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Rules of the Competition

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Open Competition[1] above the EU Procurement Thresholds

Subject to the Norwegian Public Procurement Act of 17 June 2016 no. 73 (LOA) and the Public

Procurement Regulations of 18 August 2016 no.974 (FOA, Parts I and III), § 13-2.

For the procurement of:

Phase 1 Heterogeneous Technology Evaluation
HPC system for the eX³ project

ITT[2] 10/2019

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1   In Norwegian: "åpen ambudskonkurranse"
2   Invitation to tender

Terminology

This document aims to use simple terminology[3]. Some terms are used interchangeably.

Customer	Client, Buyer, procurer
Contractor	Vendor, Supplier
FOA[4]	The Norwegian Public Procurement Regulation (Norw.: Forskrift om offentlige anskaffelser)
KOFA	The Norwegian Complaints Board for Public Procurement (Norw.: Klagenemnd for offentlige anskaffelser)
LOA[5]	Public Procurement Act (Norw: Lov om offentlige anskaffelser)
offer	tender, proposal, bid, submission
RFI	Request for Information
RFP	Request for Price/Procurement
RFQ	Request for quotation/ quote
RFT	Request For Tender
RFx	RFI, RFQ, RFP or RFT
SSA	The Norwegian Government Standard Terms and Conditions for IT Procurement (Norw: Statens standardavtaler for IT-anskaffelser)
tender	a generic term used to describe making an approach to market ('going out to tender')

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3   https://www.mercell.com/en/69106617/tender-terminology-from-a-to-z.aspx
4   https://lovdata.no/dokument/SF/forskrift/2016-08-12-974
5   https://lovdata.no/dokument/NL/lov/2016-06-17-73

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1   INTRODUCTION

1.1 About the Customer

Simula Research Laboratory AS was established in 2001 and is organised as a limited liability[6] owned by the Norwegian Government. This ownership is executed through the Ministry of Education and Research. It is governed by a board of directors appointed by the owner. The board appoints a managing director (CEO), who in turn decides how Simula should operate on a daily basis.

Simula's management group is led by CEO Aslak Tveito and includes the directors and deputy directors of each of the companies, as well as the CFO and the Dir. of Corporate Development. The management group strives to maintain a single, unifying culture across all Simula companies and locations.

Since the establishment of the Simula Research Laboratory (SRL) in 2001, several subsidiary companies have been established under SRL to organize its expanding activities in research, education and innovation. The main entities are summarized below, and a basic overview is presented in the chart.

Simula Research Laboratory now has several specialized subsidiary companies, each of which contributes to Simula's activities in research, education and innovation. These companies (described below) are located in three areas in Norway: Fornebu, Oslo downtown, and Bergen.

Our main objective is to create knowledge about fundamental scientific challenges that are of genuine value for society.

Main activities

> **RESEARCH** - we conduct basic and long-term research in the fields of scientific computing, software engineering, machine learning, communication systems and cryptography. This research is conducted at Simula Research Laboratory, Simula Metropolitan, and Simula UiB.

> **EDUCATION** - we educate students at the master's, doctoral, and postdoctoral levels in partnership with Norwegian and international universities. The majority of Simula's educational activities are organised through the Simula School of Research and Innovation (SSRI).

> **INNOVATION** - we promote the application of research in both private and public sectors. The Simula Garage provides support services to tech entrepreneurs, and Simula Innovation invests in promising start-ups and spin-offs.

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6   https://en.wikipedia.org/wiki/Aksjeselskap

1.2 Background, objective and scope

1.2.1 Background of this Procurement

Computational infrastructures are essential for an increasing number of disciplines, and it is particularly important for research that requires demanding calculations or generates large amounts of data. The project "Experimental Infrastructure for Exploration of Exascale Computing", or eX³, will develop competence and techniques for successful exploitation of the coming generation supercomputers. Such exascale computers will be able to perform at a minimum of a billion billion (10^{18}) floating point operations per second. This new generation of high-performance computing, which will also be needed to handle the exponentially increasing, complex data that is being generated in research and in applications, is a major target for international research.

