E　宇宙線研究所重力波観測研究施設（飛騨）に設置するサーバーは以下の要件を満たしていること。

a　実効的に使用可能なデータ記録領域として200TiB以上の論理容量をもつ、データ送受信サーバー１台からなる。サーバーは３つ以上のネットワークインターフェイスを有すこと。各インターフェイスを切り離してアクセス内容を限定し、セキュリティ保護した運用が可能なこと。

b　LinuxないしＵＮＩＸ準拠のオペレーティングシステムであること。

c　C、C++、Fortran90の処理系を備えること。

F　重力波データ転送保管装置全体として、下記の機能を有すこと。

a　１日24時間、365日の連続運用が可能なこと。

b　無停電電源を有し、停電時には自動で安全なシステム終了処理を行うこと。

G　システムの導入、移行、保守、障害や稼働状態の調査、各種設定の変更、講習会やプログラム相談などの利用者支援、に関して支援・協力を行うこと。

H　ハードウェア故障時の交換、ＯＳ、コンパイラ、ライブラリ等の問題修正を含むソフトウェア等のバージョンアップに速やかに対応できる保守体制をとること。

I　設置面積・耐床面荷重等の設置要件を十分に考慮に入れたシステムを提案すること。

２　資料及びコメントの提供方法　上記１⑵の物品に関する一般的な参考資料及び同⑸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。

⑴　資料等の提供期限　令和３年５月14日17時00分（郵送の場合は必着のこと。）

⑵　提出先　〒277―8581　千葉県柏市柏の葉５―１―５　東京大学柏地区共通事務センター契約チーム　鈴木　輝夫　電話04―7136―3486

３　説明書の交付　本公表に基づき応募する供給者に対して導入説明書を交付する。

⑴　交付期間　令和３年４月12日から令和３年５月14日まで。

⑵　交付場所　上記２⑵に同じ。

４　説明会の開催　本公表に基づく導入説明会を開催する。

⑴　開催日時　令和３年４月19日14時00分

⑵　開催場所　東京大学宇宙線研究所６階大セミナー室

５　その他　この導入計画の詳細は導入説明書による。なお、本公表内容は予定であり、変更することがあり得る。

6　Summary

⑴　Classification of the products to be procured : 14

⑵　Nature and quantity of the products to be purchased : Gravitational Wave Data Transfer and Storage System 1 Set

⑶　Type of the procurement : Purchase

⑷　Basic requirements of the procurement :

A　The system consists of a large disk array, data transfer servers, working servers for users, computing servers, job management servers, gateway servers etc., which are placed at the Institute for Cosmic Ray Research (Kashiwa, Chiba), and a data transfer server with a medium-size storage system which is place at the KAGRA Observatory, the Institute for Cosmic Ray Research (Hida, Gifu).

B　The large storage disk array must satisfy the following specifications.

a　It has a logical capacity of 6.5PiB or more as an effective data storage area available to the users. (Note : PiB means 2 to the power of 50 bytes)

b　It can manage 0.5 billion files or more simultaneously. It has a quota function.

c　It has redundancy capability in a RAID 6 equivalent configuration. Power supply, fan and RAID controller must be redundancy.

d　The data area must be uniformly accessible from each node of the system. Continuous file I／O from each node has a speed of 500MB／s or more for writing and 1000MB／s or more for reading.

C　The servers which are installed at the Institute for Cosmic Ray Research (Kashiwa) must meet the following hardware requirements.

a　The system must have at least two gateway servers that users use to login from the Internet.

b　The system must have at least 4 working servers where users can work and submit computating jobs. All users must be able to connect to the large disk array and the computing servers from any of the working servers.

c　The system must have at least two dedicated data sending／receiving servers. Each sending／receiving server must have at least three network interfaces. Each interface must be separated to restrict the access for secure operation.

d　The system must have at least 12 computing servers. Each computing server must have at least 400GFlops per node.

e　A job management server must be provided.

f　If it is necessary, the system can have disk management servers (including a metadata server-like one) to manage the data area of the disk array. In this case, the disk management servers should be redundant with two or more servers.

D　The servers to be installed at the Institute for Cosmic Ray Research (Kashiwa) should provide the following software environment.

a　A Linux or UNIX compliant operating system.

b　Job management system.

c　C, C++, and Fortran 90 compilers.

E　The server which is installed in the KAGRA Observatory of the Institute for Cosmic Ray Research (Hida) should meet the following requirements.

a　The server should consist of one data sending／receiving server with a logical capacity of 200TiB or more as an effectively usable data storage area. The server should have at least three network interfaces. Each interface must be separated to restrict the access for secure operation.

b　Operating system should be a Linux or UNIX compliant operating system.

c　C, C++, and Fortran 90 compilers should be installed.

F　The system as a whole should have the following functions.

a　Continuous operation 24 hours a day, 365 days a year is possible.

b　The system must have an uninterruptible power supply and shall automatically and safely terminate the system in the event of a power failure.

G　Support for implementation, migration, maintenance, investigation of failures and operating conditions, changes in various settings, user support such as workshops and program consultations must be provided.

H　A maintenance system should be in place to promptly respond to replacements in the event of hardware failure, and to upgrate the operating system, compilers and libraries in order to fix the problems.

I　The installation requirements such as installation area and floor load capacity should be fully considered.