

**Specifications attached to the
Invitation to Tender**

EASA.2011.OP.30

**MULCORS - The Use of MULTicore
proCessORs in airborne Systems**

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Introduction to EASA

The European Aviation Safety Agency, (hereinafter "EASA", "the Agency" or "the Contracting Authority"), is an agency of the European Union, which has been given specific regulatory and executive tasks in the field of aviation safety. The Agency constitutes a key part of the European Union's strategy to establish and maintain a high uniform standard of safety and environmental protection in civil aviation at European level.

The Agency was set up in 2003 as an independent body of the European Union under European public law accountable to the Member States and the European Union institutions. It works hand in hand with the National Aviation Authorities (NAAs) in Europe for the execution of many operational tasks. The aviation industry is also actively involved in the Agency's activities through a number of consultative and advisory committees. Moreover, EASA develops close relations with counterpart organisations across the world concluding working arrangements aimed at harmonising standards and promoting best practice in aviation safety worldwide.

The main tasks of the Agency currently include:

- Rulemaking: drafting aviation safety legislation and providing technical advice to the European Commission and to the Member States;
- Inspections, training and standardisation programmes to ensure uniform implementation of European aviation safety legislation in all Member States;
- Safety and environmental type-certification of specific models of aircraft, engines and parts approved for operation in the European Union;
- Approval of aircraft design organisations worldwide and of production and maintenance organisations outside the EU;
- Coordination of the European Union programme SAFA (Safety Assessment of Foreign Aircraft) regarding the safety of foreign aircraft using European Union airports;
- Data collection, analysis and research to improve aviation safety.

The Agency's responsibilities have been extended in the new [EASA Basic Regulation 216/2008](#) so as to include essential rulemaking in the fields of air operations & flight crew licensing and the oversight of third country operators. In the near future, the Agency will also take on active responsibility for safety regulations regarding airports and air traffic management systems.

Based in Cologne, the Agency already employs more than 500 professionals from across Europe. It will continue to recruit highly qualified specialists and administrators in the coming years as it consolidates its position as Europe's centre of excellence in aviation safety.

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

1 Overview of this tender

1.1 Description of the contract

The services required by EASA under the contract to be potentially awarded as a result of this call for tender are described in the terms of reference in section 2 of the present tender specifications.

1.2 Timetable

Summary timetable	Date	Comments
Launch date	02 September 2011	
Deadline for addressing requests for clarification to EASA	13 October 2011	
Last date on which clarifications are issued by EASA	15 October 2011	Tenderers are advised to check the EASA Webpage on a regular basis for possible updates and/or clarifications
Deadline for submission of tenders	19 October 2011	Tenders delivered by hand shall be submitted not later than 17:00h Local Time*
Opening session	26 October 2011 ¹	Maximum one legal representative per participating tenderer may attend the opening session. Tenderers shall inform the Agency of their intention to attend, at least 5 working days prior to the opening session.
Completion date for evaluation of tenders	November 2011	Estimated
Signature of contracts	December 2011	Estimated

* Cologne (Germany) local time.

¹ Maximum one legal representative per participating tenderer may attend the opening session. Tenderers shall inform the Agency of their intention to attend, at least 5 working days prior to the opening session.

1.3 Participation in the tender procedure

This procurement procedure is open to any natural or legal person wishing to bid for the assignment and established in any of the European Union Member States, Norway, Iceland, Liechtenstein or Switzerland.

In addition, tenderers must not be in any situation of exclusion under the exclusion criteria indicated in section 3.1 of these tender specifications and must have the legal capacity to allow them to participate in this tender procedure (see section 3.2.1).

Please note that any attempt by a tenderer to obtain confidential information, enter into unlawful agreements with competitors or influence the evaluation committee or EASA during the process of examining, clarifying, evaluating and comparing tenders will lead to the rejection of his tender and may result in administrative penalties.

1.4 Participation of consortia

Consortia may submit a tender on the condition that it complies with the rules of competition.

A consortium may be a permanent, legally-established grouping or a grouping which has been constituted informally for a specific tender procedure.

Such grouping (or consortium) must specify the company or person heading the project (the leader) and must also submit a copy of the document authorising this company or person to submit a tender on behalf of the consortium. All members of a consortium (i.e. the leader and all other members) are jointly and severally liable to the Contracting Authority.

In addition, each member of the consortium must provide the required evidence for the exclusion and selection criteria (see section 3 of these tender specifications). Concerning the selection criteria "economic and financial capacity" as well as "technical and professional capacity", the evidence provided by each member of the consortium will be checked to ensure that the consortium as a whole fulfils the criteria.

The participation of an ineligible person will result in the automatic exclusion of that person. In particular, if that ineligible person belongs to a consortium, the whole consortium will be excluded.

1.5 Subcontracting

The tenderer must indicate clearly which parts of the work will be sub-contracted **and** to what extent (proportion in %). The sub-contractor must not sub-contract further.

Sub-contractors must satisfy the eligibility criteria applicable to the award of the contract. If the identity of the intended sub-contractor(s) is already known at the time of submitting the tender, all sub-contractors must provide the required evidence for the exclusion and selection criteria.

If the identity of the sub-contractor(s) is not known at the time of submitting the tender, the tenderer who is awarded the contract will have to seek EASA's prior written authorisation before entering into a sub-contract.

Where no sub-contracting is indicated in the tender the work will be assumed to be carried out directly by the bidder.

1.6 Presentation of the tenders

Tenders must comply with the following conditions:

1.6.1 Tenders must be submitted in accordance with the **double envelope system**:

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

- the ref. number of the invitation to tender **EASA.2011.OP.30**
- the project title **"MULCORS – The Use of MULTicore proCessORs in airborne Systems"**
- the name of the Tenderer
- the indication **"Tender - Not to be opened by the internal mail service"**
- the address for submission of tenders (*as indicated in the letter of invitation to tender*)
- the date of posting (*if applicable*) should be legible on the outer envelope

The outer envelope must contain **three inner envelopes**, namely, **Envelope A, B and C**.

The content of each of these three envelopes must be as follows:

Envelope A – Administrative documents

- the signed, dated and duly completed **Tender Submission Form** using the template in **Annex VII**
- the duly filled in, signed and dated **Exclusion Criteria Declaration(s)** as requested in section 3.1 and using the standard template in **Annex IV**
- the duly filled in, signed and dated **Legal Entity Form(s)** as requested in section 3.2.1 and using the standard template via the link in **Annex V** as well as the requested **accompanying documents**
- the duly filled in, signed and dated **Financial Identification Form**² using the template in **Annex VI**, including the IBAN and SWIFT/BIC code
- **financial and economic capacity documents** as requested in section 3.2.2
- a statement containing the name and position of the tenderer's **authorised representative/signatory** and official documentary evidence proving the representative's legal authority to validly sign on behalf of the organisation
- in case of consortia, a **consortium agreement** duly signed and dated by each of the consortium members specifying the company or person heading the project and authorised to submit a tender on behalf of the consortium (please see section 1.4 of the tender specifications)
- duly filled in, signed and dated **statements of absence of conflict of interest** as found in **Annex VIII**
- a duly filled in, signed and dated **statement of acceptance** as found in **Annex IX**

Envelope B – Technical proposal

One signed original and **four** copies (identical in full to the original) of the technical and professional capacity documents as requested in section 3.2.3 and of the technical proposal providing all information requested in section 4.2 including information relevant to subcontracting as requested in section 1.5.

Envelope C – Financial proposal

One signed original and **four** copies (identical in full to the original) of the financial proposal **based on the format found in Annex II**.

² In case of consortia, only **one** Financial Identification Form for the whole consortium shall be submitted, nominating the bank account into which payments are to be made under the contract in the event that the respective tender is successful.

1.6.2 The original tender must be marked "**ORIGINAL**", and the copies signed in the same way as the original and marked "**COPY**".

1.6.3 Tenders should be drafted in one of the official languages of the European Union, **preferably English**.

It is strictly required that tenders be presented in the correct format and include all documents necessary to enable the evaluation committee to assess them. Failure to respect these requirements will constitute a formal error and may result in the rejection of the tender.

1.7 Period during which tenders are binding

The period of validity of tenders, during which tenderers may not modify the terms of their tenders in any respect is 90 days after the deadline for the submission of tenders. In exceptional cases, before the period of validity expires, EASA may ask tenderers to extend the period for a specific number of days, which shall not exceed 40.

The selected tenderer must maintain its tender for a further 60 days from the date of notification that his tender has been recommended for the award of the contract. The further period of 60 days is added to the initial period of 90 days irrespective of the date of notification.

1.8 Contacts between EASA and tenderers

Contacts between EASA and tenderers are prohibited throughout the procedure save in exceptional circumstances and under the following conditions only:

Before the final date for submission of tenders:

- At the request of the tenderer, EASA may provide additional information solely for the purpose of clarifying the nature of the contract. Any request for clarification must be made in writing by **e-mail** at tenders@easa.europa.eu and should indicate the reference number and the title of the tender.
- Requests for clarification received by EASA after the deadline for such requests for clarification as specified in section 1.2 – Timetable may not be processed.
- EASA may, on its own initiative, inform interested parties of any error, inaccuracy, omission or any other clerical error in the text of the call for tenders.
- Any clarifications including that referred to above will be published on EASA's website. **Please ensure that you visit regularly the site for updates.**

After the opening of tenders:

If, after the tenders have been opened, some clarification is required in connection with a tender, or if obvious clerical errors in the submitted tender must be corrected, the EASA may contact the tenderer, although such contact may not lead to any alteration of the terms of the submitted tender.

1.9 Visits to EASA premises

No site visits at EASA's premises are deemed necessary for this procedure.

1.10 Division into lots

This tender is not divided into lots. The tenderer must be in a position to provide all the services requested.

1.11 Variants

Unless otherwise requested in the terms of reference in section 2 of the present specifications your tender should not deviate from the services requested.

1.12 Scope for additional services or for the repetition of similar services

EASA may, at its own discretion, extend the project in duration and/or scope subject to the availability of funding and to satisfactory performance by the contractor.

1.13 Confidentiality & public access to documents

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

- Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 and 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;
- Council Regulation (EC) No 1049/2001 of 30 May 2001 regarding public access to European Parliament, Council and Commission documents.

1.14 Contract provisions

In drawing up your tender, you should bear in mind the provisions of the draft contract (see **Annex I** to the present tender specifications). In particular, the draft contract indicates the method and the conditions for payments to the contractor.

Nota bene:

Submission of a tender implies acceptance of all the terms and conditions set out in the invitation to tender, in the tender specifications and in the draft service contract and, where appropriate, waiver of the tenderer's own general or specific terms and conditions. It is binding on the tenderer to whom the contract is awarded for the duration of the contract.

In this respect every tenderer is also required to submit a duly filled in and signed **statement of acceptance**, in the form provided in **Annex IX**.