Simula's eX³ project was one of the 19 projects selected for funding out of 92 applications submitted to the most recent round of the Research Council of Norway's (RCN) program for research infrastructures. The project will build and run a national HPC infrastructure that will help prepare Norwegian researchers, big data users, data center management, and industry for the coming exascale era of computing. The upcoming exascale computing will rely on an intricate interplay between thousands of sophisticated processing nodes, each with a large number of cores, deep memory hierarchies and equipped with accelerators, organized in complex communication topologies. The aggregated level of complexity in a system designed for billion-way concurrency represents a major challenge with many features: How to program such computers? How to port existing code, and how to reach a satisfactory level of reliability and efficiency while maintaining an acceptable energy footprint? The eX³ infrastructure will provide a platform for researching answers to such questions, utilizing relevant technology albeit on a smaller scale than in a full-blown exascale system.

1.2.2 Procurement objective

While competing technologies in hardware, middleware, and software are being driven by major research projects in the United States, China, Japan and the EU, it is essential for Norwegian HPC research groups to be at the frontier of research.

The eX³ project is currently scheduled to run for five years, with a high potential for future extensions and additions. In addition to the host institution Simula, the project consortium also counts the national HPC management body Sigma2, HPC research groups from NTNU, University of Tromsø and University of Bergen, as well as the HPC technology providers Dolphin Interconnect Solution, Numascale, Skala Technologies and Fabriscale Technologies.

In order to fulfill the goal of the eX³ project and deliver on the terms contracted with RCN, the system that Simula will build and offer to the research community has to be based on bleeding-edge components that will play important roles in the exascale setting. The HPC industry is characterized by quickly changing generations of hardware components that each brings more computing power and new possibilities, sometimes complemented by more disruptive technology steps. The different

generations of components tend to hit the market as waves that fade out after 18-24 months when a new generation is ready to roll in. For eX³, it is critically important to buy into the relevant incoming technological waves, rather than surfing on the top of the existing waves. This marks the difference between the experimental nature of eX³ and traditional, production-oriented systems. In the eX³ context, aggressive experimentation will be allowed, for instance by reserving the whole system for detailed performance measurements or testing unusual combinations of heterogeneous components. In total, the eX³ infrastructure will be a quite unusual installation, of which there are very few comparable systems around, even internationally. Such a system is already high in demand, and due to its visibility, eX³ is expected to be a showpiece for both researchers and technology providers. Moreover, the eX³ infrastructure will play an important role in educating master and PhD students, at partner institutions and their collaborating universities, to become the next generation HPC experts.

The following sections of this procurement document describe the technical requirements for the initial (Phase 1) purchase of equipment for the eX³ infrastructure. Further purchases are planned over two coming phases in 2019/2020. Preparing for the Phase 1 purchases, the eX³ partners have conducted extensive surveys of available and soon-to-appear technologies and hardware components that are appropriate for the eX³ system. In particular, the final system will be very heterogeneous, involving several different architectures based on different CPUs, GPGPUs and emerging processors designed specifically for machine learning algorithms. For Phase 1, the emphasis is on CPU and GPGPU nodes.

On the other side, a successful outcome of the eX³ project will require that the system builds on the competence present in Simula and in the other eX³ partner organizations. This requirement is also posed by RCN as the funding agency, in that the project is granted on basis of the competence demonstrated in the project application. Too large deviations from the competence base would threaten the success of the project and thus violate the underlying considerations. While this condition sets a certain direction, it is also compliant with the international technology trends for top-tier HPC systems in which the available competence is very relevant. Another requirement, which is fundamental to keep the total cost at a reasonable level, is that the equipment purchased in the eX³ project is compatible with the existing computing infrastructure at the host institution (Simula).

Based on the totality of the above considerations, some of the requirements in the current procurement document points, directly or indirectly, to specific architectures. In some cases, due to targeting the start of an incoming technology wave, only one specific product or a specific group of products adequately cover such architectural choices at the present time.

For any tender to be executable in terms of a signed contract, it must be compatible with the budget set aside for the Phase 1 purchase. While this budget is unknown to the Contractors, it should be clear that it is based on a thorough understanding of the market price of typical realizations of the indicated solution, taking into account the common practice that offers for academic research installations of strategic value are heavily discounted when compared to general market prices. For the eX³ system, we expect competitive Contractors to follow such a practice.

