

Instructions to tenderers and specifications attached to the Invitation to Tender No. ERA 2016 10 OP

“Use of data and analytics techniques in railways to support better management of the risk of accidents”

CONTENT

SECTION A. INTRODUCTION	4
A.1 What is ERA?	4
A.2 What is a tender?	4
A.3 Who is eligible to participate to this tender?	5
A.3.1. Participation.....	5
A.3.2. Contractual conditions.....	5
A.3.3. Joint tenders	5
A.3.4. Subcontracting.....	6
SECTION B. GUIDELINES AND GENERAL INFORMATION RELATED TO THIS TENDER	7
B.1 What should my offer consist of?	7
B.1.1. Identification of the tenderer	7
B.1.2. Technical proposal	7
B.1.3. Financial proposal	8
B.1.4. Supporting documentation.....	8
B.2 Contacts between ERA and the tenderers	9
B.2.1. Written clarification before the closing date for submission of tenders	9
B.2.2. Oral clarification before the closing date for submission of tenders.....	10
B.3 Can I offer something that varies from what is requested in the terms of reference?	10
B.4 Misrepresentation and corruptive practices	10
B.5 Confidentiality & public access to documents	10
B.6 Where do I find the standard provisions ERA applies in its contracts?	11
B.7 How and when should I present my offer?	11
B.7.1. Data Protection	11
B.7.2. Language	11
B.7.3. Dates and postal address	11
B.7.4. Double envelope system.....	12
B.8 How will my offer be evaluated?	12
B.8.1. Offer opening session	12
B.8.2. Offer evaluation session	13
B.9 Appeals	13
B.10 Other information	13
B.11 Intellectual property rights	14
SECTION C. SPECIFIC INFORMATION RELATED TO THIS TENDER	15
C.1 Timetable	15
C.2 Specifications	16
C.2.1. Introduction and context of the required services	16
C.2.2. Scope of work and expected results	19
C.2.3. Meetings	22
C.2.4. Deliverables and schedule	24
C.2.5. Organisation of the tenderer	25
C.3 Content of the technical offer	25
C.4 Content of the financial offer	27
C.4.1. General.....	27

C.4.2.	Taxes	27
C.4.3.	Conditions for validity	27
C.5	Selection criteria	28
C.5.1.	Economic and financial capacity	28
C.5.2.	Technical and professional capacity	28
C.6	Award criteria	30
SECTION D.	STANDARD FORMS.....	32
D.1	Declaration of eligibility	32
D.2	Tenderer’s address and contact details	36
D.3	Technical & professional capacity – Reference projects	37
D.4	Technical & professional capacity – Overview on the project team.....	38
D.5	Financial Proposal	39
D.6	Curriculum Vitae	40
D.7	Checklist.....	41
D.8	Confirmation of offer submission.....	42
SECTION E.	ANNEX I	43
SECTION F.	ANNEX II DRAFT SERVICE CONTRACT	44
SECTION G.	ANNEX III – BIG-DATA IN RAILWAYS.....	45

Section A. Introduction

A.1 What is ERA?

The European Railway Agency, (hereinafter "ERA" or "the Agency"), is a specialised agency of the European Union, which has been given specific regulatory tasks in the railway sector.

The Agency is located in Valenciennes/Lille, France, and has the mission of reinforcing safety and interoperability of railways throughout Europe, and thus adding a strong new momentum towards the shared vision of a truly integrated, competitive European railway area.

As part of its common transport policy, the European Union has adopted legislation to pave the way for gradual establishment of an integrated European railway area, both legally and technically. This involves the development and implementation of Technical Specifications for Interoperability and a common approach to questions concerning railway safety. The Agency's main task is to manage the preparation of these measures. The Agency has about 140 members of staff, mostly professionals from the European railway sector.

Agency structure, main tasks and working methods are outlined in Regulation (EC) No 1335/2008 amending Regulation (EC) 881/2004 of the European Parliament and of the Council of 29 April 2004 establishing a European Railway Agency.

Further information can be found on the Agency's web site at <http://www.era.europa.eu>.

A.2 What is a tender?

For its organisation and functioning ERA is in constant need of goods and services. 'Tendering' is the structured way to consult the market for the purchase of these goods and services.

The purpose of competitive tendering for awarding contracts is two-fold:

- › to ensure the transparency of operations;
- › to obtain the desired quality of services, supplies and works at the best possible price.

The procurement procedure for the EU institutions, agencies and other bodies is governed by the following provisions, namely:

1. Regulation (EU, EURATOM) No 966/2012 of the European Parliament and of the Council of 25 October 2012 on the financial rules applicable to the general budget of the Union and repealing Council Regulation (EC, Euratom) No 1605/2002 [Official Journal L 298, 26.]
2. Commission Delegated Regulation (EU) No 1268/2012 of 29 October 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 [Official Journal L 362, 31.12.2012].
3. The World Trade Organisation's Agreement on Government Procurement, which the European Union joined following Council Decision of 16 November 1987 concerning the conclusion of the Protocol amending the GATT Agreement on Government Procurement;
4. DECISION n°93 of the Administrative Board of the European Railway Agency adopting the financial regulation of the Agency and which can be found at the following link:

<http://www.era.europa.eu/Document-Register/Documents/ERA%20AB%20Decision%2093%20-%20financial%20regulation.pdf>

5. Corrigendum Decision n°96 of the Administrative Board of the European Railway Agency laying down detailed rules for the implementation of the Financial Regulation of the European Railway Agency (dated 26 November 2014) and which can be found at the following link:
<http://www.era.europa.eu/Document-Register/Pages/DECISION-n°96-of-the-Administrative-Board-of-the-European-Railway-Agency-laying-down-detailed-rules-for-the-implementation.aspx>

In addition to the above-mentioned legislation, it is worth noting that:

6. The provisions mentioned at 1. and 2. above are largely similar to those contained in the European Union’s public procurement directive, Directive 2014/24/EU of the European Parliament and of the Council of 26 February 2014 on public procurement and repealing Directive 2004/18/EC, which is applicable to the Member States;
7. Principles arising from the European Court of Justice’s case-law in the field of procurement are binding on the European institutions;
8. Prospective tenderers are legitimately entitled to expect ERA to manage its calls for tenders in accordance with principles arising from the European Ombudsman’s decisions;
9. ERA’s staff follows the “Code of Good Administrative Behaviour” in their relations with the public, as defined by the Executive Director decision of 10 July 2007 and which can be found at the following link: <http://www.era.europa.eu/Document-Register/Pages/Code-of-good-administrative-behaviour.aspx>

A.3 Who is eligible to participate to this tender?

A.3.1. Participation

Participation in this tender procedure is open on equal terms to all natural and legal persons from one of the EU Member States and to all natural and legal persons in a third country which has a special agreement with the European Union in the field of public procurement on the conditions laid down in that agreement.

Tenderers must indicate clearly in which country they have their headquarters (legal person) or domicile (natural person). Operators in third countries which have signed an agreement with the European Union in the field of public procurement are allowed to take part in the Tendering procedure on the conditions laid down in this agreement. The Agency shall not accept Tenders submitted by operators established in third countries which have not signed such an agreement with the European Union.

A.3.2. Contractual conditions

The tenderer should bear in mind the provisions of the **draft contract** which specifies the rights and obligations of the contractor, particularly those on payments, performance of the contract, confidentiality, and checks and audits.

A.3.3. Joint tenders

A joint tender is a situation where a tender is submitted by a **group (2 or more) of economic operators** (consortium). Joint tenders may include subcontractors in addition to the joint tenderers.

In case of joint tender, all economic operators in a joint tender assume joint and several liabilities towards the Contracting Authority for the performance of the contract as a whole. Nevertheless, tenderers must designate a single point of contact for the Contracting Authority.

After the award, the Contracting Authority will sign the contract either with all members of the group, or with the member duly authorised by the other members via a power of attorney.

A.3.4. Subcontracting

Subcontracting is permitted in the tender but the contractor will retain full liability towards the Contracting Authority for performance of the contract as a whole.

Tenderers must give an indication of the proportion of the contract that they intend to subcontract and to identify all subcontractors whose share of the contract is above 30%.

During contract execution, the change of any subcontractor identified in the tender will be subject to prior written approval of the Contracting Authority.

Section B. Guidelines and general information related to this tender

Tenderers are recommended to consult the Guidelines for Tenderers published in our web site at the following link: <http://www.era.europa.eu/The-Agency/Procurement/Pages/home.aspx>

B.1 What should my offer consist of?

Tenderers must submit an offer that comprises of the following 4 elements:

B.1.1. Identification of the tenderer

The tender must include a cover letter presenting the name of the tenderer (including all entities in case of joint offer) and identified subcontractors if applicable, and the name of the single contact person in relation to this tender.

[If applicable, the cover letter must indicate the proportion of the contract to be subcontracted.]

