2017.12.25 **No.11**

# Info!

## Contents

## Progress of the IP phone project and how to proceed with the IP phone implementation in the future ~A summary report of the first questionnaire results is also included~

■ Introduction

The conversion of the telephone networks to IP networks is a global trend and even in Japan each phone company is moving towards converting to IP networks. The IIMC began considering using IP phones a few years ago thinking about the future. As a part of this plan, we have started the IP phone pilot project from the consecutive holiday break by cooperating with 70 people from the Katsura campus and 30 people from the Yoshida campus, having a total of 100 people. In this article I will explain the circumstances leading up to this pilot project and the outline of the project along with reporting the outline regarding the results of the 1st questionnaire conducted in August and explain the direction of considering future IP phone conversions.

■ Background of the circumstances that led to the start of the pilot project

At the IIMC we first set up a number of calculations based on the goal of reducing the cost of the telephone infrastructure. It turned out that cost reduction is not easy to achieve. Furthermore, it was assumed that by replacing the telephones that had been used for many years to IP phones will lead to repulsion and dissatisfaction among the users. Therefore, we decided to carry out this pilot project for the purpose of finely investigating various problems from implementation to actual use of the IP phone as well as good and bad aspects of its daily use.

As the users who participate in the pilot project, we decided that members of Yoshida campus (mainly from the IIMC) will join mainly the Katsura campus volunteers who are approaching closely to the renewal of PBX. I am very thankful for the cooperation of the volunteers from the Graduate School of Engineering.

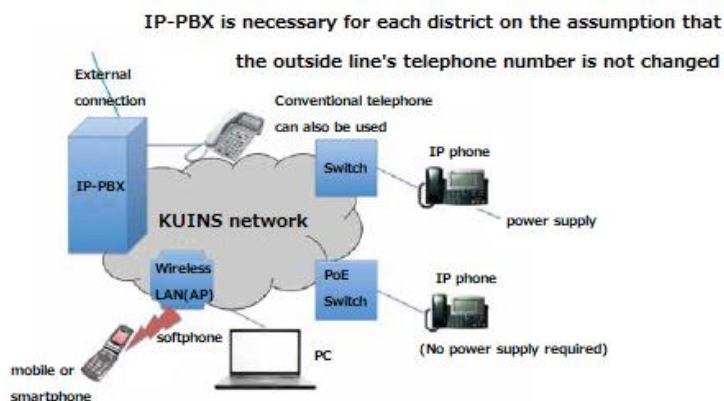### Explanatory image for introducing the IP phone

IP-PBX is necessary for each district on the assumption that the outside line's telephone number is not changed



Figure 1

■ Outline of the pilot project

Figure 1 is an image diagram of the IP phone conversion. In the pilot business, we selected several types of IP phones, softphones that function on PCs, applications running on mobile terminals such as smartphones etc. from Cisco's products that have many new functions and the actual system construction for which we selected NTT West Japan and Fujitsu. In this project, the basic functions such as transfer, grouping, pickup etc., that the conventional multifunctional telephone has, can be used in almost the same way.

However, since only some users are using the new IP phone, the telephone number of the pilot project participants must be given a two digit prefix "14-" which is the new number of this business. Since it was not possible to register all the users in the Web phone directory, which seemed to have been convenient to use, at the start we did not have some of the originally conceived merits, leading to a condition of insufficient usability.

When starting the pilot project it was necessary to accurately grasp the network of each participant's room, the status of information outlets, etc. and we visited each room so as to conduct field surveys. In Katsura campus we held briefing sessions four times in May and once in Yoshida campus.

Using the network of KUINS as a network for passing sounds was a premise for cost reduction from the beginning. However, the network of KUINS whose LAN is divided finely for each laboratory is incompatible with the IP phone system (see column 1: IP phone mechanism) which directly exchanges voice packets between terminals and as provisional measures we implemented the network we have now (see column 2 for details).

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Column 1: IP phone mechanism

Conventional telephones are connected to each other by copper wire and the analog signal of the voice was transmitted through the line. A device called switching machine is on the way acting to select a connection point according to the telephone number. In addition, there is a device called private branch exchange (PBX) that reduces this exchange within the university campus and it is responsible for its extension calls within the university, connection to outside lines, functions of the individual multi-function telephones etc.

IP phones carry the voice using IP packets. It is now the time when everyone watches YouTube on the internet, so it is quite well known that you can transmit voice and video using IP packets.

In the case of IP phone, I will explain how the same function as the telephone number is performed by using the figure shown below. In the middle of this figure is a device called SIP server, acting like a switch. For the IP network, the terminals are specified by IP addresses. Therefore, this SIP server has a correspondence table of telephone numbers and IP addresses, converting telephone numbers to IP addresses.

The SIP server executes the steps 1) and 2) in the figure shown below and does its part. After that what happens is that terminals A and B will interact with each other and start the voice communication. This way of communication is called P2P (Peer to Peer). As described above, IP phones are based on the premise that terminals can exchange signals and voice packets for mutual control.

## How the IP phone works



When calling from terminal A to B: exchange takes place in the order from 1) to 5)

**SIP Server**

Database connecting phone numbers to IP addresses

1110 - 192.0.2.0
1111 - 192.0.2.1

1233 - 192.0.2.100
1234 - 192.0.2.101

1) I want to call 1234!

2) 192.0.2.1 is calling you !

2) 1234 is 192.0.2.101 !

3) Can we connect?
4) Let's connect!