2 Terms of reference (TOR)

The Terms of Reference will become part of the contract that may be awarded as a result of the tender.

2.1 Introduction: background of the invitation to tender

The embedded software tasks in safety-critical airborne systems are currently executed by single processing cores. These processors, together with the operating systems (OSs) that run on them, can execute software tasks in a manner that is safe and deterministic, can provide robust memory, and time partitioning for the tasks and the WCET (worst-case execution time) of each task can be measured.

Increasing the throughput of single core processors by increasing their operating frequencies has resulted in processors with high power consumption, generating a lot of heat that must be dissipated. The alternative approach now being taken by manufacturers is to incorporate multiple processing cores into one device but to run them at lower frequencies. These multi-core processors require less power and less heat dissipation while still providing more processing power than single core processors by enabling tasks to be run in parallel and by having more rapid memory access than single core processors.

These advantages and the fact that processor manufacturers are therefore producing multi-core processors instead of single-core processors mean that there is an increasing demand to use multi-core processors in safety-critical airborne systems. EASA and the other certification authorities have not yet allowed them to be used because of concerns that the co-location of processing cores, memory and cache memories in order to provide faster processing may have negative effects such as enabling interference between the cores due to the sharing of access to memory, cache memories, databuses and input/output devices. The resulting problems could include data inconsistency, race conditions, deadlocks or data starvation. Some multi-core processors also include features that control data transfers between the cores and the other components in a manner that is not deterministic. Other features such as the ability of some multi-core processors to re-allocate tasks between cores, to alter the operating frequencies of cores, to introduce tasks dynamically or to shut down cores for reasons of energy efficiency could also cause problems for safety-critical applications.

Multi-core processors also bring considerable challenges in the software field in terms of design, verification and certification. The ability to execute tasks (or parts of tasks) in parallel with less need for repeated context switching should enable faster processing than with a single core, even at lower frequencies. However, the potential increase in processing power can only be utilised if tasks can be organized to run efficiently on multiple cores, which may require different specification and analysis methods, design tools and programming techniques from those currently used. Some multi-core processors include an overall 'hypervisor' programme to control the execution and partitioning of tasks. Some processor configurations may have different operating systems (OSs) for each core if the cores are of different types (i.e. heterogeneous) instead of homogeneous cores. Some of this OS or supervisory software may be compliant with ED-12B / DO-178B (Software Considerations in Airborne Systems and Equipment Certification) and may provide robust partitioning, while other parts of it may be highly complex COTS IP (commercial off the shelf intellectual property) programmes with no ED-12B / DO-178B compliance, possibly with non-deterministic behaviour and perhaps unable to provide robust partitioning.

It is not yet clear whether existing applications can easily be re-hosted or whether it may be most efficient for each core to run only one safety-critical task, perhaps along with some non-critical tasks from which it is partitioned. It is also crucial that faults within a system can be detected when multi-core processors are used and the consequences of

the loss of a partition, a core or an entire set of cores executing safety-critical tasks need to be examined.

The verification of software applications may be complicated by multi-core programming, with aspects such as the WCET (worst-case execution time) of each task being more difficult to determine with some architectures. There are also indications that software debugging may be more difficult and complex than with multiple tasks running on a single core. More sophisticated verification techniques and tools may need to be developed.

These and other problems may make it difficult or even impossible for some multi-core processing configurations to be included in safe, robustly partitioned, deterministic and certifiable systems for executing safety-critical airborne software applications. EASA wishes to produce guidance material that will enable EASA and applicants to determine whether there are conditions under which some multi-core processors might be used to host such applications and whether some other multi-core processors may not be used.

2.2 Description of the subject and scope of the contract

2.2.1 Objectives and Scope

The successful tenderer shall conduct a study of the multi-core processors that are currently available and that are anticipated within the next three years. The objective of the study is to provide EASA with sufficient data and analyses to enable EASA to write and publish guidance material on the subject of the use of multi-core processors in safety-critical airborne systems. These systems would be of Development Assurance Levels (DAL) A, B or C in compliance with CS 25.1309 (a) and (b), ED-79A / ARP4574A, ED-12B / DO-178B, ED-80 / DO-254 and EASA Certification Memoranda 001 and 002 for Airborne Electronic Hardware (AEH) and Software. The AEH Certification Memorandum will be updated to include the new guidance material.

This study shall examine the various hardware and software architectures of multi-core processors to determine which characteristics of these architectures would enable them to host safety-critical airborne software and which have negative implications in terms of the ability of the systems to host safe, robustly partitioned and deterministically executed applications. Where there are such negative effects, the study shall investigate whether there may be means to limit, counteract or eliminate those effects by measures such as architectural mitigation, work-arounds, deactivation of the features or the imposition of rules as to which features may be used or how they may be used. The study shall show which types of multi-core processors are suitable or can be adapted to be suitable for hosting safety-critical airborne software, which measures are necessary in each case and which processors do not appear to be adaptable for use with safety-critical airborne software.

It is not intended that this should be an exhaustive study in detail of all the types of processor on the market or likely to be in the near future. There shall be an initial data gathering phase in which the basic architectural characteristics of multi-core processors on the market (and those anticipated in the near future) are identified and inserted into a spreadsheet or a database. This shall then be used to group the processors with similar essential characteristics. A representative processor from each group shall then be examined in detail in the study so as to highlight the significant characteristics of the group that are new or different from those of single core processors, whether the characteristics are favourable or unfavourable for the use of the type in safety-critical applications, and whether any mitigation measures might be used in each case to adapt the type for use in safety-critical applications. The use of a spreadsheet or a database will permit the groupings of processors to be modified if necessary as the study progresses and more details are discovered about the processors and their behaviour. The spreadsheet shall be delivered to EASA, who could use and update it so EASA can easily see which processors had any particular characteristics or features.

There may be cases in which a group of processors with particular characteristics would not comply with the current certification guidance even with the use of mitigation measures. In such cases, the study shall indicate the problems that would prevent compliance and show with which parts of the guidance material they conflict. If the study can identify ways in which the current EASA guidance material could be modified in the future to enable certain processor types to be used and still provide safe, deterministic and robustly partitioned processing, the study shall describe these possible modifications.

The study of the features of multi-core processors shall examine in detail the software aspects of using multi-core processors to host safety-critical airborne software, including any supervisory or OS software that is delivered with the devices as COTS IP or that needs to be used in conjunction with the devices. The study shall identify whether the OS or supervisory software used with a processor complies with ED-12B / DO-178B and whether it can provide robust partitioning. The study shall identify whether there are tools and techniques that may be used to specify the software requirements and the software design so as to efficiently and safely execute in parallel on multi-core processors. The study shall also examine the verification and certification implications of hosting software on multi-core processors, including measuring the WCET of each task and which tools might be necessary in order to debug software applications and to verify them in compliance with ED-12B / DO-178B.

If the contractor performing the study knows of or identifies any other significant considerations not mentioned in this document that they believe EASA should take into account in order to produce their guidance material on multi-core processors, then EASA requests the contractor to include those considerations in the study so that the Agency does not omit any useful or vital considerations from their guidance material.

2.2.2 Description of the tasks

The tasks to be carried out in the study shall be as follows, taking into account that the steps are highly related and that some of them might be executed in parallel or iteratively rather than strictly in sequence:

1. Identify the types of multi-core processors currently available from the major manufacturers, along with any that are anticipated in the near future (i.e. the next three years). The multi-core processors identified should include DSPs (digital signal processors), devices that combine multiple processor cores with other airborne hardware devices such as Field-Programmable Gate Arrays (FPGA) and any other types of multi-core processors that the study may reveal.
2. Identify the essential basic architectural characteristics or components of each type of processor and insert them with the types of processor into a spreadsheet or database that shall be delivered to EASA at the end of the study. Characteristics that might be taken into account in such a classification might include whether the cores are homogeneous or heterogeneous, the memory, cache and databus architectures of the devices, the number of cores or whichever other criteria the study identifies as being important.

Emphasis shall be placed on features that differ from those of current single core processors and that may prevent the functions executed on the processors from behaving in a deterministic and robustly partitioned manner. These would include features that may enable interference between cores due to common access to memory, cache, databus or I/O devices and any features intended to save energy that may dynamically shut down a core, alter its executing frequency or dynamically alter the number of executing tasks. Other features to capture in the spreadsheet may include the presence of any software or COTS IP that is provided with the processor and any features to control the hardware or the data transfers between cores and other components, or to control the execution of any hosted software. The study shall identify any COTS IP and whether it was developed and verified in compliance with any DAL of ED-12B / DO-178B.

Details in the spreadsheet should be limited, such as the title or category of the feature or the number of processors, with the detailed explanations of the features and their implications being provided in the text of the report.

3. Determine whether it is possible to classify the multi-core processors listed in the spreadsheet into groups according to their components, the characteristics of their architectures, their behaviours or other criteria. The study shall describe the criteria used to classify the processors and why those criteria were selected. The groups may later be used by EASA to write guidance material that is specific to each group.
4. Select - in agreement with EASA - a representative processor from each of the identified processor groups and conduct a detailed examination of the internal architecture of that processor, identifying the components involved and the features of the processors, describing their roles in the data and control flow of the device. Emphasis should again be on features that are not found on most single core processors. Aspects that are common to many types or groups only need to be described once in the study report, but any important variations that are specific to a processor or group of processors shall be highlighted.

While identifying and describing processor features, identify which of the components, features or behaviours of the processor groups are unsuitable for the use of the processors in safety-critical airborne systems with deterministic behaviour and in compliance with the current guidance material listed above. The features listed in item 2 above and the reasons why they are unsuitable should be described. Any other type of interference or effect identified by the study that might make a component or architecture unsuitable for use in certifiable and deterministic safety-critical airborne systems should be identified and described.

5. In each case where a component or feature is not suitable for use in safety-critical airborne systems, identify whether or not there are any feasible measures that might be used to mitigate the particular negative effect by means of, for example, architectural mitigation, work-arounds, disabling the feature concerned, imposing rules or limitations on the use of the feature concerned or any other means that the study may identify.
6. Identify any cases in which a non-favourable characteristic might be made compliant if a modification or addition was made to the current EASA guidance material, while still providing robust partitioning between tasks and deterministic behaviour. If there are such cases, the suggested modification to the EASA guidance material shall be identified and why this might be desirable. (Modifications to EUROCAE³ / RTCA⁴ documents should not be suggested because their modification is not within the power of EASA alone, although any points within those documents that cause compliance problems for multi-core processors shall be identified in the study.)
7. In combination with the steps listed above, identify and analyse the software architectures that may be used in combination with the hardware of each processor group and, if possible, classify those software architectures into groups. Criteria for this grouping might include such factors as whether symmetric, asymmetric or 'bare-metal' multi-processing would be used, whether there are suitable certifiable operating systems that may be acquired and incorporated to execute on the processor and for which types of processing the processors would be best suited. The study shall identify whether there are particular ways to allocate tasks or parts of tasks to the processor cores that would be most safe and effective for each type of processor and / or operating system, e.g. allocating a single critical task to each processor.