In case of joint tender, the cover letter must be signed by a duly authorised representative for each tenderer or by a single tenderer duly authorised by other tenderers (with power of attorney).

Subcontractors must provide a letter of intent stating their willingness to provide the service foreseen in the offer and in line with the present tender specification.

In order to prove their legal capacity and their status, all tenderers and identified subcontractors must provide a signed **Legal Entity Form** with its supporting evidence. The form is available on:

http://ec.europa.eu/budget/execution/legal_entities_en.htm

The tenderer (or the single point of contact in case of joint tender) must provide a **Financial Identification Form** and supporting documents.

Only one form per offer should be submitted (no form is needed for subcontractors and other joint tenderers). The form is available on: http://ec.europa.eu/budget/execution/ftiers_en.htm

Tenderers and identified subcontractors that are already registered in the Agency’s accounting system (i.e. they have already been direct contractors) must provide the form but are not obliged to provide the supporting evidence.

Tenderers must provide the following information if it has not been included with the Legal Entity Form:

- › **For legal persons**, a legible copy of the notice of appointment of the persons authorised to represent the tenderer in dealings with third parties and in legal proceedings, or a copy of the publication of such appointment if the legislation which applies to the legal entity concerned requires such publication. Any delegation of this authorisation to another representative not indicated in the official appointment must be evidenced.
- › **For natural persons**, where applicable, a proof of registration on a professional or trade register or any other official document showing the registration number.

B.1.2. Technical proposal

The technical offer must be consistent with the terms of reference and contain all information requested in Section C, thus cover all aspects and tasks required in the technical specification and provide all the information needed to apply the award criteria described in the said section.

Offers deviating from the requirements or not covering all requirements may be excluded on the basis of non-conformity with the tender specifications and will not be evaluated.

B.1.3. Financial proposal

The financial proposal shall be prepared according to the format found in **section D.5**.

Prices must be quoted in EURO using the conversion rates published in the C series of the Official Journal of the European Union on the day when the invitation to tender was issued.

This information is also available on the Website of the European Central Bank at the following URL: <http://www.ecb.int/stats/exchange/eurofxref>.

Prices must be quoted free of all duties, taxes and other charges (including VAT) as ERA is exempt from such charges under Articles 3 and 4 of the Protocol on the privileges and immunities of the European Union.

The amount of VAT must be shown separately.

The financial quotation shall be completely unambiguous. Your tender shall be disqualified if it contains any statements preventing an accurate and complete comparison of the tenders (such as "To be discussed", "Depending on x", "Conditional to" etc.) or referring to external circumstances (such as an already existing but separate contract).

B.1.4. Supporting documentation

The supporting documentation is an important part of your offer and must be complete to guarantee that your proposal will be evaluated. The supporting documentation must contain the following elements:

Declaration of eligibility

In order not to be excluded from tender participation tenderers and identified subcontractors should not be in one of the situations described in the declaration of eligibility under **section D.1**.

Before the Contracting Authority signs the contract with the successful selected contractor, the successful selected contractor must provide the documentary proof or statements required under the law of the country in which the company (or each of the companies in case of a consortium) is established, to show that it does not fall into any of the exclusion situations listed in **section D.1**. This evidence or these documents or statements must carry a date, which cannot be more than 1 year before the date of submission of the tender. In addition, a sworn statement shall be furnished stating that the situations described in these documents have not changed since then.

The successful selected contractor will be given a two weeks period after the notification of the award to provide the above-mentioned documentary evidence. Therefore selected contractors are requested to take all the necessary arrangements in order to be able to submit, in case they are awarded the contract, the evidence within such a short period of time.

This evidence is to be provided by the successful selected contractor:

- i. ERA shall accept, as satisfactory evidence that the selected contractor is not in one of the situations described in point (a), (b) or (e), mentioned in the declaration of eligibility under **section D.1**, production of a recent extract from the judicial record or, failing that, a recent equivalent document issued by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied.
- ii. ERA shall accept, as satisfactory evidence that the selected contractor is not in the situation described in point (d) mentioned in the declaration of eligibility under **section D.1**, a recent certificate issued by the competent authority of the State concerned.

Where no such certificate is issued in the country concerned, it may be replaced by a sworn or, failing that, a solemn statement made by the interested party before a judicial or administrative authority, a notary or a qualified professional body in his country of origin or provenance.

Declaration of absence of conflict of interest

Offers not including the form duly filled and signed or deviating from the requirements or not covering all requirements may be excluded on the basis of non-conformity with the tender specifications and will not be evaluated (see B.8.2 point 1).

In order not to be excluded from tender participation tenderers and identified subcontractors shall submit the declaration in **Section E Annex I**.

Selection criteria documentation

Tenderers must prove their economic, financial, technical and professional capacity to carry out the work subject to this call for tender.

The evidence requested should be provided by each member of the group in case of joint tender and identified subcontractor whose intended share of the contract is above 30%. However a consolidated assessment will be made to verify compliance with the minimum capacity levels.

The tenderer may rely on the capacities of other entities, regardless of the legal nature of the links which it has with them. It must in that case prove to the Contracting Authority that it will have at its disposal the resources necessary for performance of the contract, for example by producing an undertaking on the part of those entities to place those resources at its disposal.

Selected contractor administrative information

This information is necessary to allow ERA to produce the contractual documentation in the event you are awarded the contract. This information is particularly important for payments, since payments will be made by bank transfer to the account indicated by the selected contractor in the standard forms. The standard forms to be used are the ones already mentioned at point B.1.1 – Identification of the tenderer.

Checklist

The checklist found in **section D.7** must be included as a cover page of your technical proposal.

B.2 Contacts between ERA and the tenderers

B.2.1. Written clarification before the closing date for submission of tenders

Requests for clarification regarding this procurement procedure or regarding the nature of the contract can be sent by post mail or email to:

Procurement Services
European Railway Agency
120, rue Marc Lefrancq
BP 20392
F-59307 Valenciennes Cedex
France
Email: procurement@era.europa.eu

The deadline for clarification requests is indicated in the timetable under **section C.1**. Each request for clarification sent to ERA should indicate the reference number and the title of the tender.

ERA will provide additional information resulting from the request for a clarification in the following way: the following URL address where the written clarifications will be available for download:

<http://www.era.europa.eu/The-Agency/Procurement/Pages/Procedures-over-60000.aspx>

selecting Calls for tender – on-going and, under the heading of the tender, clicking on “Read more”

In case ERA discovers an error, a lack of precision, an omission or any other type of clerical defect in the text of the contract notice or in the tender specifications, ERA will inform candidates at its own initiative.

B.2.2. Oral clarification before the closing date for submission of tenders

Where a site visit at ERA's premises or a meeting is deemed necessary before the closing date for submission of tenders in order to clarify certain aspects of the tender, ERA shall make the necessary arrangements and inform or invite candidates.

The costs incurred in attending shall be borne by the tenderer. ERA may, however, decide that the query would be more efficiently dealt with by means of a written clarification.

The deadline for clarification requests is indicated in the timetable under **section C.1.**

B.3 Can I offer something that varies from what is requested in the terms of reference?

In the absence of any such indication in the tender specifications your offer should not deviate from the services requested.

B.4 Misrepresentation and corruptive practices

The contract will not be awarded to selected contractors who, during the procurement procedure:

- i. Are subject to a conflict of interest;
- ii. Are guilty of misrepresentation in supplying the information required by ERA as a condition of participation in the contract award procedure or fail to supply this information;
- iii. Any attempt by a tenderer to obtain confidential information, enter into unlawful agreements with competitors or influence the evaluation committee of ERA during the process of examining, clarifying, evaluating and comparing tenders, will lead to the rejection of his offer and may result in administrative penalties.

B.5 Confidentiality & public access to documents

In the general implementation of its activities and for the processing of tendering procedures in particular, ERA observes the following rules:

- i. 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, and;
- ii. Council Regulation (EC) No 1049/2001 of 30 May 2001 regarding public access to European Parliament, Council and Commission documents.

All data and information reported into the studies are intended to be made public at the Agency's discretion. Therefore, any restriction as to the public release of any such data or with respect to third parties' intellectual property rights should be clearly identified as such in every service provided, at the earliest possible stage.

B.6 Where do I find the standard provisions ERA applies in its contracts?

In drawing up your offer, you should bear in mind the provisions of the draft contract (see **section E**). In particular, the draft contract indicates the method and the conditions for payments to the contractor. Provisions included in the draft contract may be subject to change.

B.7 How and when should I present my offer?

B.7.1. Data Protection

Please note that if processing your reply to the invitation to tender involves the recording and processing of personal data (such as your identification data, contact data, bank information data, evaluation/assessment data, etc.), such data will be processed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. Unless indicated otherwise, your replies to the questions and any personal data requested are required to evaluate your tender in accordance with the specifications of the invitation to tender and will be processed solely for that purpose by the entity acting as data controller is in our case the Authorising Officer.