1.2.3 Procurement volume and content

This invitation to tender is for the procurement of the first phase of a Linux cluster with a high degree of heterogeneity, high performance interconnect and fast global storage system for temporary files.

The system is split into the following suggested functional parts with expected volumes listed:

Description	Volume and specification
Admin nodes	2
Login node with Grid GPU	1
Metadata server nodes	2
Compute nodes (top-bin x86-64)	2-4
Compute nodes (top-bin AArch64)	2-4
Compute nodes (top-bin Amd64)	2-4
Compute nodes (x86-64 w/FPGA)	2-4
GPGPU AI/ML node	1
GPGPU compute node (Power ISA v3.0 CPU)	1
High-Speed Interconnect, General Provisioning network and Management network	For High-Speed Interconnect: Minimum 200 Gbps For General Provisioning network: 10Gbps For Management network: 1Gbps
1/10Gbps TOR switch with 100Gbps uplinks	1
High Performance Enterprise Global Storage	~1400TB raw, 1PB FS
Building blocks for Scale-Out Shared file-system for AI/MI/ML[7] workloads	min. 6-node quadnode chassis with ~72TB raw
CM	Bright Cluster Manager for DeepLearning 8.2 or equivalent
Global Shared Filesystem	Latest BeeGFS with BeeOND

Table 1.1: Suggested solution

For more detailed information about the scope, requirements and content of the procurement, see the Appendices, especially requirements in A01 Appendix 1 Customer Requirements.

1.2.4 Type of contract

The Customer intends to award a contract to one Contractor only for the entire scope of the procurement (the Solution). In addition to the initial delivery, the resulting Contract shall include options for later increases of the offered parts of the system as specified in Appendix 1 Customer Requirements.

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7   Artificial Intelligence/Machine Intelligence/Machine Learning

The contract template is The Norwegian Government's Standard Terms and Conditions for IT Procurement SSA-K. See A00 General Agreement (SSA-K 2015), with amendments as per Appendix 8: Changes to the general contractual wording. The Contractor's maintenance agreement will be valid for three (3) years from the commissioning date. The contract shall include options for extending the maintenance for five years for key components.

1.3 Contract notice

The contract notice has been sent through Mercell to the "Doffin" database and the Tender Electronic Daily (www.ted.europa.eu) as of the date given in section 2.5. The contract notice has been published by use of the Customer's tendering tool.

All relevant information regarding the Competition is available for free on the following URL: https://permalink.mercell.com/91001251.aspx

2 ADMINISTRATIVE PROVISIONS

2.1 Tendering procedure

The tendering procedure for this procurement is the open procedure in accordance with FOA part I and III. In an open procedure, any interested supplier may submit a tender in response to the call for competition. Negotiations are prohibited.

2.2 The structure of the procurement documents

The procurement document consists of two parts:

Part 1 is the Rules of the Competition (this document) and contains procedures and the framework describing how the process will be conducted up to the point of contract award.

Part 2 is a Draft Contract (SSA-K, 2015) including technical requirements for the scope of the Contract. The Contractor shall base the Tender on the requirements, terms, and conditions stipulated in these documents. Part 2 contains the following documents:

- A00 Draft Contract (SSA-K, 2015), including the following appendices:
- A01 Appendix 1: Customer requirement specification
- A02 Appendix 2: Contractor description of the deliverables
- A03 Appendix 3: Customer technical platform
- A04 Appendix 4: Delivery date and other deadlines
- A05 Appendix 5: Approval test
- A06 Appendix 6: Administrative provisions

- A07 Appendix 7: Total price and pricing provisions

- A07A Attachment Price and Requirement Matrices

- A08 Appendix 8: Changes to the general contractual wording

- A09 Appendix 9: Changes subsequent to the conclusion of the Agreement

- A10 Appendix 10: License terms and conditions for standard software and free software

- A11 Appendix 11: Standard Benchmarks reports and SRL benchmark results

- A12 Appendix 12: Non-Disclosure Agreement with Contractor

2.3   Communication

All communication between Customer and Contractor, including document submission, questions regarding the competition and other inquiries shall be made in through InfoCenter in the tendering tool Mercell as described in section 2.7 below.