³ EUROPEAN ORGANISATION for CIVIL AVIATION EQUIPMENT

⁴ RADIO TECHNICAL COMMISSION FOR AERONAUTICS

8. Identify the methods, tools, languages and operating systems that would be most suitable for specification, development and implementation of safety-critical software to execute in parallel with robust partitioning on the representative processors and any software / COTS IP that they include.
9. Identify which methods and tools would be suitable and / or necessary in order to conduct ED-12B / DO-178B verification of the software applications hosted on multi-core processors. The study shall determine (if possible) whether the WCET of tasks could be measured or analysed for each type of processor hardware / software architecture and identify any aspects of particular processor groups that might either facilitate that measurement or make it more difficult.
10. Examine whether the architectures of multi-core processors may affect the ability of a system to detect failures within the processors or their associated hardware and the ability of the system to make itself safe, to re-start and recover in the event of a failure being detected. The study shall determine which multi-core processors incorporate features such as memory management units and detection of division by zero and ensure that watchdog timers can be incorporated. The study shall identify which kinds of failure detection are possible, whether the processors incorporate any form of exception handling and what the response of the processor is to error detection, e.g. shutting down the affected software partition, the processing core, the entire processor or any other means.
11. Analyse the processor architectures and examine any problems or processor errata that have already been found to determine whether multi-core processors in general or particular types of them might suffer from more frequent failures or different or more widespread types of failures than the current single core processors. This shall include failures due to radiation induced effects such as SEU (single event upsets), whether such effects would be detectable and whether the processors incorporate any means to detect such events and correct the errors produced.

The contractor shall produce a final study report that provides details of the investigations conducted during each of the steps listed above and that clearly categorizes the various groups of multi-core processors, their hardware and software architectural characteristics and behaviours. Tables produced from the processor spreadsheet of the study are an effective way of presenting some of this information, in addition to text that explains the details of the processors, their architectures, functions, capabilities, advantages and disadvantages etc. The spreadsheet shall be provided with the report.

The report shall be written so as to facilitate the writing of guidance material based upon its conclusions in each area, and it shall provide clear recommendations in its conclusions as to:

- which features of multi-core processors are different from the features of single core processors, identifying which of those features are suitable and which are not suitable for the use of the processors in safety-critical airborne applications,
- which mitigation means would be required and would be sufficient to deal with particular undesirable features and comply with the current guidance material,
- which of the processors or processor groups identified in the study appear to be suitable (either alone or in combination with some identified mitigation) for use in deterministic safety-critical airborne applications that require robust partitioning, taking into account not only the hardware, architectural, software, OS and COTS features of the devices but also the ability to detect failures and make the systems safe,
- which of the processors or processor groups identified in the study do not appear to be suitable (even with any incorporated mitigation means) for use in deterministic safety-critical airborne applications,
- whether there are any particular ways in which the current EASA certification guidance could be modified in order to allow systems incorporating particular multi-core

processors to be certified while still providing safe, partitioned and deterministic execution of the applications that they host.

Any recommendations should be justified and should address practical steps to be taken. Also any obstacles to the implementation of the proposed recommendations as well as any mitigation measures shall be discussed in the final study report.

2.3 Reference documents

- EASA CS 25, Certification Specifications for Large Aeroplanes, Amendment 11, 2011, available at:
<http://www.easa.europa.eu/agency-measures/certification-specifications.php>
- EUROCAE ED-80 / DO-254, Design Assurance Guidance for Airborne Electronic hardware, 2000, available for purchase at:
<http://boutique.eurocae.net/catalog/index.php>
- EUROCAE ED-12B / DO-178B, Software Considerations in Airborne Systems and Equipment Certification, 1992, available for purchase at:
<http://boutique.eurocae.net/catalog/index.php>
- EUROCAE ED-79A / ARP4574A, Guidelines for Development of Civil Aircraft and Systems, 2010, available for purchase at:
<http://boutique.eurocae.net/catalog/index.php>
- EASA CM-SWCEH-001, 2011, Development Assurance of Airborne Electronic Hardware, available for download at:
 - <http://easa.europa.eu/certification/certification-memoranda.php> or
 - http://easa.europa.eu/certification/docs/certification-memorandum/EASA_CM-SWCEH-001_Development_Assurance_of_Airborne_Electronic_Hardware.pdf
- EASA CM-SWCEH-002, 2011, Software Aspects of Certification, available for download at
 - <http://easa.europa.eu/certification/certification-memoranda.php> or
 - http://easa.europa.eu/certification/docs/certification-memorandum/EASA_CM-SWCEH-002_Software_Aspects_of_Certification.pdf

2.4 Volume of the contract

The Agency intends to sign a direct contract with the successful tenderer. The maximum contract budget shall be in the range of EUR 80,000 (eighty thousand Euro) to EUR 100,000 (one hundred thousand Euro).

2.5 Duration of the contract

The duration of the contract shall not exceed ten (10) months from contract signature.

2.6 Place of delivery/execution

The main performance and execution of the tasks shall take place at the contractor's premises. Monthly progress reports, an interim report as well as the final study report shall be delivered to the Agency's premises in Cologne/Germany.

2.7 Variant solutions

Variants are not permitted.

2.8 Deliverables, reporting and schedule

2.8.1 Deliverables

The deliverables of the project shall consist of one interim report (covering significant intermediary results of tasks as described in section 2.2.2), the final study report and the final study presentation (covering all tasks described in 2.2.2).

A complete draft final study report shall be delivered to EASA at the latest one month before the end of the period of execution of the contract.

The report shall be submitted in English following the outline in **Annex X**. EASA will have twenty days to comment on each of the interim and final study reports; based on the comments the contractor shall have ten days in which to submit additional information or a new report.

Proper delivery and EASA approval of interim and final study reports shall be a condition for the initiation of corresponding payments by EASA.

2.8.2 Monthly progress reports

In addition to the reports mentioned above the contractor is expected to deliver **monthly progress reports** containing the following:

- Updates on progress of the contract implementation;
- Potential difficulties/obstacles to sort out (if any), and proposed solutions;
- planned activities foreseen until the next progress report.

All deliverables and reports, including progress reports, shall be submitted to the Project Manager identified in the contract.

2.8.3 Project meetings

A series of project meetings shall be held between EASA and the contractor to monitor the progress of the study and any identified issues. In total five project meetings are planned:

- Kick-off meeting: a general project kick-off meeting held at EASA premises within one week of contract signature;
- Project progress review meetings: three progress review meetings, one conducted at EASA premises, the other ones at contractor premises and/or by telephone/video conference;
- Final presentation: the results of the study shall be presented to EASA (and a larger audience) in a final presentation at EASA premises in Cologne.

The minutes of meeting shall be drafted by the contractor and reviewed by EASA for final acceptance.

Travelling to the above mentioned meetings/activities, accommodation and any other costs related thereto shall be at the sole expense of the contractor and shall be fully included in the price presented in the financial offer.

2.8.4 Project schedule

The schedule of the project is as follows:

Date (T ₀ : contract signature)	Event	Expected task from EASA	Deliverable provided by Contractor
T ₀ + 1 week	Kick-off meeting at EASA premises	Presentation of scope of the study and objectives by EASA	Presentation of project plan and technical approach

Date (T ₀ : contract signature)	Event	Expected task from EASA	Deliverable provided by Contractor
T ₀ + 3m	Progress meeting / Telephone/video conference 1		Presentation of project progres
T ₀ + 5m	Progress meeting / telephone/video conference 2		Presentation of project progress
T ₀ + 5m	Completion of at least (ca.) 50 % of the tasks		Interim report
T ₀ + 5m20d		EASA comments and/or approval of the interim report	
T ₀ + 6m			Additional information / revised second interim report (if applicable)
T ₀ + 7m	Progress meeting / telephone/video conference 3		Presentation of project progress
T ₀ + 9m	Delivery of final study report (including all tasks results)		Final study report (complete draft)
T ₀ +9m20d		EASA comments and accepts or rejects final study report	
T ₀ + 10m			Revised Final study report (where applicable)
T ₀ + 10m	Final presentation Conclusion of the project		Final presentation

3 Exclusion and selection criteria

3.1 Exclusion criteria

Participation in this tender is only open to tenderers who are not in any of the situations listed below:

- a) bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- b) have been convicted of an offence concerning their professional conduct by a judgement which has the force of res judicata;
- c) have been guilty of grave professional misconduct proven by any means which the Contracting Authority can justify;
- d) have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the Contracting Authority or those of the country where the contract is to be performed;
- e) have been the subject of a judgement which has the force of res judicata for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the European Union's financial interests;
- f) following another procurement procedure or grant award procedure financed by the European Union budget, they have been declared to be in a serious breach of contract for failure to comply with their contractual obligations.

In addition to the above, contracts may not be awarded to tenderers who, during the procurement procedure:

- are subject to a conflict of interest;
- are guilty of misrepresentation in supplying the information required by the Contracting Authority as a condition of participation in the contract procedure or fail to supply this information.

Means of proof required

Tenderers shall provide a declaration on their honour (see model in **Annex IV**), duly signed and dated, stating that they are not in any of the situations referred to above.

Nota bene 1:

The tenderer to whom the contract is to be awarded **shall provide**, within 15 days following notification of award and **preceding the signature of the contract**, the following documentary **proofs to confirm** the declaration referred to above:

- For points a), b) and e) a **recent extract from** the judicial record or, failing that, an equivalent document **recently issued** by a judicial or administrative authority in the country of origin or provenance showing that those requirements are satisfied.
- For point d) a **recent certificate** issued by the competent authority of the State concerned.

Where the document or certificate referred to above **is not 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.

Nota bene 2:

As indicated in section 1.14 tenderers shall provide, together with their offer, a duly signed and dated statement of acceptance (in the form provided in **Annex IX**).

3.2 Selection criteria

The tenderer must submit evidence of their legal, economic, financial, technical and professional capacity to perform the contract.

3.2.1 Legal capacity

Requirements

Tenderers (including, **if applicable**, all consortium members and any proposed sub-contractors) are asked to prove that they are authorised to perform the contract under the national law as evidenced by inclusion in a trade or professional register, or a sworn declaration or certificate, membership of a specific organisation, express authorisation or entry in the VAT register.

Evidences required

Tenderers (including, **if applicable** all consortium members and any proposed sub-contractors) shall provide a duly filled in and signed **Legal Entity Form** (see **Annex V**) **accompanied by the documents** requested therein. Where a tenderer has already signed another contract with EASA, he may provide instead of the legal entity file and its supporting documents a copy of the legal entity file provided on that occasion, unless a change in his legal status occurred in the meantime or the legal entity file or its supporting documents are older than one year.

