bizhub 501 / bizhub 421 / bizhub 361 /
ineo 501 / ineo 421 / ineo 361
VarioLink 5022 / VarioLink 4222 / VarioLink 3622
Control Software
A0R50Y0-0100-G00-20
A0R50Y0-1D00-G00-11
Security Target

This document is a translation of the evaluated and certified security target written in Japanese

Version：1.07

Issued on：April 20, 2009

Created by：KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

<Revision History>

Date	Ver.	Division	Approved	Checked	Created	Revision
2008/10/24	1.00	Development Div. 11	Yamazaki	Kakutani	Oda	Initial Version.
2008/11/08	1.01	Development Div. 11	Yamazaki	Kakutani	Oda	Change “the transmission address data” from TSF data to user data.
2009/1/9	1.02	Development Div. 11	Yamazaki	Kakutani	Oda	Add the product name of “VarioLink”. Change “England name” to “English name” and “Japan name” to “Japanese name”.
2009/1/14	1.03	Development Div. 11	Yamazaki	Kakutani	Oda	Change the assignment description for FIA_SOS.1[1], FIA_SOS.1[2], FIA_SOS.1[3], FIA_SOS.1[4], FIA_SOS.1[5], and FIA_SOS.1[7]. Change the content in table 11. Deal with OR Correspondence.
2009/1/16	1.04	Development Div. 11	Yamazaki	Kakutani	Oda	Deal with typos.
2009/2/20	1.05	Development Div. 11	Yamazaki	Kakutani	Oda	Deal with typos.
2009/3/16	1.06	Development Div. 11	Yamazaki	Kakutani	Oda	Deal with OR Correspondence.
2009/4/20	1.07	Development Div. 11	Yamazaki	Kakutani	Oda	Deal with OR Correspondence.
2009/5/11	1.07	Development Div. 11	Iizuka	Kakutani	Oda	Change the name of Division and Approval person in Revision History according to the change of organization.

---- [Contents] --

---- [List of Figures] --

---- [List of Tables] --

1. ST Introduction

1.1. ST Identification

-ST Title	:	bizhub 501 / bizhub 421 / bizhub 361 / ineo 501 / ineo 421 / ineo 361 / VarioLink 5022 / VarioLink 4222 / VarioLink 3622 Control Software A0R50Y0-0100-G00-20 A0R50Y0-1D00-G00-11 Security Target
-ST Version	:	1.07
-Created on	:	April 20, 2009
-Created by	:	KONICA MINOLTA BUSINESS TECHNOLOGIES, INC. Akihiko Oda

1.2. TOE Identification

-TOE Name	:	Japanese Name : bizhub 501 / bizhub 421 / bizhub 361 / ineo 501 / ineo 421 / ineo 361 / VarioLink 5022 / VarioLink 4222 / VarioLink 3622 Control Software English Name : bizhub bizhub 501 / bizhub 421 / bizhub 361 / ineo 501 / ineo 421 / ineo 361 / VarioLink 5022 / VarioLink 4222 / VarioLink 3622 Control Software
-TOE Version	:	A0R50Y0-0100-G00-20 (System Control) A0R50Y0-1D00-G00-11 (BIOS Control)
-TOE Type	:	Software
-Created by	:	KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

1.3. TOE Overview

This paragraph explains the usage of TOE, main Security Functions and Operation Environment of the TOE.

1.3.1. TOE Type

The bizhub 501 / bizhub 421 / bizhub 361 / ineo 501 / ineo 421 / ineo 361 / VarioLink 5022 / VarioLink 4222 / VarioLink 3622 Control Software that is the TOE is an embedded software product that controls the operation of whole MFP overall in the compact flash memory and flash memory on the MFP controller.

1.3.2. Usage of TOE and main Security Functions

bizhub 501, bizhub 421, bizhub 361, ineo 501, ineo 421, ineo 361, VarioLink 5022, VarioLink 4222, VarioLink 3622 are digital Multi-Function Products by Konica Minolta Business Technologies, Inc., composed by selecting and combining copy, print, scan and FAX functions. (Hereinafter referred to as "MFP"). TOE is the “control software for bizhub 501 / bizhub 421 / bizhub 361 / ineo 501 / ineo 421 / ineo 361 / VarioLink 5022 / VarioLink 4222 / VarioLink 3622” that controls the entire operation of MFP, including the operation control processing and the image data management that are accepting from the panel of the main body of MFP or through the network.

TOE supports the protection from exposure of the highly confidential document stored in the MFP. Moreover, TOE can prevent the unauthorized access to the image data written in HDD for the danger of taking HDD that is the medium that stores the image data in MFP out illegally by using the HDD lock function loaded on the HDD. Besides, TOE has the deletion method to follow various overwrite deletion standards. It deletes all the data of HDD completely and it contributes to the prevention of the divulging information of the organization that uses MFP by using the method at the time of abandonment or the lease returns.

1.4. TOE Description

1.4.1. Role of the TOE User

The roles of the personnel related to the use of MFP with TOE are defined as follows.

- User
  An MFP user who is registered into MFP. (In general, the employee in the office is assumed.)

- Administrator
  An MFP user who manages the operations of MFP. Manages MFP's mechanical operations and users. (In general, it is assumed that the person elected from the employees in the office plays this role.)

- Service Engineers
  A user who manages the maintenance of MFP. Performs the repair and adjustment of MFP. (In general, the person-in-charge of the sales companies that performs the maintenance service of MFP in cooperation with Konica Minolta Business Technologies, Inc. is assumed.)

- Responsible person of the organization that uses the MFP
  A responsible person of the organization that manages the office where the MFP is installed. Assigns an administrator who manages the operation of MFP.