Terminal A (IP phone, No.1111)
IP address: 192.0.2.1

5. audio interaction

Terminal B (IP phone, No. 1234)
IP address: 192.0.2.101

Column 2: Poor compatibility between the VLAN of KUINS network and the IP phone

As explained in Column 1, in order to make IP phones work, it is a major premise that IP packets can be transmitted between the SIP server and each terminal, as well as between each terminal. In case all terminals are accommodated in one in-house LAN, information can be exchanged between all the terminals without any problem. However, KUINS assigns individual VLANs to the networks of each laboratory, making it basically impossible to communicate across laboratories. According to this security is maintained.

However, if IP phones would be set in all laboratories and if we want to be able to connect to any other laboratory's terminal from any laboratory's IP phone, actually between all VLANs it was set in such a way that the communication could not have been done, making it necessary to change the settings so as to pass packets of IP phones between all VLANs.

In this pilot project, it was relatively easy to set this between the VLANs of the users

because the number of the users was 100 people, which is a small number for such a process. However, doing this on a university scale has proved that the number of settings is enormous and it cannot be done. This is due to the bad compatibility of IP phones and the VLANs which are using KUINS that is shared for each laboratory. The implementation method in this pilot project is just a provisional one and we have to consider a method to get it done for a large scale.

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■ Results of the 1st questionnaire:

　　We conducted a questionnaire targeting pilot project participants in July, about 3 months after the introduction of the pilot project. We received valuable opinions from about 80 people. Thank you very much. We are doing an analysis and we are examining solutions for the remaining problems, including the details. Here I will explain the outline of the preponderant opinions and important comments etc.

[Issues concerning the terminals]

　　The most numerous opinions were related to the terminals. The most relevant ones are listed below.

● The usability aspects such as transfer, pickup, park, group ringing etc. are worse compared to conventional telephones.

● The distinction between the master unit and the slave unit as well as the way of receiving the incoming call are desired to be the same as for the conventional telephones.

● Ringtones during calls disturb the conversation.

● Phone numbers cannot be registered for individuals. Managing the phone book of the smartphones separately from the personal phone directory is desired.

● The screen and the buttons of the handset for the softphone called Jabra are small and hard to use.

● The IP phone terminal has foreign specifications making it hard to use. (Author's note: regarding this issue, we are going to consider other vendors from Japan)

● The sound is better than expected.

● The phonebook is convenient.

● It is convenient to have displayed the number of missed calls and those phone numbers.

● It is good that there is a park function.

● It is easy to see because the display is big and colorful. (Author's note: it is the case of some IP phones)

● It became possible to change the received sound and it became possible to judge

which one of the three phones is ringing by the sound.

● In the case of the previous phones, it was set to "no notification settings" when the call was made from a slave unit to an outside line, but it was good that the IP phone was set to "notification settings ON" by the number of the master unit.

[Issues concerning softphones and mobile terminals]

● Softphones are convenient, but they need some improvements regarding their usability.

● When the smartphone enters the sleep state, the wireless LAN connection is cut off resulting in not receiving calls, which seems like a big problem.

● The use of BYOD instead of PHS has not been properly achieved yet. One reason is that the access points of KUINS-Air are not located outdoors in Katsura campus. (Author's note: we will consider it in the future.)

● It was said that using smartphones you can connect even outside of the university, but these merits cannot be used.

● Softphone's incoming history is convenient. It is also easy to redial.

● Using a PC's microphone and speakers you can phone having both hands freely available.

[General comments]

● The FAX has no problems (Is there some noise during calls done via FAX?).

● Overall the sound quality is nearly good, there seems to be no dissatisfaction regarding the sound quality (There are some complaints that the sound is interrupted in the case of some smartphones.).

● There was a considerable amount of trouble at the time of the switching due to the lack of explanations such as the detailed settings.

● The transition to IP phones as a process is difficult without adequate support.

● New functions (Web phone book, extension of mobile terminals, joining meetings etc. ) are not used much (Author's note: there are functions which could not have been provided this time due to various restrictions.).

● Considering that the teachers and the administrative staff use the telephone completely differently, it seems that different solutions are needed for each of them.

● Considering that the telephone is used as an alternative to important face-to-face conversations, reliability is important for the telephone network.

● A manual that complies with actual situations should be made because it would be easier to use.

　Based on these opinions, I would like to consider the strategies of implementing the IP telephony in the future.

■ Issues that have been noticed from the early studies and the questionnaire results

[How can voice packets be sent by using KUINS?]

From the point of view of the cost reduction, the method of constructing its own network for IP phones separately from KUINS is not considered costly. Therefore, we would like to use the existing KUINS network as much as possible, but as it was already mentioned in the 3rd paragraph of column 2, network of KUINS and the IP phone are not compatible (See column 2).

How to solve this problem is the biggest task for KUINS.

[The wiring problem between the terminal switch and the room's information outlet (the last 10m problem)]

This is a question of whether it is possible to use the existing KUINS wiring as the wiring from the KUINS switch installed on each floor of each building to the room. There is a common phrase on the internet's network called "last one mile". It refers to the wiring to the last home. From that analogy we call it "the last 10m problem".

[The selection problem about the terminal equipment]

This task is dependent on the following: poor usability of the terminals, the differences from conventional telephones, which are mainly the IP terminals, or the choice of softphone software, all of which received a lot of opinions when the questionnaire was given.

When listening to the voice of the users we understood that "terminals should be chosen so that they are as close as possible to traditional multifunctional telephones". Actually, it is necessary to try some IP phones from domestic vendors and make the choice so as to minimize the difference compared to the conventional phones.

[To what extent should we use softphones?]

