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 theoretical peak bandwidth of the network-link connecting the computation nodes as the high performance interconnection network must be 8GByte／sec (single direction) or higher for each node. 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 bisection bandwidth.

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 Fortran compilers with both an automatic parallelization feature and Open MP 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 504 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 MPI 2.0 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 large scale parallel processing server must be equal to or more than 26 TFLOPS and 307 TFLOPS in double precision computation for the general purpose CPU part and the computation accelerator part, respectively.

p The total memory capacity of the large scale parallel processing server must be equal to or more than 8 TByte and 1.5 TByte for the general purpose CPU part and the computation accelerator part, respectively.

q The external cable connector must be attached to the computation node for converting a bus with equal to or more than 40 Gbps of theoretical peak bandwidth. Or otherwise, each node must be satisfied with the condition Bb.

B The extension part for Tightly Coupled Accelerated Network must satisfy the following conditions. However, in the condition Aq, if each node can be satisfied with the condition b, these conditions are not necessarily required.

a The extension part for Tightly Coupled Accelerated Network must consists of multiple PCI-express expansion boxes that each box includes the TCA boards for two or more computation nodes.

b The TCA board whose size is full-length and double-height defined by PCI Express Card Electromechanical (CEM) Specification must be attached to the slot with PCI Express Gen 2 or above and ×8 lanes or above, with providing power source by 2×3 PCI Express auxiliary power connector, and the back panel of the TCA board installed in the chassis must be accessed from outside of the chassis.

c The TCA board and the computation node must be connected by an external cabling system with equal to or more than 40 Gbps of theoretical peak bandwidth with peer-to-peer connection.

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.

c The Tightly Coupled Accelerators Experimental System must be connected by the high performance interconnection network with 32 GB／sec (single direction) or higher to the large scale parallel processing server and the large scale storage system of the Frontier Computing System installed at the University of Tsukuba.

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

E The power consumption of the large scale parallel processing server and the large scale storage system must be less than 150 kVA in total.

F The hardware system constructing the Tightly Coupled Accelerators Experimental System must be highly reliable.

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

G The system must be supported by various third party application software and numerical libraries.

H 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, October, 2012

(6) Contact point for the notice: Satoshi Kuramochi, 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

次のとおり物品の導入を予定していますので、当該導入に関して資料等の提供を招請します。

平成24年9月3日

国立大学法人岡山大学学長　森田　　潔

◎調達機関番号　415　◎所在地番号　33

○第５号

1　調達内容

(1)　品目分類番号　14

(2)　導入計画物品及び数量　病院情報管理システム　一式

(3)　調達方法　借入

(4)　導入予定時期　平成25年度６月以降

(5)　調達に必要とされる基本的な要求要件

A　要求システムは、本院における診療業務等を総合的に支援し、良質な医療、病院の効率的な運営、医学教育、地域医療の進展に寄与するものであるとともに、全体のセキュリティ管理機能を備えること。