Details concerning the processing of your personal data are available on the privacy statement at: http://www.era.europa.eu/Pages/Privacy_Statement.aspx

B.7.2. Language

Offers must be submitted in one of the official languages of the European Union, but preferably in English (for practical reasons). Both the technical proposal and the financial proposal should be signed and perfectly legible in order to rule out any ambiguity.

B.7.3. Dates and postal address

The offer should be postmarked no later than the date indicated in the timetable in **section C.1** or submitted by hand not later than the date and time indicated in **section C.1**.

Tenders sent by post mail are to be sent to the following postal address:

**Procurement Services
European Railway Agency
BP 20392
120, Rue Marc Lefrancq
F-59307 Valenciennes Cedex
France**

Tenders sent by Express Mail, commercial courier or hand-delivered should be addressed to the following physical address:

**Procurement Services
European Railway Agency
BP 20392
120, Rue Marc Lefrancq
F-59307 Valenciennes Cedex
France**

B.7.4. Double envelope system

Offers must be submitted in accordance with the **double envelope system**: the technical proposal and the financial proposal are submitted separately.

The **outer envelope or parcel** should be sealed with adhesive tape, signed across the seal and carry the following information:

- › the reference number of the invitation to tender no. **ERA 2016 10 OP** ;
- › the project title: “**Use data and analytics techniques in railways to support better management of the risk of accidents**”;
- › the name of the Tenderer
- › the indication "Offer - Not to be opened by the internal mail service".
- › the address for submission of offers (see above)
- › the date of posting should be legible on the outer envelope

The **outer envelope or parcel** includes **two innermost envelopes** containing one the original paper version of the technical proposal (signed and clearly marked as "**Original**") and three copies on CD-ROM (or USB key) and the other the financial proposal (signed and clearly marked as "**Original**") and one copy on CD-ROM or USB key. Paper version of copies is not requested.

Any information presented in tabular form on a CD-ROM or USB key should be in a usable format such as a worksheet.

Paper versions of copies are not requested. The electronic copies must **exactly match** the paper originals. Nevertheless, in case of discrepancies between the paper and electronic versions, the paper version will be considered authentic.

B.8 How will my offer be evaluated?

Offers are opened and evaluated by a committee, possessing the technical and administrative capacities necessary to give an informed opinion on the offers. The committee members are appointed on a personal basis by ERA under guarantee of impartiality and confidentiality. Each of them has equal voting rights.

B.8.1. Offer opening session

The main aim of the opening session is to check whether the offer received is compliant with the following formal requirements:

- › Not submitted later than the submission deadline;
- › The envelope containing the offer is sealed;
- › Written in a EU language;
- › Signed;
- › Contains a technical and financial proposal;
- › Submitted in the number of copies required.

The offer opening session will take place on the date indicated in the timetable in **section C.1** at the premises of ERA.

Tenderers wishing to attend the opening session should send a confirmation e-mail to procurement@era.europa.eu. Maximum one representative per tenderer may attend the opening session and their participation will be restricted to an observer role.

B.8.2. Offer evaluation session

Offers complying with the formal requirements checked during the offer opening session will be evaluated in three stages:

1. The evaluation committee first verifies whether the Declaration of Eligibility and the Declaration of absence of conflict of interest are included, complete and signed by the authorised representative of the tenderer.
2. The evaluation committee then discusses the capacity of the tenderer to perform the contract in view of the Selection Criteria as defined in **section C.5**. If one of the relevant criteria listed under the Selection Criteria is not positive, the offer may not be further evaluated.
3. Each committee member evaluates the technical proposal and awards a score against the Award Criteria as defined in **section C.6**. Weighting the technical quality against the price, the economically most advantageous offer is established.

The offer evaluation procedure is confidential. The Evaluation Committee's deliberations are held in closed session and its decisions are collectives. The members of the Evaluation Committee are bound to secrecy.

The evaluation reports and written records are for official use only and may not be communicated to the selected contractors or to any party other than ERA, the European Anti-Fraud Office and the European Court of Auditors.

B.9 Appeals

Tenderers believing that they have been harmed by an error or irregularity during the award process may petition the Contracting Authority directly (European Railway Agency). If the above procedure fails, the tenderers may have recourse to procedures established under European Union legislation. European citizens also have the right to complain to the European Ombudsman, who investigates complaints of maladministration by the European Union.

B.10 Other information

The submission of an offer implies acceptance of the terms specified in the "General terms and conditions applicable to contracts" and all provisions laid down in these specifications and its annexes, the invitation to tender and where applicable, additional documents.

Tenderers are expected to examine carefully and respect all instructions and standard formats contained in these specifications and the invitation to tender. An offer which does not contain all the required information and documentation may be rejected.

Tenders must be clear and concise, with continuous page numbering, and assembled in a coherent fashion (e.g. bound or stapled, etc.). Since tenderers will be judged on the content of their written tenders, these must make clear that they are able to meet the requirements of the specifications.

Tenderers shall be bound by their offer for a period of **90 days** following the closing date for submission of offers.

The successful selected contractor must maintain its offer for a further **60 days** from the date of notification of the award.

Where a maximum budget is mentioned in the terms of reference, any tenderer submitting a financial proposal exceeding this budget will be rejected.

All documents presented by the tenderers become the property of ERA and are deemed confidential. ERA will not reimburse expenses incurred in preparing and submitting offers.

Completing the adjudication or the procedure of the call for tenders in no way imposes on ERA an obligation to award the contract. ERA shall not be liable for any compensation with respect to tenderers whose offers have not been accepted, nor shall ERA be liable when deciding not to award the contract.

Each tenderer will be informed in writing about the outcome of the call for tender.

B.11 Intellectual property rights

Without prejudice to pre-existing intellectual property rights of third parties, all the data collected and produced by the selected contractor in the scope of this contract as well as the deliverables and all the related artefacts shall be the properties of the Agency and shall not be used by the selected contractor without prior agreement of the Agency.

With respect to pre-existing intellectual property right of third parties, the selected contractor shall warrant to the Agency to have obtained all necessary prior approval of such third parties (to the extent legally required) and shall indemnify and hold the Agency harmless from and against any claim by such third parties, claiming a violation of their rights.

Tenderers shall be aware that the selected contractor (and all parties involved in the performance of the services of the contract) shall continue to be bound to this clause after completion of the contract. All data and information reported into the studies are intended to be made public at the Agency's discretion. Therefore, any restriction as to the public release of any such data or with respect to third parties' intellectual property rights should be clearly identified as such in every service provided, at the earliest possible stage.

Section C. Specific information related to this Tender

C.1 Timetable

The timetable for this tender and the resulting contract is as follows:

Title: ERA 2016 10 OP – “Use data and analytics techniques in railways to support better management of the risk of accident”.

Summary timetable	Date	Comments
Launch date	02/12/2016	publication sent to OJ
Deadline for request for clarifications from ERA	24/01/2017	Exclusively via https://etendering.ted.europa.eu/c.....
Last date on which clarifications are issued by ERA	27/01/2017	Exclusively via https://etendering.ted.europa.eu/c.....
Deadline for submission of offers	17/02/2017	Tenders delivered in person shall be submitted no later than 12h00 local time
Opening session	24/02/2017	at 14h00 local time
Date for evaluation of offers	consequently	Estimated
Award decision	Within end of March 2017	Estimated (it depends on number of submissions to be evaluated)
Contract signature	consequently	Estimated
Commencement date of activities	consequently	Estimated
Completion date	Within 1 year	From signature of the contract

C.2 Specifications

The purpose of these Specifications is to give instructions and guidance to candidates about the nature of the work they will need to perform and to serve as the Agency's mandate during project implementation. The Specifications ensure that the services will be properly conceived by the contractor, that the work is carried out on schedule, resources will not be wasted and the agreed deliverables are provided.

The Specifications will become part of a **Direct Service Contract** that may be awarded as a result of this tender procedure.

C.2.1. Introduction and context of the required services

The following section is a summary of Section G - Annex III – Big-data in Railways. Please consult it for a complete overview of the subject.

C.2.1.1. Problem Definition

Monitoring of railway operations as part of safety management

Monitoring is an essential part of any management system. The well-known P-D-C-A principle, common to all the management systems, includes a monitoring process which is often condensed in the “Check” step but it is actually covering the whole cycle. In fact, monitoring needs to be designed during the planning (P), implemented during the implementation of each process (and of the management system as a whole) (D). Its results are analysed during the “Check” step (C) and finally the result of the analysis is used to improve the core business.

The same concept is applicable to railway safety, the management systems are oriented to keep all safety risks under control, therefore there is a focus on a specific aspect of the business: Safety. In fact, the RSD requires Infrastructure Managers and Railway Undertakings to control risks arising from their operations. This includes also those generated by contractors and their use. The RSD imposes the use of a Management System to control those risks. A monitoring process is also required and a specific Common Safety Method¹ for Monitoring is applicable as a European Regulation for all Infrastructure Managers and Railway Undertakings.

