of services outside normal working hours, as defined above.

- In such situations, the following surcharges will be added to the applicable daily rates:
  - For normal working days before 8:00 and after 20:00: 20%
  - For weekends and holidays: 40%

  The surcharge will apply only if at least a half-day (a normal working day is 7 hours 30 minutes) of services is delivered within the timeframe qualifying for the surcharge.

4.1 Fixed price projects

Services shall be provided at a fixed price as stipulated in a specific contract. The overall value of a project shall be set according to the prices for man-days as listed in the framework contract. The payments shall be made on the basis of the Agency's written acceptance of the work.

The work shall be carried out by the Contractor in accordance with the specifications set out in the specific contract and its annexes. This shall include a description of the work, the timetable, reports, standards, reference manuals and details of the results and deliverables required.

Each result and deliverable shall be a subject to the approval by the Agency with the aim to

ensure conformity with the specifications. The acceptance period will run up to a maximum of thirty (30) working days from the day of signature of a delivery note by the Agency. During this acceptance period, the Agency may notify the Contractor in writing of any defaults in the result or deliverable.

4.2 Time-and-means projects

Services shall be provided on a time-and-means as stipulated in a specific contract. The overall value of a project shall be based on a specified daily sum to be paid for a given number of days for the provision of the means to perform informatics services. The specific contract shall state the purpose of the provision of the services, i.e. an obligation for the Contractor to achieve a specific result.

The Contractor shall, at the request of the Agency, supply all the necessary personal information regarding his staff providing the services.

The days worked shall be recorded by the Contractor and/or his staff in the manner defined by the Agency. At the end of each month, the Contractor and/or his staff shall complete and sign the attendance sheet which shall be verified by the Agency.

The acceptance period will run up to a maximum of thirty (30) working days from the day of signature of a delivery note by the Agency. During this acceptance period, the Agency may notify the Contractor in writing of any defaults in the result or deliverable.

4.3 Function Point measured projects

The “Function point measured projects” method may be used for development of components for which a functional and technical analysis has already been performed and when not using “fixed price” method.

In the request for services, the Agency shall provide the Contractor with a detailed description of each sub-task and the related functional and technical analysis.

The Contractor shall submit a draft offer providing a first estimation of function points needed to perform the subtasks and a ceiling in terms of maximum allowed function points for the overall project. The estimation of function points needed must be calculated with the view to carry out the sub-tasks within the expected delivery periods. The maximum function points ceiling, when accepted by the Agency, shall be binding for the Agency.

The estimation of the ceiling value should take into consideration that a reasonable number of requests for change could be submitted during the implementation of a project due to on-going analysis and changes linked to a new operational scenario. The ceiling cannot exceed 50% of the first value (function points estimation).

The estimation shall be contractually binding; however it will also be used as an internal reference. At the acceptance stage, the Contractor shall provide the final functional measurement in function points, according to IFPUG Counting Practice Method v. 4.3 and other Agency’s guidelines compliant with IFPUG method which the Agency may release during the period of the framework contract.

The Contractor shall provide documentation on the final functional measurement with all details needed for maintaining the baseline over time. The final functional measurement provided by the Contractor can be subject to additional revision by a third party, appointed by the Agency, who shall check the calculation and eventually arbitrate any functional measurement issue that might appear.

The payment, approved by the Agency, will be carried out on the basis of each sub-task fully delivered and the number of function points deriving from the final functional measurement accepted by the Agency in writing.

The acceptance period will run up to a maximum of thirty (30) working days from the day of signature of a delivery note by the Agency. During this acceptance period, the Agency may notify the Contractor in writing of any defaults in the result or deliverable.

4.4 Person-day quoted projects

The “person/day quoted” method may be used for service providers working outside the Agency’s premises, when not using the “fixed price” or the “function point” method.

The services will be ordered for a maximum number of days and will be divided into various sub-tasks (or "quoted person-day").

In the request for services, the Agency shall provide the Contractor with a detailed description of each sub-task. The Contractor shall submit a draft offer which shall include an estimate of the number of days needed to carry out the sub-task and the expected delivery date(s). When the estimate is accepted by the Agency, it shall become binding for both parties; only the number of days indicated in the estimate which will be a subject of a specific contract, shall be chargeable.

The payment, approved by the Agency, will be carried out on the basis of each sub-task fully delivered and accepted by the Agency in writing.

The acceptance period will run up to a maximum of thirty (30) working days from the day of signature of a delivery note by the Agency. During this acceptance period, the Agency may notify the Contractor in writing of any defaults in the result or deliverable.

4.5 Remote Support Projects

Remote support services shall be provided on a fixed price basis. The details of the services will be specified in a specific contract and shall include a daily fee for a given number of days for the provision of informatics services and the availability of a certain number of resources who will be available on call, if needed.

The Contractor shall, at the request of the Agency, supply all the necessary personal information regarding his staff providing the services and their profiles.

