(4) Basic requirements of the procurement : The Frontier Computing System consists of a large scale parallel processing server, a large scale storage system, an external network system, and other hardware and software for stable and efficient operation of the total system.

A The large scale parallel processing server must satisfy the following conditions.

a The large scale parallel processing server must be a highly parallel supercomputer composed of multiple computation nodes connected by a high performance interconnection network.

b A computation node is a computer system which consists of a general purpose CPU part and a computation accelerator part.

c The general purpose CPU part of a computation node consists of multiple CPU cores connected by a hardware shared memory system.

d All the CPU cores of the general purpose CPU part must be homogeneous and based on 64-bit extended IA32 architecture.

e The computation accelerator part must be constructed by a set of multiple computation cores connected by a hardware shared memory system. This part must be connected to the general purpose CPU part to perform high speed computing coordinating with it.

f The high performance interconnection network to connect all the nodes must provide the peak performance under the following condition. Assuming the theoretical peak performance of the general purpose CPU part in a computation node as X GFLOPS and the theoretical peak throughput in a single direction of the interconnection network communication link as Y GByte／sec, the ratio of X／Y must be equal to or less than 24. If a single physical network link cannot support this performance, it is allowed to provide the same performance with bonding of multiple links.

g The interconnection network among all the computation nodes must provide a full bisectionbandwidth.

h A computation node must be equipped with a hard disk drive system with equal to or more than 2 TByte of capacity. The hard disk drive must be redundant and fault-tolerant with RAID-5 feature.

i A computation node must equipped with a hardware monitoring and managing function with a supporting software to check the system condition.

j For multiple CPU cores in the general purpose CPU part, the programming tools and languages for shared memory programming such as C, C++ and Fortran90 compilers with both an automatic parallelization feature and OpenMP API must be provided.

k On the computation accelerator part on a computation node, any efficient programming environment to utilize its inherent parallelism and performance must be provided.

l On a computation node, the general purpose CPU part and the computation accelerator part must be connected by a bus system with equal to or more than 160 Gbps of theoretical peak bandwidth. It is allowed to support the same performance with multiple buses.

m For the parallel programming over the computation nodes, MPI programming environment based on MPI2.0 specification must be provided.

n The operating system must be based on UNIX. (Linux operating system is preferred.)

o The total peak performance of the massively parallel processing server must be equal to or more than 70 TFLOPS and 970 TFLOPS in double precision computation for the general purpose CPU part and the computation accelerator part, respectively.

p The total memory capacity of the massively parallel processing server must be equal to or more than 25 TByte and 9 TByte for the general purpose CPU part and the computation accelerator part, respectively.

B The large scale storage system must satisfy the following conditions.

a The total capacity of user utilization space must be equal to or more than 200 TByte.

b It must besupported by RAID-5 or RAID-6 for redundant and fault tolerant operation, and the modules to construct entire storage system must be able to replace without stopping the entire system when the disk or storage control system fails.

C The external network system must satisfy the following basic features.

a All the computation nodes must be connected to the external network system by Ethernet with Gigabit Ethernet or higher specification.

b The external network system consists of a set of edge switches to combine Ethernet links from all the computation nodes and a L3 router to connect to the external network. The router must be equipped with four or more of 10G Ethernet ports for external connection.

D The sustained performance of the massively parallel processing system will be evaluated by a set of benchmarks individually provided from this specification.

E The power consumption of the massively parallel processing server and the large scale storage system must be less than 400 kVA in total.

F The hardware system constructing the Frontier Computing System must be highly reliable.

G The system must be flexibility to port the application software programs developed and maintained in the university.

H The system must besupported by various third party application software and numerical libraries.

I The system must be equipped with the accounting and statistic management system for system utilization.

(5) Time limit for the submission of the requested material : 5 : 00 PM 16, November, 2010

(6) Contact point for the notice : Naoyuki Orii, Associate Head Center for Computational Sciences, University of Tsukuba, 1―1―1 Tennodai Tsukuba-shi 305―8577 Japan, TEL 029―853―6486

資料提供招請に関する公表

次のとおり特定役務の調達を予定していますので、当該調達に関して資料等の提供を招請します。

平成22年10月６日

国立大学法人豊橋技術科学大学

事務局長　辻　　敏明

◎調達機関番号　415　◎所在地番号　23

○第１号

１　調達内容

(1)　品目分類番号　78

(2)　調達計画特定役務及び数量　豊橋技術科学大学地下水浄化サービス事業　一式

(3)　調達方法　購入等

(4)　導入予定時期　平成23年度４月以降

(5)　調達に必要とされる基本的な要求要件

A　井戸を掘削し井戸水を浄化する。

B　水質は，水道法に基づく水質基準（基準項目50項目）に適合するとともにシリカ成分を除去すること。

C　浄化設備の運転及び保守管理を行うこと。

２　資料及びコメントの提供方法　上記１(2)の特定役務に関する一般的な参考資料及び同(5)の要求要件等に関するコメント並びに提供可能なライブラリーに関する資料等の提供を招請する。

(1)　資料等の提供期限　平成22年11月８日17時00分（郵送の場合は必着のこと。）

(2)　提供先　〒441―8580 豊橋市天伯町雲雀ケ丘１－１　国立大学法人豊橋技術科学大学施設環境課施設総括係　白井　育子　電話0532―44―6532