The CSM for Monitoring requires the operators to monitor all the processes of the Management System and the Management System as a whole, this has to be done defining:

- › Strategies and plans for monitoring;
- › A system to collect data;
- › A process to analyse data, turning it into information;
- › Use of the information to improve the processes and the management system.

The monitoring framework described in the CSM for Monitoring (to be applied by RUs, IMs and ECMs) shall be proactive in order to give early warnings.

Information based decision making

The monitoring of safety performance, at all levels, from operational to regulatory, is defined with the aim to continually improve the safety level of the railway system, when reasonably practicable. According to the

¹ EU Regulation No. 1078/2012 - [Common safety method for monitoring to be applied by railway undertakings, infrastructure managers after receiving a safety certificate or safety authorisation and by entities in charge of maintenance.](#)

CSM for Monitoring, data has to be collected and then analysed. An action plan should be defined wherever the analysis shows that targets are not met or that something in the system is not working according to the specifications.

Decisions are therefore based on information extracted from the data collected during the monitoring process. More and better information, should therefore support more effective decision making.

This relationship between monitoring and better informed decision-making about risk management exists at every level of the European framework: operators, national authorities and the European legislative function.

Current practice in monitoring

The Agency does not have a clear overview of the strength and quality of monitoring processes within sector companies.

To the Agency’s knowledge, with some exceptions, the completeness and complexity of the monitoring systems are mainly related to the size of the railway operator. Moreover, in general, data are collected at company level and rarely shared with other operators in a structured way, for instance using a data sharing platform.

This approach leads to the presence of fragmented datasets, with different information architectures, data volumes and quality.

Only in a few cases there is a cooperative approach to data collection and analysis, which allows smaller operators to benefit from bigger data sets, as well as taking advantage of economies of scale in terms of system development and maintenance.

In this scenario, some of the incumbents are trying to define and implement their own data collection systems, which are often part of their digitalisation strategy. Some of them adopted also an Open Data policy for sharing datasets. That said, this is more driven by other business needs, such as the possibility to better manage traffic, passenger demand and flows and quality of the service in general. Safety is not explicitly a primary purpose for the digitalization of railway monitoring systems.

Prevention of accidents

Many accidents and incidents occur frequently, so that simple trend analysis is sufficient to support management of the associated risks.

Serious accidents in the Single European Railway Area are rare occurrences; this makes their analysis complicated because of the difficulties in building reliable statistics. Moreover, the fragmentation of safety datasets and poor data sharing do not help the industry in analysing and preventing those events.

To compensate the lack of statistical data on serious accidents, one recognised approach is based on accidents models. This method consists of identifying causes of serious accidents using historical data (return on experience) and professional expertise (risk assessment). Causes are identified as precursors, measuring the occurrence of precursors, it is possible to assess the risk level of a specific accident, at least qualitatively.

This is a complex approach that does not always produce consistent results across different models, bigger (and shared) datasets with a good data quality could help in improving their reliability. However this approach is consistent with the Agency’s policy intent to move toward a more proactive approach to safety risk management.

Data collection and structure

The completeness and complexity of the internal monitoring process of each railway operator also affects the volume and quality of data collected. Data collection can be classified as automatic and manual.

“Automatic” data collection is triggered by a specific event detected by sensors (such as trains traversing the route on a specific point) and then collected and stored by means of technical equipment, without any human intervention.

“Manual” reporting can be done using technical systems or IT equipment (tablets, mobile phones, etc.) but it is always created manually by humans. The decision to report is not triggered by sensors but is made by human beings according to their perception of reality. This introduces a subjective element.

To date, automatic and manual reporting are to be considered complementary. Automatic systems allow to detect issues which are not easily detectable by humans. For instance, the actual axle load of a freight wagon could be calculated by humans but it will require the use of a weigh scale and then a reporting procedure. A Wayside Track Monitoring System makes this measurement and reporting much easier and more reliable.

On the other hand, humans are still better able to detect and report new risks or unexpected occurrences, as well as complex occurrences such as human factors.

Automatic reporting is characterised by:

- › strong data reliability and structure, data is collected in a systematic way and structured according to the design of the system;
- › need of technical sub-systems and the related supporting infrastructure;
- › need of a strict occurrence identification, the proper sensor has to be installed to detect the desired event.

Manual reporting is characterised by:

- › decision-making/contribution of human beings;
- › subjective perception of reality which may lead to inconsistent and less structured information;
- › potential use of open text reporting, which is more difficult to analyse but could provide high information density, because it could also include the circumstance under which a specific occurrence took place and other contextual and causal information.

Costs

The Agency is aware of significant investment in automatic monitoring and reporting technology.

This is mainly justified by:

- › the possibility to detect occurrences, which are not detectable by human beings;
- › better data quality and structure;
- › the efficiency of automatic systems, which can provide more data at less cost.

To date, the Agency cannot demonstrate the validity of this last point. Automatic systems need to be designed, properly installed and maintained. Moreover, their life-cycle is not only related to the obsolescence of the equipment but also to the relevance and priority of the risk being monitored. Technical systems are able to detect what they are designed and programmed for. A system designed to report on overloading will not be able to report fire in rolling stock. Therefore, if in three years’ time the company will need more data on occurrences involving fire, it will have to implement a different system.

The role of big-data in monitoring processes and in occurrence reporting

Data collection and analytics have changed substantially in the last 10 years. New opportunities are the result of technological progress applied to other industries such as sales, healthcare, road transport and aviation. So called “big-data” technology supports improved data collection, analytics and visualization but also offers the possibility to reduce, but not replace, the need for human intervention in reporting and collection systems.

The Agency believes there is potential for the application of these techniques to improve the performance and efficiency of the detection, reporting, collection and analysis of occurrences, in order to support better understanding and management of the risks of complex, catastrophic accidents.

C.2.1.2. Rationale for the study

This contract supports the wider Agency Common Occurrence Reporting project, which includes development of Safety Management Data Reporting.

This work has the following objectives:

- › Supporting convergence of Member State safety performance across all significant and non-significant accident categories, to achieve current EU average;
- › Improved understanding and management of the risks of significant and catastrophic accidents in all Member States.

To achieve those objectives a tool for a more effective accident analysis (to understand the causes of the accidents, including the catastrophic ones) and for improving analytics to predict and then prevent them should be developed.

Big data collection and analytics techniques could allow the use of multiple data sets, could include text mining to simplify manual reporting and machine learning technology to develop/improve risk models. Moreover, the capability to manage big volumes of data would allow to enlarge significantly the type of data to be used, for instance it could allow the use of operational data (timetables, train composition, type of rolling stock, etc.) which is not a current practice in safety analysis.

The Agency would like to understand the feasibility of this approach and this what this study should help with.

C.2.2. Scope of work and expected results

C.2.2.1. Scope of work

This study consists of three main tasks:

- 1. Leadership and management of a group of 3 to 7 study participants;**
- 2. Assessment of the capability of big-data to support occurrence reporting through collection of automatically generated reports and other data sources;**
- 3. Assessment of the capability of big-data analytics to support accident analysis;**

In general, if the execution of particular task or subtask would raise possible conflicts of interest, and depending on the seriousness of these, the contractor will be asked to declare the possible conflict, or to be free of any such conflict.

Details:

Task 1 – Leadership and management of a group of 3 to 7 study participants

The Agency will select and engage between 3 to 7 study participants. These participants will be mainly European Infrastructure Managers, but may also include Railway Undertakings and / or rail suppliers or manufacturers. Participants will be selected by the Agency and stakeholder partners, according to criteria,

including the use of English as the main working language for the study, availability and nature of data collected by the study participant and time resource commitment to the study.

Note that information or data categories from some participants may not be recorded and stored in English. Experience on this should be reported by the contractor as a constraint on the availability of data.

The contractor will be invited to contribute to development of the criteria and selection of study participants.

The contractor will be expected to take part in at least 2 physical meetings with each participant, either collectively or bilaterally. Other meetings may be arranged by the means of electronic communication, but must be sufficient to enable the objectives of the study to be realised and in particular, to ensure sufficient support for completion of the other tasks.

Amongst other things, the contractor must ensure;

- › Regular and thorough communications and updates to study participants;
- › Appropriate undertakings to collect, store and manage participants' data, respecting their reasonable confidentiality requirements;
- › Development and agreement of an appropriate agreement to be signed between study participants and the contractor, such as a Memorandum of Understanding or simple contract;
- › The establishment of the proper interfaces to access/collect all data sets shared by the participants.