There shall be no other contact or communication regarding this procurement with persons at the Customer, nor at the other Consortium members listed in 1.1.

2.4   Language

All communication related to this procurement shall be conducted in English only. This language requirement also applies to the Tender itself.

2.5   Procurement progress plan

This procurement will be conducted according to the following progress plan. All dates are tentative with the exception of the fixed tender deadline.

The tentative plan for this procurement can be found in table 1 below.

Deadline	Dato
Tender procurement announcement	October 19th 2018
Tender deadline (fixed)	November 19th 2018, 12:00 CEST
Tenders opening (fixed)	November 19th 2018, 13:00 CEST
Award of contract	November 26th 2018
Contract signing	December 6th 2018
Customer takes delivery	4-8 weeks after signature

Table 2.1: Tentative Progression plan

2.6 Corrections, supplements or amendments to the procurements documents

Prior to the tender deadline, the Customer has the right to make non-substantial corrections, supplements or changes to the procurement documents, including the performance requirements, in accordance with FOA § 14-2. Any corrections, supplements or changes will be communicated in writing through Mercell, cf. section 2.7 below. To the extent required, the Customer will extend the tender deadline following a correction, supplement or change of the procurement documents.

2.7 Tendering tool

The Customer uses the web-based eProcurement tool Mercell[8] in order to handle procurements. The procurement will be managed through http://www.mercell.com, which is an online free procurement system. The procurement will consequently also be published in Doffin/TED.

To ask questions select the "Communication" tab, then click on the "new message"-icon and write your messages, and then click the "Send"-icon. Any questions the Contractor may have regarding these documents should be submitted as early as possible to allow for the Customer's response to be provided minimum 6 days[9] before the tender deadline set in section 2.5. All questions will be made anonymous when answered and will be made available to *all participants* in the competition.

Questions regarding the use of the Mercell web tool, e.g. in respect of creating a user account, downloading documents, uploading documents, and other technical issues pertinent to the use of Mercell, must be addressed to the Mercell technical support. It is available as follows:

By phone at +47 21 01 88 60 (Alternatively +47 21 01 88 00) and by e-mail support@mercell.no Monday – Friday between 9 a.m. and 4 p.m. (CEST)

2.8 Cost of tendering

Contractors must bear all costs associated with the preparation, submission and following up their tender and any further costs incurred prior to the award of the contract. Contractors will not be reimbursed for the tendering process.

Participation in the competition will not in any way commit the Customer to enter into a contract with the Contractor or tie the Customer to any financial commitments.

2.9 Contractor's risk

The Contractor carries the risk of inconsistencies and/or vagueness in the tender, pursuant to FOA § 23-3 (2). This implies that the Contractor is responsible for ensuring that all questions, requirements, and clarifications in the procurement documents are answered, explained and/or

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8   https://www.mercell.com/en/67127880/leading-e-tender-system-and-tender-offer-provider.aspx
9   https://lovdata.no/forskrift/2016-08-12-974/§14-2 (2)

documented sufficiently and that the Customer is given sufficient information to assess whether the requirements have been met and what value is added by the Contractor's solution.

3   CONFIDENTIALITY AND PUBLIC ACCESS

3.1 Public access

Please note that, as a general rule, upon request, the Customer has an obligation to grant the public access to the tenders after award of the contract.

However, public access to the tender does not include information subject to a statutory confidentiality obligation. Such information shall be removed from the tender before access is granted.

Should the Contractor find that the Tender contains information which is subject to a confidentiality obligation, or for other reasons should be exempt from public access, this shall be noted in a separate document. The listing of the information shall be done with a clear and unambiguous reference to the information that the Contractor finds to be subject to a confidentiality obligation. Please note that the Customer will consider such information as guidelines only; the Customer is obliged to make an independent assessment of the right of access in accordance with The Freedom of Information Act § 29[10].

4   TENDER REQUIREMENTS

4.1 Participation in the competition

All interested Contractors can submit a tender in the competition.

