C　The learning support system must be equally or more usable and powerful than the current learning support system with classroom video recording and streaming unless otherwise specified. Additionally, this subsystem must support the tool consumer functionality based on IMS LTI which is defined by IMS Global.

D　The learning support system must be a Web application supporting the responsible design and the users can use the system via Web browsers. The learning support system must support a dedicated application or the progressive web apps.

E　The learning support system must record the activities of learners on this subsystem with IMS Caliper defined by IMS Global or xAPI defined by ADL.

F　The classroom video recording system must be able to automatically record entire lectures delivered in the classrooms in Lecture Rooms A, B and C, and the Multimedia Education and Research Complex at Kawauchi-Kita Campus by using the existing devices equipped with each classroom. Each lecture video must consist of video images with a resolution greater than or equal to 1980x1080 pixels and a two channel-audio with more than or equal to 256 kbps. This subsystem must automatically register the recorded lecture videos into the video streaming system

G　The video streaming system must support the tool provider functionality based on IMS LTI. By using this functionality, this subsystem must distribute the registered videos on the learning support system and other systems which support IMS LTI.

H　The learning support system must be constructed over a public cloud.

I　The classroom video recording system must be constructed in the Multimedia Education and Research Complex. This subsystem must connect to the video streaming system via the leased network if the video streaming system is constructed in the Multimedia Education and Research Complex. Otherwise, this subsystem must connect to the Internet via the Tohoku University Academic Allround Advanced Information Network System (TAINS).

J　The video streaming system must be constructed over the same public cloud with the learning support system, or be constructed in the Multimedia Education and Research Complex. This subsystem must be connected to the Internet via TAINS if this subsystem is constructed in the Multimedia Education and Research Complex.

K　The learning support system must accommodate more than 30,000 users and stably operate for 1,000 concurrent users.

L　The classroom video recording system must stably record more than 10 lectures concurrently.

M　The video streaming system must stably distribute videos more than 600 concurrent users.

N　The learning support system with classroom video recording and streaming must work smoothly, be stable and protected with sufficient security.

O　The learning support system with classroom video recording and streaming must work continuously and stably for 24 hours a day, 365 days a year except during maintenance times and electrical power outages. It must also be operated with sufficient and prompt support.

P　The learning support system with classroom video recording and streaming must be efficient, labor-saving, space-saving and energy-saving in its operation and maintenance.

Q　The machines and devices must be properly infixed against earthquakes

R　The teaching material data ; document files and video files that are stored in the current learning support system with classroom video recording and streaming and the elapsed time after expiration is within five years, must be transferred to the new system.

⑸　Time limit for the submission of the requested material : 17 : 00　16 April, 2020

⑹　Contact point for the notice : Shigehiro Akiyama, Procurement Services Office, Finance Department, Tohoku University, 2―1―1 Katahira Aoba-ku Sendai-shi 980―8577 Japan, TEL 022―217―4869

○第９号

１　調達内容

⑴　品目分類番号　22、31

⑵　導入計画物品及び数量　高磁場ＭＲＩ誘導放射線治療システム　一式

⑶　調達方法　購入等

⑷　導入予定時期　令和２年度10月以降

⑸　調達に必要とされる基本的な要求要件

Ａ　リニアックのエネルギーは、７ＭＶ以上の高出力が可能であること。

Ｂ　放射線治療用加速器システムは、アイソセンターを中心に360°連続回転が可能であること。

Ｃ　高画質を得るためにイメージガイドに使用するＭＲＩは、1.5Ｔ以上であること。

Ｄ　ＭＲＩの静磁場均一性を高くし、画像の歪みを最小限に抑えられること。

Ｅ　ＭＲＩの受信コイルシステムは、腫瘍や正常組織を変形させることがなくセッティングが可能な機構を有していること。

Ｆ　ＭＲＩは多様なコントラストの撮像が可能であり、パラレルイメージング法などの高速撮像法との併用が可能であること。

Ｇ　治療ビーム照射中に３断面以上のＭＲシネ画像によって、ターゲットや注意臓器の移動を監視することができること。

Ｈ　磁場を考慮したモンテカルロ計算アルゴリズムを搭載した放射線治療計画装置を有すること。

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２年５月７日17時00分（郵送の場合は必着のこと。）

⑵　提供先　〒980―8577 仙台市青葉区片平２―１―１　東北大学財務部調達課調達第一係長　秋山　茂紘　電話022―217―4869

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２年３月16日から令和２年５月７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２年３月24日10時00分

⑵　開催場所　東北大学医学部３号館７階共用会議室

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 : 22, 31

⑵　Nature and quantity of the products to be purchased : High-field MRI Guided Radiotherapy Systems 1 Set

⑶　Type of the procurement : Purchase

⑷　Basic requirements of the procurement :

A　The output energy of the linear accelerator must be 7 MV or higher.

B　The medical linear accelerator system must be able to rotate continuously 360° around the isocenter.

C　For the highest quality MRI image guidance, the magnetic field strength of the MR image guidance must be 1.5 T or higher.

D　The magnetic field homogeneity of the MRI system must be high to minimize the image distortion.

E　The MRI receiver coil systems must have a mechanism that can be set without deforming the tumors or the organs at risk.