Task 2 - Assessment of the capability of big-data to support occurrence reporting through collection of automatically generated reports and other data sources;

Based on the contractor's work with the study participants, as well as any other research carried out by the contractor (methods to be specified in the tender), the contractor will assess the availability, or potential availability, of the necessary data. The Agency will provide a draft of a developed occurrence classification and structured supporting taxonomy.

This assessment shall include:

- › Type of data and size of existing databases, containing railway safety-related data, which is currently available as Open data. The Agency will contribute with known cases. The terms and conditions of access to each open data source should be summarized or included in the report;
- › Type of data and size of existing databases shared through a private agreement, the conditions of the agreement should be included in the report;
- › If the data collected are meaningful to describe the railway system, the risk exposure and is capable of supporting analysis of specific unwanted events (catastrophic rail accidents). The contractor shall describe how the available data aligns with the railway system by demonstrating the match between a functional model of the railway system and the available data.

Considering the data sources above, for each of them:

- › Percentage of data collected through technical systems such as: On Train Recording Devices, Wayside Train Monitoring System, European Rail Traffic Management System, etc.
- › To which operational activity or technical equipment those data are referring, this is to include who is generating the information and for what purpose.

Implementation of data mining from free/open/raw text, to be tested on:

- › Close call² reports;
- › Internal and external audit reports.

Assessment of the potential to reduce manual reporting for safety risk modelling:

- › Report on the technical equipment to do so (Wayside Train Monitoring System, On Train Recording Devices, Cameras and other systems);
- › Inference of safety information from operational data as currently collected or potential for such inference.

Task 3 - Assessment of the capability of big-data to support analysis of accident risk;

Using data and information from the participants, the tenderer will proceed with:

- › For a given type of serious accident, potential to identify causes, operational patterns and correlations (improve or refine fault trees or other approaches to modelling);
- › Potential for modelling risks through machine learning;
 - Using only reporting of occurrences;
 - Using occurrences and operational data, such as timetable, information on vehicles and infrastructure, signalling system, etc.

The type of serious accident to be modelled will be selected and agreed with the Agency according to data availability established as part of Task 2. The Common Safety Indicators established within the Railway Safety Directive³ should be referred to as a basis for this selection. The accidents will be modelled using:

- › Bow-tie diagrams ; or
- › Neural networks.

Other modelling techniques are possible if agreed with the Agency and proposed as part of the technical offer.

C.2.2.2. Expected results

Task 1 – Leadership and management of a group of 3 to 7 study participants

Together with the Agency, the contractor will have to select from 3 to 7 study participants.

The expected result is a report, which includes:

- › The list of participants;
- › A description of the railway activities covered by the data collected, this should also include the data volume;
- › The commitment of the participants in terms of data and resources ;
- › A summary on how they currently use data for managing railway safety.
- › An MoU, or simple contract, providing terms and conditions to access data and information provided by the participants;

The contractor will also provide a presentation, which includes a summary of the information provided in the report.

² Report of a situation in which something dangerous almost happened, but it was avoided.

³ Directive (EU) 2016/798 - [Link](#)

Task 2 - Assessment of the capability of big-data to support occurrence reporting through collection of automatically generated reports and other data sources

The output of the work consists in one report that will include at least the following elements:

- › Methodology;
 - used for information collection;
- › A general functional map of the railway system including a data model describing the current situation on data collection and analytics, including:
 - How much of the reporting is done with automatic and manual systems, a list of automatic systems shall be included;
 - To which organisational, operational or technical systems the data is referring;
 - Most reported outcomes;
 - Etc.
- › List of available databases, for each of which the following information should be detailed:
 - Type and volume of data included (static data);
 - Type and volume of data exchanged (streaming data):
 - Occurrences reported;
 - Queries;
 - Others.
- › Proposals on how big-data can support data reporting:
 - Text mining for the analysis of manual reports:
 - Close calls;
 - Companies’ internal audits reports;
 - Annual safety reports from NSAs.
 - Example of text mining, reducing the burden of manual reporting, providing a tool able to organise data according to a predefined taxonomy.

The detailed structure of the report will be agreed with the Agency.

The contractor will also provide a presentation, which includes a summary of the information provided in the report.

Task 3 - Assessment of the capability of big-data to support accident analysis

The result of this task shall be included in a report, a presentation and an executive summary.

Using the results from the previous task, the contractor shall demonstrate the potential of big data to support modelling catastrophic accident risk. This should include both the potential for identification of new causes/risks/hazards, as well as the potential for populating risk models to allow effective prediction and prevention of catastrophic accidents.

C.2.3. Meetings

All meetings with the Agency staff will be held at the ERA meeting rooms in Lille or at the Agency’s offices in Valenciennes.

C.2.3.1. Kick-off meeting

No later than two weeks after the signature of the service contract, the contractor shall organise in coordination with the Agency Project Manager a **kick-off meeting (KOM)**, to be held in Lille.

The meeting agenda should include:

- a) a presentation to ERA of the outlined work plan:
- b) general description of the methodology for each task and of the supporting organisation put in place to carry out the study,
- c) the core team carrying out the work,
- d) a time plan, referring to the tasks of the study, the planned meetings and the planned reporting (intermediate and final reports). This to be the basis of the payment schedule.
- e) the person(s) that will be the interface with ERA and attend the following meetings,
- f) the person(s) affected to the different tasks,
- g) a presentation of foreseeable risks for the achievement of study's objectives and of anticipated prevention and mitigation measures,

Following the meeting an **inception report** summarising the above points shall be submitted to ERA.

C.2.3.2. Intermediate meeting

One intermediate meeting will be organized, at a date to be mutually agreed between the parties. It will be based on an intermediate report sent **at least 2 weeks in advance**. The compulsory intermediate meeting will be held in Lille, **maximum 4 months after signature of the contract (N+4)**.

At this **intermediate meeting**, the contractor shall

- › Present the work progress, in relation to the time plan agreed at the kick-off meeting;
- › Describe in detail the work methodology and organization for the upcoming tasks;
- › Update the schedule of work;
- › Present all decisions taken that may be relevant for the performance of the work.

Additional meetings may be organized at the initiative of any party, if mutually agreed. The Agency reserves the right to call for additional meetings if the Contractor significantly deviates from his own work schedule.

C.2.3.3. Conference calls

A conference call will be organised every third week between the contractor and the Agency in order to allow the Agency to monitor the progress of the work. Any foreseeable problem or difficulty to perform the study should be discussed during these conference calls. The substance of this conference call will be covered in the monthly progress reports to the Agency.

The contractor will provide a brief written summary of the call, including progress according to the agreed time plan and any agreed actions.

C.2.3.4. Final meeting

The final meeting will be held at the latest one month before the end of the contract.

At the meeting, the **draft final reports**, to be delivered **two weeks in advance** at least, will be presented. Sufficient time and resources shall be allocated for amending the report, following the meeting.

C.2.4. Deliverables and schedule

Services must be completed within 1 year time from signature of the contract.

NB: The inception, intermediate and final reports must be accepted by the Agency before any payment.

The Agency will provide written comments on the final deliverables within **one week** after the final meeting. They shall be taken into account by the contractor, who shall finalise the report **within 5 working days** after reception of the comments. The Agency will inform the contractor about the non-/acceptance of the final reports within next three working days.

Reports and documents shall be sent to:

Mr Antonio D'AGOSTINO
antonio.dagostino@era.europa.eu
European Union Agency for Railways
120 rue Marc Lefrancq
BP 20392
F-59307 Valenciennes
France

The tenderer shall specify the project team members and the level of experience of the project team in the different fields required to perform this study.

C.2.4.1. Inception report

To be finalised 2 weeks after the kick-off meeting at latest.

C.2.4.2. Intermediate report

Draft report to be delivered **at the latest 4 months after the signature of the contract** and 2 weeks before the intermediate meeting at latest.

Reports will have to be then finalised for acceptance within 2 weeks after the intermediate meeting.

C.2.4.3. Final reports

Unless otherwise agreed in writing following the kick off meeting, draft final reports for all 3 tasks have to be **delivered at the latest 1 month before the end date of the contract** and 2 weeks before the final meeting at latest.

Reports will have to be then finalised for acceptance within 2 weeks after the final meeting.

The final reports for tasks 1, 2 and 3 shall be based on the inception, intermediate report, presentations and workshops with study participants, and shall take into account the outcome of the discussions organised with the Agency following each task.

The final reports shall comprise:

- › executive summary;
- › description of the method, resources and sources used to perform the activities;
- › the elements listed in section C.2.2.2., for each of the 3 tasks.
- › the following standard disclaimer: *“The information and views set out in this [report/study/article/publication...] are those of the author(s) and do not necessarily reflect the official opinion of the Agency. The Agency does not guarantee the accuracy of the data included in this study. Neither the Agency nor any person acting on The Agency’s behalf may be held responsible for the use which may be made of the information contained therein.”*

The contractor will also produce a summary of the results of the three tasks.