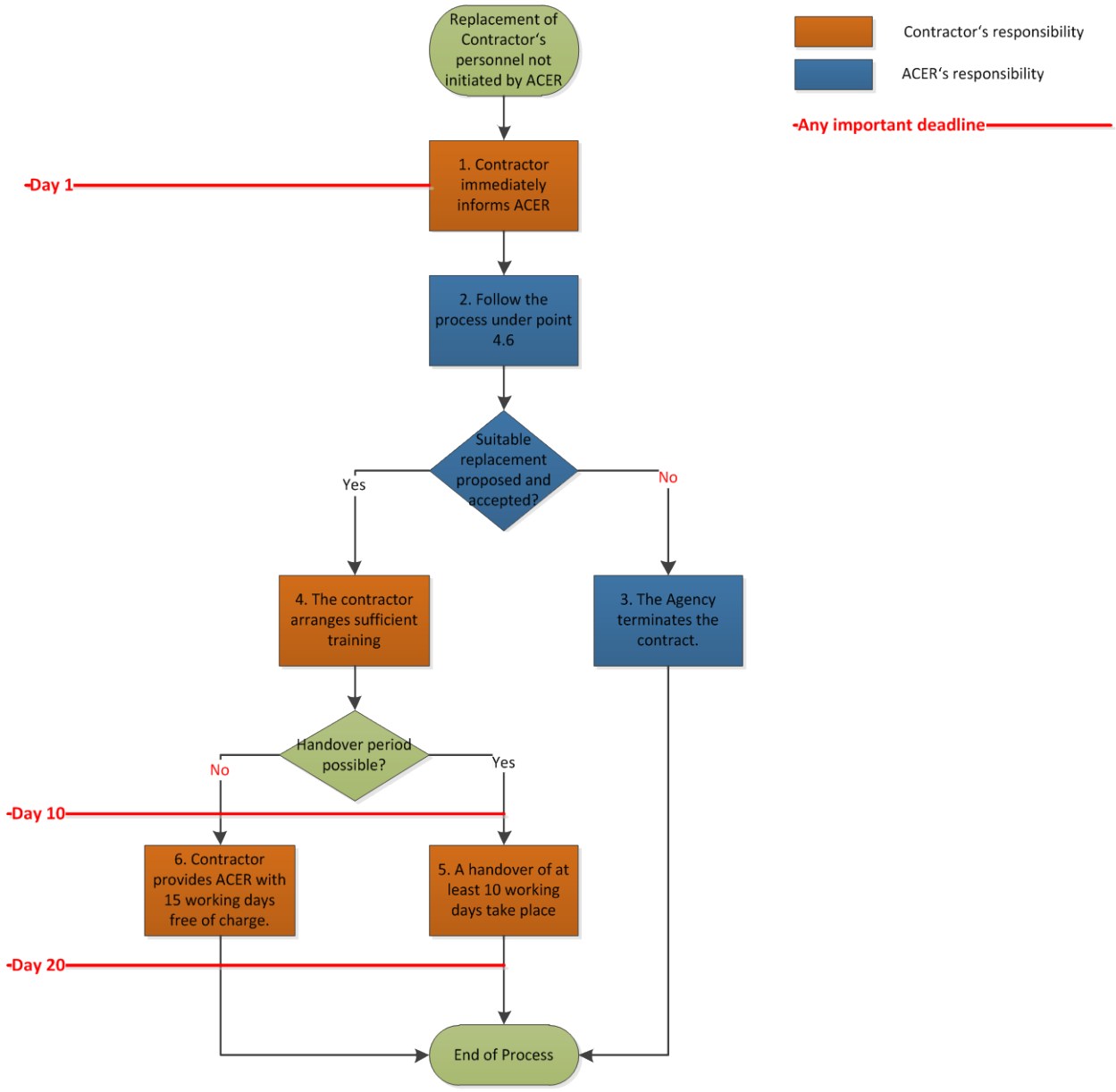
The days worked shall be recorded by the Contractor and/or his staff in the manner defined by the Agency (preferably in an automated way, integrated with a CRM tool). At the end of each month, the Contractor and/or his staff shall complete and sign the attendance sheet which shall be verified by the Agency.

4.6 Replacement of Contractor’s personnel not initiated by the Agency

This point is applicable only for cases where the services are performed at the Agency’s premises.

In case there is a need to replace personnel working under a specific contract which is not initiated by the Agency, the following process shall apply:

1. As soon as the Contractor learns that the person implementing services at the Agency will no longer be able to carry out the work, the Contractor is obliged to immediately inform the Agency. The Contractor shall give one month's notice to the Agency.
2. The replacement, approved by the Agency, shall be present at the Agency's premises ten working days before the end of the period of notice of the predecessor.
3. In case the Contractor does not propose a suitable replacement in due time, the Agency may either:
    a. immediately cancel the specific contract or
    b. apply a penalty of 10 working days free of charge.
4. The Contractor shall arrange sufficient training during a handover period to guarantee the continuity of service provided to the Agency.
5. The handover period should have a duration of at least 10 working days and shall be free of charge for the Agency.
6. If no handover is possible, at least 15 working days must be provided by the successor free of charge for the Agency. The days free of charge will be the first working days of the successor.
7. Any such replacement will not represent any additional cost to the Agency.



5. Professional profiles

5.1 A-level profiles

A-level profiles are those which have senior experience of at least 10 years in management in the field of software development lifecycle and in managing large IT teams and are able to manage and intensively interact with the stakeholders.

Project Manager (PM)	
Minimum education	University degree in the field of Economics, Computer Science or Engineering with a focus on Financial or Energy Markets.
Tasks	– Manage the development and implementation of information systems to meet the identified business needs, acquiring and utilising the necessary resources and skills, within agreed parameters of cost, timescales and quality. – Give proposals for project strategies, planning, definition of tasks and deliverables, review of project deliverables, quality control, risk analysis and management, status reports, problem reporting and management systems, follow up and organisation. – Guide the team in charge of project activities and review their deliverables. – Participate in functional working groups and progress meetings. – Estimate costs, timescales and resource requirements for the successful completion of each project according to the agreed specifications. – Prepare and maintain project and quality plans and tracks activities against the plan, provide regular and accurate reports. – Monitor costs, timescales and resources used and take action where these deviate from the agreed tolerances as well as ensure that delivered systems are implemented according to these criteria. – Manage the change control procedure gaining agreement for revisions to the project from project sponsors. – Provide effective leadership for the project team ensuring that team members are motivated and constantly developing their skills and experience. – Support the Agency's staff in specifying requirements for activities with other Agency's contractors where needed; – Lead and coordinate any relationship resulting from specific contract(s) based on the outcome for Lot 3 of this tender, and inform the Agency in case of potential disagreements.
Knowledge and skills	– In-depth knowledge of project management frameworks (such as PRINCE2 and/or PMBOK) – Knowledge of project management tools (e.g. Primavera or MS Project, Microsoft Excel); – Excellent command of English language which should allow him/her to participate in meetings and draft minutes and notes of internal teams' meetings and external meetings with the Contractors and stakeholders.
Experience	– Minimum 10 year experience in IT field, with a similar position for at least 7 years; – Experience in quality assurance procedures; – Must have successfully completed the project management for at least 2 international projects.

