The mission of the Department of Information Technology is to develop information infrastructure and provide information services for the smooth operation of research and related activities at RERF. Specifically, the department is responsible for the maintenance of RERF's in-house network infrastructure, the development of databases and related applications, and the operation and maintenance of various hardware equipment for the operation of application layer services. For example, RERF has a huge amount of data obtained from many epidemiological studies, including data from the F1 study cohort. We have contributed to the improvement of the reliability and availability of the data by developing applications applied for creating databases for these large-scale data and utilization of these data. Furthermore, ensuring the security of these data not only contributes to the efficiency of research, but also greatly contributes to the protection of sensitive survivor information from external threats.

The ITD (Information Technology Department) organization was changed in 2021. The Research Resource Section was newly established as the first step in establishing the Research Resource Center. The Research Resource Section deals with the mission regarding information technology of the Research Resource Center. Specifically, it is the construction of data management tools and content management systems. The Research Resource Section consists of one dedicated staff and three concurrent staffs. The section chief also serves as the department chief. Due to this reorganization, the ITD will be composed of three sections: Research Resource Section, System Technology Section, and Library and Archives Section. The Systems Technology Section is responsible for the above-mentioned information system-related tasks. The Library and Archives Section manages RERF's collection of books, published papers, and historical materials, and has started a project for archiving these assets permanently.

1. FY2021 Departmental Achievements

1) Migration of email system to Cloud (Microsoft 365)

   Previously, the email system has been operated on premise, however, we can achieve more efficiency and effective communication methods by migrating to the Cloud. The cloud solution is provided in Microsoft 365.

2) Introduction of Single Sign On system

   In order to migrate to the cloud solution, we need to operate a safer authentication.

Previously, each system had each account, so we had to manage multiple account information such as passwords. The Single Sign-On method can allow use of any system with only one authentication. SSO provides not only safety but also efficiency.

3) Introduction of IC card for multi-factor authentication

To apply a more secure environment, we need to introduce Multi-Factor Authentication. MFA requires not only a password but also other factor for authentication. We introduced an IC card (FeliCa) for MFA authentication, a facet that has been applied to the attendance management system and entry/exit management system.

4) Introduction of integrated authentication platform

Previously, we had two kinds of accounts: an Active Directory account, and a LDAP account. By integrating these accounts that are used at our institute, the platform will contribute to the introduction of SSO.

5) Replacement of physical server with virtual environment

The physical server, which provides the resources for the virtual environment by creating virtual servers, was replaced because of aging. A smaller and more energy-efficient server with the same performance as that of the previous server was selected.

6) Creation of redundant environment for core switch

The core switch will come to play a central role at our institute. Preparing for unexpected accidents, we will create a redundant environment by duplicating the core switch.

7) Replacement of backup system

Due to aging of the current backup system, which functions to back up the data of the entire institute, it has been replaced with a new system.

8) Replacement of fiber channel switch

The old switch for connecting from the servers to storage units was replaced with

a new one. Most physical servers access large-scale storage devices through this switch.

9) Replacement of employee liquid monitors (15 units)

We made a lump-sum purchase of liquid monitors to be used by staff members at RERF for periodic replacement. Work efficiency was improved by adopting monitors with a wider angle than the old ones.

10) Replacement of staff PCs (45 units)

We made a lump-sum purchase of workplace PCs for staff for periodic replacement. A space-saving model with SSD internal storage was selected to improve work efficiency and maintainability of the equipment.

11) Replacement of laptop PCs for lending (5 units)

For periodic replacement, we made a lump-sum purchase of laptop PCs for lending to various departments/sections.

12) Periodic replacement of surveillance camera server

The old server for the surveillance management system of our institute was replaced with a new one. Video information sent from the surveillance cameras is archived on this server.

13) Construction of Scan Center

We have a large volume of paper documents stored at our institute. These documents need to be digitized somehow, but at the same time, the digitized results need to be made useful, e.g., searchable and reusable. The Scan Center provides searchable document using OCR (optical character recognition) and will archive a large volume of paper documents in a central server at our institute.