- Responsible person of the organization that manages the Maintenance of the MFP
  A responsible person of the organization that manages the maintenance of MFP. Assigns service engineers who manage the maintenance of MFP.

Besides this, though not a user of TOE, those who go in and out the office are assumed as accessible persons to TOE.

1.4.2. Phisical Range of TOE

1.4.2.1. Environment for the usage

Figure 1 shows the expected general environment for the usage of MFP equipped with TOE. Moreover, the matters expected to occur in the use environment are listed below.

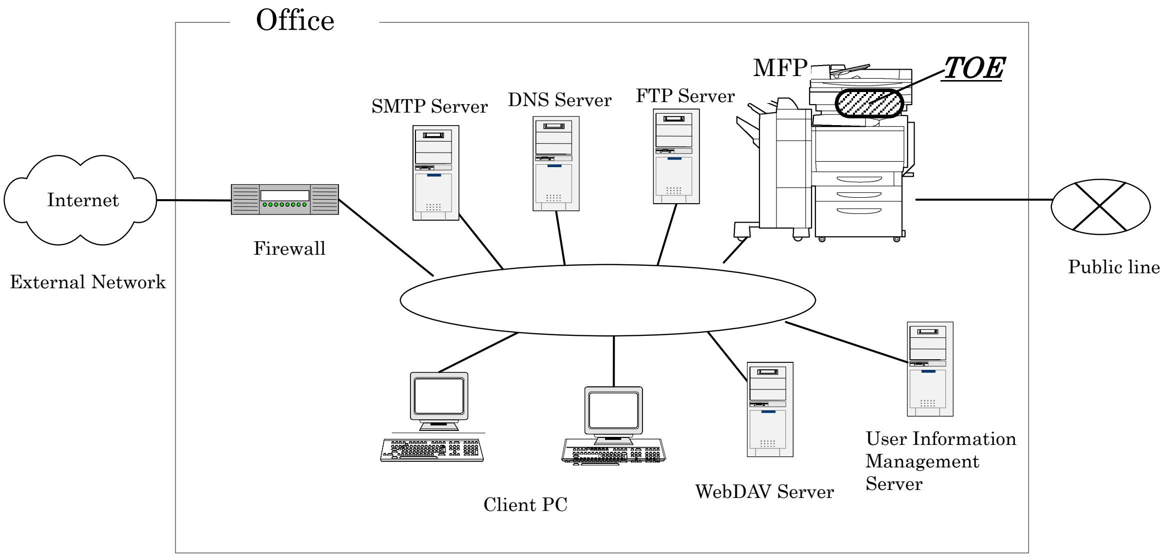


Figure 1 An example of the expected environment for usage of the MFP

- The intra-office LAN exists as a network in the office.
- MFP is connected to the client PCs via the intra-office LAN, and has mutual data communications.
- When the SMTP server or FTP server or WebDAV server are connected to the intra-office LAN, the MFP can carry out data communication with these. (Need the DNS Service when setting the Domain name of SMTP Server or FTP Server or WebDAV server)
- The case, which is unifying management of the user ID and the user password in the server, also assumes. In this case, TOE can control the access to the MFP by using the user registration information in the user information management server.
- When the intra-office LAN connects to an external network, measures such as connecting via a firewall are taken, and an appropriate setup to block access requests to the MFP from the external network is carried out.
- The intra-office LAN provides a network environment that cannot be intercepted by the office operation including using the switching hub and installing the wiretapping detector.
- The public line connected with MFP is used to communicate with the FAX and the remote support function.

1.4.2.2. Operation Environment

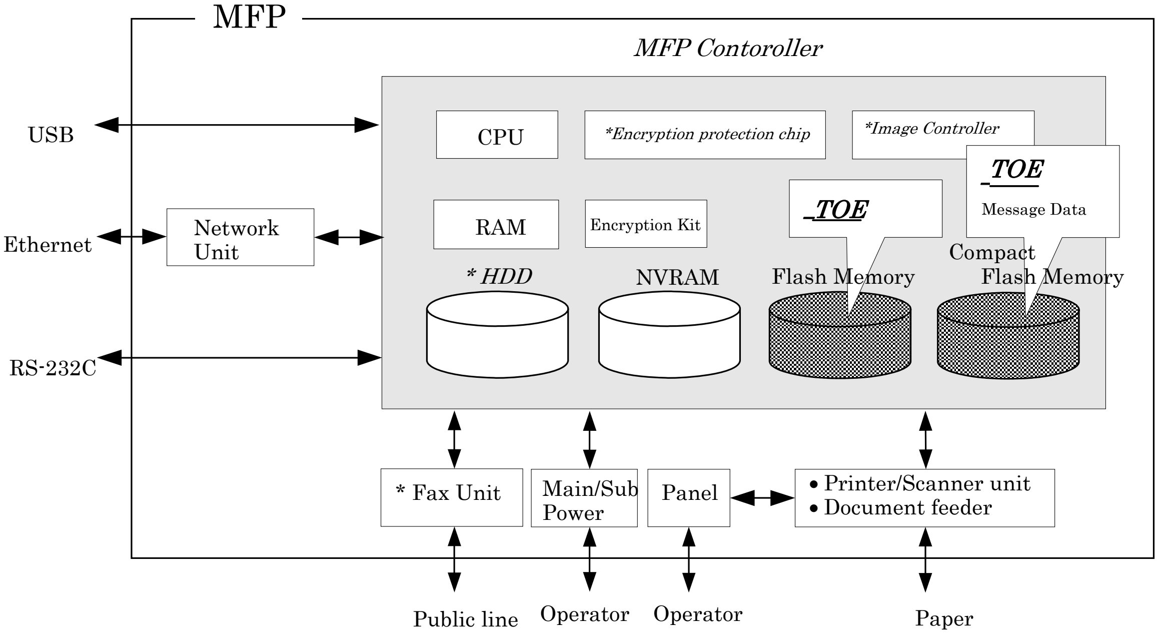


Figure 2 Hardware composition that relates to TOE

Figure2 shows the structure of the hardware environment on the MFP that TOE needs for the operation. TOE exists as System Controller on the compact flash memory and as BIOS Controller on the flash memory on the MFP controller which builds in the body of the MFP and is loaded and run on the RAM when main power is switched ON.