5.2 B-level profiles

B-level profiles are those which have senior experience of at least 7 years in middle management in the area of the software development lifecycle, are able to intensively interact with stakeholders (internal and external) and coordinate the activities of a small team of technical people.

For the purpose of this lot IT experts in a specific area with a continuous experience of at least 7 years in specific IT technical sectors and platforms and leading research and development or customer relationships, are also considered B-level.

Functional Analyst (FA)	
Minimum education	University degree preferably in the field of Economics with focus on Financial or Energy Markets. Alternatively, university degree in the field of Mathematics, Engineering, Computer Science.
Tasks	– Convert specific business procedures in procedures which can be easily implemented technically; – Gather requirements and prioritise their implementation; – Interact with the Agency (in particular with business experts) and minimise the interaction to gather functional and where applicable, technical requirements. – Summarise processes and, in case the processes are too complex, suggest alternative strategies to better comply with the user needs. – Formalize gathered requirements in UML diagrams and communicate them to a technical analyst who will be able to put them in a UML format for final implementation; – Follow-up the implementation of the requirements and prioritize them in co-ordination with the project manager, based on business needs and experience.
Knowledge and skills	– In-depth knowledge of Rational Unified Process or Agile programming processes and methodologies; – Knowledge of market monitoring matters or knowledge of working methods in the world of financial markets, or functional knowledge of the wholesale energy market; – Knowledge of at least a UML design tool, preferably IBM Rational suite. – Excellent command of English language which should allow her/him to participate at stakeholders meetings and the ability to draft efficient functional analysis, minutes and notes for technical analysts and developers.
Experience	Minimum 7 years of experience, of which 3 in the analysis of business processes in the field of wholesale energy market or in the field of financial markets or in the field of market monitoring and surveillance.

Technical Analyst (TA)	
Minimum education	University degree in the field of Computer Science, Engineering, or related subjects.
Tasks	– Translate the outcome of the functional analysis in technical analysis which shall be further implemented by developers; – Select the most appropriate technology among the available technologies portfolio, and in accordance with the specifications of the System Architect, the most suitable technical solution/pattern in the scope to make the technical analysis fully compliant with the selected technologies assuring maximum performances and minimizing, in case of problems, any substantial modification of the software architecture; – Describe in formalized and structured way all technical UML analysis (mastering different kind of UML graphs) and all technical information needed to a developer to implement a specific piece of software without knowing the surrounding functional environment; – Interact with the Data Base Architect and the System Architect with the aim to give them visibility on need for changes in the existing software architecture; – Assure re-usability of components analysed and passed for development, finding common denominators among the developed objects; – Recursively test the integrated components by the managed developers.
Knowledge and skills	– In depth working knowledge of Rational Unified Process, and in particular, of the analysis and requirement phase using RUP documents and UML diagrams, and low level analysis for developers; – Knowledge of at least a UML design tool, preferably IBM Rational suite; – Knowledge on calculation in function points analysis and its application in evaluating complex and economic calculation of software especially in web platforms; – Depending on the project, must have at least an in-depth working knowledge of one or more of the frameworks mentioned under point 3.1 ”*Frameworks, languages, standards and protocols*“, allowing her/him to proactively use each component of the framework with the aim to minimize the developer effort and to simplify the application of standard development patterns. – Good command of English language – The ability to read both UML diagrams and attached notes which could come from the Agency’s personnel.
Experience	Minimum 7 years of working experience, of which 4 in technical analysis of the frameworks mentioned under point 3.1 ”*Frameworks, languages, standards and protocols*“.

System Architect (SAR)	
Minimum education	University degree in the field of Mathematics, Computer Science, Engineering.
Tasks	– Manage technical project development from the beginning to the end; – Prepare clear and concise instructions for the development team about standards for writing codes in the frame of the project and about usage of objects; – Suggest and select the most appropriate technologies in line with the Agency's principles for the specific platforms; – Leadership in the technical role linked to her/his past experience and decide on the most appropriate technical solutions. – Select the most appropriate development patterns and technologies in relation to the scope and capacity planning; – Run a capacity planning before starting the test phase; – Bridge with technical analysts to fix all the issues not take into consideration during the technical analysis phase and which could appear in the application integration phase; – Lead the application integration phase together with the DBA and all technical analysts. – Coordinate the overall software lifecycle process, and lead, together with the deployment expert, the configuration management before the integration.
Knowledge and skills	– In-depth knowledge of configuration management and integration methodologies; – Depending on the project, must have at least an in-depth working knowledge of one or more of the frameworks mentioned under point 3.1 "*Frameworks, languages, standards and protocols*", allowing her/him to master the framework with the aim to minimize the developer's effort and to simplify the application of standard development patterns; – Excellent command of English language which should allow him/her to participate at meetings and draft minutes and notes of internal teams' meetings and external meetings with the Contractors and stakeholders.
Experience	– Minimum 7 year experience in IT covering a similar position for at least 5 years in the same development framework; – Experience in quality assurance procedures.

Technology Expert (TEX)	
Minimum education	University degree in the field of Mathematics, Engineering, Computer Science.
Tasks	– Develop the concept of the software platform with the Agency and in the view to clearly understand the Agency's expectations for the software; – Develop technical guidelines which must be followed by the development team in the development phase; – Work with the software developers, technical analysts, data base architect and system administrator to ensure the final product is what the Agency needs; – Test and validate the software is free from inaccuracies and operating problems and fully compliant with the technical guidelines; – Prioritize and schedule features and changes to the software as requested by the Agency; – Research and keep current with software and systems designs; – Ensure that the software deliverable arrives to the Agency; – Ensure quality control for all software developed by carrying out testing, taking into account feedback from the Agency and external stakeholders.
Knowledge and skills	– Depending on the project, must have at least an in-depth working knowledge of one or more of the frameworks mentioned under point 3.1 ”*Frameworks, languages, standards and protocols*“, allowing her/him to proactively use each component of the framework with the aim to minimize the developer effort and to simplify the application of standard development patterns. – Knowledge of at least a UML design tool, preferably IBM Rational suite; – Excellent command of English language, the person must be able to read both UML diagrams and attached notes which could come from the Agency’s staff and must be able to provide guideline papers which shall be used by the Contractor’s and Agency’s staff.
Experience	Minimum 7 years of experience in the role of System Architect in one or more of the frameworks mentioned under point 3.1 ”*Frameworks, languages, standards and protocols*“.