C.2.4.4. Progress report

Reporting progress do not require a specific document. Progress will be reported during the conference calls in C.2.3.3 and outlined in the following summary of the call, provided by the contractor. Progress will be reported against the time plan agreed at the Kick Off meeting as well as reporting against the project risks identified.

Tenderers are informed that dates included in the schedule are milestones and therefore are crucial. They will have to be closely monitored by the parties in order to avoid delays. Delays are subject to Liquidated Damages (see General Conditions of the Contract).

C.2.5. Organisation of the tenderer

C.2.5.1. Project plan and reporting

The tenderer shall specify his project plan with milestones and a risk assessment of the project.

C.2.5.2. Working language

The working language for the exchange of information between the Agency and the contractor for any activity including the reports and the presentations shall be **English**.

C.2.5.3. Organisation and planning

The tenderer shall provide a time plan of the activities requested including the dates to which achievement of each milestone is expected, in order to allow the Agency to monitor the work progress (e.g. Gantt diagram).

The clearer the time plan is in breaking down the work into different tasks and explaining how long each task will take, the easier it will be for the Agency to evaluate the tender.

C.2.5.4. Obligation to inform

The contractor shall immediately inform the Agency when problems are detected, which can prejudice the compliance with the agreed time planning and/or the quality of the deliverables.

C.2.5.5. Estimate of the amount of work involved

The **estimated cost** for the work to be undertaken **is in the range of 140000 to 150000 Euro**.

C.2.5.6. Duration of the contract

The duration of the contract is 12 months from the date of the signature.

C.3 Content of the technical offer

Your offer must include a technical offer which must cover all aspects and tasks required in the technical specifications and provide all the information needed to apply the award criteria.

The technical offer must clearly contain the following information regarding the achievement of the technical results indicated in **section C.2.2.2**.

- a) **Description of the organisation, thus the proposed working team indicating competences (including language competences) and skills of the team members in particular**, those of the person or persons

that the tenderer commits to assign as responsible for overall project management; foreseen subcontractors or consortiums (if any) shall also be listed. In particular:

- › Structure – organisation chart
- › Project Manager with at least 15 years’ experience in project management, including overseeing project delivery, quality control of delivered service, client orientation and conflict resolution experience in project of a similar size and coverage (geographical scope at least half of the one subject to this call for tender), with experience in management of team of at least 10 people)
- › List of experts with evidence of their skill level in the relevant professional fields
- › Level of availability of human and organisational resources to carry out the expected tasks
 - English is the working language for this study. **Each CV⁴** provided should indicate the intended function in the delivery of the service. Adequacy of the proposed team will be evaluated on the basis of the provided CVs and professional references for the team members.

Notes:

- › The composition of the proposed working team will be considered as a contractual commitment.
 - › Past experience in the areas of the tasks concerned must be adequately demonstrated by supporting documents.
 - › Tenderers are informed that proven linguistic knowledge is one of the key elements of the offer: the tenderer shall demonstrate that they can guarantee a high standard of spoken and written English (which is the language in all communications within and with the Agency). Capacity of the contractor to conduct interviews in other official languages of the EU and its Member States is considered as an advantage.
- b) **Methodology, planning, risks management, quality management resources, including** a description of the activities foreseen to be carried out and time plan with reference to the specified milestones to allow the Agency to monitor the progress of work.
- The tenderer shall explain how he will have access to relevant databases and the approach and methodology he intends to apply.
- The description of the methodology should also include information on how the tenderer will ensure high quality findings that are likely to give useful information on datasets at EU level and potential for big-data analytics in the railway industry.
- c) **Risk management methodology and quality control measures:** the tenderer shall specify which could be the risks encountered during the performance of his services and which measures he proposes for mitigating them; same for the quality control system applied to the service foreseen in this tender specifications concerning the quality of the deliverables, the language quality check, and continuity of the service in case of absence of the member of the team. The quality system should be detailed in the tender and specific to the tasks at hand. A generic risk management and quality system description will result in a low score vis-à-vis of the related award criterion at the stage of tender evaluation.
- d) **Reporting:** detailed information about how the Agency will be able to monitor the progress of the performed services.

⁴ The CV’s **must be provided** in the EU format, see Section D.4.

Offers deviating from the requirements or not covering all requirements may be excluded on the basis of non-conformity with the tender specifications and will not be evaluated.

Note: the tenderer should be aware that his services will be subject to the following standards:

- › the experts included in the proposal of the contractor are bound to perform the services subject of the resulting contract;
- › should any of the experts become unavailable after the signature of the contract, the Contractor will have the contractual obligation to inform the Contracting Authority and propose a replacement who shall have at least equal qualifications and experience;
- › time schedule included in the tender, as amended and agreed in writing during the kick off meeting, will be a contractual commitment;
- › specific type of deliverables (e.g. work plan, interim report(s), final report(s) / summary report(s) / test results and any other deliverable(s)) shall be prepared by the Contractor according to terms agreed with the Agency;
- › deliverables shall be drawn up in English and shall be supplied in electronic format to be delivered simultaneously with the paper copy and submitted as per the contractual time schedule.

These standards will be included in the contract; should the level of quality not be reached during contract execution, the Agency may activate the penalty clause.

C.4 Content of the financial offer

C.4.1. General

The financial offer must be based on the format found in **section D.5**.

Complementary to the instructions at point B.1.3 it is here emphasised that the proposed, **all inclusive lump sum price** must be fixed, not subject to revision and that the financial quotation shall include, in a separate sheet, the proposed price breakdown for the various services and deliverables; this information would facilitate the evaluation of the tender by the Agency but unit prices will not become part of the contract.

Prices shall be inclusive of all costs and expenses (company management, secretariat, social security, salaries, travel and office expenses, insurance, etc.) directly and indirectly connected with the provision of the service.

C.4.2. Taxes

Prices shall be quoted free of all duties, taxes and other charges, i.e. also free of VAT, as the ERA is exempt from such charges in the EU under Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Union (OJEU C 83 of 30.03.2010, p. 266). Exemption is granted to the Agency by the governments of the Member States, either through refunds upon presentation of documentary evidence or by direct exemption.

For those countries where national legislation provides an exemption by means of a reimbursement, the amount of VAT is to be shown separately. In case of doubts about the applicable VAT system, it is the selected contractor's responsibility to contact his national authorities to clarify the way in which the European Union is exempt from VAT.

C.4.3. Conditions for validity

The financial quotation shall be completely unambiguous. Your tender shall be disqualified if it contains any statements preventing an accurate and complete comparison of the tenders (such as "To be discussed", "Depending on x", "Conditional to" etc.) or referring to external circumstances (such as an already existing but separate contract).

C.5 Selection criteria

After having certified that it is not in one or more of the situations that constitute grounds for exclusion from tender participation, the evaluation committee will examine the offers to ensure that the information requested in the selection criteria has been provided and that the tenderer fulfils all these criteria. Offers which fail to include some of the information requested, may be rejected outright.

C.5.1. Economic and financial capacity

In order to prove their economic and financial capacity, the tenderers (i.e. in case of joint tender, the combined capacity of all members of the consortium and identified subcontractors) shall provide **formal evidence** that his **turnover** in the last two financial years was above **300 000€ per year**.

The following evidence should be provided:

- › Copy of the **profit & loss account** for the last two years for which accounts have been closed, or, failing that, appropriate statement from banks, others;

Note 1:

If the tenderer is a public entity, the evidence will be considered as a sufficient proof of his economic and financial capacity.

Note 2:

If, for some exceptional reason which the contracting authority considers justified, the tenderer is unable to provide the references requested by the contracting authority, he may prove his economic and financial capacity by any other means which the contracting authority considers appropriate.

C.5.2. Technical and professional capacity

Requirements

The tenderer must provide a copy of the **Trade register** or equivalent, and:

a.	Prove the suitability of their organisation and staffing structure available for the activities covered by the contract (including all consortia members and/or any proposed subcontractors).
b.	Have a minimum of three years' recent (gained in the past 5 years) experience in the provision of similar services, on an international level.
c.	Have successfully managed a minimum of 1 feasibility study (during the past 5 years) on an international level (i.e. size, several stakeholders, objectives etc.) comparable to the study to be performed under this contract, in particular it is requested a proven experience of running: <ul style="list-style-type: none"> › stakeholder groups; › safety risk modelling; › research into big-data analytics.
d.	i. Project Team: Have a competent and experienced project team for the performance of the contract. All staff involved in the execution of the contract should possess an adequate educational background and expertise relevant to the tasks that they shall perform as well as a good level of English language competency.

	ii. Project Team leader: Nominate a suitable project team leader fulfilling the criteria in C.5.2.d.i. above as well as experience in at least 1 other comparable project in the team leader role and a very good level of English language competency.
e.	The tenderer (including all consortium members and/or any proposed subcontractors) shall not be in any situation which could give rise to a conflict of interest in what concerns the implementation of the contract.