4.2 Tender submission

The Tender shall contain the following documentation, and shall be structured as follows:

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10   Norw.: Lov 19.05.2006 nr. 16 om rett til innsyn i dokument i offentleg verksemd (offentleglova)

Section no.:	Documentation:

1.	A Tender letter containing the following information:
	    1.1. Reference to the procurement document's name and number
	    1.2. The Contractor's address, telephone, and fax number, and the company identification number
	    1.3. The name of the Contractor's contact person including their telephone number and e-mail address
	    1.4. Confirmation of the Tender's validity date, see section 4.3
	    1.5. Bank account number and the name and address of the bank
	    1.6. Clearing/SWIFT-code and IBAN-code
	    1.7. Binding signature from a person authorized to sign on the behalf of the Contractor.

2.	The European Single Procurement Document (ESPD), completed in accordance with section 5.1 below.
3.	Any reservations or amendments to the procurement document with a specific reference to the relevant provision. Any reservations to the general terms and conditions of the contract, SSA-K, shall also be set out in Appendix 8 to the contract.
4.	Descriptions and answers to all requirements in Appendix 1, filled in Appendix 2 with attachments (if any), along with completing all the other appendices. Any reference to documents not included in the Tender will not be permitted. All Contractor replies shall be made in **Arial Blue Bold font size 10.**
5.	Other relevant information.

Table 4.1: Contractor and procurement documentation

4.3   Tender validity period

Bids shall remain valid for a period of 60 days from the deadline for receipt of tenders. Bids that are valid for a shorter period may be judged to be non-compliant and can be rejected by the Customer.

In exceptional circumstances, Customer may seek the Contractor's consent to extend the validity period. Contractors may refuse such a request without penalty.

4.4   Contract

The Contractors shall base their Tender on the Contract found in Part 2 Draft Contract and give their tender by answering all requirements in Appendix 1 with attachments and other appendices by giving answers and descriptions in Appendix 2 with attachments and in other appendices with attachments.

4.5   Tender for parts of the scope of the delivery

Tenders for *only parts* of the scope of this delivery *will not be accepted*.

4.6 Reservations and amendments

Reservations and amendments shall be precise and clear, making it unnecessary for the Customer to seek clarification regarding these elements during the evaluation process. Reservations and amendments shall clearly and unambiguously refer to the relevant appendix and section in the procurement document, and must be written in Appendix 8 of the Draft Contract and Appendix 7A Prices and Pricing Provisions workbook in the Requirements sheet.

The Contractor shall clearly specify the consequences any reservations and amendments have on the performance, price or any other elements of the Tender.

Substantial reservations and amendments will lead to rejection of the Tender.

4.7 Withdrawal of the tender

A Tender may be withdrawn or changed prior to the Tender deadline date by the Contractor. Withdrawals and submissions of revised tenders shall be made in the Tendering tool Mercell.

4.8 Rejection of Tender

The rules for rejection of a tender set out in FOA §§ 24-1 to 24-9 will apply for this competition. This includes the grounds for exclusion which are reflected in the EU Public Procurement Directive, FOA § 24-2 (2) and § 24-2 (3); cf. section 5.1 below.

The Contractor is advised to familiarize itself with these rules.

4.9 Right to cancel the competition

The Customer may cancel the competition with immediate effect based on justifiable grounds.

4.10 Deadline for receipt of tenders

The Tender must be received by the Customer, in the tendering tool, no later than the Tender deadline date set out in section 2.5.

Tenders received after the tender deadline will be rejected.

The Contractor carries the risk of errors or delays in the submission of the Tender.

5 REQUIREMENTS FOR PARTICIPATION

The Customer has set out qualification requirements for the Contractors' participation in the competition. A Contractor that does not meet the qualification requirements will be rejected from the competition, and its tender will not be evaluated.

The qualification requirements and the associated documentation required is set out in the below provisions.

5.1 ESPD

The European Single Procurement Document (ESPD[11]) for this procurement is attached in the Tendering tool. The filled-in ESPD from the Contractor shall temporarily document:

- the absence of grounds for exclusion, and

- that the Contractor is qualified.