5.3 C-level profiles

C-level profiles are those which have experience of at least 5 years in technical aspects in the area of the software development lifecycle, are able to cover independently a technical role inside a development team and interact with other members of a team.

Data Base Architect (DBA)	
Minimum education	University degree in the field of Mathematics, Engineering, Computer Science.
Tasks	– Describe and implement the database design based on the inputs of the technical analysis and suggestions of the System Architect; – Perform a capacity planning based on the foreseen values related for the transactions; – Perform installation of Data Base Software on test, stage and production environments; – Installation and capacity planning on database; – Establish a backup and recovery strategy to manage the system; – Suggest security strategy to comply with functional requirements in accordance with the specific Data Base and infrastructural limitations; – Design a database from scratch considering the surrounding technologies; – Performance and tuning of the system after installation of the overall platform; – Software lifecycle management; – Document the system and any change.
Knowledge and skills	– Knowledge of at least a Data Base Design and modelling tools (e.g. ErWIN. ER/Studio, ModelRight, DeZign for Databases, Oracle Designer, Oracle SQL Developer Data Modeler, Sybase PowerDesigner and IBM Data Architect), Data Base Design and implementation at the functional and technical level; – Knowledge of Data Base Management on at least one of the data base platforms mentioned under point 3.1" *Data Bases*"; – Familiar with at least frameworks mentioned under point 3.1 "*Frameworks, languages, standards and protocols*".
Experience	Minimum 5 years of experience in the role of DB Architect in one or more of the frameworks mentioned under point 3.1 "*Frameworks, languages, standards and protocols*" for web development.

Deployment Expert	
Minimum education	University degree in the field of Mathematics, Engineering, Computer Science.
Tasks	– Responsible for Software Deployment in test, stage and production environments; – Coordinate with the system administrator, or eventually the data base architect, to have appropriate versions of Operating System, Application Server, Data Base in place before the software deployment; – Responsible to manage software lifecycle management (releases, versions, etc.); – Coordinate any possible issue related to the solution of performance problems during the execution of the project; – Document all the deployment phases and all the pre-requirements needed to deploy the platform.
Knowledge and skills	– Very good knowledge of deployment on at least one product or technology foreseen under point 3.1 "*Application and web servers*" for web development using at least one of the databases described under "*Data bases"*; – Good knowledge of at least two languages or technologies foreseen under point 3.1 "*Application and web servers*" for web development; – Good knowledge of deployment phases in the specific surrounding technical environment; – Knowledge of scripting languages to automate deployment phase; – Good command of English language to be able to draft documentation and guide the Agency's staff in case any change is needed.
Experience	5 years of experience in similar roles, using at least one product or technology foreseen under point 3.1 "*Application and web servers*" for web development.

5.4 D-level profiles

D-level profiles are those which have experience of at least 2 years in technical aspects in the area of the software development lifecycle, are able to cover a technical role inside a development team under guidance of more senior profiles and interact with other members of a team. D-level profiles shall work in a team under the supervision of a B-level profile.

Developer (DEV)	
Minimum education	University degree in the field of Computer Science, Engineering, or related subjects; alternatively, secondary school with a focus on software development.
Tasks	– Design, code and debug applications in at least all the programming languages mentioned under point 3.1 "*Frameworks, programming languages, standards and protocols*" (depending on the project); – Front end graphical user interface design using Web Interfaces (both pure HTML and Rich Internet Applications); – Unit test of developed components; – Performance tuning, improvement, balancing, usability, automation; – Document software functionality; – Integrate developed components with pre-existing components; – Evaluate and identify new technologies for implementation; – Maintain standards compliance; – Implement localization or globalization of software.
Knowledge and skills	– In-depth working knowledge of a technical framework mentioned under point 3.1 "*Frameworks, languages, standards and protocols*" (depending on the project), allowing her/him to proactively use each component of the framework with the aim to minimize the developer's effort and to simplify the application of standard development patterns; – In-depth knowledge of one or more programming languages mentioned under point 3.1 "*Frameworks, languages, standards and protocols*" (depending on the project) and of web interfaces programming; – Knowledge of at least an Integrated Development Environment (IDE) (Eclipse, NetBeans, JDeveloper, Visual Studio); – Good command of English language to be able to read both UML diagrams and attached notes which could come from the Agency's staff.
Experience	Minimum 2 years of experience in developing web based applications in one or more of the frameworks mentioned under point 3.1 "*Frameworks, languages, standards and protocols*" (depending on the project).

System Administrator (SAD)	
Minimum education	University degree in the field of Computer Science, Engineering, or related subjects; alternatively secondary school with a focus on software development.
Tasks	– Installation, configuration and tuning of basic operating systems; – Installation, configuration and tuning of basic database software; – Installation, configuration and tuning of the application and web server; – Installation, configuration and tuning of the PC image for the developers; – Document the overall installation process; – Maintain standards compliance; – Implement localization or globalization of software.
Knowledge and skills	– Knowledge of system administration issues such as: installation and maintenance of the most common UNIX and windows operating systems; – Knowledge of application servers issues such as: installation and maintenance of one of the application servers mentioned under point 3.1 "*Application and Web Servers*"; – Knowledge of Data Base issues such as: installation and maintenance of one of the databases mentioned under point 3.1 "*Data Bases*"; – Scripting languages to automate system administration; – Good command of English language to be able to draft documentation and guide the Agency's staff in case any change is needed.
Experience	Minimum 3 years of experience in system administration in medium-large projects in environments with similar software and hardware infrastructure.

6. The content of the Service Level Agreement

The Service Level Agreement (SLA) shall establish the minimum standards and values for the performance of the requested services from the ordering phase, to project execution phase and audit.