The following explains about the unique hardware on the MFP controller, the hardware having the interface to the MFP controller, and the connection by using RS-232C, shown in Figure 2.

- Compact Flash memory (Hereafter, use "CF" as abbreviated name)
  Storage medium that stores the object code of the System Controller of "MFP Control Software" that is the TOE. Additionally, it stores the message data of each country's language to display the response accessed through the panel and network.
  This medium also stores various setting values which are needed for the operation of the MFP used for processing of TOE. As for security related data, various setting values are included except Administrator password, CE password, HDD lock password, encryption passphrase and CF lock password.
  As a feature function, the security function (CF lock function) is installed, being possible to set the password and not being possible to read and write unless it agrees to the password. Furthermore, when the frequency of uniformity of it becomes unsuccessful in password collation, the function is also ready to lock the password collation function.

- Flash memory
  Storage medium that stores the object code of the BIOS Controller of "MFP Control Software".

- HDD (* Option)

Hard disk drive of 60GB in capacity. It is utilized besides the image data is stored as a file, temporarily image data with such as extension conversion, and as an area where the transmission address data kept.
As a feature function, the security function (HDD lock function) is installed, being possible to set the password and not being possible to read and write unless it agrees to the password. Furthermore, when the frequency of uniformity of it becomes unsuccessful in password collation, the function is also ready to lock the password collation function. It is not pre-installed in MFP as standard according to the circumstances in sales, but is an optional part., but it is an essential component under this ST assumption.

- NVRAM
  Nonvolatile Memory. The memory medium that stores various setting values needed for the operation of the MFP used for processing of TOE.

- Encryption Kit or Encryption Protection Chip (* Option)
  The cryptographic function, which is mounted in the Encryption Kit, the hardware on the MFP Controller, is installed in order to encipher image data to be written in HDD or CF. Encryption Protection Chip sold as an optional part is necessary to work encryption function.

- Image Controller (* Option parts)
  The controller for image conversion process that be connected to MFP controller with Video bus. It is not pre-installed in MFP as standard according to the circumstances in sales, but is an optional part., but it is an essential component under this ST assumption.

- Panel
  The exclusive control device for the operation of the MFP equipped with the touch panel of a liquid crystal monitor, ten-key, start key, stop key, screen switch key, etc.

- Main power supply, Sub power supply
  The power switch for activating MFP

- Network Unit
  The interface device to connect to the Ethernet. It supports 10BASE-T, 100BASE-TX and Gigabit Ethernet.

- Local Connecting Unit (* Option)
  A unit that connects the client PC with USB. It is available to use Print function through this interface.

- USB
  The Port to print with local connection. It has interface connected directly to MFP controller to backup the setting values, to update the TOE in addition to use Print function.

- FAX Unit (* Option parts)
  A device that is used for the communication for sending and receiving FAX and for the remote

diagnosis function (described later) via public line. It is not pre-installed in MFP as standard according to the circumstances in sales, but is sold as an optional part.

- Scan Unit/ An automatic manuscript feeder
  The device that scans images and photos from a paper and converts them into the digital data.

- Printer Unit
  The device that actually prints the converted image data for printing when demanded to print by the MFP controller.

- RS-232C
  The serial connection can be done. It can utilize a remote diagnostic function (later description) to connect with the modem connected with the public circuit.

1.4.2.3. Guidance

- bizhub 501/421/361 Service Manual [Security Function] (Japanese)
- bizhub 501/421/361 ineo 501/421/361 VarioLink 5022/4222/3622 Service Manual [Security Function] (English)
- bizhub 501/421/361 User's Guide [Security Operations] (Japanese)
- bizhub 501/421/361 User's Guide [Security Operations] (English)
- ineo 501/421/361 User's Guide [Security Operations] (English)
- VarioLink 5022/4222/3622 User's Guide [Security Operations] (English)

1.4.3. Logical Range of TOE

A User uses a variety of functions of the TOE from the panel and a client PC via the network. The following explains typical functions, such as the basic function, the user box function to manage the image files stored, the user identification and authentication function, the administrator function manipulated by administrator, the service engineer function manipulated by service engineer, and the function operated in the background without user's awareness.

1.4.3.1. Basic Function

In MFP, a series of function for the office work concerning the image such as copy, print, scan, and fax exists as a basic function, and TOE performs the core control in the operation of these functions. It converts the raw data acquired from the external device of the MFP controller into the image file, and registered in RAM and HDD. (After two or more conversion processing is done, the conversion is done as for the print image file from PC.) The image file which has been converted into data for the print or for the transmission, and is transmitted to the device outside of the MFP controller concerned.

Operations of copy, print, scan, and fax are managed by the unit of job, and can be changed the operation order, can be modified the finishing if it's a printing job, and can be cancelled the operation, by the command from the panel.

The following is the functions related to the security in the basic function.

- Secure Print Function
  When a Secure Print password is received together with printing data, the image file is stored as standby status. Then, printing is performed by a print direction and password entry from the panel.
  When printing is requested by a client PC, this function eliminates the possibility that other users stole a glance at the printing of highly confidential data, or such data is slipped into the other printings.

- ID & Print Function
  When this function is set up, usual print data are saved in the print waiting state, and printed by the user authentication processing from the panel. Even when this function is not set up, if it is specified on the print data to activate this function, the system will operate in the same manner as this function is set up by a user.