3.2.2 Economic & Financial capacity

Requirements

- The tenderer must be in a stable financial position and have the economic and financial capacity to perform the contract;
- The yearly turnover in relation to the services, similar to the services covered by the contract (see section 2) in the last three years must not have fallen below 80,000 Euros.

Evidence required

Proof of economic and financial capacity shall be furnished by the following documents:

- balance sheets or extracts from balance sheets **for at least the last two years** for which accounts have been closed (where publication of the balance sheet is required under the company law of the country in which the economic operator is established);
- a statement of turnover concerning services, similar to the services covered by the contract **during the last three financial years**;
- if, for some exceptional reason which EASA 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 EASA considers appropriate.

The Agency reserves the right to request any additional documentary evidence it deems necessary or useful in order to verify a candidate's economic and financial standing.

3.2.3 Technical and professional capacity

The tenderer must prove and demonstrate that he has the technical and professional capacity to perform the contract.

Requirement(s)

- a) Suitability of the organisation and staffing structure available for the activities covered by the contract (including all consortia members and/or any proposed subcontractors);
- b) Professional experience in provision of services similar to those covered by the contract:
 - The tenderer must have recent (during the last five years) experience in the fields of airborne system, hardware and software development methods including validation and verification processes;

and

- The tenderer must have knowledge, gained in at least one project in the last five years, of the risk assessment, airworthiness certification and development assurance processes covered by EUROCAE ED-79A / ARP4574A, ED-80 / DO-254 and ED-12B / DO-178B guidelines.
- c) Relevant expertise of the key personnel, proposed to be allocated to the project in the technical fields addressed by the study;
 - d) The tenderer shall be familiar with the existing EASA CRIs (Certification Review Items) on software and airborne electronic hardware and with the recently-published EASA Certification Memoranda SWCEH-001 and 002.
 - e) The tenderer must have strong experience in conducting comparable research or studies in an international context and delivering results and recommendations to specialised audiences in the English language (involvement in at least one comparable research or development projects);
 - f) The tenderer (including any 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.
Any risk of perceived partiality shall be duly assessed, disclosed and addressed, i.e. effectively circumvented through credible means ensuring full objectivity and independence, e.g. by entrusting the coordination of the project and verification of its results to a perfectly independent entity, such as a university.

Evidence required

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

For *the* requirement a):

- Details of the structure of the organisation (including all consortia members and any subcontractors and the number of staff involved, at least two relevant staff members expected), explaining the suitability of the tenderer's organisation to perform the contract;

For *the* requirement b):

- Track-record of the tenderer's experience, clearly presenting how this experience has been gained and through which practical and relevant work, studies or other means (working at least in one project in the last five years), and emphasizing how the professional capacity has been built in the field of airborne system, software and hardware development / validation & verification methods;
- Detailed description of experience gained in civil aviation equipment certification and in using the EUROCAE ED-79 / ARP4574, ED-79A / ARP4574A, ED-80 / DO-254, ED-12B / DO-178B standards including a list of projects participated in (at least one)

involving hardware airworthiness certification within the last five years covering ALL these areas of expertise.

For *the* requirement c):

- Relevant professional accreditations or references held by the tenderer; CVs of the key experts to carry out the study (using template in **Annex III**), covering education and training, organisational, technical and work experience.

For *the* requirement d):

- Detailed description of experience gained by the tenderer in dealing with software and airborne electronic hardware certification issues taking into account regulatory aspects and description of the tenderer's involvement in at least two projects or work programmes in this field;

For *the* requirement e):

- Example/s of involvement of the tenderer in research projects / studies conducted in an international context and demonstrating the delivery of results and recommendations to specialised audiences in English;

For *the* requirement f):

- Duly filled-in statement on absence of conflict of interest (**Annex VIII**), duly signed and dated by all parties involved in the performance of the contract (including consortia members and/or any proposed subcontractors), supported by a duly documented:

- i. assessment of any risk of perceived partiality and
- ii. description of any steps taken to circumvent any such risk.

Nota bene:

An economic operator may, where appropriate and for a particular contract, 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.

4 Award of the contract

Only the tenders meeting the requirements of the exclusion and selection criteria will be evaluated in terms of quality and price.

4.1 Technical evaluation

The quality of technical offers reaching this stage will be evaluated in accordance with the award criteria and the associated weighting as detailed in the evaluation grid below.

No	CRITERIA	Max points	Awarded score
1	Rationale, strategy and methodology: - Understanding of the ToRs and general approach to the project, - Coverage of the required analyses and proposed strategy/methodology, - Evaluation of the key issues, limitations and risks as well the proposed mitigations by the tenderer.	60	
2	Work organisation and planning within the tenderer/consortium: -Description of activities and planning of tasks/work packages (sequence, duration), related inputs and outputs, sequence, timing of major milestones in execution of the contract, - In case of consortia, description of key contributions from each of the consortium members and sub-contracting arrangements foreseen.	20	
3	Involvement of key personnel: description of the involvement of the proposed experts (roles, responsibilities and interactions) to cover the main project activities.	20	
	TOTAL	100	

4.2 Interviews

The Evaluation Committee does not expect to conduct any interviews.

4.3 Technical proposal

The assessment of the technical quality will be based on the ability of the tenderer to meet the purpose of the contract as described in the terms of reference. To this end, the technical proposal shall contain the following information to allow evaluation of their tender according to the technical criteria mentioned above:

- A description of the approach proposed, activities required and the proposed methodology to be applied; means to be used to meet the objectives of the terms of reference and assessment of the main issues, limitations, risks of the analyses to be carried out as well as the proposed measures;
- Description of work organisation and planning and proposal for a work schedule, indicating as well clearly the list and volume of the tasks (at least (ca.) 50 % of the tasks as described in section 2.8) planned to be fulfilled by the time of the

presentation of the interim report (including all major milestones, as requested in section 2.8 of these tender specifications);

- Description of the involvement of the proposed key experts (roles, responsibilities and interactions) to execute the planned activities, in particular to cover the key analyses and investigations of the study; and
- In case of consortia, a description of the specific roles and responsibilities of all the consortium partners.

In addition to the above the tenderer must provide the information concerning sub-contracting as requested in section **1.5**.

4.4 Technical quality threshold

Only tenders scoring 75 points or more (of a maximum of 100 points) against the technical award criteria will have their financial proposal evaluated.

4.5 Financial evaluation

The financial evaluation will be made on the basis of the price offered in the model financial offer (Annex II) and based on the following formula:

Financial score for tender X = 100*(cheapest price/price of tender)

4.6 Financial proposal

- The financial proposal should be presented in the format found in **ANNEX II**.
- Price must be quoted in **EURO** and include all expenses necessary to perform the contract.
- The price quoted is fixed and is subject to **NO revision**.
- Price must be quoted free of all duties, taxes and other charges (including VAT) as EASA is exempt from such charges under Articles 3 and 4 of the Protocol on the privileges and immunities of the European Communities.
- Costs incurred in preparing and submitting tenders are borne by the tenderer and shall not be reimbursed
- **No additional reimbursement of any other costs whatsoever is foreseen.**

4.7 Choice of the selected tender

The most economically advantageous tender is established by weighing technical quality against price on a **50/50** basis.

Calculation formula: The consolidated score for each tenderer will be calculated as follows:

Consolidated score = Technical score*0,5 + Financial score*0,5

ANNEX I – DRAFT CONTRACT

SERVICE CONTRACT

MULCORS - The Use of MULTicore proCessORs in airborne Systems

CONTRACT NUMBER – [EASA.20XX.XX]

The European Aviation Safety Agency (hereinafter referred to as "the Agency"), which is represented for the purposes of the signature of this contract by [*name in full and function*],

of the one part,

and

[official name in full]
[official legal form]
[official address in full]

[statutory registration number]
[VAT registration number]

(hereinafter referred to as "the Contractor"), represented for the purposes of the signature of this contract by [*name in full and function*],

of the other part,

HAVE AGREED

the **Special Conditions** and the **General Conditions** below and the following Annexes:

Annex I – Tender Specifications No EASA.2011.OP.30

Annex II – Contractor's Tender of [date]

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

The terms set out in the Special Conditions shall take precedence over those in the other parts of the Contract. The terms set out in the General Conditions shall take precedence over those in the Annexes. The terms set out in the Tender Specifications (Annex I) shall take precedence over those in the Tender (Annex II).

Subject to the above, the several instruments forming part of the Contract are to be taken as mutually explanatory. Ambiguities or discrepancies within or between such parts shall be explained or rectified by a written instruction issued by the Agency, subject to the rights of the Contractor under Article I.7 should he dispute any such instruction.

I – SPECIAL CONDITIONS

ARTICLE I.1 - SUBJECT

- I.1.1.** The subject of the Contract is the provision of a study on MULCORS - The Use of MULTicore proCessORs in airborne Systems.
- I.1.2.** The Contractor shall execute the tasks assigned to him in accordance with the Tender Specifications annexed to the Contract (Annex I).

ARTICLE I.2 - DURATION

- I.2.1.** The Contract shall enter into force on the date on which it is signed by the last contracting party.
- I.2.2.** Execution of the tasks may under no circumstances begin before the date on which the Contract enters into force.
- I.2.3.** The duration of the tasks shall not exceed 10 months. This period and all other periods specified in the Contract are calculated in calendar days. Execution of the tasks shall start from date of entry into force of the Contract. The period of execution of the tasks may be extended only with the express written agreement of the parties before such period elapses.

ARTICLE I.3 – CONTRACT PRICE

- I.3.1** The maximum total amount to be paid by the Agency under the Contract shall be EUR [*amount in figures and in words*] covering all tasks executed, in conformity with Annex I.

ARTICLE I.4 – PAYMENT PERIODS AND FORMALITIES

Payments under the Contract shall be made in accordance with Article II.4. Payments shall be executed only if the Contractor has fulfilled all his contractual obligations by the date on which the invoice is submitted. Payment requests may not be made if payments for previous periods have not been executed as a result of default or negligence on the part of the Contractor.

I.4.1. Pre-financing:

Not applicable

I.4.2. Interim payment:

Following proper performance of at least 50% of the tasks (as per Annex I) and submission of the interim report in accordance with the instructions laid down in Annex I a request for interim payment by the Contractor shall be admissible. The interim report for Task 1 is estimated to be delivered 5 months from the contract signature.

The request for the interim payment by the Contractor shall be admissible if accompanied by:

- > the interim technical report in accordance with the instructions laid down in Annex I
- > the relevant invoices

provided the report has been approved by the Agency.

The Agency shall have twenty days from receipt to approve or reject the report, and the Contractor shall have ten days in which to submit additional information or a new report.

Within thirty days of the date on which the report is approved by the Agency, an interim payment corresponding to the relevant invoices equal to 40% of the total amount referred to in Article I.3.1 shall be made.

