United Kingdom-Didcot: Computer-related equipment
2018/S 021-043576

Contract notice

Supplies

Directive 2014/24/EU

Section I: Contracting authority

I.1) **Name and addresses**
Diamond Light Source Ltd
Diamond House, Harwell Science and Innovation Campus
Didcot
OX11 0DE
United Kingdom
Contact person: DLS Procurement (NUTS: UKJ14 Oxfordshire)
Telephone: +44 1235778167
E-mail: procurement@diamond.ac.uk
Fax: +44 1235778212
NUTS code: UKJ14
Internet address(es):
Main address: http://www.diamond.ac.uk

I.2) **Joint procurement**

I.3) **Communication**
The procurement documents are available for unrestricted and full direct access, free of charge, at: https://tenders.diamond.ac.uk/Home.aspx
Additional information can be obtained from the abovementioned address
Tenders or requests to participate must be submitted electronically via: https://tenders.diamond.ac.uk/Home.aspx
Tenders or requests to participate must be submitted to the abovementioned address

I.4) **Type of the contracting authority**
Body governed by public law

I.5) **Main activity**
Other activity: Scientific Research Facility

Section II: Object

II.1) **Scope of the procurement**

II.1.1) **Title:**
HPC and Storage Analysis Platform (DLSITT0400)
Reference number: DLSITT0400

II.1.2) **Main CPV code**
30230000

II.1.3) **Type of contract**

Supplies

II.1.4) **Short description:**
Diamond Light Source (DLS) wishes to deploy a new platform for the collection and analysis of experimental data from beamlines and electron microscopes. The installation will be in our new data centre and will provide an integrated set of high performance compute nodes and a highly resilient, high performance file system. Diamond already operates a suite of high performance file systems and a HPC cluster in an existing data centre. However, this new system will not be 'tightly coupled' with existing HPC and storage platforms. i.e. it is not planned to extend the low latency, high bandwidth current Infiniband fabric across to the new data centre. This procurement is for the foundations of a new platform in a new data centre, and it is required that this new system will be able to grow over time in both capacity and capability within the new data centre. The budget for the new system is 2M GBP ex VAT.

II.1.5) **Estimated total value**
Value excluding VAT: 2 000 000.00 GBP

II.1.6) **Information about lots**
This contract is divided into lots: no

II.2) **Description**

II.2.1) **Title:**

II.2.2) **Additional CPV code(s)**
30234000

II.2.3) **Place of performance**
NUTS code: UKJ14
Main site or place of performance:
Diamond Light Source Ltd.

II.2.4) **Description of the procurement:**
For computational analysis, we require a system that in operation will be able to provide near real-time feedback on data capture at end stations, and provide for longer term post-processing of stored data. Our current applications utilise both standard x86 architectures, for which the majority are typically characterised as high throughput compute, single node type jobs, and GPU based applications that are developed internally and externally to utilise NVidia GPUs through CUDA. It is envisaged the compute nodes and the storage provided will be interconnected via a high performance, low latency fabric.
The new compute nodes within the system will operate as an integral part of the overall solution, coupled via an expected high bandwith, low latency interconnect, to the proposed storage solution.
— There is no minimum number of nodes or cores required,
— The majority (>90 %) of the workload is characterised as high throughput or dependant on GPU for execution,
— A balance between high core count and number of nodes is desired in order to maximise the overall throughput of jobs in the system. We typically operate shared workloads on a per node basis, but where GPUs are incorporated compute nodes generally are used exclusively on a per job basis,
— Existing GPU nodes have a 1:1 ratio between CPU and GPU card per node. This is known to work well for our requirements though alternative proposals are acceptable.
For storage, current experience is based on the use of both Lustre and GPFS, with each having different strengths and weaknesses. We intend to choose the file system to be deployed based on tests conducted in cooperation with the vendors.

Alternative solutions to Spectrum Scale (GPFS) or Lustre are welcome providing sufficient supporting evidence of their usage in similar environments can be provided. In summary we require:

— at least 5PB of usable resilient storage,

— at least 60GB/s sustained aggregate read and write throughput to our clients,

— at least 900MB/s sustained aggregate read and write throughput from a single client,

— sufficient meta data performance to allow fast data acquisition to be unaffected by data processing. We expect the system to support approximately ~ 2x109 files.