The Customer shall require the chosen Contractor to submit updated documentation to verify the above before the contract is awarded.

The Contractor shall fill in the ESPD-form at https://ec.europa.eu/tools/espd/filter?lang=en and generate an XML-file as part of the competition. The generated XML can be imported into Mercell.

The following sections shall be answered:

- Part II: Information concerning the economic operator

- Part III: Exclusion grounds

- Part IV: Selection criteria

Part V: Reduction of the number of qualified candidates shall not be filled in.

With reference to Part III of the ESPD, please note that FOA § 24-2, second paragraph, and third paragraph litra i) set out national exclusion grounds that are not reflected in the ESPD:

   • Under FOA § 24-2, second paragraph, a Contractor shall be excluded if the Customer is aware that the Contractor has accepted a fine for violation of the relevant penal provisions.

   • Under FOA § 24-2, third paragraph litra i), a Contractor may be excluded if the Customer can demonstrate that the Contractor is guilty of grave professional misconduct, or has committed other grave errors, which renders its integrity questionable.

These national exclusion grounds apply.

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11   https://ec.europa.eu/tools/espd

5.2   Tax certification

Requirement	Documentation requirement
The Contractor shall fulfill obligations relating to the payment of taxes, VAT or similar payments under the law of Norway or of the relevant State in which the Contractor is established.	Tax certificate not older than 6 months counted from the Tender deadline. With tax certificates are meant: For Norwegian Contractors: • Certificate from the Tax Administration (RF-1316) regarding tax and value-added tax (VAT) (Norw.: Attest for skatt og merverdiavgift) For Foreign Contractors: • Foreign Contractors must have corresponding certificates from their authorities documenting that they have complied with the rules and regulations relating to taxes, VAT fees, duties etc. If the authorities do not issue such certificates, the Contractors shall forward a statement confirming that all such taxes have been paid. The Statement shall be confirmed and signed by the Contractors Chief Financial Officer and auditor.

Table 5.1: Contractor Tax certification

5.3   Organizational and legal position

Requirement	Documentation requirement
The Contractor shall have a legally established company.	Norwegian Contractors: • Company registration certificate from Brreg.no[12]. Foreign Contractors: • Confirmation that the Contractor is registered in a trade register or a register of business enterprise in accordance with the laws of the State where the Contractor is established. If the company has a registered entity in Norway it should be included.

Table 5.2: Contractor legal entity documentation

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12   https://www.brreg.no/

5.4 Economic and financial capacity

Requirement	Documentation requirement
The Contractor shall have sufficient financial strength to perform the Contract.	Credit Evaluation/Rating based on the last known accounting data. The credit evaluation shall be performed by the commercial inquiry agency that has the concession to perform such operations. The credit evaluation shall make visible the fact that the Contractor has the financial capability to manage and fulfill the contract obligations including the maintenance and support agreement. A bank guarantee may be requested if this capability is uncertain for the Customer. The credit evaluation must be equal to or higher than rating A from Credit Bisnode[13] or rated Creditworthy (30) or above from Experian[14] or similar from other commercial inquiry agencies. In the case that the Contractor has a valid reason for why it is not able to submit this documentation, it may document its economic and financial capacity through any other document that the Customer finds suitable.

Table 5.3: Contractor economical and financial capacity documentation

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13 https://www.bisnodegroup.com/
14 http://www.experian.no/assets/ressurser/support/usermanual-credit-online-jan09.pdf

5.5 Technical and professional qualifications

#	Requirement	Documentation requirement
1	The Contractor shall have substantial experience with similar contract performance.	Description of up to 3 contract performances of comparable size (the estimated contract value of this procurement +- 25%) and similar configuration from the 5 preceding years in Europe. The description shall as a minimum include: − Short description of the contract performance and complexity of the solution. − Time of performing the contract. − Contract value. It is the Contractor's responsibility to document relevance to this procurement through this description.
2	The Contractor shall have sufficient capacity to deliver on the contract.	Description of how the Contractor is organized for the fulfillment of this Contract. The description shall as a minimum include: − Project organization, including information on whether the project manager is a subcontractor or not. − Which resources and the extent to which they will be allocated to the project. − Subcontractor's role and contribution to the project (if relevant).