Making calls using software from a PC or a mobile terminal is the new phone usage. Some of the faculty members welcome such usage, but there is a strong opinion that it may be difficult to use it among the staff members. There is a difference in the room's environment (large room or private room) and among the administrative staff working in the business environment, there is a widely established culture of the "team's phone" more than a "personal phone". The way of using it is deeply linked to how the work is done, transitions to new ways of usage being difficult unless it is changed the way how the work is done.

[Maintenance/ operation system]

Currently the telephone and KUINS are conducting separate maintenance and operation, but in case of the IP phone conversion, the sound will be carried via KUINS network and the operation method of these two must either be integrated or a close

cooperation is required. In doing so, it is necessary to calculate to some extent the personnel and cost required as a whole and judge whether it is worth to proceed with the IP phone conversion or not.

[What happens when KUINS fails or during power outages and what are the disaster countermeasures]

From the beginning many people were worried that the IP phone cannot be used when KUINS fails. If the power supply to the private branch exchange (PBX) is secured, from the conventional telephone where the phone could be used it will switch to an IP phone that cannot be used during power outages.

There are many types of failures for KUINS. Frequently occurring loop faults are limited when it comes to their impact range in most cases, but there are also rarely occurring large-scale failures that affect the whole KUINS. Some telephone users say that it is unacceptable to have the important phone unusable due to small failures or power outages. A typical example is the hospital. In such organizations, facilities, places etc., you will need to continue to use the conventional phones.

■　Future plans for implementing the IP telephony

As mentioned above, there are various problems regarding IP telephony and it is the present understanding of the IIMC that trying to promote things quickly does not produce good results. Based on that, in October we launched the "IP telephony review project" within the IIMC and decided to make thorough considerations from this year to the next one.

This project will examine how to solve each of the issues listed in the "problems that were indicated during the initial study and from the results of the questionnaire", estimate the cost necessary to achieve it and plan to find ways to make it possible to convert to IP telephony by cutting the cost as much as possible.

It is necessary to carefully consider whether it is possible to convert conventional phones that have been used for many years to IP phones. If it is decided to part ways with conventional phones, careful preparation and a time-consuming transition will be required.

Regarding the users' part, we may also need to make a conscious reform concerning the voice communication means such as mobile phones, smartphones, the internet etc. from "telephone always connected as a lifeline" to "IP phone as one means".

We would like to take into consideration your frank opinions, so please contact the Information Environment Support Center (support@iimc.kyoto-u.ac.jp) to express them.


(Saito Yasuki: Professor and Chief of the IIMC's Information Infrastructure Division)

## Update for the KUINS in-house switches and terminal switches

The campus network consists of the backbone switches that are arranged for each of the premises, the in-house switches (that accommodates the building's network) and the terminal switches (accommodates the network of each floor).

The IIMC made a plan to revise a certain number of in-house and terminal switches every year as a part of the 3rd mid-term's target plans and was adopted as a priority strategy action plan. Starting from 2017 the switches will be updates sequentially.

■  Update schedule for this fiscal year and next fiscal year.

This year's and next year's switch update schedule is as follows.

For 2017

● Katsura Campus (A1 Building (part of it), A2 Building, Kyoto University Rohm Memorial Hall, EM Center, Katsura Intec Center Building, Welfare Building, Funai Tetsuro Memorial Auditorium, Administrative Building (part of it), Integrated Research Building III Physics Building C3b Building, Comprehensive Research Building V Earth System C1 Building)      ● Nuclear Reactor Research Institute

For 2018

● Katsura Campus (the remaining buildings)      ● Primate Research Institute

● Center for Ecological Research                ● Faculty of Pharmacy (part of it)

After that, it is planned to update each area sequentially in 2019 (Yoshida South Campus, Uji Campus), 2020 (Faculty of Pharmacy Campus (the remaining part), Yoshida South Campus) and 2021 (North part of the Main Campus)

We apologize for the trouble we are causing you during the replacement of the switches.
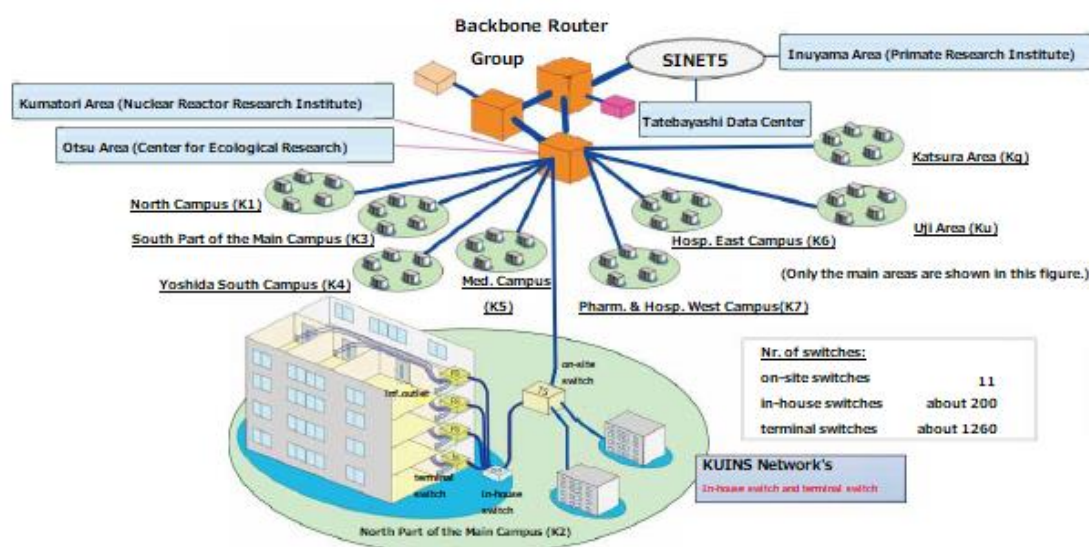


(IIMC Information Infrastructure Division)

## About the data storage services provided

As announced in Info! No.9 and Info! No.10, from 2018 we will begin providing the archive system of important data, mainly the research data and provide it as "IIMC's Data Storage Service".