I.4.3. Payment of the balance:

Following proper performance of all tasks and submission of the final study report in accordance with the instructions laid down in Annex I a request for payment of the balance by the Contractor shall be admissible. The final study report shall be delivered 9 months from contract signature.

The request for payment of the balance of the Contractor shall be admissible if accompanied by

- the final study report in accordance with the instructions laid down in Annex I
- the relevant invoices

provided the report has been approved by the Agency.

The Agency shall have twenty days from receipt to approve or reject the report, and the Contractor shall have ten days in which to submit additional information or a new report.

Within thirty days of the date on which the report is approved by the Agency, payment of the balance corresponding to the relevant invoices equal to 60% of the total amount referred to in Article I.3.1 shall be made.

ARTICLE I.5 – BANK ACCOUNT

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

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

ARTICLE I.6 – GENERAL ADMINISTRATIVE PROVISIONS

Any communication relating to the Contract shall be made in writing and shall bear the Contract number. Ordinary mail shall be deemed to have been received by the Agency on the date on which it is registered by the department responsible indicated below.

Communications shall be sent to the following addresses:

Agency:

European Aviation Safety Agency
[Directorate – complete]
[Department/Section]
[full name and function]

Postfach 10 12 53
D-50452 Köln
Deutschland

Contractor:

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

ARTICLE I.7– APPLICABLE LAW AND SETTLEMENT OF DISPUTES

- I.7.1.** The Contract shall be governed by European Union law, complemented, where necessary, by the national substantive law of Germany.
- I.7.2.** Any dispute between the parties resulting from the interpretation or application of the Contract which cannot be settled amicably shall be brought before the courts of Cologne.

ARTICLE I.8 – DATA PROTECTION

Any personal data included in the Contract shall be processed pursuant to Regulation (EC) No 45/2001 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data. The data shall be processed solely for the purposes of the performance, management and monitoring of the Contract by the Agency without prejudice to possible transmission to the bodies charged with a monitoring or inspection task in application of Union law. The Contractor shall have the right of access to his/her personal data and the right to rectify any such data. Should the Contractor have any queries concerning the processing of his/her personal data, s/he shall address them to the Agency. The Contractor shall have right of recourse at any time to the European Data Protection Supervisor.

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

The data shall be confidential within the meaning of Regulation (EC) No 45/2001 of the European Parliament and of the Council on the protection of individuals with regard to the processing of personal data by Community institutions and bodies and on the free movement of such data. The Contractor shall limit access to the data to the staff strictly necessary for the performance, management and monitoring of the Contract.

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

- a) prevent any unauthorised person from having access to computer systems processing personal data, and especially:
 - i) unauthorised reading, copying, alteration or removal of storage media;
 - ii) unauthorised data input as well as any unauthorised disclosure, alteration or erasure of stored personal data;
 - iii) unauthorised persons from using data-processing systems by means of data transmission facilities;
- b) ensure that authorised users of a data-processing system can access only the personal data to which their access right refers;
- c) record which personal data have been communicated, when and to whom;

- d) ensure that personal data being processed on behalf of third parties can be processed only in the manner prescribed by the contracting institution or body;
- e) ensure that, during communication of personal data and transport of storage media, the data cannot be read, copied or erased without authorisation;
- f) design its organisational structure in such a way that it meets data protection requirements.

ARTICLE I.9 – TERMINATION BY EITHER CONTRACTING PARTY

Either contracting party may, of its own volition and without being required to pay compensation, terminate the Contract by serving three months formal prior notice. Should the Agency terminate the Contract, the Contractor shall only be entitled to payment corresponding to part-performance of the Contract. On receipt of the letter terminating the Contract, the Contractor shall take all appropriate measures to minimise costs, prevent damage, and cancel or reduce his commitments. He shall draw up the documents required by the Special Conditions for the tasks executed up to the date on which termination takes effect, within a period not exceeding sixty days from that date.

ARTICLE I.10 - OWNERSHIP OF THE RESULTS - INTELLECTUAL AND INDUSTRIAL PROPERTY

Ownership of all copyright and other intellectual or industrial property rights, including any documentation, data, technical information and know-how, resulting from performance of the Contract, remains vested to the Agency which may use, publish, assign or transfer them as it sees fit, without geographical or other limitation, except where industrial or intellectual property rights already exist. All such information shall be held in the strictest confidence and shall not be disclosed or copied to third parties without explicit written consent from the Agency.

II – GENERAL CONDITIONS

ARTICLE II. 1 – PERFORMANCE OF THE CONTRACT

- II.1.1** The Contractor shall perform the Contract to the highest professional standards. The Contractor shall have sole responsibility for complying with any legal obligations incumbent on him, notably those resulting from employment, tax and social legislation.
- II.1.2** The Contractor shall have sole responsibility for taking the necessary steps to obtain any permit or licence required for performance of the Contract under the laws and regulations in force at the place where the tasks assigned to him are to be executed.
- II.1.3** Without prejudice to Article II.3 any reference made to the Contractor's staff in the Contract shall relate exclusively to individuals involved in the performance of the Contract.
- II.1.4** The Contractor must ensure that any staff performing the Contract have the professional qualifications and experience required for the execution of the tasks assigned to him.
- II.1.5** The Contractor shall neither represent the Agency nor behave in any way that would give such an impression. The Contractor shall inform third parties that he does not belong to the European public service.
- II.1.6** The Contractor shall have sole responsibility for the staff who execute the tasks assigned to him.

The Contractor shall make provision for the following employment or service relationships with his staff:

- staff executing the tasks assigned to the Contractor may not be given orders direct by the Agency;
 - the Agency may not under any circumstances be considered to be the staff's employer and the said staff shall undertake not to invoke in respect of the Agency any right arising from the contractual relationship between the Agency and the Contractor.
- II.1.7** In the event of disruption resulting from the action of a member of the Contractor's staff working on Agency premises or in the event of the expertise of a member of the Contractor's staff failing to correspond to the profile required by the Contract, the Contractor shall replace him without delay. The Agency shall have the right to request the replacement of any such member of staff, stating its reasons for so doing. Replacement staff must have the necessary qualifications and be capable of performing the Contract under the same contractual conditions. The Contractor shall be responsible for any delay in the execution of the tasks assigned to him resulting from the replacement of staff in accordance with this Article.
- II.1.8** Should any unforeseen event, action or omission directly or indirectly hamper execution of the tasks, either partially or totally, the Contractor shall immediately and on his own initiative record it and report it to the Agency. The report shall include a description of the problem and an indication of the date on which it started and of the remedial action taken by the Contractor to ensure full compliance with his obligations under the Contract. In such event the Contractor shall give priority to solving the problem rather than determining liability.

II.1.9 Should the Contractor fail to perform his obligations under the Contract in accordance with the provisions laid down therein, the Agency may - without prejudice to its right to terminate the Contract - reduce or recover payments in proportion to the scale of the failure. In addition, the Agency may impose penalties or liquidated damages provided for in Article II.16.

ARTICLE II. 2 – LIABILITY

II.2.1 The Agency shall not be liable for damage sustained by the Contractor in performance of the Contract except in the event of wilful misconduct or gross negligence on the part of the Agency.

II.2.2 The Contractor shall be liable for any loss or damage caused by himself in performance of the Contract, including in the event of subcontracting under Article II.13. The Agency shall not be liable for any act or default on the part of the Contractor in performance of the Contract.

II.2.3 The Contractor shall provide compensation in the event of any action, claim or proceeding brought against the Agency by a third party as a result of damage caused by the Contractor in performance of the Contract.

II.2.4 In the event of any action brought by a third party against the Agency in connection with performance of the Contract, the Contractor shall assist the Agency. Expenditure incurred by the Contractor to this end may be borne by the Agency.

II.2.5 The Contractor shall take out insurance against risks and damage relating to performance of the Contract if required by the relevant applicable legislation. He shall take out supplementary insurance as reasonably required by standard practice in the industry. A copy of all the relevant insurance contracts shall be sent to the Agency should it so request.

ARTICLE II. 3 - CONFLICT OF INTERESTS

II.3.1 The Contractor shall take all necessary measures to prevent any situation that could compromise the impartial and objective performance of the Contract. Such conflict of interests could arise in particular as a result of economic interest, political or national affinity, family or emotional ties, or any other relevant connection or shared interest. Any conflict of interests which could arise during performance of the Contract must be notified to the Agency in writing without delay. In the event of such conflict, the Contractor shall immediately take all necessary steps to resolve it.

The Agency reserves the right to verify that such measures are adequate and may require additional measures to be taken, if necessary, within a time limit which it shall set. The Contractor shall ensure that his staff, board and directors are not placed in a situation which could give rise to conflict of interests. Without prejudice to Article II.1 the Contractor shall replace, immediately and without compensation from the Agency, any member of his staff exposed to such a situation.

II.3.2 The Contractor shall abstain from any contact likely to compromise his independence.

II.3.3 The Contractor declares:

- that he has not made and will not make any offer of any type whatsoever from which an advantage can be derived under the Contract,
- that he has not granted and will not grant, has not sought and will not seek, has not attempted and will not attempt to obtain, and has not accepted and will not

accept, any advantage, financial or in kind, to or from any party whatsoever, where such advantage constitutes an illegal practice or involves corruption, either directly or indirectly, inasmuch as it is an incentive or reward relating to performance of the Contract.

II.3.4 The Contractor shall pass on all the relevant obligations in writing to his staff, board, and directors as well as to third parties involved in performance of the Contract. A copy of the instructions given and the undertakings made in this respect shall be sent to the Agency should it so request.

ARTICLE II. 4 – INVOICING AND PAYMENTS

II.4.1 Pre-financing:

Where required by Article I.4.1, the Contractor shall provide a financial guarantee in the form of a bank guarantee or equivalent supplied by a bank or an authorised financial institution (guarantor) equal to the amount indicated in the same Article to cover pre-financing under the Contract. Such guarantee may be replaced by a joint and several guarantee by a third party.

The guarantor shall pay to the Agency at its request an amount corresponding to payments made by it to the Contractor which have not yet been covered by equivalent work on his part.

The guarantor shall stand as first-call guarantor and shall not require the Agency to have recourse against the principal debtor (the Contractor).

The guarantee shall specify that it enters into force at the latest on the date on which the Contractor receives the pre-financing. The Agency shall release the guarantor from its obligations as soon as the Contractor has demonstrated that any pre-financing has been covered by equivalent work. The guarantee shall be retained until the pre-financing has been deducted from interim payments or payment of the balance to the Contractor. It shall be released the following month. The cost of providing such guarantee shall be borne by the Contractor.

II.4.2 Interim payment:

At the end of each of the periods indicated in Annex I the Contractor shall submit to the Agency a formal request for payment accompanied by those of the following documents which are provided for in the Special Conditions:

- an interim technical report in accordance with the instructions laid down in Annex I;
- the relevant invoices indicating the reference number of the Contract to which they refer;
- statements of reimbursable expenses in accordance with Article II.7.