1.4.3.2. User Box Function

A directory called a "user box" can be created as an area to store image files in HDD. Three types of user box are usable; the first is the personal user box which a user possesses, the second is the public user box which is shared by registered users who made a certain number of groups, and the third is the group box which is shared by the users belonging to same account. As for the personal user box, the operation is limited only for the user who owns it, the public user box performs access control by sharing a password set to the user box among users, and the group box limits operations only for the users of the account that are permitted to use it.

TOE processes the following operation requests to a user box or image files in the user box that is transmitted from the panel or the network unit through a network from a client PC.

- Print, transmit, and download from a client PC, of image files in a user box
  - ➢ The encryption of box file is possible in the E-mail that is one of the transmission methods.
- Delete an image file in a user box, and move/copy it to other user boxes
- Set a storing period of image files in a user box (delete automatically after the period passes.)
- Change the name and password of a user box, or delete a user box
- Set attributes of a user box (change the type of a personal user box, public user box, or group box)

1.4.3.3. User Authentication Function

TOE can limit the user who uses MFP. For access through the panel or the network, TOE identifies and authenticates that the user is permitted to use the MFP by applying the user password and user ID. When the identification and authentication succeeds, TOE permits the user the use of the basic function and the user box function, etc.

Several types of user authentication like below are supported.

(1) Machine authentication
A method to authenticate user at MFP by registering a user ID and a user password into HDD on the MFP controller.

(2) External server authentication
A method to authenticate user at MFP by using the user ID and the user password that are registered on the user information management server which is connected with the intra-office LAN without managing the user ID and user password on the MFP side. Though multiple methods called Active Directory[1], NTLM[2], and NDS are supported, the method of the external server authentication assumed in this ST is applied only to the case of using Active Directory.

1.4.3.4. Account Authentication Function

TOE can manage the MFP users by grouping them into Account unit. The methods of Account Authentication are as follows.

(1) Method synchronized with User Authentication
Set an Account ID on a user beforehand, and associate the user with the account ID of the user's account when he/she is authenticated.

(2) Method not synchronized with User Authentication
Associate a user with his/her account ID when the user is authenticated by the account password set for each account ID.

1.4.3.5. Administrator Function

TOE provides the functions such as the management of user boxes, management of user information at the time of MPF authentication and management of various settings of the network, image quality, etc in the administrator mode that only authenticated administrator can manipulate.

The following shows the function related to the security.

- The user registration management
  - Registration or change in user ID and user password, and deletion of a user.
  - Change the association of user with account ID
- The account registration management
  - Registration or change in account ID and account password.
- Management of user box settings
  - Registration or change in user box password, and management of user attributes
- Operation setting of automatic system reset
  - Setting of the function that logs out automatically when the setting time passed.
- Management of network setting
  - Connection setting of the intra-office LAN (setting of DNS server)

[1] A method of directory service that Windows Server 2000 (or later) supports to uniformly manage user information in the network environment of Windows platform.

[2] An abbreviation of NT LAN Manager. An authentication method used in directory service that Windows NT supports to uniformly manage user information in network environment of Windows platform.

  - SMTP setting (setting of SMTP server utilized by E-mail transmission)
  - IP address, NetBIOS name and AppleTalk printer name etc.
- Backup or restore function of NVRAM, CF and HDD
  - This is performed through the network by using an application exclusive use for the management installed in the client PC.
- Complete overwrite deletion function of HDD
  - There are data deletion methods conformed to various military standards (ex. Military Standard of United States Department of Defense)
  - When this function is started up, in conformity with a set method, the overwrite deletion is executed for the overall area of HDD.
- Format function of HDD
  - A logical format is executable.
- Counter management function
  - A function to manage the counter information of the number of printed sheets for each user through the WebDAV service or FTP service.
- Setup of the WebDAV server
  - Setup of the communications function of the WebDAV server, which can obtain user settings.
- Management of FAX setting
  - Setting of TSI[3] receiving
  - Setting of FAX output at PC-FAX receiving (Storing in Box or common Boxarea for all users are available.)
- FTP Serverfunction setting
  - Whether to activate or stop the function is selected.

The functions below are the operation setting functions related especially to the behavior of the security function.

- Method setting of a user authentication function
  - Machine authentication, external server authentication, or user authentication stop is selected.
  - Combination with Account Authentication is set up. (Method synchronized with User Authentication, Method not synchronized with User Authentication)
- Setup of access when the user attribute is public
  - It is selected whether to permit or prohibit MFP utilization of the user who is not identified by user ID.
- Setup of a password policy function
  - It is selected whether to enable or disable the function to check the several conditions of the password, such as the number of valid digits of various passwords.
- Setup of the authentication method of Secure Print and the prohibit function of authenticating operations.
  - When secure print files are authenticated, the authentication prohibition function operates in a mode, and does not operate in the other mode.
  - The operation mode of the function detecting unsuccessful authentication in each

[3] Abbreviation of Transmtting Subscriber Identification. The Same meaning of Identification of Subscriber's Termnal. TSI receiving is the function that can designate the Box to be stored for each Subscriber.

  authentication function is also synchronous with the above mode.
  - The above-mentioned operational modes are selected.