Evidence required

The following documents and information must be presented as evidence of compliance with the technical and professional requirements:

a.	Details of the structure of the organisation (including all consortia members and/or any subcontractors) and the number of staff involved, explaining the suitability of the tenderer’s organisation to perform the contract.
b.	An overview of the services performed within the past 5 years with the value of the contracts / projects, dates and particulars of the recipients and services provided by completing the table in Section D.3 – Reference Projects .
c.	Detailed description of the study provided including any research, analysis, reports, presentations etc. delivered.
d.	<p>i. Overview of the project team (using the template provided in Section D.4), and,</p> <p>ii. CVs of the key experts to carry out the study (using the EU CV format available at: http://europass.cedefop.europa.eu/en/home), covering education and training, organisational, technical and work experience including any relevant supporting documentation i.e. accreditations, certificates etc.</p>
e.	Statement on absence of conflict of interest (Section E), duly signed by all parties involved in the performance of the contract, supported by a copy / description of the tenderers process for mitigating the risk of conflict of interest.

The most important services shall be accompanied by certificates of satisfactory execution, specifying that they have been carried out in a professional manner and have been fully completed.

Note 1:

The Agency will not accept the offer if the tenderer fails to produce the information.

Note 2:

Please note that the Agency reserves the right to contact prior customers for best assessing selected contractor’s capacity when rendering similar work and that the Agency will not accept the offer if the selected contractor fails to produce the above information or if the Agency judges it insufficient or irrelevant.

C.6 Award criteria

Once the tenderer has demonstrated the appropriate capacity to perform the contract on the grounds of the selection criteria, the offer will be assessed on the basis of the award criteria.

The award criteria serve to identify the most economically advantageous tender. The quality of each offer will be evaluated in accordance with the award criteria and the associated weighting. No award criteria other than those detailed below will be used to evaluate the offer.

The award criteria for this tender are:

Award Criteria	Weighting in points
A. Technical criteria (weighting factor of 75%)	
1. Demonstration of the understanding of the scope, objectives, tasks and time plan of these Terms Of Reference Demonstration of understanding of the purpose of the study, topics to be covered and strategy to carry out the study (15) Detailed time planning and allocated resources (10)	20
2. Consistency of proposed working organisation and adequacy of the proposed team vis-à-vis the objectives of the task, as exposed in the present document The proposed team covers the necessary skills to conduct the current study, including project and quality management plus a clear attribution of tasks to the team members (15) Organisation of the deliverables (5)	20
3. Fitness of the proposed methods, tools, and procedures to perform the tasks Reasonable description of methodology, including establishment of working relationships and shared benefits, as well as assured confidentiality and data protection for task 1, and research techniques in relation to tasks 2 and 3. (20) Presentation of findings and results in a structured way, in accordance with the requirements (10)	30
Total	70
B. Price (weighting factor of 30%)	

Tenders should elaborate on all points addressed by this invitation to tender in order to score as many points as possible. The mere repetition of mandatory requirements set out in this invitation to tender, without going into details on how to actually achieve them or without giving any added value, will only result in a very low score.

In addition, if certain essential points of this invitation to tender are not expressly covered by the tenderer, the Agency may decide to give a zero mark for the relevant qualitative award criterion.

Tenders scoring less than 52.5 points as a total or less than 50% in the points awarded for a single criterion will be excluded from the rest of the assessment procedure.

The points scored for the above qualitative criteria will be compared to the price, and the contract will be awarded to the tender which is the most economically advantageous tender (MEAT) on the basis of the ratio between the total points scored and the total cost.

The tenders are ranked using the formula below to determine the tender offering best value for money

$$\text{Total score for a tenderer} = \text{The score of his technical offer} + \frac{\text{The cheapest received offer (price)}}{\text{The price offer of the tenderer}} * 30$$

Section D. Standard Forms

The standard forms are to be completed and provided as part of your offer.

D.1 Declaration of eligibility

(To be completed with much care and signed by applicant)

The undersigned, [*insert name of the signatory of this form*], representing:

(<i>only for natural persons</i>) himself or herself	(<i>only for legal persons</i>) the following legal person:
ID or passport number:	Full official name: Official legal form: Statutory registration number: Full official address: VAT registration number:

(1) declares whether the above-mentioned person is in one of the following situations or not:		
Situation of exclusion concerning the person	YES	NO
(a) it is bankrupt, subject to insolvency or winding up procedures, its assets are being administered by a liquidator or by a court, it is in an arrangement with creditors, its business activities are suspended or it is in any analogous situation arising from a similar procedure provided for under national legislation or regulations;	<input type="checkbox"/>	<input type="checkbox"/>
(b) it has been established by a final judgement or a final administrative decision that the person is in breach of its obligations relating to the payment of taxes or social security contributions in accordance with the law of the country in which it is established, with those of the country in which the contracting authority is located or those of the country of the performance of the contract;	<input type="checkbox"/>	<input type="checkbox"/>
(c) it has been established by a final judgement or a final administrative decision that the person is guilty of grave professional misconduct by having violated applicable laws or regulations or ethical standards of the profession to which the person belongs, or by having engaged in any wrongful conduct which has an impact on its professional credibility where such conduct denotes wrongful intent or gross negligence, including, in particular, any of the following:		
(i) fraudulently or negligently misrepresenting information required for the verification of the absence of grounds for exclusion or the fulfilment of selection criteria or in the performance of a contract;	<input type="checkbox"/>	<input type="checkbox"/>
(ii) entering into agreement with other persons with the aim of distorting competition;	<input type="checkbox"/>	<input type="checkbox"/>
(iii) violating intellectual property rights;	<input type="checkbox"/>	<input type="checkbox"/>

(iv) attempting to influence the decision-making process of the contracting authority during the award procedure;	<input type="checkbox"/>	<input type="checkbox"/>
(v) attempting to obtain confidential information that may confer upon it undue advantages in the award procedure;	<input type="checkbox"/>	<input type="checkbox"/>
(d) it has been established by a final judgement that the person is guilty of any of the following:		
(i) fraud, within the meaning of Article 1 of the Convention on the protection of the European Communities' financial interests, drawn up by the Council Act of 26 July 1995;	<input type="checkbox"/>	<input type="checkbox"/>
(ii) corruption, as defined in Article 3 of the Convention on the fight against corruption involving officials of the European Communities or officials of EU Member States, drawn up by the Council Act of 26 May 1997, and in Article 2(1) of Council Framework Decision 2003/568/JHA, as well as corruption as defined in the legal provisions of the country where the contracting authority is located, the country in which the person is established or the country of the performance of the contract;	<input type="checkbox"/>	<input type="checkbox"/>
(iii) participation in a criminal organisation, as defined in Article 2 of Council Framework Decision 2008/841/JHA;	<input type="checkbox"/>	<input type="checkbox"/>
iv) money laundering or terrorist financing, as defined in Article 1 of Directive 2005/60/EC of the European Parliament and of the Council;	<input type="checkbox"/>	<input type="checkbox"/>
(v) terrorist-related offences or offences linked to terrorist activities, as defined in Articles 1 and 3 of Council Framework Decision 2002/475/JHA, respectively, or inciting, aiding, abetting or attempting to commit such offences, as referred to in Article 4 of that Decision;	<input type="checkbox"/>	<input type="checkbox"/>
(vi) child labour or other forms of trafficking in human beings as defined in Article 2 of Directive 2011/36/EU of the European Parliament and of the Council;	<input type="checkbox"/>	<input type="checkbox"/>
(e) the person has shown significant deficiencies in complying with the main obligations in the performance of a contract financed by the Union's budget, which has led to its early termination or to the application of liquidated damages or other contractual penalties, or which has been discovered following checks, audits or investigations by an Authorising Officer, OLAF or the Court of Auditors;	<input type="checkbox"/>	<input type="checkbox"/>
(f) it has been established by a final judgment or final administrative decision that the person has committed an irregularity within the meaning of Article 1(2) of Council Regulation (EC, Euratom) No 2988/95;	<input type="checkbox"/>	<input type="checkbox"/>
(g) for the situations of grave professional misconduct, fraud, corruption, other criminal offences, significant deficiencies in the performance of the contract or irregularity, the applicant is subject to: <ul style="list-style-type: none"> i. facts established in the context of audits or investigations carried out by the Court of Auditors, OLAF or internal audit, or any other check, audit or control performed under the responsibility of an authorising officer of an EU institution, of a European office or of an EU agency or body; ii. non-final administrative decisions which may include disciplinary 	<input type="checkbox"/>	<input type="checkbox"/>

iii. measures taken by the competent supervisory body responsible for the verification of the application of standards of professional ethics; iv. decisions of the ECB, the EIB, the European Investment Fund or international organisations; v. decisions of the Commission relating to the infringement of the Union's competition rules or of a national competent authority relating to the infringement of Union or national competition law; or vi. decisions of exclusion by an authorising officer of an EU institution, of a European office or of an EU agency or body.		
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[Only for legal persons other than Member States and local authorities, otherwise delete this table]