If the report is a condition for payment, on receipt the Agency shall have the period of time indicated in the Special Conditions in which:

- to approve it, with or without comments or reservations, or suspend such period and request additional information; or
- to reject it and request a new report.

If the Agency does not react within this period, the report shall be deemed to have been approved. Approval of the report does not imply recognition either of its regularity or of the authenticity, completeness or correctness of the declarations or information enclosed.

Where the Agency requests a new report because the one previously submitted has been rejected, this shall be submitted within the period of time indicated in the Special Conditions. The new report shall likewise be subject to the above provisions.

II.4.3 Payment of the balance:

Within sixty days of completion of the tasks referred to in Annex I, the Contractor shall submit to the Agency a formal request for payment accompanied by those of the following documents, which are provided for in the Special Conditions:

- a final study report in accordance with the instructions laid down in Annex I;
- the relevant invoices indicating the reference number of the Contract to which they refer;
- statements of reimbursable expenses in accordance with Article II.7.

If the report is a condition for payment, on receipt the Agency shall have the period of time indicated in the Special Conditions in which:

- to approve it, with or without comments or reservations, or suspend such period and request additional information; or
- to reject it and request a new report.

If the Agency does not react within this period, the report shall be deemed to have been approved. Approval of the report does not imply recognition either of its regularity or of the authenticity, completeness or correctness of the declarations and information enclosed.

Where the Agency requests a new report because the one previously submitted has been rejected, this shall be submitted within the period of time indicated in the Special Conditions. The new report shall likewise be subject to the above provisions.

ARTICLE II. 5 – GENERAL PROVISIONS CONCERNING PAYMENTS

II.5.1 Payments shall be deemed to have been made on the date on which the Agency's account is debited.

II.5.2 The payment periods referred to in Article I.4 may be suspended by the Agency at any time if it informs the Contractor that his payment request is not admissible, either because the amount is not due or because the necessary supporting documents have not been properly produced. In case of doubt on the eligibility of the expenditure indicated in the payment request, the Agency may suspend the time limit for payment for the purpose of further verification, including an on-the-spot check, in order to ascertain, prior to payment, that the expenditure is eligible.

The Agency shall notify the Contractor accordingly and set out the reasons for the suspension by registered letter with acknowledgment of receipt or equivalent. Suspension shall take effect from the date of dispatch of the letter. The remainder of the period referred to in Article I.4 shall begin to run again once the suspension has been lifted.

II.5.3 In the event of late payment the Contractor shall be entitled to interest, provided the calculated interest exceeds EUR 200. In case interest does not exceed EUR 200, the Contractor may claim interest within two months of receiving the payment. Interest shall be calculated at the rate applied by the European Central Bank to its most recent main refinancing operations ("*the reference rate*") plus seven percentage points ("*the margin*"). The reference rate in force on the first day of the month in which the payment is due shall apply. Such interest rate is published in the C series of the

Official Journal of the European Union. Interest shall be payable for the period elapsing from the calendar day following expiry of the time limit for payment up to the day of payment. Suspension of payment by the Agency may not be deemed to constitute late payment.

ARTICLE II. 6 – RECOVERY

- II.6.1** If total payments made exceed the amount actually due under the Contract or if recovery is justified in accordance with the terms of the Contract, the Contractor shall reimburse the appropriate amount in euro on receipt of the debit note, in the manner and within the time limits set by the Agency.
- II.6.2** In the event of failure to pay by the deadline specified in the request for reimbursement, the sum due shall bear interest at the rate indicated in Article II.5.3. Interest shall be payable from the calendar day following the due date up to the calendar day on which the debt is repaid in full.
- II.6.3** The Agency may, after informing the Contractor, recover amounts established as certain, of a fixed amount and due by offsetting, in cases where the Contractor also has a claim on the European Union that is certain, of a fixed amount and due. The Agency may also claim against the guarantee, where provided for.

ARTICLE II. 7 – REIMBURSEMENTS

- II.7.1** Where provided by the Special Conditions or by Annex I, the Agency shall reimburse the expenses that are directly connected with execution of the tasks on production of original supporting documents, including receipts and used tickets.
- II.7.2** Travel and subsistence expenses shall be reimbursed, where appropriate, on the basis of the shortest itinerary.
- II.7.3** Travel expenses shall be reimbursed as follows:
- a)** travel by air shall be reimbursed up to the maximum cost of an economy class ticket at the time of the reservation;
 - b)** travel by boat or rail shall be reimbursed up to the maximum cost of a first class ticket;
 - c)** travel by car shall be reimbursed at the rate of one first class rail ticket for the same journey and on the same day;
 - d)** travel outside European Union territory shall be reimbursed under the general conditions stated above provided the Agency has given its prior written agreement.
- II.7.4** Subsistence expenses shall be reimbursed on the basis of a daily allowance as follows:
- a)** for journeys of less than 200 km (return trip) no subsistence allowance shall be payable;
 - b)** daily subsistence allowance shall be payable only on receipt of a supporting document proving that the person concerned was present at the place of destination;

- c) daily subsistence allowance shall take the form of a flat-rate payment to cover all subsistence expenses, including accommodation, meals, local transport, insurance and sundries;
- d) daily subsistence allowance, where applicable, shall be reimbursed at the rate specified in Article I.3.

II.7.5 The cost of shipment of equipment or unaccompanied luggage shall be reimbursed provided the Agency has given prior written authorisation.

ARTICLE II. 8 – OWNERSHIP OF THE RESULTS - INTELLECTUAL AND INDUSTRIAL PROPERTY

Any results or rights thereon, including copyright and other intellectual or industrial property rights, obtained in performance of the Contract, shall be owned solely by the Agency, which may use, publish, assign or transfer them as it sees fit, without geographical or other limitation, except where industrial or intellectual property rights exist prior to the Contract being entered into.

ARTICLE II. 9 – CONFIDENTIALITY

II.9.1. The Contractor undertakes to treat in the strictest confidence and not make use of or divulge to third parties any information or documents which are linked to performance of the Contract. The Contractor shall continue to be bound by this undertaking after completion of the tasks.

II.9.2. The Contractor shall obtain from each member of his staff, board and directors an undertaking that they will respect the confidentiality of any information which is linked, directly or indirectly, to execution of the tasks and that they will not divulge to third parties or use for their own benefit or that of any third party any document or information not available publicly, even after completion of the tasks.

ARTICLE II.10 - USE, DISTRIBUTION AND PUBLICATION OF INFORMATION

II.10.1 The Contractor shall authorise the Agency to process, use, distribute and publish, for whatever purpose, by whatever means and on whatever medium, any data contained in or relating to the Contract, in particular the identity of the Contractor, the subject matter, the duration, the amount paid and the reports. Where personal data is concerned, Article I.8 shall apply.

II.10.2 Unless otherwise provided by the Special Conditions, the Agency shall not be required to distribute or publish documents or information supplied in performance of the Contract. If it decides not to publish the documents or information supplied, the Contractor may not have them distributed or published elsewhere without prior written authorisation from the Agency.

II.10.3 Any distribution or publication of information relating to the Contract by the Contractor shall require prior written authorisation from the Agency and shall mention the amount paid by the Agency. It shall state that the opinions expressed are those of the Contractor only and do not represent the Agency's official position.

II.10.4 The use of information obtained by the Contractor in the course of the Contract for purposes other than its performance shall be forbidden, unless the Agency has specifically given prior written authorisation to the contrary.

ARTICLE II. 11 – TAXATION

- II.11.1** The Contractor shall have sole responsibility for compliance with the tax laws which apply to him. Failure to comply shall make the relevant invoices invalid.
- II.11.2** The Contractor recognises that the Agency is, as a rule, exempt from all taxes and duties, including value added tax (VAT), pursuant to the provisions of Articles 3 and 4 of the Protocol on the Privileges and Immunities of the European Communities.
- II.11.3** The Contractor shall accordingly complete the necessary formalities with the relevant authorities to ensure that the goods and services required for performance of the Contract are exempt from taxes and duties, including VAT.
- II.11.4** Invoices presented by the Contractor shall indicate his place of taxation for VAT purposes and shall specify separately the amounts not including VAT and the amounts including VAT.

ARTICLE II. 12 – FORCE MAJEURE

- II.12.1** Force majeure shall mean any unforeseeable and exceptional situation or event beyond the control of the contracting parties which prevents either of them from performing any of their obligations under the Contract, was not due to error or negligence on their part or on the part of a subcontractor, and could not have been avoided by the exercise of due diligence. Defects in equipment or material or delays in making it available, labour disputes, strikes or financial problems cannot be invoked as force majeure unless they stem directly from a relevant case of force majeure.
- II.12.2** Without prejudice to the provisions of Article II.1.8, if either contracting party is faced with force majeure, it shall notify the other party without delay by registered letter with acknowledgment of receipt or equivalent, stating the nature, likely duration and foreseeable effects.
- II.12.3** Neither contracting party shall be held in breach of its contractual obligations if it has been prevented from performing them by force majeure. Where the Contractor is unable to perform his contractual obligations owing to force majeure, he shall have the right to remuneration only for tasks actually executed.
- II.12.4** The contracting parties shall take the necessary measures to reduce damage to a minimum.

ARTICLE II. 13 – SUBCONTRACTING

- II.13.1** The Contractor shall not subcontract without prior written authorisation from the Agency nor cause the Contract to be performed in fact by third parties.
- II.13.2** Even where the Agency authorises the Contractor to subcontract to third parties, he shall none the less remain bound by his obligations to the Agency under the Contract and shall bear exclusive liability for proper performance of the Contract.
- II.13.3** The Contractor shall make sure that the subcontract does not affect rights or guarantees to which the Agency is entitled by virtue of the Contract, notably Article II.17.

ARTICLE II. 14 – ASSIGNMENT

- II.14.1** The Contractor shall not assign the rights and obligations arising from the Contract, in whole or in part, without prior written authorisation from the Agency.

II.14.2 In the absence of the authorisation referred to in 1 above, or in the event of failure to observe the terms thereof, assignment by the Contractor shall not be enforceable against and shall have no effect on the Agency.