The draft SLA covers all order types and sets benchmarks for minimum standards and values for the framework contract as well as specific contract(s).

The SLA for the framework contract shall apply to the ordering phase for each request for services, whereas the SLA for a specific contract shall apply to project execution phase and audit. A specific SLA shall include general conditions as well as benchmarks which describe the minimum expected quality level. In case a benchmark applies to a specific condition, this shall be clearly indicated.

A specific SLA will form an integral part of a contract.

6.1 Quality monitoring

A benchmark is a point of reference for measuring the performance of an activity according to which the Contractor shall be assessed at a certain observation time. The benchmarks below shall be used to measure the quality of the service delivered.

For clarity, penalties are stated in the benchmark cards. These shall be applied when the Contractor fails to meet quality expectations either by a substantial margin in a single instance or consistently over a period of time.

In the case of an SLA for a specific contract, the Agency shall apply the benchmarks only in respect to the ordered services and not to all the orders.

6.2 General rules and provisioning applying to the quality monitoring during project execution

The Agency shall monitor the quality of service delivery and measure whether the Contractor is delivering the standard of service as requested.

Where the deliverable under a specific contract shall be a system or part thereof, the request for services shall include at least a vision and system use cases, prepared in accordance with the principles of Rational Unified Process (RUP), as well as the requirements for documentation to be delivered with the system.

Monitoring the quality of projects for software development will be carried out as follows:

1. At the outset of the project, a detailed software development plan will be drawn up by the Contractor following the principles of the RUP software development methodology. Where the Contractor intends to use another methodology, the application of the new methodology (e.g. Agile) shall be approved by the Agency in writing before the start of the project and, when the Agency is not aware of the way the methodology will work, the Contractor shall provide the Agency's IT team with training and support in the evaluation of the new agreed development methodology;

   The deliverables for iteration will be agreed between the Contractor and the Agency in the software development plan related to the offer. This plan will be used by the Agency to measure the progress and quality of the project together with the benchmarks which will impose the Contractor to have a Configuration System and a Defect Monitoring System in place before starting the project to accomplish the requested measures.

2. At the end of iteration specified in the software development plan the Agency shall test and approve in writing the deliverables.

3. During the project, the Contractor will be required to provide regular progress reports containing:
   - An executive summary of the status of the project
   - The status of all the milestones.
     - Where there are delays, the reason(s) for the delay
     - Where there are delays, a revised end date
   - The Contractor will update and keep up to date a risk report, which will include:
     - A description of the identified risks (planned and unplanned)
     - The probability, severity and consequence of the risk occurring
     - The mitigation plan for the risk
     - The current probability, severity and consequence of the risk occurring
   - The list of issues

4. During the project, the system analysis and design documentation using UML must be reviewed and approved by the Agency's Software Architects (through the REMIT IT project office). No deliverable will be accepted by the Agency without prior approval of the analysis and design documentation. Where the analysis is provided by the Agency and where the analysis is a part of a previously accepted delivery, the Contractor, receiving the above mentioned analysis, will have an implicit approval. The Agency shall send the approval to the Contractor within 5 working days after receiving the

documentation. A description of technical and system documentation required, but not limited to that and subject to change, is:

- System use cases (where not provided by the Agency as part of the initial specifications)
- Sequence diagrams for every use case and showing the interaction of all classes towards the realisation of that use case
- Class diagram
- Data model
- Activity diagrams to illustrate the functioning of the important functionality of individual classes or of the system
- Architectural diagrams
- Any other UML diagram which can be useful to better clarify the analysis

5. During the project, the Contractor will be required to provide a test plan, test scripts, the results of the execution of the test scripts and a summary of the defects raised, offering the Agency sufficient assurance that the deliverables have been appropriately tested. The Agency retains the right to ask to run the tests before formal acceptance without any prior notice.

6. After delivery and acceptance of the system, the Contractor will be required to finalise all the documentation to the Agency's satisfaction.

7. On completion of the project, the measures linked to the benchmarks will be finalized and analysed by the Contractor and reviewed by the Agency to establish the penalties, if any.

Monitoring the quality of projects that are not software development projects will include using a combination of the above methodologies as applicable and as agreed in the relevant specific contract.

Monitoring the quality of work delivered by resources will measure the delivery of the services required in respect to timeliness and the extent to which they meet the qualitative expectations of the Agency. Monitoring will be carried out in the following manner:

1. Quality of the work of a resource;
2. Before commencing a task, the Contractor's personnel will agree on the scope of the task, the technical approach and the workload estimate with the Agency's staff.
3. Progress monitoring: all resources will report on a weekly basis via timesheets showing the number of hours spent per agreed task and progress on the task.
4. Monitoring deliverables (upon delivery): the Agency's staff will review the quality of what is delivered on the basis of its fitness for purpose.

***Note**:*
Whether expectations are met will be established by adherence to the profile description, the service level agreement and the quality of the code (inter alia established via peer reviews). Where the resource either fails to meet the benchmarks by a substantial margin in a single instance or consistently over a period of time, the Agency may terminate the collaboration with this resource immediately. The Contractor will be required to replace the affected resource immediately.

6.3 Benchmark cards for Service Level Agreement

With the aim to define a modular and customizable Service Level Agreement framework the Agency set a list of benchmarks which will be used during the contract implementation to

continuously check that the Contractor, when performing the specific services is performing on commonly agreed quality standards.

The Contractor can propose additional benchmarks before the signature of a specific contract. The proposed benchmarks must be accepted in written by the Agency but should follow the following basic rules:

- cannot override or modify any part of the benchmarks defined in these technical specifications;
- cannot be expressed in a way that makes the benchmarks in these technical specifications unusable for the purpose of the contract implementation;
- must be supported by relevant literature and with a descriptive paper describing the use of the new benchmark.

For editorial reasons, the benchmark cards are gathered in two groups:

- benchmark cards related to the ordering phase
- benchmark cards related to the execution and audit phase of the projects to give a better reading and understanding of the quality framework and of the phase in which each benchmark will intervene.