We expect the vendors in the dialogue will have direct relationships with the compute and storage system hardware manufacturers, and also (possibly through these manufacturers) have demonstrated deployment experience with the proposed file system such as GPFS, Lustre technologies.

Computer room constraints will require the compute and storage system to be installed in existing 19" racks with an average power density of 15kW per rack. Up to 3 racks may operate at a higher density of 20kW per rack.

II.2.5) **Award criteria**
Price is not the only award criterion and all criteria are stated only in the procurement documents

II.2.6) **Estimated value**

II.2.7) **Duration of the contract, framework agreement or dynamic purchasing system**
Duration in months: 4
This contract is subject to renewal: no

II.2.9) **Information about the limits on the number of candidates to be invited**
Envisaged minimum number: 3
Maximum number: 5
Objective criteria for choosing the limited number of candidates:
See PQQ.

II.2.10) **Information about variants**
Variants will be accepted: yes

II.2.11) **Information about options**
Options: no

II.2.12) **Information about electronic catalogues**

II.2.13) **Information about European Union funds**
The procurement is related to a project and/or programme financed by European Union funds: no

II.2.14) **Additional information**

Section III: Legal, economic, financial and technical information

III.1) **Conditions for participation**

III.1.1) **Suitability to pursue the professional activity, including requirements relating to enrolment on professional or trade registers**

III.1.2) **Economic and financial standing**

III.1.3) **Technical and professional ability**

III.1.5) **Information about reserved contracts**

III.2) **Conditions related to the contract**

III.2.2) **Contract performance conditions:**

III.2.3) **Information about staff responsible for the performance of the contract**

Section IV: Procedure

IV.1) **Description**

IV.1.1) **Type of procedure**
Competitive dialogue

IV.1.3) **Information about a framework agreement or a dynamic purchasing system**

IV.1.4) **Information about reduction of the number of solutions or tenders during negotiation or dialogue**
Recourse to staged procedure to gradually reduce the number of solutions to be discussed or tenders to be negotiated

IV.1.6) **Information about electronic auction**

IV.1.8) **Information about the Government Procurement Agreement (GPA)**
The procurement is covered by the Government Procurement Agreement: yes

IV.2) **Administrative information**

IV.2.1) **Previous publication concerning this procedure**

IV.2.2) **Time limit for receipt of tenders or requests to participate**
Date: 01/03/2018
Local time: 00:00

IV.2.3) **Estimated date of dispatch of invitations to tender or to participate to selected candidates**
Date: 21/03/2018

IV.2.4) **Languages in which tenders or requests to participate may be submitted:**
English

IV.2.6) **Minimum time frame during which the tenderer must maintain the tender**
Duration in months: 3 (from the date stated for receipt of tender)

IV.2.7) **Conditions for opening of tenders**

Section VI: Complementary information

VI.1) **Information about recurrence**
This is a recurrent procurement: no

VI.2) **Information about electronic workflows**

VI.3) **Additional information:**
To obtain the PQQ documents please create an account via the website link below:
http://www.diamond.ac.uk/Home/Procurement/
You will then be issued with a password to enable you to download the documents. In order to be considered, your response should arrive no later than 24:00 (midnight) on Thursday 1.3.2018.

VI.4) **Procedures for review**

VI.4.1) **Review body**
Diamond Light Source Ltd
Didcot
United Kingdom

VI.4.2) **Body responsible for mediation procedures**

VI.4.3) **Review procedure**
Precise information on deadline(s) for review procedures:
Diamond Light Source will incorporate a standstill period at the point information on the award of the contract is communicated to tenderers. That notification will provide full information on the award decision. The standstill period, which will be for a minimum of 10 calendar days, provides time for unsuccessful tenderers to challenge

the award decision before the contract is entered into. The Public Contracts Regulations 2015 (SI 2015 No 102) provide for aggrieved parties who have been harmed or are at risk of harm by a breach of the rules to take action in the High Court (England, Wales and Northern Ireland).

VI.4.4) **Service from which information about the review procedure may be obtained**

VI.5) **Date of dispatch of this notice:**
29/01/2018