Here we will introduce the system and the outline of the service again. Please refer to the following link for the contents of the whole service and the detailed usage method.

http://www.iimc.kyoto-u.ac.jp/ja/services/archive

Please try to understand that this service starts from the trial service and is expanding its limits.

■ System outline

The system outline to be used for data storage service is as follows. It consists of two systems: "the light archive" which users usually access and which is used for managing documents and "the dark archive" which copies the contents of the light archive and keeps it in an inaccessible state towards the general users.
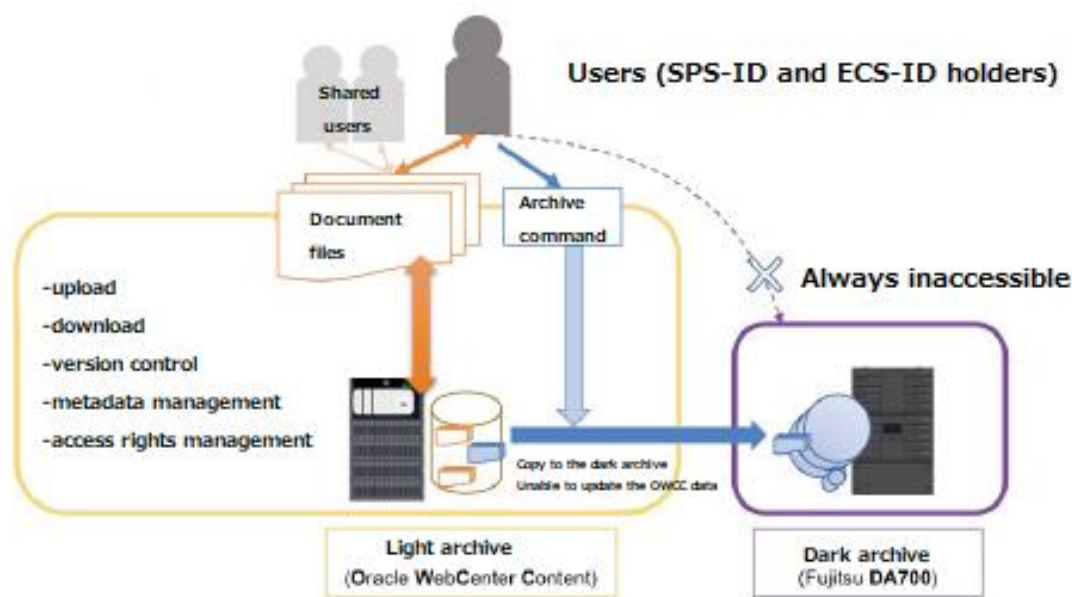


● Light archive

This system uses the Oracle Web Center Content (OWCC) as the management infrastructure of the documents.

The users log into the system with their SPS-IDs or ECS-IDs, create folders and upload documents.

As a document management system, it is provided with the following functions:

・Version control: when uploading a document file, the old versions saved in the past are being kept.

・Sharing documents: you can specify the university e-mail address and share folders or document files. You can individually grant "read", "write", "delete" and management rights.

・Metadata: Metadata can be given for each document. At present, the two types commonly available are: "general document" and "research data". The metadata specification is optional at this time. You can grant it at a later date when reviewing the data.

The database for management in the light archive and the contents data are kept on the general purpose system of the IIMC. The same way as for the university e-mail system etc., the multiplexing and the backup creation are carried out and the contents are being kept.

● Dark archive

・The folders saved in the light archive can be copied and saved in the archival disk storage (Fujitsu DA700). This work can be carried out from time to time by the administrators of the folders.

・The DA700 is an optical disk storage that can be written only once.

・The contents of the DA700 cannot be directly browsed, providing the function called "dark archive". In order to view the contents of the DA700, it is necessary to apply using application forms from the person who copied it or from the department to which the document belongs to.

・Documents copied from OWCC to DA700 can still be viewed on OWCC. However, the OWCC document is given the "not updatable" attribute after copying. It can be renewed after the person who performed the copy operation cancels the setting.

The optical disks used for DA700 are said to be able to withstand saving for over 50 years. Through this service we plan to establish an operation plan that preserves this content over a long period of 10 years or more while confirming the consistency of the data stored in DA700.

■ Examples of how it can be used

The following situations are conceivable when using this service for storing research data.

● The dark archive at the time when the achievements are being organized

The data will be saved to this service when the contents of the research achievements such as the research presentations and accepted papers etc. are decided.

(1)We will organize the research data used to prepare these materials along with presentation materials and paper manuscripts kept on your computer or on the laboratory server.

(2)Upload the organized data to the light archive

(3)Immediately after copying to the light archive, it will be copied on the dark archive.

(4)Since it is possible to refer to the data saved in the light archive and download it even after it was saved in the dark archive, it can be used as a further backup of the data saved in the laboratory.

● Data preservation during the research period

The light archive data sharing and the revision management function will be used to keep the data saved periodically.

(1)You create a folder on the light archive at the start of a research project or an individual experiment.

(2)You upload the data generated from each experiment or survey on the light archive. This time, you can take advantage of the functions such as "save the correction record data by using the version management function of the data" and "keep record of the discussions on the data by using the annotation function" etc.