Project phase	Benchmark code	Fixed price projects	Time-and-means projects	Function point measured projects	Person-day quoted projects	Remote support projects
Order process	O1.01	X	X	X	X	X
	O1.02		X		X	X
	O1.03		X		X	X
Project execution phase	E2.01 (only for development projects)	X	X			X
	E2.02 (only for development projects)	X	X			
	E2.03 (only for development projects)	X	X			
	E2.04 (only for development projects)	X	X	X	X	X
	E2.05 (only for development projects)	X	X	X	X	X
	E3.01 (only for maintenance projects)	X	X	X		
	E3.02 (only for maintenance projects)	X	X	X		
	E3.03 (only for maintenance projects)	X	X	X		X
	E3.04 (only for maintenance projects)	X	X	X		X
	E3.05 (only for maintenance projects)	X	X	X		
	E3.06 (only for maintenance projects)	X	X	X		X
	E3.07 (for development and maintenance projects)	X	X	X		X
Audit	E4.01 (only for audits)	X	X	X	X	X

6.3.1 Benchmarks related to the ordering phase

Benchmark O1.01 - Compliance with timeline for sending the response to offer request	
Service quality indicators	Compliance with timeline for sending the response to offer request
Unit of measure	Working days
Source of measurement data	E-mail exchanges between the Agency and the Contractor
Observation period	6 months
Frequency of measure	Every time a new request for offer is sent to the Contractor and reply received
Data to measure	– E-mail with the response and a formal offer from the Contractor – Date and time of arrival of the reply to declare willingness to provide an offer
Rules for measuring	None
Formula (if any)	*O2 = Date_Received_Offer_Email - Date_Deadline_Submission*
Thresholds	*O2<=0 in working days*
Contractual actions	The Agency will send the request for services to the next contractor on the list for a period of 12 months following the observation period, excluding the Contractor in question.
Exceptions	No exception

Benchmark O1.02 - Success or failure to provide the requested service	
Service quality indicators	Success or failure to provide the requested service
Unit of measure	Percentage
Source of measurement data	Report on the outcome of the offer evaluated by the Agency
Observation period	12 months
Frequency of measure	When every new request for services is sent to the Contractor
Data to measure	Report on the outcome of the offer evaluated by the Agency from a qualitative and quantitative perspective, in line with the Agency request.
Rules for measuring	After 12 months from the start of framework contract and every 12 months period following the start of the framework contract, per each Contractor who submitted an offer. The Agency shall take into account the evaluation reports and shall count the number of occurrences in which the Contractor has submitted the offer for the services requested and the number of occurrences in which the Contractor failed to submit the offer.
Formula (if any)	*O3 =[positive_outcomes / (positive_outcomes + negative_outcomes)] *100%*
Thresholds	*O3 > Yes in 75% of the total requests*
Contractual actions	The Agency will send the request to the next contractor on the list for a time period of 12 months following the observation period, excluding the Contractor in question.
Exceptions	No exception

Benchmark O1.03 - For availability of resources	
Service quality indicators	For availability of resources
Unit of measure	Percentage
Source of measurement data	Report on the outcome of the offer evaluated by the Agency
Observation period	12 months
Frequency of measure	When every new request for services is sent to the Contractor
Data to measure	Report on the outcome of the offer evaluated by the Agency with a focus on the availability of resources, from a quantitative perspective, in line with the Agency request.
Rules for measuring	After 12 months from the start of the framework contract and every 12 months period following the start of the framework contract, for each Contractor who submitted an offer, the Agency, after taking into account the reports, will count the number of occurrences in which the Contractor has offered quantitatively acceptable amount of resources in response to a request for services, and the number of occurrences in which the Contractor failed.
Formula (if any)	*O5=[positive_outcomes / (positive_outcomes + negative_outcomes)] *100%*
Thresholds	*O5 > Yes in 75% of the total requests*
Contractual actions	The Agency will send the request for services to the next Contractor on the list for a time period of 12 months following the observation period, excluding the Contractor in question.
Exceptions	No exception

6.3.2 Benchmarks for the execution phase

Applicable only to *Software development* specific contracts.

Benchmark E2.01 - Takeover of existing services or platforms	
Service quality indicators	Takeover of existing services or platforms
Unit of measure	Working days
Source of measurement data	– Takeover plan; – Declaration of conformity of the Takeover plan;
Observation period	Takeover phase
Frequency of measure	Once per specific contract mentioning “Takeover services”
Data to measure	– Date of start of the Takeover activities (*Start_Takeover*) – Date of end of Takeover activities (*End_Takeover*)
Rules for measuring	None
Formula (if any)	*TOTO = End_Takeover - Start_Takeover*
Thresholds	*TOTO <= 65 working days*
Contractual actions	– The Contractor will refund the Agency the sum equal to the amount needed for uninterrupted continuation of service, to be carried out by the Agency’s Contractors prior to takeover; – the Agency could invoke the right to terminate the contract
Exceptions	None

Benchmark E2.02 - Development time for the specific milestones	
Service quality indicators	Development time for the specific milestones
Unit of measure	Calendar weeks
Source of measurement data	– Detailed time plan accepted when signing a specific contract. The detailed plan must clearly state the milestones. – Report on release for acceptance to the Agency.
Observation period	Per each milestone defined in the project plan
Frequency of measure	Once per project/order/specific contract of this type
Data to measure	– Date of request for development – Date of release for acceptance – Sum of weeks needed to complete the sum of all the previous milestones as from the detail plan
Rules for measuring	None
Formula (if any)	*DTPM (duration in weeks) = Weeks of release for acceptance – week of initial request (+1) – weeks needed to complete the sum previous milestones as from the detail plan.* Rounded to the next whole number
Thresholds	*Threshold 1* *DTPM <= 5 weeks*
Contractual actions	In case the value is above the threshold, the Contractor will have a penalty of 5% of the amount for the specific contract.
Exceptions	No exception