- Setup of the network setting modification function by SNMPv1 and v2.
  - It is selected whether to enable or disable the function to change MIB by SNMPv1 and v2.
- Operational Setup of Authentication Function when writing using SNMPv3
  - The security levels of authentication or skipping authentication is selected.
  - For the security levels, either "only authentication password" or "authentication password + privacy password" is available.
- Setting of HDD lock function
  - Whether to activate or stop the function is selected.
  - Register or change the HDD lock password when ON is selected.
- Setting of CF lock function
  - Whether to activate or stop the function is selected.
  - Register or change the CF lock password when ON is selected.
- Setup of encryption function (* only when the encryption protection chip installed)
  - Whether to activate or stop the function is selected.
  - An encryption passphrase is registered or changed when the function is activated.
- Setup of the user box collective management function
  - It is selected whether to enable or disable this function.
- Setup of the print capture function
  - A function to verify the print data received by MFP when the print function is faulty.
  - It is selected whether to enable or disable this function.
- Setup of the network setting management reset function
  - This function resets a series of items to factory default values
  - It is selected whether to enable or disable this function.
- Setup of the trusted channel (SSL/TLS encryption communications) function
  - SSL/TLS server certificates are generated or imported.
  - The encryption method used for communications is set up.
- Setup of the transmission address data
  - A transmission address or method used for box file transmission etc. is selected.
  - S/MIME certificates are imported.
  - Setting of encryption method that is used for data encryption.
- Setup of the FTP server function
  - Whether to activate or stop the function is selected.
  - FTP service is a function to manage counter information such as the number of printed sheets for each user.
  - Each account and user information can also be managed with counter information.
- Setup of the ID & print function
  - Whether to activate the ID & print function or not in normal printing is selected.

1.4.3.6. Service Engineer Function

TOE provides a management function of administrator and a maintenance function, such as adjusting the device for Scan/Print etc, within the service mode that only a service engineer can operate. The following shows the functions related to the security.

- Modification function of administrator password

The following is a set of operation setting functions related especially to the behavior of the security function.

- Authentication setup of the service engineer with the CE[4] password.
  - Whether to activate or stop the function is selected.
- Setup of remote diagnostic function (later description)
  - Able to select permission or prohibition.
- Setup of a TOE update function via Internet
  - Able to select permission or prohibition.
- Setup of maintenance function
  - Able to select permission or prohibition.
- The format function of HDD
  - A logical format and a physical format are executable.
- Installation setting of HDD
  - An explicit installation setting is necessary to use HDD as a data storage area.
- Initialization function
  - The various settings that the user or the administrator has set and the data that the user has stored are deleted.

1.4.3.7. Other Functions

TOE provides the functions that run background without awareness of the user and the updating function of TOE. The following explains the major functions.

(1) Encryption key generation function

Performs encryption/decryption by ASIC when writing data in HDD or reading data from HDD. (TOE does not process the encryption and description itself.)

The operational setup of this function is performed by the administrator function. When activated, TOE generates the encryption key by the encryption passphrase that was entered on the panel..

(2) Remote diagnostic function

MFP's equipment information such as operating state and the number of printed sheets is managed by making use of connection such as E-mail, WebDAV, and a modem connection through a FAX public line portal or the RS-232C protocol to communicate with the support center of MFP produced by Konica Minolta Business Technologies, Inc. In addition, if necessary, appropriate services (shipment of additional toner packages, account claim, dispatch of service engineers due to the failure diagnosis, etc.) are provided.

(3) Updating function of TOE

TOE facilitated with the function to update itself. As for the update means, there are a method that exists as one of items of remote diagnostic function, a method that downloads from FTP server through Ethernet (TOE update function via Internet), and a method that

[4] An abbreviation of Customer Service engineer

performs the connection of the memory medium such as USB memory.

(4) Encryption Communication function
TOE can encrypt the data transmitted from client PC to MFP, and the data received by download from MFP by using SSL/TLS.
The operational setup of this function is performed by the administrator function.

(5) S/MIME certificate automatic registration function
It is the function to register the certificate for S/MIME (conforms to ITU-T X.509) with each transmission address automatically. When a certificate is attached in received e-mail, MFP recognizes user ID according to the information of e-mail header, and registers the certificate as certificate of the same user ID.

TOE uses effectively the security function of external entity as HDD and CF. The following explains the major functions related to the external entity.

(1) Utilization of HDD Lock Function
HDD as an external entity has the HDD lock function as measure against the illegal taking out, when the password is set.
The administrator function does the operation setting of this function. As for the starting operation of MFP, the access to HDD is permitted by the matching of the HDD lock password set to the HDD and the one set on the MFP. (Even if HDD is taken out, it is impossible to use it excluding the MFP that the concerned HDD installed.)

(2) Utilization of CF Lock Function
CF as an external entity has the CF lock function as measure against the illegal taking out, when the password is set.
The administrator function does the operation setting of this function. As for the starting operation of MFP, the access to CF is permitted by the matching of the CF lock password set to the CF and the one set on the MFP. (Even if CF is taken out, it is impossible to use it excluding the MFP that the concerned CF installed.)

1.4.3.8. Enhanced Security Function

Various setting functions related to the behavior of the security function for the Administrator function and the Service engineer function can be set collectively to the secure values by the operation settings of the "Enhanced Security Function". Each value set is prohibited changing itself into the vulnerable one individually. As the function that does not have a setting function of the operation individually, there is the reset function of the network setting and the update function of TOE through the network, but the use of these functions is prohibited.

The following explains the series of the setting condition of being the enhanced security function active. In order to activate the enhanced security function, the prerequisite is required that an administrator password and a CE password should be set along with the password policy.