(3)We will implement a dark archive for each project's breaks. By repeating the data registration to the light archive and subsequently to the dark archive, multiple generations of data can be achieved on the dark archive.

■ Limitations

Please follow the rules of using Kyoto University's information assets. The utilization is limited to the information acquired and generated by carrying out research at Kyoto University. When using this service for storing research data, it is necessary to maintain consistency with the method of storing research data determined by each department. Please consider using this service according to the circumstances of each department and we ask for your cooperation for improving the convenience and expanding the usage in the future.


■ Contact us

Please contact us via e-mail to the Information Environment Support Center.

E-mail: support@iimc.kyoto-u.ac.jp




(Aoki Takaaki: Associate Professor at IIMC/ Research Support Division)

## The revision of software license management methods and solutions for this year

On the 18th of May 2011 the director in charge with information technology presented the "Notice on properly managing the software licenses". Along with it, as the department in charge, the IIMC introduced the ASSETBASE Software License Management Support System, having been engaged in appropriate management of the paid software used on the PCs of the faculty members of our entire university. During this time, it was a great achievement that all faculty and staff members understood it and the proper use of our software license became a norm for our university.

■  Current status of the software license management

At our university the management by ASSETBASE and in-house unique tools are well established, having the staff usually using the ASSETBASE, while the faculty is using both ASSETBASE and the unique tools. (Table 1)

(Table 1) The tool usage ratio for ASSETBASE

(According to the license summary report)

| Year | Faculty | | | | | Staff | | |
|------|-----------------|----|-----------------|----|-------|-----------------|-----------------|-------|
|      | ASSETBASE use | % | Use of tools etc. | % | Total | ASSETBASE use | Use of tools etc. | Total |
| 2011 | 7131 | 58 | 5206 | 42 | 12337 | 2792 | 0 | 2792 |
| 2012 | 6990 | 55 | 5611 | 45 | 12601 | 2490 | 0 | 2490 |
| 2013 | 5068 | 42 | 7068 | 58 | 12136 | 3195 | 0 | 3195 |
| 2014 | 4846 | 36 | 8549 | 64 | 13395 | 3261 | 0 | 3261 |
| 2015 | 4703 | 36 | 8307 | 64 | 13010 | 2496 | 0 | 2496 |
| 2016 | 4835 | 40 | 7304 | 60 | 12139 | 3727 | 0 | 3727 |

Considering that new software is rarely installed in the case of the administrative organization, since last year we have reduced the usage survey from twice a year to once a year.

For the educational & research organizations, the software shown in Table 2 (Top 10 for according to the total used number) is frequently used and it can be seen that major vendors such as Microsoft and Adobe are taking the top places.

(Table 2) The top 10 best software used by educational & research organizations
(For October 2016, but in the case of Adobe and Microsoft, it is for October 2017.)

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1st place: Symantec AntiVirus, 2nd place: Microsoft Office, 3rd place: ATOK, 4th place: MATLAB, 5th place: Origin, 6th place: Adobe Acrobat, 7th place: Trend Micro Internet Security, 8th place: Autodesk Education Master Suite, 9th place: Adobe Photoshop, 10th place: CambridgeSoft Chem 3 D Ultra.

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On the other hand, if we look at the external circumstances, due to the increase in the popularity of the cloud subscription methods, the forms of software license agreements by the software vendors are suffering changes. Especially in the case of major vendors such as Microsoft and Adobe, the contract management has been done directly by the vendor.

Also, the number of lawsuits regarding the fraudulent use of the software has decreased.

Based on this situation, we have reviewed the software license management work and decided to terminate the use of ASSETBASE.


■ About the future software license management tasks

We are going to stop the use of ASSETBASE and the related tools at the end of 2017 and from 2018 we are considering to develop and provide new software management tools that are simpler and easier to use.

Given the current situation that ASSETBASE is not only used for the software license management, in some departments being used for the asset management of the PCs etc., we asked the people in charge with the software license management of the university to give a questionnaire on the actual uses of ASSETBASE. While reviewing the answers received on this questionnaire, we are considering reflecting them into a new tool to be developed.

We think that we may cause inconveniences to everyone during this fiscal year and during the first half of the next fiscal year, but we ask for your understanding and your cooperation.


(IIMC/ Information Infrastructure Division)

## Kyoto University-Information about Microsoft's comprehensive license

Based on the comprehensive agreement between Kyoto University and Microsoft Japan, Kyoto University Coop sells comprehensive licensed products "Public Expenditure Use" and "Personal use" at each of its stores by consignment with Kyoto University.

The comprehensive license is a subscription product that has a set price according to the usage period, expenses being set for each product. When the product is upgraded during use, it is possible to use the latest version any time.

For details, please check the following links:

Notifications on IIMC's HP: https://u.kyoto-u.jp/mslicense

Kyoto University Coop's HP: http://www.s-coop.net/service/research/pc_license/

【Public Expenditure Use】

**About the MS Comprehensive License,**
**please check the MS Comprehensive License Publ. Exp. Site or the CO-OP shops.**

Price list(tax included) for Kyoto University's Microsoft Comprehensive License (Publ. exp. license)

| Product Category | Product Name | Nr. of years of use | | | | |
|---|---|---|---|---|---|---|
| | | 1 academic year | 1 year | 2 years | 3 years | 4 years |
| Office product | Office Professional | 4,644 | 4,644 | 9,288 | 13,932 | 18,576 |
| | Office Standard | 4,320 | 4,320 | 8,640 | 12,960 | 17,280 |
| | Office for Mac | 4,320 | 4,320 | 8,640 | 12,960 | 17,280 |
| | Office Word,Excel etc. as indiv. prod. | 1,620 | 1,620 | 3,240 | 4,860 | 6,480 |
| | Office 365 ProPlus (public exp. use) | 4,644 | 4,644 | 9,288 | 13,932 | 18,576 |
| OS product | Windows 8.1 Upgrade | 3,240 | 3,240 | 6,480 | 9,720 | 12,960 |
| | Windows 10 Upgrade | 3,240 | 3,240 | 6,480 | 9,720 | 12,960 |
| CAL | Core CAL Suite | 378 | 378 | 756 | 1,134 | 1,512 |
| Language product | Imagine Standard | 8,640 | 8,640 | 17,280 | 25,920 | 34,560 |