Table 5.4: Contractor technical and professional qualifications documentation

5.6 Support from subcontractors

With regard to the required economic and financial capacity, cf. section 5.4 above, and technical and professional qualifications, cf. section 5.5 above, a Contractor may rely on the capacities of other entities, regardless of the legal nature of the links which it has with them. With regard to the required professional experience, a contractor may however only rely on the capacities of other entities where the latter will perform the services for which these capacities are required.

Where a contractor wants to rely on the capacities of other entities, it shall prove to the Customer that it will have at its disposal the resources necessary, for example, by producing a commitment by those entities to that effect. Furthermore, each entity on which the contractor relies shall submit a separate ESPD as described in section 5.1 above.

The provisions above apply accordingly to affiliates or subsidiaries of the contractor.

6 AWARD CRITERIA AND EVALUATION

6.1 Award criteria

The Customer will choose the most economically advantageous tender based on an evaluation of the award criteria described below. The principles and procedures for evaluating the two components of price and quality, and for composing the total score, are described after the table.

	Award criteria	Weight	Documentation
1	Price	50%	Filled-in spreadsheet as specified in Appendix 7A of the procurement document.
2	Quality	50%	
2.1	• Heterogeneity		Response to all Mandatory and Desirable requirements that impact the overall heterogeneity of the complete system as described by the contractor in Appendix 2, in particular in terms of the diversity of instruction set architectures, memory and storage components.
2.2	• Over-fulfillment of Mandatory requirements		Response to the Mandatory requirements, as described by the contractor in Appendices 2 and 7A.
2.3	• Fulfillment of answering Desirables and Requested information		Response to the Desirable requirements and Requested information, as described by the contractor in Appendices 2 and 7A.
2.4	• Solution flexibility and extensibility		Response to all Mandatory and Desirable requirements that impact the possibility of reconfiguring and extending the functionality and processing capacity of the delivered system as described by the contractor in Appendix 2, in particular in terms of

			adding co-processors, accelerators, offload engines, memory, storage devices, and alternative interconnects.
2.5	• Contractor technical proficiency		Professional transcripts/CVs of key personnel included in or attached to Appendix 6.

Table 6.1: Weighted award criteria and associated documentation

6.2 Evaluation method

Price: The Customer will evaluate the total price of a complete solution as specified in Appendices 1 and 2, based on the prices indicated in the spreadsheet specified in Appendix 7A.

Each tender will receive a grade between 0 and 10 based on the application of the following formula:

$$grade(p) = max(0, (1 - (p - p_{min})/p_{min}) * 10)$$

Here, p is the price of the tender to be graded, while p_{min} is the price of the lowest offer. In particular, this means that the tender with the lowest price is graded 10, and all tenders that are priced twice the lowest price or higher are graded 0. Grades for the price element will be rounded to tenths (one digit to the right of the decimal point).

Quality: The Customer will evaluate the quality based on the information and documentation indicated in the table in section 6.1 above.

Under each sub-criterion, the Customer will compare the tenders and give each tender an integer grade in the range from 0 to 10. The best tender under each sub-criterion will achieve the grade 10. The other tenders will achieve grades based on the evaluated proportionate quality gap up to the best tenders.

The grades achieved under each sub-criterion will subsequently be averaged to give the total quality score.

Total score: The grades achieved under the two criteria price and quality will be weighted as indicated in the table in section 6.1 to form a total score.

6.3 Award of contract

The Customer's decision on which Contractor that will be awarded the contract will be communicated in writing to all participants through the Mercell InfoCenter[15]. The award notice will include a brief account of the basis for the award decision in accordance with the award criteria set out in section 6.1 above.

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15 https://my.mercell.com/m/InfoCenter/

The Customer may not enter into the contract before the expiry of a standstill period of 10 days, calculated from the day after the award notice is communicated to the contractors.

If the Customer finds that the decision to award the Contract is not in accordance with the award criteria, the decision may be annulled until the time at which the Contract is entered into.

The contract is entered into when signed by both parties.