● Setup of user identification and authentication function	: Valid (Both authentication by the main body and the external server are usable)
● User : Setup of access of PUBLIC	: Prohibited
● Setup of a service engineer authentication function	: Valid
● Setup of password policy function	: Valid
● Setup of secure print authentication method	: Authentication operation prohibition function effective method
● Setup of Authentication Operation Prohibition function	: The panel and account are locked out for 5 seconds when authentication has failed (failure frequency threshold: 1-3).
● Setup of user box collective management function	: Prohibited
● Setup of the network setting modification function with SNMPv1 and v2	: Prohibited
● Authentication Operation when writing using SNMPv3	: Valid
● Setup of HDD lock function	: Valid
● Setup of CF lock function	: Valid
● Setup of print capture function	: Prohibited
● Setup by remote diagnostic function	: Prohibited
● Network setting management reset function	: Prohibited
● TOE update function via Internet	: Prohibited
● Transmission address data user setup function	: Prohibited
● Operational setup of Trusted Channel function	: Valid
● Administrator authentication lock-out time	: Setup prohibited for 1-4 minutes
● CE authentication lock-out time	: Setup prohibited for 1-4 minutes
● Setup of FTP Server function	: Prohibited
● Panel auto log-off time (System auto reset)	: more than 1 minute

The following function becomes as follows at the timing of the operation settings of the “Enhanced Security Function”, but contrary to above mentioned settings, this setting can be changed individually.

- Setup of maintenance function : Prohibited

2. Conformance Claims

2.1. CC Conformance Claim

This ST conforms to the following standards.

Common Criteria for Information Technology Security Evaluation
Part 1: Introduction and general model 2006/9 Version 3.1 Revision 1 (Translation v1.2)
Part 2: Security functional requirements 2007/9 Version 3.1 Revision 2 (Translation v2.0)
Part 3: Security assurance requirements 2007/9 Version 3.1 Revision 2 (Translation v2.0)

- Security function requirement : Part2 Extended
- Security assurance requirement : Part3 Conformant

2.2. PP Claim

There is no PP that is referenced by this ST.

2.3. Package Claim

This ST conforms Package : EAL3. There is no additional assurance component.

2.4. Reference

- Common Criteria for Information Technology Security Evaluation Part 1: Introduction and general model September 2006 Version 3.1 Revision 1 CCMB-2006-09-001
- Common Criteria for Information Technology Security Evaluation Part 2: Security functional components September 2007 Version 3.1 Revision 2 CCMB-2007-09-002
- Common Criteria for Information Technology Security Evaluation Part 3: Security assurance components September 2007 Version 3.1 Revision 2 CCMB-2007-09-003
- Common Criteria for Information Technology Security Evaluation Evaluation methodology September 2007 Version 3.1 Revision 2 CCMB-2007-09-004

3. Security Problem Definition

This chapter will describe the concept of protected assets, assumptions, threats, and organizational security policies.

3.1. Protected Assets

Security concept of TOE is "the protection of data that can be disclosed against the intention of the user". As MFP is generally used, the following image file in available situation becomes the protected assets.

- Secure Print file
  An image file registered by Secure Print.
- ID & print file
  An image file saved as an ID & print file when print data are registered by the ID & print function.
- User Box file
  An image file stored in the personal user box, public user box and group user box.

As for a image file of a job kept as a wait state by activities of plural jobs, and a image file of a job kept that prints the remainder of copies becoming as a wait state for confirmation of the finish, and other than the image file dealt with the above-mentioned is not intended to be protected in the general use of MFP, so that it is not treated as the protected assets.

In the print of a secure print file or an ID & print file and the transmission of a user box file, making in the preparation for the threat thought when unauthorized MFP or mail server is connected by any chance, or when operational setup of PC-FAX is changed even if without unauthorized MFP, the setting of MFP (IP address etc.) and operation setting of PC-FAX require not to be modified illegally. Therefore, the setting of MFP (IP address etc.) and operation setting of PC-FAX are considered as subsidiary protected assets.

On the other hand, when the stored data have physically been separated from the jurisdiction of a user, such as the use of MFP ended by the lease return or being disposed, or the case of an HDD or CF theft, a user has concerns about leak possibility of every remaining data. Therefore, in this case, the following data files become protected assets.

- Secure Print File
- ID & print File
- User Box File
- On Memory Image File
  - Image file of job in the wait state
- Stored Image File
  - Stored image files other than secure print file, user box file and ID & print file
- HDD remaining Image File
  - The file which remains in the HDD data area that is not deleted only by general deletion operation (deletion of a file maintenance area)

- CF remaining Image File
  - ➢ The file which remains in the Compact Flash memory data area that is not deleted only by general deletion operation (deletion of a file maintenance area). The data leak possibility does not exist when HHD is preinstalled as standard. When HDD is not preinstalled and image file happens to be in CF, this leakage possibility exists.
- Image-related File
  - ➢ Temporary data file generated in print image file processing
- Transmission Address Data File
  - ➢ File including E-mail address and telephone numbers that become the destination to transmit an image.

3.2. Assumptions

The present section identifies and describes the assumptions for the environment for using the TOE.

A.ADMIN (Personnel conditions to be an administrator)

Administrators, in the role given to them, will not carry out a malicious act during the series of permitted operations given to them.

A.SERVICE (Personnel conditions to be a service engineer)

Service engineers, in the role given to them, will not carry out a malicious act during series of permitted operations given to them.

A.NETWORK (Network connection conditions for MFP)

- The intra-office LAN where the MFP with the TOE will be installed is not intercepted.
- When the intra-office LAN where the MFP with the TOE will be installed is connected to an external network, access from the external network to the MFP is not allowed.

A.SECRET (Operational condition about secret information)

Each password and encryption passphrase does not leak from each user in the use of TOE.

A.SETTING (Operational setting condition of Enhanced Security function)

MFP with the TOE is used after enabling the enhanced security function.

3.3. Threats

In this section, threats that are expected during the use of the TOE and the environment for using the TOE are identified and described.

T.DISCARD-MFP (Lease-return and disposal of MFP)

When the leaser returned or the discarded MFP were collected, secure print file, a user box file, ID & print files, on memory image file, the stored image file, the HDD remaining image file, the CF remaining image file, the image-related file, the transmission address data file, and the set various passwords can leak by the person with malicious intent taking out and analyzing an HDD or CF or NVRAM in MFP.