【Personal use】

Price list (tax included) for Kyoto University's Microsoft
Comprehensive License (License for personal use)

| Product category | Product Name | Nr. of years of use | | | |
|---|---|---|---|---|---|
| | | 1 year | 2 years | 3 years | 4 years |
| Office product | Office 365 ProPlus | 1,296 | 2,592 | 3,888 | 5,184 |
| | Office 2016 Mac | | | | |
| OS product | Windows 8.1 Upgrade | 3,240 | 6,480 | 9,720 | 12,960 |
| | Windows 10 Upgrade | | | | |

(Planning & Information Department/ Information Promotion Section/ Research Information Team)

**Rare materials available for reading at "Kyoto University Rare Digital Archive"**
**–High-resolution images released on the IIIF compatible systems-**


   The Kyoto University Library Organization has digitized valuable materials such as the classic collections that it holds, but also started the operation of the new public system "Kyoto University Rare Digital Archive".

   URL: https://rmda.kulib.kyoto-u.ac.jp/

   English HP: https://rmda.kulib.kyoto-u.ac.jp/en


■  What kinds of documents become open to the public?

   Although Kyoto University holds many valuable materials, it is important to keep these materials carefully and transmit them to posterity, while allowing people who need them to make full use of them. Since it is difficult to have the materials that are in a fragile state to be used directly, photographs are taken with a digital camera etc. to create an image data, title, author, publication manner, form, commentaries etc. that form the so-called "metadata", which is added to it and made public through the digital archive and it is available freely on the internet.
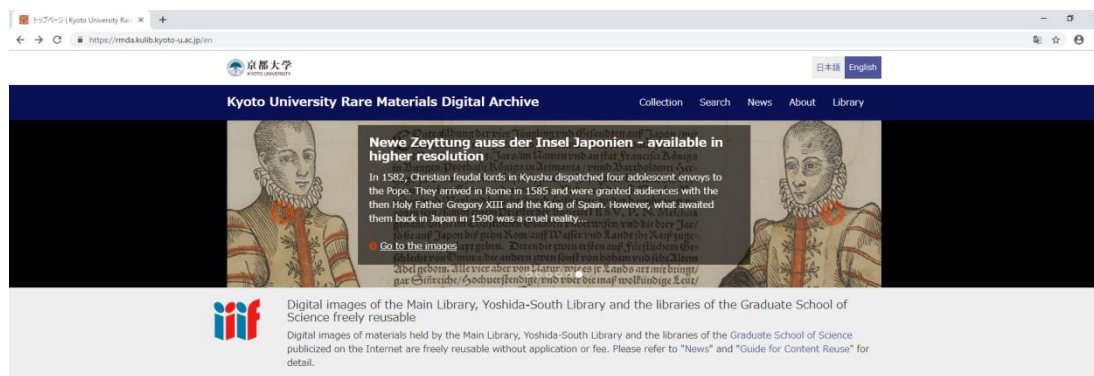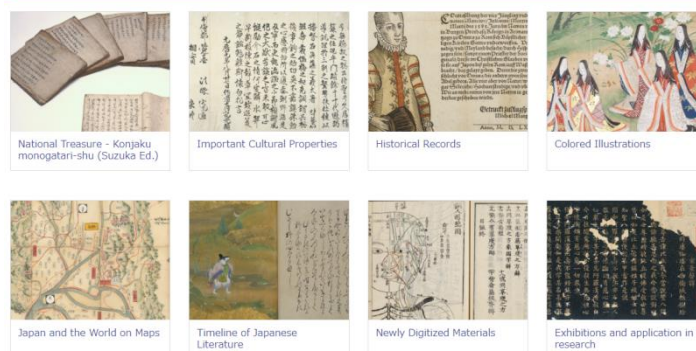


Kyoto University Rare Digital Archive (top page)

The digitized documents are important cultural properties such as the National Treasure "Collection of stories of the past (Suzuka Book)" and "Kiyohara Household Collection" etc., "Newe Zeyttung auss der Insel Japonien" drawn by the so-called "Tensho dispatch European boy envoy", "National Maiko Song Lyrics" in which the life of Izumono Country is being told etc., documents that you may have seen in textbooks, "special document collection restored" which is deeply related to Kyoto and the collection called "Nakai family pictures and documents" etc., and there is no space for further enumeration.



A collection of old stories, having some translated passages that you can read (Suzuka Book)

Depending on the documents, you can also read the translated sentences that make it easy to read the transcript and its transcription into text data, also having some that contain English explanations.