Benchmark E2.3 - Effort estimation accuracy	
Service quality indicators	Effort estimation accuracy
Unit of measure	Absolute value
Source of measurement data	– Initial estimated effort from the accepted offer – Real effort is measured using work sheets of all the personnel involved in the project
Observation period	From start to end of the project.
Frequency of measure	Every quarter
Data to measure	– Actual project effort (in man days, from the time sheets) – Estimated project effort (in man days, from the offer)
Rules for measuring	The measure starts from the beginning of the project linked to a specific contract up to the release of all the deliverables foreseen by the same specific contract. This is not applicable for maintenance and ad-hoc consultancy.
Formula (if any)	*Effort Estimation Accuracy = Actual project effort / Estimated project effort*
Thresholds	*EEA < 1.35* during the first year of specific contract *EEA < 1.25* during the subsequent years of the contract
Contractual actions	In case the value is above the threshold, the Contractor will have a penalty of 1% on the total amount of development fees for the single quarter on the specific contract.
Exceptions	No exception

Benchmark E2.4 - For timely delivery	
Service quality indicators	For timely delivery
Unit of measure	True or False
Source of measurement data	Report on the outcome of the offer evaluated by the Agency
Observation period	Once, at the end of the specific contract
Frequency of measure	See “Observation period”
Data to measure	– Estimated date of the Agency’s acceptance must be mentioned in the detailed plan accepted by the Agency. – End of the specific contract is defined as the final acceptance of deliverables at the end of the specific contract and is signed by the Contractor and the Agency.
Rules for measuring	This is a single measure at the end of any specific contract.
Formula (if any)	*Date of Agency acceptance* <= *Estimated date of Agency acceptance*
Thresholds	This measure should not be false
Contractual actions	In case the value is above the threshold, the Contractor will have a penalty of 3% on the total amount of development on the complete value of the specific contract.
Exceptions	No exception

Benchmark E2.5 – Handover of a project to the Agency or to a third party	
Service quality indicators	Handover of services or platforms to the Agency or to a third party
Unit of measure	Working days
Source of measurement data	– Handover plan – Declaration of conformity of the handover plan
Observation period	Handover phase only of an existing platform
Frequency of measure	Once per specific contract mentioning “Handover services”
Data to measure	– Starting date for handover activities (*Start_Handover*) – Ending date for handover activities (*End_Handover*)
Rules for measuring	None
Formula (if any)	*TTHO = End_Handover - Start_Handover*
Thresholds	*TTHO <= 65 working days*
Contractual actions	– The Contractor will refund the Agency the sum equal to the amount needed for uninterrupted continuation of service, to be carried out by the Agency’s Contractors prior to takeover; – the Agency could invoke the right to terminate the contract.
Exceptions	None

Applicable only to *Software maintenance* specific contracts

Benchmark E3.01 - Corrective maintenance development time	
Service quality indicators	Corrective maintenance development time
Unit of measure	Working hours
Source of measurement data	– Configuration management system – Registry of planned maintenance
Observation period	Every corrective maintenance development
Frequency of measure	Measure is conducted on each development event under a maintenance contract.
Data to measure	For every agreed maintenance event on existing software: – Duration of the development phase to maintain the specific software component estimated by the Contractor with the agreement of the Agency (*estimated_maintenance_duration*) • Time/Date of start of development phase to maintain the specific software component (*Start*) • Time/Date of end of development phase to maintain the specific software component with a positive resolution and proved by tests (*End*); • Any suspension notified to the Agency and which is not linked to the Contractor's activity.
Rules for measuring	None
Formula (if any)	*Effective_Duration = estimated_maintenance_duration – (End – Start – Suspension)*
Thresholds	*Effective_Duration >= 0 in 90% of the total number of events in the observation period.* *Effective_Duration >= -0,25 x estimated_maintenance_duration for the remaining 10% of events in the observation period.*
Contractual actions	In case the values exceed one of the two thresholds, the Contractor will have a penalty of 1% on the amount for the specific development/maintenance which shall be due in the running quarter.
Exceptions	No exception.

Benchmark E3.02 - Compliance of time planned for planned maintenance	
Service quality indicators	Compliance of time planned for planned maintenance
Unit of measure	Working days
Source of measurement data	– Configuration management system – Registry of planned maintenance
Observation period	Quarter
Frequency of measure	Measure is conducted on each planned maintenance event, with the exclusion of those for which a work around is proposed and accepted by the Agency.
Data to measure	For every agreed planned maintenance event: – Duration of maintenance estimated by the Contractor with the agreement of the Agency (*estimated_maintenance_duration*) – Time/Date of start of planned maintenance (*Start*) – Time/Date of end of planned maintenance with a positive resolution (*End*); – Any suspension notified to the Agency and which is not linked to the Contractor's activity.
Rules for measuring	None
Formula (if any)	*Effective_Duration = estimated_maintenance_duration – (End – Start – Suspension)*
Thresholds	*Effective_Duration >= 0 in 95% of the total number of events in the observation period.* *Effective_Duration >= -0,25 x estimated_maintenance_duration for the remaining 5% of events in the observation period.*
Contractual actions	In case the values exceed one of the two thresholds, the Contractor will have a penalty of 1% on the amount for the specific development/maintenance which shall be due in the running quarter.
Exceptions	No exception.

Benchmark E3.03 - Time to recover for application defects	
Service quality indicators	Time to recover due to defects in applications released and under warranty
Unit of measure	Hours
Source of measurement data	Every order type related to software
Observation period	Quarter
Frequency of measure	Measured in case of a sever event with absence of any possibility to perform any operation on the system
Data to measure	– Start of resolution process: date and time of the first call to the service desk reporting the defect (*start*) – End of resolution process: date and time or release of the solution, in this case a workaround is acceptable if it is approved by the Agency and which involves the opening of planned maintenance (*end*) – Any suspension agreed between the parties (*suspension*)
Rules for measuring	None
Formula (if any)	*TTRA = End - Start - Suspension* *Round to 30 minutes*
Thresholds	*TTRA < 8 hours*
Contractual actions	In case the value is above the threshold, the Contractor will have a penalty of 1% per each whole number exceeding the threshold based on the amount for the specific development which is due in the running quarter.
Exceptions	None