T.BRING-OUT-STORAGE (An unauthorized carrying out of HDD)

- Secure print files, user box files, ID & print files, on memory image files, stored image files, HDD remaining image files, image-related files, transmission address data files, and the set-up various passwords can leak by a malicious person or a user illegally when he/she brings out the files to analyze the HDD in a MFP.
- A person or a user with malicious intent illegally replaces the HDD in MFP. In the replaced HDD, newly created files such as secure print files, user box files, ID & print files, on-memory image files, stored image files, HDD-remaining image files, image-related files, transmission address data files and various passwords which were set up are accumulated. A person or a user with malicious intent takes out to analyze the replaced HDD, so that such image files will leak..

T.ACCESS-PRIVATE-BOX (Unauthorized access to the personal user box which used a user function)

Exposure of the user box file when a person or a user with malicious intent accesses the user box where other user owns, and downloads, prints and transmits the user box file (E-mail transmission, FTP transmission, fax transmission, SMB[5] transmission and WebDAV transmission).

T.ACCESS-PUBLIC-BOX (Unauthorized access to public box which used a user function)

Exposure of the user box file when a person or the user with malicious intent accesses the public user box which is not permitted to use, and downloads, prints, transmits (E-mail transmission, FTP transmission, FAX transmission, SMB transmission and WebDAV transmission) and removes and copies to the other user box the user box file.

T.ACCESS-GROUP-BOX (Unauthorized access to the group user box which used a user function)

Exposure of the user box file when a person or the user with malicious intent accesses the group user box which the account where a user does not belong to owns, and downloads, prints, transmits (E-mail transmission, FTP transmission, FAX transmission, SMB transmission and WebDAV transmission) and removes and copies to the other user box the user box file.

T.ACCESS-SECURE-PRINT (Unauthorized access to the secure print file or ID & print file by utilizing the user function)

- Secure print files are exposed by those malicious including users when he/she prints ones to which access is not allowed.
- ID & print files are exposed by those malicious including users when he/she prints ones which were registered by other users.

T.UNEXPECTED-TRANSMISSION (Transmission to unintended address)

- Malicious person or user changes the network settings that is related to the transmission of a user box file. Even an addressee is set precisely, a user box file is transmitted (the E-mail transmission or the FTP transmission) to the entity which a user does not intend to, so that

[5] Abbreviation of Server Message Block. Protocol to realize the file sharing or printer sharing on Windows.

a user box file is exposed.

<The network setting which is related to user box file transmission>

- ➢ Setting related to the SMTP server
- ➢ Setting related to the DNS server

- Malicious person or user changes the network settings which set in MFP to identify MFP itself where TOE installed, by setting to the value of the entity such as another unauthorized MFP from the value of MFP (NetBIOS name, AppleTalk printer name, IP address etc) that TOE is originally installed, so that secure print files or ID & print files are exposed.
- Malicious person or user changes the TSI recieving settings. A user box file is stored to the entity which a user does not intend to, so that a user box file is exposed.
- Malicious person or user changes the PC-FAX operation settings. By changing the setting of the storing for the public user box to store to common area for all users, a user box file is stored to the entity which a user does not intend to, so that a user box file is exposed.

* This threat exists only in the case that the operation setting of PC-FAX is meant to work as the operation setting for box storing.

T.ACCESS-SETTING (An unauthorized change of a function setting condition related to security)

The possibility of leaking user box files, secure print files, or ID & print files rises because those malicious including users change the settings related to the enhanced security function.

T.BACKUP-RESTORE (Unauthorized use of Backup function and restoration function)

User box files, secure print files, or ID & print files can leak by those malicious including users using the backup function and the restoration function illegally. Also highly confidential data such as passwords can be exposed, so that settings might be falsified.

T.BRING-OUT-CF (An unauthorized carrying out of Compact Flash Memory)

The possibility of the following rises because a malicious person or a user with malicious intent illegally taking out and analyzing a CF in MFP.

- Leak of setting value (SNMP password, WebDAV server password).
- Operation by a falsified password (SNMP password, other operation setting values of various functions).
- Operation under falsified TOE.
- Leak of image information existed in the Compact Flash Memory through remaining CF image file.

3.4. Organizational Security Policies

Recently, there are a lot of organizations that demand security of network in office.

Although a threat of wiretapping activities etc. in intra-office LAN is not assumed in this ST, TOE security environment that corresponds to the organization that demanded security measures in intra-office LAN is assumed.

Particularly, correspond to the secure communication of Protected Assets considering the confidentiality showed in the preceding.

The security policies applied in the organization that uses TOE are identified and described as follows.

P.COMMUNICATION-DATA (secure communication of image file)

Highly confidential image files (secure print files, user box files and ID & print files,) which transmitted or received between IT equipment must be communicated via trusted pass to the correct destination, or encrypted when the organization or the user expects to be protected.

4. Security Objectives

In this chapter, in relation to the assumptions, the threats, and the organizational security policy identified in Chapter 3, the required security objectives policy for the TOE and the environment for the usage of the TOE are described by being divided into the categories of the security objectives for the TOE and the security objectives for the environment, as follows.

4.1. Security Objectives for the TOE

In this section, the security objectives for the TOE is identified and described.

O.REGISTERED-USER (Utilization of registered user)

TOE permits only the registered user to user the MFP installing TOE.

O.PRIVATE-BOX (Personal user box access control)

- TOE permits only a user to use the user function of the personal user box which this user owns.
- TOE permits only a user to use the user function of the use box file in the personal user box which this user owns.

O.PUBLIC-BOX (Public user box access control)

- TOE permits the registered user the reading operation of the public user box.
- TOE permits the user function of the public user box only to the user who is permitted the use of this public user box.
- TOE permits the user function of the user box file in the public user box only to the user who is permitted the use of this public user box.