ARTICLE II. 15 – TERMINATION BY THE AGENCY

II.15.1 The Agency may terminate the Contract in the following circumstances:

- (a) where the Contractor is being wound up, is having his affairs administered by the courts, has entered into an arrangement with creditors, has suspended business activities, is the subject of proceedings concerning those matters, or is in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- (b) where the Contractor has not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which he is established or with those of the country applicable to the Contract or those of the country where the Contract is to be performed;
- (c) where the Agency has evidence or seriously suspects the Contractor or any related entity or person, of professional misconduct;
- (d) where the Agency has evidence or seriously suspects the Contractor or any related entity or person, of fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the European Union's financial interests;
- (e) where the Agency has evidence or seriously suspects the Contractor or any related entity or person, of substantial errors, irregularities or fraud in the award procedure or the performance of the Contract;
- (f) where the Contractor is in breach of his obligations under Article II.3;
- (g) where the Contractor was guilty of misrepresentation in supplying the information required by the Agency as a condition of participation in the Contract procedure or failed to supply this information;
- (h) where a change in the Contractor's legal, financial, technical or organisational situation could, in the Agency's opinion, have a significant effect on the performance of the Contract;
- (i) where execution of the tasks has not actually commenced within fifteen days of the date foreseen, and the new date proposed, if any, is considered unacceptable by the Agency;
- (j) where the Contractor is unable, through his own fault, to obtain any permit or licence required for performance of the Contract;
- (k) where the Contractor, after receiving formal notice in writing to comply, specifying the nature of the alleged failure, and after being given the opportunity to remedy the failure within a reasonable period following receipt of the formal notice, remains in serious breach of his contractual obligations.

II.15.2 In case of force majeure, notified in accordance with Article II.12, either contracting party may terminate the Contract, where performance thereof cannot be ensured for a period corresponding to at least to one fifth of the period laid down in Article I.2.3.

II.15.3 Prior to termination under point c), d), e), h) or k), the Contractor shall be given the opportunity to submit his observations.

Termination shall take effect on the date on which a registered letter with acknowledgment of receipt terminating the Contract is received by the Contractor, or on any other date indicated in the letter of termination.

II.15.4 Consequences of termination:

In the event of the Agency terminating the Contract in accordance with this Article and without prejudice to any other measures provided for in the Contract, the Contractor shall waive any claim for consequential damages, including any loss of anticipated profits for uncompleted work. On receipt of the letter terminating the Contract, the Contractor shall take all appropriate measures to minimise costs, prevent damage, and cancel or reduce his commitments. He shall draw up the documents required by the Special Conditions for the tasks executed up to the date on which termination takes effect, within a period not exceeding sixty days from that date.

The Agency may claim compensation for any damage suffered and recover any sums paid to the Contractor under the Contract.

On termination the Agency may engage any other contractor to execute or complete the services. The Agency shall be entitled to claim from the Contractor all extra costs incurred in making good and completing services, without prejudice to any other rights or guarantees enforceable under the Contract.

ARTICLE II.15a – SUBSTANTIAL ERRORS, IRREGULARITIES AND FRAUD ATTRIBUTABLE TO THE CONTRACTOR

Where, after the award of the Contract, the award procedure or the performance of the Contract prove to have been subject to substantial errors, irregularities or fraud, and where such errors, irregularities or fraud are attributable to the Contractor, the Agency may refuse to make payments, may recover amounts already paid or may terminate all the contracts concluded with the Contractor, in proportion to the seriousness of the errors, irregularities or fraud.

ARTICLE II. 16 – LIQUIDATED DAMAGES

Should the Contractor fail to perform his obligations under the Contract within the time limits set by the Contract, then, without prejudice to the Contractor's actual or potential liability incurred in relation to the Contract or to the Agency's right to terminate the Contract, the Agency may decide to impose liquidated damages of 0.2% of the amount specified in Article I.3.1 per calendar day of delay. The Contractor may submit arguments against this decision within thirty days of notification by registered letter with acknowledgement of receipt or equivalent. In the absence of reaction on his part or of written withdrawal by the Agency within thirty days of the receipt of such arguments, the decision imposing the liquidated damages shall become enforceable. These liquidated damages shall not be imposed where there is provision for interest for late completion. The Agency and the Contractor expressly acknowledge and agree that any sums payable under this Article are in the nature of liquidated damages and not penalties, and represent a reasonable estimate of fair compensation for the losses that may be reasonably anticipated from such failure to perform obligations.

ARTICLE II. 17 – CHECKS AND AUDITS

II.17.1 Pursuant to Article 142 of the Financial Regulation applicable to the general budget of the European Communities, the Court of Auditors shall be empowered to audit the documents held by the natural or legal persons receiving payments from the budget of the European Union from signature of the Contract up to five years after payment of the balance.

II.17.2 The Agency or an outside body of its choice shall have the same rights as the Court of Auditors for the purpose of checks and audits limited to compliance with contractual obligations from signature of the Contract up to five years after payment of the balance.

II.17.3 In addition, the European Anti Fraud Office may carry out on-the-spot checks and inspections in accordance with Council Regulation (Euratom, EC) No 2185/96 and Parliament and Council Regulation (EC) No 1073/1999 from signature of the Contract up to five years after payment of the balance.

ARTICLE II. 18 – AMENDMENTS

Any amendment to the Contract shall be the subject of a written agreement concluded by the contracting parties. An oral agreement shall not be binding on the contracting parties.

ARTICLE II. 19 – SUSPENSION OF THE CONTRACT

Without prejudice to the Agency's right to terminate the Contract, the Agency may at any time and for any reason suspend execution of the tasks under the Contract or any part thereof. Suspension shall take effect on the day the Contractor receives notification by registered letter with acknowledgment of receipt or equivalent, or at a later date where the notification so provides. The Agency may at any time following suspension give notice to the Contractor to resume the work suspended. The Contractor shall not be entitled to claim compensation on account of suspension of the Contract or of part thereof.

SIGNATURES

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

For the Agency,
[forename/surname/function]

signature[s]:

signature[s]:

Done at _____, [date]

Done at Cologne, [date]

In triplicate in English.

ANNEX I to the Contract

**Tender Specifications No EASA.2011.OP.30
MULCORS - The Use of MULTicore proCessORs in airborne Systems**

ANNEX II to the Contract
Contractor's Tender of [date]

ANNEX II MODEL OF FINANCIAL OFFER
Tender Publication Reference: EASA.2011.OP.30

Title of the Contract: MULCORS - The Use of MULTicore proCessORs in airborne Systems

NAME OF TENDERER:.....

	EURO (without VAT)
Global Price	

Note:

- The above amount must not be broken down further
- Prices must be quoted in EURO and include all expenses necessary to perform the contract.
- Travelling to the meetings/activities mentioned under section 2.8.3 of the Tender Specifications, accommodation and all other costs related hereto are at the sole expense of the Contractor and shall be fully included in the price presented in the financial offer.
- The price quoted is fixed and shall be subject to **NO revision**.

ANNEX III TEMPLATE FOR CURRICULUM VITAE

EUROPEAN CURRICULUM VITAE FORMAT



PERSONAL INFORMATION

Name - [SURNAME, other name(s)]
Address - [House number, street name, postcode, city, country]
Telephone -
Fax -
E-mail -

Nationality -

Date of birth - [Day, month, year] [optional to complete]

TOTAL YEARS OF EXPERIENCE [month, year]

WORK EXPERIENCE

- Dates (from – to) [Add separate entries for each relevant post occupied, starting with the most recent.]
- Name and address of employer
- Type of business or sector
- Occupation or position held
- Main activities and responsibilities

EDUCATION AND TRAINING

- Dates (from – to) [Add separate entries for each relevant course you have completed, starting with the most recent.]
- Name and type of organisation providing education and training
- Principal subjects/occupational skills covered

- Title of qualification awarded
- Level in national classification (if appropriate)

PERSONAL SKILLS AND COMPETENCES

Acquired in the course of life and career but not necessarily covered by formal certificates and diplomas.

MOTHER TONGUE

- **[Specify mother tongue]**

OTHER LANGUAGES

- Reading skills
- Writing skills
- Verbal skills

- **[Specify language]**
 - [Indicate level: excellent, good, basic.]
 - [Indicate level: excellent, good, basic.]
 - [Indicate level: excellent, good, basic.]

SOCIAL SKILLS AND COMPETENCES

Living and working with other people, in multicultural environments, in positions where communication is important and situations where teamwork is essential (for example culture and sports), etc.

- [Describe these competences and indicate where they were acquired.]

ORGANISATIONAL SKILLS AND COMPETENCES

Coordination and administration of people, projects and budgets; at work, in voluntary work (for example culture and sports) and at home, etc.

- [Describe these competences and indicate where they were acquired.]

TECHNICAL SKILLS AND COMPETENCES

With computers, specific kinds of equipment, machinery, etc.

- [Describe these competences and indicate where they were acquired.]
 -

ARTISTIC SKILLS AND COMPETENCES

Music, writing, design, etc.

- [Describe these competences and indicate where they were acquired.] [optional to complete]

OTHER SKILLS AND COMPETENCES

- [Describe these competences and indicate where they were acquired.]

Competences not mentioned above.

DRIVING LICENCE(S) - [optional to complete]

ADDITIONAL INFORMATION - [Include here any other information that may be relevant, for example contact persons, references, etc.]

ANNEXES - [LIST any attached annexes.]

ANNEX IV DECLARATION ON EXCLUSION CRITERIA

To be completed and signed by the tenderer (by each Consortium member, in case of Consortia)

The undersigned:

Name of the individual/company/organisation:

Legal address:

Registration number/ID Card No.:

VAT number:

Declares on oath that the individual/company/organisation mentioned above is not in any of the situations mentioned below:

- a) they are bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matters, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
- b) they have been convicted of an offence concerning their professional conduct by a judgement which has the force of *res judicata*;
- c) they have been guilty of grave professional misconduct proven by any means which EASA can justify;
- d) they have not fulfilled obligations relating to the payment of social security contributions or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the Contracting Authority or those of the country where the contract is to be performed;
- e) they have been the subject of a judgement which has the force of *res judicata* for fraud, corruption, involvement in a criminal organisation or any other illegal activity detrimental to the European Union's financial interests;
- f) following another procurement procedure or grant award procedure financed by the European Union budget, they have been declared to be in serious breach of contract for failure to comply with their contractual obligations.