■ System configuration

"Kyoto University Rare Digital Archive" consists of "the contents management system (CMS)", which stores metadata and "IIIF (Triple I –F) image server" which stores high-definition image data. When installing the hardware we use the housing service of the IIMC.
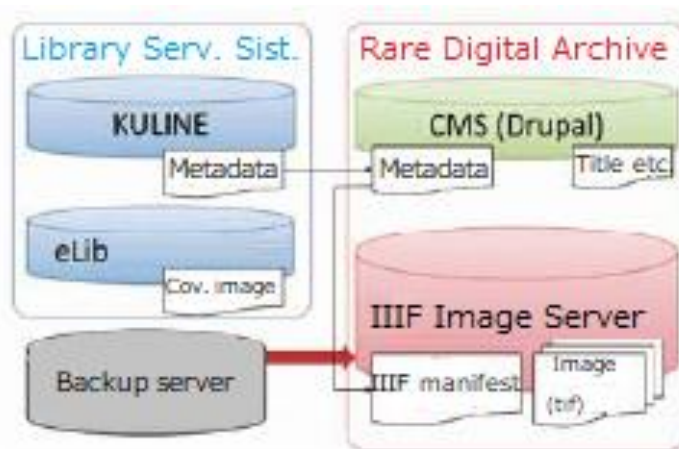


System configuration

■　High-definition images and IIIF compatibility

　　For the new digital archive we released high-definition images which make up a master file at the time of the shooting, not low-resolution images that we have released until now.

There is certainly some information that cannot be obtained unless you directly look at the source of the materials, such as the materials of the paperboards and the condition of the bindings etc., but due to the high-definition images some researchers point out that some of these can be noticed. Being able to view while zooming in and out freely (it is necessary to be careful when opening the original documents in case the materials are degraded or for large map materials) is a great advantage when you don't have much space and time to read carefully.



One piece of the "Nakai family pictures and documents" which was released as a high-definition image "Yamashironokuni( Map of the Kinai region)"


　　Another important feature of this system is that it corresponds to the international standard "IIIF (Triple I-F: International Image Interoperability Framework). Generally, the contents of the digital archives that have been published so far on each institution's own system were difficult to be used for searches across multiple systems and to browse while comparing images. However, the images published in the digital archive compatible with IIIF can be browsed beyond the boundaries of the system, provided that the viewer's system is compatible with IIIF.

　　For example, "Fujikawa book collection", which is stored in the library of Kyoto University was a large collection gathered by Fujikawa Yu (1865-1940), Dr. of Medicine and Dr. of Literature, but now it is spread and stored into multiple institutions

including Kyoto University Library. These documents can be used as if they are one collection if each of the organizations holding part of the collection publishes digitized images in the IIIF system.

This initiative has not been put into practice at the moment, but it is one that we want to proactively pursue. If the image data disclosure done according to the international standards spreads, the development of the research utilizing the documents is also expected to show some progress.

■ Efforts made in order to promote the open access

Digitization and disclosure of valuable documents is carried out as part of the "Open Access Promotion Project" undertaken by Kyoto University. By making academic information freely available on the internet, it will promote and accelerate its distribution and dissemination, sharing the research results among researchers and by disseminating the research results to the society it is intended to create a foundation for the implementation of the research results in the educational activities that utilize them.

"Kyoto University Rare Digital Archive" will continue to publish new materials along with enhancing the metadata and will promote the use by revising the secondary usage rule of the images etc.

(Ohmura Akemi: Attached Library/Library Planning Section/ Library Planning Team -Professional Staff -)

## The 6th Expert training for the specialized technical group    - Implementation report-

■ Overview

  On the 13th of November 2017 (Monday), the general technical department's 6th specialized technical group (below referred to as the 6th specialized technical group) held a specialized training at the Seminar House of the Graduate School of Science. During the 1st half of the specialized training Prof. Hajime Kita, the Chief of the IIMC, as well as Prof. Saito Yasuki etc. gave lectures on information security, being followed in the second half by 8 technical presentations from the technical staff belonging to the 6th specialized technical group. In this article I will briefly introduce the general technical department and the 6th specialized technical group, also reporting on the specialized training held in 2017.

■  General Technical Department's 6th specialized technical group

  The general technical department was established in 1991 and includes all departments' technical staff belonging to the organizations within our university (excluding nurses), having more than 250 classroom assigned technical staff. The general technical department is divided into 6 expertise groups: No.1 (work and operation related), No.2 (systems and measurements related), No.3 (substances and materials related), No.4 (biological and ecological related), No.5 (nuclear and radiation related) and No.6 (information systems related).

  Among them, the one that has a special connection to the IIMC is the 6th specialized technical group, which is made of 42 technical staff members, about half of them belonging to the Planning and Information Department and about half of them are technical staff belonging to each department. These people carry out tasks related to the information environment at various places of the university and support the information technology of Kyoto University. The 6th specialized technical group conducts specialized training at least once a year. Specialized training is conducted from various perspectives such as learning the latest technologies, doing technical presentation sessions, visiting remote facilities to check the circumstances of the information environments etc.

■  The specialized training program of the 6th specialized technical group for 2017

[First half: Information Security Course]

(1) Current status of the information security at Kyoto University: current situation, tasks, expectations for the technical staff

Kita Hajime- Chief of the IIMC-

He gave a lecture on the current situation and tasks related to the information security of Kyoto University, what area needs to be defended and dealt with, what should be offered to end users, expectations for the technical staff etc.

(2) Recent information security situation and internet vulnerability

Saito Yasuki- Full Professor at the IIMC-

He gave lecture on the current situation of the information security from the information analysis report IBM Tokyo SOC, the large-scale internet failure that occurred on the 25th of August and about the technical staff belonging to American universities.

(3) Things that the security measures team would like to request information system technicians

Katagiri Osamu- Planning & Information Department/ Information Infrastructure Division/ Security Measures Team- Team Leader

The information security measures basic plan of Kyoto University and information rating standards, log management etc. and things that the security measures team would like to request information system technicians were the main topics.