(2) declares whether a natural person who is a member of the administrative, management or supervisory body of the above-mentioned legal person, or who has powers of representation, decision or control with regard to the above-mentioned legal person (this covers the company directors, members of the management or supervisory bodies, and cases where one natural person holds a majority of shares) is in one of the following situations or not:

Situations of exclusion concerning natural persons with power of representation, decision-making or control over the legal person	YES	NO
Situation (c) above (grave professional misconduct)	<input type="checkbox"/>	<input type="checkbox"/>
Situation (d) above (fraud, corruption or other criminal offence)	<input type="checkbox"/>	<input type="checkbox"/>
Situation (e) above (significant deficiencies in performance of a contract)	<input type="checkbox"/>	<input type="checkbox"/>
Situation (f) above (irregularity)	<input type="checkbox"/>	<input type="checkbox"/>

(3) declares whether a natural or legal person that assumes unlimited liability for the debts of the above-mentioned legal person is in one of the following situations or not:

Situations of exclusion concerning natural or legal persons assuming unlimited liability for the debts of the legal person	YES	NO	N/A
Situation (a) above (bankruptcy)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Situation (b) above (breach in payment of taxes or social security contributions)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(4) declares whether the above-mentioned person is in one of the following situations or not:

Grounds for rejection from this procedure	YES	NO
(h) has not distorted competition by being previously involved in the preparation of procurement documents for this procurement procedure;	<input type="checkbox"/>	<input type="checkbox"/>
(i) has provided accurate, sincere and complete information to the contracting authority within the context of this procurement procedure;	<input type="checkbox"/>	<input type="checkbox"/>

(5) acknowledges that the above-mentioned person may be subject to rejection from this procedure and to administrative sanctions (exclusion or financial penalty) if any of the declarations or information provided as a condition for participating in this procedure prove to be false.	
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Remedial measures

If the person declares one of the situations of exclusion listed above, it should indicate the measures it has taken to remedy the exclusion situation, thus demonstrating its reliability. They may include e.g. technical, organisational and personnel measures to prevent further occurrence, compensation of damage or payment of fines. The relevant documentary evidence which appropriately illustrates the remedial measures taken should be provided in annex to this declaration. This does not apply for the situations referred in point (d) of this declaration.

Evidence upon request

Upon request and within the time limit set by the contracting authority the person shall provide information on the persons that are members of the administrative, management or supervisory body, as well as the following evidence concerning the person or the natural or legal persons which assume unlimited liability for the debt of the person:

For situations described in (a), (c), (d) or (f), production of a recent extract from the judicial record is required or, failing that, an equivalent document recently issued by a judicial or administrative authority in the country of establishment of the person showing that those requirements are satisfied.

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

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

Full name:

Signature:

Date:

D.2 Tenderer’s address and contact details

Tenderer’s Name	
Address	
Post Code	
Tel	
Fax	
Email	
Web Site (if applicable)	
Legal Status	
Contact person for this tender	
Legal signatory(ies)	

D.3 Technical & professional capacity – Reference projects

Tender Publication Reference: **ERA 2016 10 OP**

Title of the Contract: **“Use data and analytics techniques in railways to support better management of the risk of accidents”**

NAME OF TENDERER:.....

	Client /Company Name (where this cannot be disclosed, specify type of company)	Project Start – End Date (in the period 2009-present)	Description of Services	Financial Volume of Services (EUR)	Sample Provided (please tick box, minimum 3)
1.					<input type="checkbox"/>
2.					<input type="checkbox"/>
3.					<input type="checkbox"/>
4.					<input type="checkbox"/>

*More rows/columns can be added by the tenderer where necessary

D.4 Technical & professional capacity – Overview on the project team

Tender Publication Reference: **ERA 2016 10 OP**

Title of the Contract: **"Use data and analytics techniques in railways to support better management of the risk of accidents"**

NAME OF TENDERER:.....

	Name	Role in Project Team	CV included in proposal
1.			<input type="checkbox"/>
2.			<input type="checkbox"/>
3.			<input type="checkbox"/>

**More rows/columns can be added by the tenderer where necessary*

D.5 Financial Proposal

The LUMP SUM PRICE – all inclusive - offered for implementing the

Title: ERA 2016 10 OP - “Use data and analytics techniques in railways to support better management of the risk of accidents”

is: EURO

Name:

Signature:

Date:

D.6 Curriculum Vitae

This form is available in electronic format at the following address:

<http://europass.cedefop.europa.eu/en/documents/curriculum-vitae/templates-instructions>

- Please press Ctrl and click simultaneously -

D.7 Checklist

The checklist must be used to ensure that you have provided all the documentation for this tender and in the correct way. This checklist should be signed and included in envelope **A** of your offer.

You must submit your offer in one envelope which contains 2 separate inner envelopes clearly marked envelope **A**, and **B**.

Please Tick ✓ the boxes provided

Envelope ‘A’ must contain

- one original signed copy and 3 copies in CD-ROM or USB key, not paper version, of the technical proposal
- a declaration of eligibility based on the format found in **section D.1**.
- administrative data following the format found in **section D.2** and supporting documents.
- this checklist signed and dated.

Envelope ‘B’ must contain

- one original signed copy of the financial proposal based on the formats found in **Section D.3 and its annex**.

You should also ensure that:

- your offer is formulated in one of the official languages of the European Union.
- both the technical and financial proposals of the offer are signed by the Tenderer or his duly authorised agent.
- your offer is perfectly legible in order to rule out any ambiguity.
- your offer is submitted in accordance with the double envelope system as detailed in **section B.9**.
- The outer envelope bears the information mentioned in **section B.9**.

Name:

Signature:

Date _____

D.8 Confirmation of offer submission

In order to keep track of offers due to arrive, Tenderers who do not hand deliver their offers are requested to complete and return this form by fax or email.

ERA 2016 10 OP - “Use data and analytics techniques in railways to support better management of the risk of accidents”

Att.: **Procurement Services**
European Railway Agency
120 rue Marc Lefrancq
59300 Valenciennes (France)
Email: procurement@era.europa.eu
Fax: +33 3 27 09 66 96

I have submitted an offer for this tender on _____ dd/mm/year using the following delivery service:

- Normal mail
- Express mail
- Courier Service
- Other

Tenderer's name: []

Email: []

Telephone []

Section E. ANNEX I

European Railway Agency
120, rue Marc Lefrancq
59300 Valenciennes
France

DECLARATION OF CONFIDENTIALITY AND ABSENCE OF CONFLICT OF INTEREST

(To be completed and signed by an authorised officer of the Bidder)

ERA 2016 10 OP - “Use data and analytics techniques in railways to support better management of the risk of accidents”**Name of the bidder:**

Full Address:

Name of the Authorised Officer and qualification:

I, the undersigned, hereby solemnly declare that I understand and agree that:

1. I am aware that I may have access to sensitive and confidential information during the preparation of my bid and/or during the implementation of the required services but I shall perform state-of-the-art services independently under penalty of cancellation of the contract and payment of liquidated damages;
2. the data released to me and my organisation by the European Railway Agency and any other third party during the implementation of the services shall be used solely for the purpose of providing the Agency with qualified services for the scope of work of the contract related to this tender procedure;
3. I shall keep the information confidential and I shall not release them, in whole or in part, by whatever means and for any purpose, to anyone else except with the Agency’s prior written consent;
4. while the data are kept under my responsibility I shall take all the necessary measures in order to prevent any breach of confidentiality;
5. upon the completion of the work carried out under the contract and following a written instruction by the European Railway Agency all confidential information and data, without any exception, received during the contract implementation shall be destroyed or returned to the European Railway Agency without retaining any copy thereof;
6. I am aware and I accept that if during the implementation of the services the Agency detects infringement of this declaration, the contract may be cancelled and I will have to compensate the Agency by paying liquidated damages equal to the value of my commercial offer and returning any amounts already paid to me (Article I.12 – Failure of compliance with agreed and undertaken requirements of the Special Conditions of Contract); and
7. I shall make the contents of this declaration known to my staff and I accept full responsibility for ensuring that everyone in my organisation observes such conditions.

Signature

Date

Section F. Annex II Draft Service Contract

The draft contract is provided solely for information. The tenderer should note that in the case that his offer is successful the resulting contract will be based on this draft contract.

Section G. Annex III – Big-data in Railways

This document is available in the Agency website.

Title: Big data in railways

Document ID: ERA-PRG-004-TD-003 V 1.0

Link: <http://www.era.europa.eu/Document-Register/Pages/Big-data-in-railways.aspx>

In case of problems in retrieving the document please email your request to:

Antonio D'AGOSTINO

antonio.dagostino@era.europa.eu