I, the undersigned, understand that contracts may not be awarded if during the procurement procedure the individual/company/organisation mentioned above:

- is subject to a conflict of interest;
- is guilty of misrepresentation in supplying the information required by the Contracting Authority as a condition of participation in the contract procedure or fail to supply this information;

Full name:

Date & Signature:

ANNEX V LEGAL ENTITY FORM

To be downloaded, depending on the tenderer's nationality and legal form, from the following website:

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

Choose between the following:

- *Individual*
- *Private Company*
- *Public Entity*

ANNEX VI - FINANCIAL IDENTIFICATION FORM

*In case of consortia, only **one** Financial Identification Form for the whole consortium shall be submitted, nominating the bank account into which payments are to be made under the contract (usually the account of the consortium leader) in the event that the respective tender is successful.*

FINANCIAL IDENTIFICATION

<u>ACCOUNT HOLDER</u>	
NAME	<input style="width: 100%;" type="text"/>
ADDRESS	<input style="width: 100%;" type="text"/>
TOWN/CITY	<input style="width: 80%;" type="text"/> POSTCODE <input style="width: 20%;" type="text"/>
CONTACT PERSON	<input style="width: 100%;" type="text"/>
TELEPHONE	<input style="width: 50%;" type="text"/> FAX <input style="width: 50%;" type="text"/>
E - MAIL	<input style="width: 100%;" type="text"/>
PERSONAL NUMBER	<input style="width: 30%;" type="text"/>
INSTITUTION	<input style="width: 100%;" type="text"/>

<u>BANK</u>	
BANK NAME	<input style="width: 100%;" type="text"/>
ADDRESS	<input style="width: 100%;" type="text"/>
TOWN/CITY	<input style="width: 80%;" type="text"/> POSTCODE <input style="width: 20%;" type="text"/>
ACCOUNT NUMBER	<input style="width: 10%; text-align: center;" type="text"/> - <input style="width: 60%; text-align: center;" type="text"/> - <input style="width: 10%; text-align: center;" type="text"/>
IBAN	<input style="width: 100%;" type="text"/>
SWIFT	<input style="width: 100%;" type="text"/>

REMARKS :

<u>BANK STAMP + SIGNATURE BANK REPRESENTATIVE</u> (Both Obligatory)

<u>DATE + SIGNATURE ACCOUNT HOLDER :</u> (Obligatory)

*Should it not be possible to obtain the stamp & signature of the bank please attach a copy of a recent bank statement, in which event the stamp of the bank and the signature of the bank's representative are not required. **The signature of the account-holder is obligatory in all cases.**

ANNEX VII - TENDER SUBMISSION FORM⁵

EASA.2011.OP.30

MULCORS - The Use of MULTicore proCessORs in airborne Systems

One signed original of this tender submission form must be supplied, together with **three copies**.

1. SUBMITTED by (i.e. the identity of the Tenderer)

	Name(s) of legal entity or entities submitting this tender	Nationality ⁶
Leader		
Member 2		
Etc ... ⁷		

2. CONTACT PERSON for this tender (to act as focal point for all communication which may take place between EASA and the Tenderer)

Name	
Organisation	
Address	
Telephone	
Fax	
e-mail	

⁵ The duly filled in Tender Submission Form should serve as the **front page** of your set of administrative documents (envelope A).

⁶Country in which the legal entity is registered.

⁷ Add / delete additional lines for consortium members as appropriate. **Note that a sub-contractor IS NOT considered to be a consortium member.** If this tender is being submitted by an individual legal entity, the name of the legal entity should be entered as "Leader" (and other lines in part 1 should be deleted).

3. STATEMENT

I, the undersigned, **being the authorised signatory** of the above Tenderer (including all consortium members, in the case of a consortium), hereby declare that we have examined and accept without reserve or restriction the entire contents of the tender specifications for the tender procedure referred to above. Our tender is made up of the following documents:

ENVELOPE A - ADMINISTRATIVE DATA:	
➤ The signed and dated Exclusion Criteria Declaration(s) by every legal entity (consortium member) identified under point 1 of this tender submission form (<i>the declaration of the Leader must be a signed original but those of other members may be faxed copies</i>)	<input type="checkbox"/>
➤ The duly filled in, signed and dated Legal Entity Form (<i>using the standard template</i>) and the supporting documents requested therein	<input type="checkbox"/>
➤ The duly filled in, stamped, signed and dated Financial Identification Form (<i>using the standard template</i>) to nominate the bank account into which payments would be made in the event that our tender is successful	<input type="checkbox"/>
➤ The duly filled in, signed and dated Statement of Absence of Conflict of interest	<input type="checkbox"/>
➤ The duly filled in, signed and dated Statement of Acceptance	<input type="checkbox"/>
➤ Documents proving our economic and financial status (section 3.2.2 of the tender specifications)	<input type="checkbox"/>
➤ Our consortium agreement (<i>in case of consortia</i>)	
ENVELOPE B – Documents proving our technical and professional capacity (section 3.2.3 of the tender specifications, copy of the statement of absence of conflict of interest including) and TECHNICAL PROPOSAL (submitted in a separate sealed envelope)	<input type="checkbox"/>
ENVELOPE C - FINANCIAL PROPOSAL(submitted in a separate, sealed envelope)	<input type="checkbox"/>

[*If applicable:* We undertake to guarantee the eligibility of the sub-contractor(s) for the parts of the services for which we have stated our intention to sub-contract in the Technical Proposal.]

We are fully aware that, in the case of a consortium, the composition of the consortium cannot be modified in the course of the tender procedure except with the prior written authorisation of EASA. We are also aware that the consortium members would have joint and several liability towards EASA concerning participation in both the above procedure and any contract awarded to us as a result of it.

This tender is subject to acceptance within the validity period stipulated in section **1.7** of the Tender Specifications.

Signed on behalf of the Tenderer **by the legally authorised representative**

Name	
Signature	
Date	

ANNEX VIII - STATEMENT OF ABSENCE OF CONFLICT OF INTEREST

<Letterhead of the Tenderer>

I, the undersigned, **being the authorised signatory** for the above-mentioned company/consortium for the tender EASA.2011.OP.30 - "MULCORS - The Use of MULTicore proCessORs in airborne Systems", hereby solemnly declare that we are not and shall not be in any situation which could give rise to a conflict of interest in what concerns the performance and implementation of the contract. In the event of the contract being awarded to us, we commit ourselves to act with complete impartiality and in good faith in what concerns its performance and outcome.

Date and signature

ANNEX IX - STATEMENT OF ACCEPTANCE ⁸

<Letterhead of the Tenderer>

[I, the undersigned, acting as **duly authorised signatory** on behalf of [full legal name of the company] [(leading and duly empowered to represent the consortium comprised of [names of partners to the consortium])] for the tender procedure **EASA.2011.OP.30 – MULCORS - The Use of MULTicore proCessORs in airborne Systems***;

[I, the undersigned, with passport number [XXX] issued in [state of issuance] and registered address at [XXX], acting in my own capacity as a private person, in relation to the tender submitted under tender procedure **EASA.2011.OP.30 – MULCORS - The Use of MULTicore proCessORs in airborne Systems***;

hereby solemnly declare and confirm [our/my]* unconditional and irrevocable **acceptance of all the terms and conditions** set out in the invitation to tender, in the tender specifications and in the draft contract and, where appropriate, waiver of [the above-mentioned company's/my]* own general or specific terms and conditions. This acceptance shall be fully binding on the tenderer as of submission of the tender and, in case of successful contract award, for the entire duration of the contract.

I am aware that there is no possibility of negotiating the contract and, should the contract be awarded to [us/me]* I hereby undertake to duly sign it with the same terms and conditions and substantially in the form attached to the invitation to tender.

I am also aware and agree that non-acceptance of terms and/or conditions as cited above **may lead to the exclusion of [our/my]* tender** for non-compliance with the tender conditions.

In the event of the contract being awarded to [us/me]*, [we/I]* undertake to submit without delay and certainly by **no later than 15 days following notification of award and prior to the signature of the contract** all the documents requested by the Agency in accordance with the tender specifications, including in particular:

- consortium agreement (in case of a consortium); and
- the following **documentary proofs** expected from the successful tenderer (and in case of a consortium **from each of the partners to the consortium**) to confirm the declaration on exclusion criteria:
 - for points a), b) and e) from the list of exclusion criteria in section 3.1 of the tender specifications a **recent extract from** the judicial record or, failing that, an equivalent document recently issued by a judicial or administrative authority in the country of origin or provenance showing that the requirements are satisfied; and
 - for point d) from the list of exclusion criteria in section 3.1 of the tender specifications a **recent certificate issued by** the competent authority of the State concerned; on the understanding that **where** the extract/document or certificate referred to above is not 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.

Date and signature

⁸ Tenderers are reminded that any failure to later comply with their undertakings under this document or any delay caused by them in signing the contract could trigger **penalties** (Article 96 of Council Regulation (EC, Euratom) n° 1605/2002 of 25 June 2002 on the Financial Regulation applicable to the general budget of the European Communities (OJL 248, 16.09.2002, p.1))

* Delete as appropriate.

ANNEX X STRUCTURE OF THE FINAL STUDY REPORT

The recommended structure and general guidelines for the final study report are presented here below:

Cover Page

The design of the cover page will be provided by the Agency. You will have to fill in Project Title and number etc.

Title Page

Study name/number/acronym, Final Report, author(s), contact person, date.

Table of Contents

List the topics covered and page numbers. List of illustrations and tables.

Acknowledgements

Note the name of the EASA study, and that the study was funded by EASA. The author(s) may also wish to list the study partners and acknowledge any person or organisation that was helpful during the study or in writing the report.

Executive Summary

Summarise highlights of the study (one page), including aims/objectives, overall approach, findings, achievements, and conclusions. The full report may include technical terms, but try to keep the executive summary in plain English.

Background

Summarise the background to the study (and how it builds on previous work) and the need for it (and why it is important).

Aims and Objectives

List the aim and objectives agreed at the start of the study, and note if they changed during the project.

Literature Review

If applicable identify and examine existing work that may be relevant to the study. A review of reports on relevant accidents and incidents may be provided.

Methodology

Summarise the overall approach taken and why this approach was chosen over other options considered. Then describe the methodology in more detail. Depending on the study, this might include the methodology for research you carried out, technical design or development, evaluation, etc. Finally, note any specific issues that had to be addressed by the methodology, e.g. standards, interoperability, scalability, etc.

Implementation

Describe how you planned and implemented the study work and the activities it involved. Depending on the project, this might cover technical development, processes, how you conducted other studies, etc. Include any problems or issues that arose and how you handled them, where readers can learn from your experience. Tell the story of what you did rather than listing work packages.

Results and Outcomes

Explain the end result of the study work in an objective way and list achievements against the aims and objectives set. Summarise study outcomes and their impact on the aviation and research communities. Depending on the study, it might include research results, findings, evaluation results, data, etc. If the study created something tangible like content, a portal, or software, describe it. Avoid a long list of deliverables.

Outreach

Indicate who will benefit from the work, how, and why. Also comment on what you learned that may be applicable to other studies, e.g. whether the methodology worked.

Conclusions

Briefly summarise any conclusions that can be drawn from the project work.

Indicate who will benefit from the work, how, and why. Also comment on lessons learned which may be applicable to other studies, e.g. whether the methodology worked. Consider the future implications of your work and how others can build on it. What new development work could be undertaken to build on your work or carry it further?

Recommendations

List any specific recommendations for the aviation and research communities. These should be clear, practical and flow from the reasoning presented in the study.

References

Glossary and Bibliography. List references to the work of others you have cited (e.g. articles, reports, studies, standards), and any explanatory notes. Provide URLs for any materials available on the web.

Appendixes (optional)

Include any appendixes that readers will find helpful to understand the work described or the results. For example, include details that support technical development carried out.