[Second half: Technical presentations]

(1) Learning support environment and training support environment by using "Learning Support System Sakai"

Educational System Management Team: Tonomura Koichiro

(2)  About the digitization of the study record of the Mathematical Analysis Institute

Mathematical Analysis Institute: Kishimoto Norifumi

(3)  Information security measures for the supercomputer service

Supercomputing Team: Hikita Junichi

(4)  Aspects related to the services provided by the Information Center affiliated to the Graduate School of Engineering: efficiency, added value and useless things.

Graduate School of Engineering's Information Center: Okunaka Takahiro

(5) About the outline of the Electronic Secretariat Department and the business improvement of the faculty & staff account management

Business System Management Team: Toda Yosuke

(6) Introduction of Kyoto University's Supercomputer and performance evaluation of the Burst Buffer

Supercomputing Team: Ogata Kosuke

(7) Information system operations of remote facilities

Graduate School of Science's Geothermal Research Facility: Mawatari Hideo

(8) Current status and efforts related to the integrated authentication system

Network managing team: Nakai Takashi

■　Final remarks

　　The technical staff members that belong to the 6th specialized technical group are keenly engaged in their daily work to improve the information environment of Kyoto University. In the future we will continue to make technical trainings so that we can be of help to everyone, so please try to understand and cooperate with the 6th specialized technical group.

　　(Katagiri Osamu: General Technical Department, Chief of the 6th specialized technical group)

[Notification]　　　　　　　　　　　　　　　　　　　　　　　　　　　　-page15-

### We are delivering the latest information about the IIMC by SNS!

　　The IIMC also publishes the "Information" articles on the official website to Twitter and Facebook at the same time. You will be able to receive important notices, security information, troubleshooting information etc. on Kyoto University's information service, so please subscribe to it.

Twitter account: @iimc_KyotoUniv
https://twitter.com/iimc_kyotouniv

Facebook page: @KyotoUnivIIMC
https://www.facebook.com/KyotoUnivIIMC/

　　　　　　　　　　　　　　　(Information Environment Support Center)

Topics on security (12th edition)     Many virus e-mails were received!
What were the security countermeasures at that time?


   During the last few months a large number of e-mails suspected of containing viruses as attached files and URLs reached our university. The amount goes up to ten thousands per week. Since the types of e-mails suspected of having viruses coming to us are posted in the information section (security information) of the IIMC's HP, please check them first when you receive suspicious e-mails.

Japanese HP: http://www.iimc.kyoto-u.ac.jp/ja/whatsnew/security/

English HP: http://www.iimc.kyoto-u.ac.jp/en/whatsnew/security/

By the way, in this column I would like to explain a bit about what the security measures (support) are being taken when a large number of e-mails suspected of having a virus arrive. It does not work as expected in all cases, but please read it as an example.


【Detection】

   The most common method of detection is having everyone report to sbox@sbox.iimc.kyoto-u.ac.jp . Especially when there are many e-mails coming, the number of reports will also increase.

【Investigation】

   First of all, we will investigate the e-mail itself. From the body of the e-mail reported we will collect information that can be found from the e-mail itself such as: "what kind of content does it have? (virus? phishing? other?)", "where was the e-mail delivered from? (wasn't it sent from inside the campus?), "is the attached file a virus?", "where is the URL connected to?". This time we check the attached files and the URL using the sandbox (a device used for confirming the behavior), which is operated by the security measures team, and we judge whether it is a virus or not by making confirmations using the information sites on the internet.

   Next, we investigate the number of receptions within the university. By using the e-mail server of KUINS, we will extract from the log of the e-mail server how many e-mails arrived from the same source to our university.

   At the same time, using Twitter etc., we collect information from other universities and security organizations etc., about whether warnings concerning the same e-mail have been issued. Recently, the ones that reach our university in a great amount reach other universities almost at the same time.

【Block access to URL】

Identify the IP address to which the URL is connected and block the entrance and exit with the outside of the campus. By doing this, after this blocking, the possibility of the virus downloading by the university's devices by clicking the URL is low. However, even for e-mails having the same sentences, there are cases where there are two or more connected IP addresses according to the e-mails and the possibility that the access destination cannot be covered remains only in the case of the reported e-mail, so please do not click on the URL unnecessarily.

【Posting warnings】

Warnings are posted on the information section of the IIMC's HP and on the bulletin board from the faculty & staff portal.

Depending on the e-mail, there are cases where the IP address of the access destination are changed over time, so please be careful to delete the posted e-mails immediately.

【Answering to the received reports】

It is about answering to those who sent us reports. Generally it will be something like this: "we believe it is a virus, so please delete it without opening it (without clicking on it)". In case of a large number of cases, it will be a regular e-mail, but I would be pleased if you could pardon us.

【Examination of the equipment that was used to access the URL】

The devices that may have accessed the URL are identified from the proxy server log of KUINS. In the case of the identified devices, considering that the possibility of being infected with a virus is high, we will ask the management department where the device is connected to the VLAN to check its safety status. If the infection is not confirmed in the reply concerning the safety confirmation, the case will be settled.

What do you think about it? This is the primary response that the security measures team gives when a large number or virus e-mails arrive.

Virus e-mails are not detected by anti-virus software immediately after they arrive and the virus server detection of KUINS cannot detect them either. By reading it you will understand, but thanks to receiving reports from you will make us able to respond. Receiving reports from everyone is very important.

Please send it to sbox@sbox.iimc.kyoto-u.ac.jp .

We also look forward for your understanding and your cooperation on the issues related to security measures from now on.

(Katagiri Osamu: IIMC/ IT Planning Office/ Planning and Information Department-Information Infrastructure Division-Security Measures Team Leader)