Benchmark E3.04 - Backlog management index	
Service quality indicators	Backlog management index
Unit of measure	Percentage
Source of measurement data	Backlog related to a specific contract for maintenance software
Observation period	Entire duration of the specific contract
Frequency of measure	Every month from start date of the specific contract
Data to measure	– Number of problems closed during the observation period – Number of problem arrivals to the service desk during the observation period
Rules for measuring	None
Formula (if any)	*BMI = (Number of problems closed during the observation period / Number of problem arrived to the service desk during the month) × 100%*
Thresholds	BMI >100%
Contractual actions	In case the value will not stay above the threshold, the Contractor will have a penalty of 1% on the amount for the specific contract for software maintenance in the running quarter.
Exceptions	No exception

Benchmark E3.05 - Percentage delinquent fixes	
Service quality indicators	Percentage delinquent fixes
Unit of measure	Percentage
Source of measurement data	– Backlog related to a specific contract for maintenance software; – Configuration management system.
Observation period	Entire duration of the specific contract
Frequency of measure	Quarter
Data to measure	– Number of fixes that exceeded the response time criteria by severity level (eg. for a defect of Severity 1, the issue is solved in a time>8 working hours) – Number of fixes delivered in a specified time
Rules for measuring	In case of defect, the Agency defines delinquent as the defects to be solved and exceed the following thresholds based on the severity: – *Severity 1* (high-blocking) – delinquent are the ones solved in time > 8 working hours from time or acceptance of defect; – *Severity 2* (medium-high impact for 75% of users) - delinquent are the ones solved in time > 24 working hours from time or acceptance of defect; – *Severity 3* (low impact on normal activity) - delinquent are the ones solved in time > 120 working hours from time or acceptance of defect. **Measure shall be done considering the previous quarter (as this measure is not valid on real time data).**
Formula (if any)	*PDF = (Number of fixes that exceeded the response time criteria by severity level / Number of fixes delivered in a specified time) × 100%*
Service quality indicators	10% < PDF < 40%
Unit of measure	In case the value will not stay within the threshold limits, the Contractor will have a penalty of 0,5% on the amount for the specific contract for software maintenance in the running quarter
Source of measurement data	No exception

Benchmark E3.06 - Mean of time to close a defect	
Service quality indicators	Mean of time to close a defect
Unit of measure	Hours
Source of measurement data	– Backlog related to a single specific contract for maintenance software – Configuration management system
Observation period	Quarter
Frequency of measure	Measured in case of a sever event with absence of any possibility to perform any operation on the system
Data to measure	– Start of resolution process: date and time of the first call to the service desk reporting the defect (*start*) – End of resolution process: date and time or release of the solution, in this case a workaround is acceptable if approved by the Agency and which involves the opening of planned maintenance (*end*) – Any suspension agreed between the parties (*suspension*)
Rules for measuring	None
Formula (if any)	MTTCD = *End – Start - Suspension* Round to 30 minutes
Service quality indicators	MTTCD < 8 hours
Unit of measure	In case the value is above the threshold, the Contractor will have a penalty of 0,5% per each whole number exceeding the threshold based on the amount for the specific development which is due in the running quarter,
Source of measurement data	None

Benchmark E3.07 - Total Defect Containment Effectiveness (TDCE)	
Service quality indicators	Effort Estimation Accuracy
Unit of measure	Absolute value
Source of measurement data	Historical backlog of pre-release and post-release defects
Observation period	3 months after release of the project, when the project enters the maintenance phase
Frequency of measure	Every quarter during the maintenance phase
Data to measure	– Number of pre-release defects (including defects due to requirements, design, coding and test phase, independently by the methodology) – Number of post-release defects
Rules for measuring	
Formula (if any)	Total Defect Containment Effectiveness (*TDCE*) = *Number of pre-release defects / (Number of pre-release defects + Number of post - release defects)*
Thresholds	*TDCE* < 0,95
Contractual actions	In case the value is above the threshold, the Contractor will have a penalty of 1% on the total amount of maintenance fee for the single quarter
Exceptions	No exception

Benchmark E4.01 – For audit success	
Service quality indicators	For audit success
Unit of measure	Percentage
Source of measurement data	Report on the outcome of the audit by the Agency
Observation period	12 months
Frequency of measure	When every audit is conducted by the Agency
Data to measure	Report on the outcome of an audit by the Agency, outlining positive and/or negative events. The report shall clearly state whether the outcome of the audit is considered positive, i.e. the Contractor is performing in line with the Agency's quality standards.
Rules for measuring	After 12 months from the start of the framework contract and every 12 months period following the start of the framework contract, per each Contractor who provided services in response to a request for services, counting the number of positively and negatively assessed audits.
Formula (if any)	*Passed_audits = [positive_outcomes / (positive_outcomes + negative_outcomes)] * 100%*
Thresholds	*Passed_audits >Yes in 75% of the total requests*
Contractual actions	The Agency will send the request to the next contractor on the list for a time period of 12 months following the observation period, excluding the Contractor in question.
Exceptions	No exception.

6.3.3 Quality audits

The Agency will audit the Contractor's processes related to the delivery of service. Three types of audits are foreseen.

1. **Short-notice point audit**:

   Notice period: 24 hours
   Content: Request to provide documented evidence that a specific step in the processes related to the delivery of the service has been provided.
   Maximum frequency: One per month

2. **Shallow system audit announced in advance**:

   Notice period: 5 working days
   Content: On-site audit (at the Contractor's premises) of all auditable processes and systems (cf. Infra)
   Maximum duration: 0,5 days
   Maximum frequency: Once per quarter

3. **In-depth system audit announced in advance**:

   Notice period: 10 working days
   Content: On-site audit (at the Contractor's premises) of all auditable processes and systems
   Maximum duration: 2 days
   Maximum frequency: Once per year

The auditable processes will be a part of the SLA with a possibility of revision on conclusions of a specific contract. The set of auditable processes and systems will consist of at least the processes and systems required in these technical specifications (process for ordering services, replacement of Contractor's personnel not initiated by the Agency, reporting requirements) and the processes the Contractor shall describe in his tender and/or in an offer to a specific request for services in case this shall be relevant to the delivery of services.