O.GROUP-BOX (Group user box access control)

- TOE permits the user function of the group user box which this account owns only to the user who is permitted the use of this account.
- TOE permits the user function of the user box file in the group user box which this account owns only to the user who is permitted the use of this account.

O.SECURE-PRINT (Access control for secure print files and ID & print files)

- TOE permits the print of a secure print file only to the user who was allowed to use the file.
- TOE permits the print of an ID & print file only to the user who registered that file.

O.CONFIG (Access limitation to management function)

TOE permits only the administrator the operation of the following functions.

- The setting function related to the SMTP server
- The setting function related to the DNS server
- The setting function related to the address of MFP
- Backup function
- Restoration function
- The setting function of HDD Lock function

- The setting function of CF Lock function
- The setting function of Encryption function
- The setting function of Trusted Channel function setting data
- The setting function of certification, transmission address data, etc used for S/MIME function.
- Counter management function
- The setting function of WebDAV server
- The setting function of TSI receiving
- The setting function of PC-FAX operation

TOE permits the operation of the following functions only to the administrator and the service engineer.

- The function related to the setting of Enhanced Security function

O.OVERWRITE-ALL (Complete overwrite deletion)

TOE overwrites all data regions of HDD and CF in MFP by using the deletion data, and makes all the image data of restoration impossible. In addition, TOE offers a function to initialize a setting value such as the highly confidential password on NVRAM (administrator password, HDD Lock password, Encryption passphrase) and password on CF (SNMP password and WebDAV server password) that is set by a user or an administrator.

O.CRYPT-KEY (Encryption key generation)

TOE generates the encryption key to encrypt and store the image files written in HDD in MFP.

O.CHECK-HDD (Validity confirmation of HDD)

TOE verifies that correct HDD is installed.

O.CHECK-CF (Validity confirmation of CF)

TOE verifies that correct CF is installed.

O.TRUSTED-PASS (The use of Trusted Channel)

TOE offers the function that communicates via Trusted Channel the following image file which is transmitted and received between MFP and client PC.

< Image file transmitted from MFP to client PC >

- User box file

< Image file transmitted from client PC to MFP >

- Image file that will be stored as user box file
- Image file that will be stored as secure print file
- Image files that will be stored as ID & print files

O.CRYPTO-MAIL (The use of encrypted mail)

TOE offers the function that encrypts and transmits the user box file transmitted from MFP to the correct destination with e-mail.

O.AUTH-CAPABILITY (The support operation to utilize user identification and authentication function)

TOE supports the necessary operation to utilize the user identification and authentication function by user information management server using ActiveDirectory.

O.CRYPTO-CAPABILITY (The support operation to utilize cryption function)
TOE supports the necessary operation to utilize the cryption function by cryption kit.

O.LOCK-HDD-CAPABILITY (The support operation to utilize HDD lock function)
TOE supports the necessary operation to utilize the HDD lock function by HDD.

O.LOCK-CF-CAPABILITY (The support operation to utilize CF lock function)
TOE supports the necessary operation to utilize the CF lock function by CF.

4.2. Security objectives for the operation environment

In this section, the security objectives for the environment, in the operation environment of the usage of the TOE, is described.

OE.CRYPT (Utilization of Encryption function)
The admnistrator buys a license of encryption protection chip to set encryption of image files stored in HDD under this TOE. Then the administrator sets encryption kit with service engineer to encrypt image files to be written in HDD inside MFP.

OE.FEED-BACK (Utilization of application to show secure password)
The administrator and user utilize the application of a browser etc., used by client PC to access MFP, that provides appropriate protected feedback to the user password, user box password, account password, administrator password, secure print password, SNMP password, and WebDAV server password, which will be entered.

OE.LOCK-HDD (Utilization of HDD with HDD lock function)
The service engineer and the administrator install HDD with HDD lock function in MFP and set to utilize the function.

OE.LOCK-CF (Utilization of CF with CF lock function)
The service engineer and the administrator install CF with CF lock function in MFP and set to utilize the function.

OE.SERVER (Utilization of user information management server)
The administrator sets to utilize user management by Active Directory in case of using external user information management server in stead of MFP for the management of user account.

OE.SESSION (Termination of session after operation)
The administrator has the user implement the following operation.

- After the operation of the secure print file, ID & print files, and the operation of user box and user box file ends, the logoff operation is performed.

The administrator executes the following operation.

- After the operation of the various function in administrator mode ends, the logoff operation is performed

The service engineer executes the following operation.

- After the operation of the various function in service mode ends, the logoff operation is performed.

OE.ADMIN (A reliable administrator)

The responsible person in the organization who uses MFP will assign a person who can faithfully execute the given role during the operation of the MFP with TOE as an administrator.

OE.SERVICE (The service engineer's guarantee)

- The responsible person in the organization managing the maintenance of MFP educates a service engineer in order to faithfully carry out the given role for the installation of the TOE, the setup of TOE and the maintenance of the MFP with TOE.
- The administrator observes the maintenance work of MFP with TOE by a service engineer.

OE.NETWORK (Network Environment in which the MFP is connected)

- The responsible person in the organization who uses MFP carries out the tapping prevention measures by setting the cipher communications equipment and the tapping detection equipment to the LAN of the office where MFP with TOE is installed.
- The responsible person in the organization who uses MFP carries out the measures for the unauthorized access from the outside by setting up the equipment such as the firewall to intercept the access from an external network to MFP with TOE.

OE.SECRET (Appropriate management of confidential information)

The administrator has the user implement the following operation.

- Keep the user password and secure print password confidential.
- Keep the user box password and account password confidential between the user who commonly utilizes it.
- Should not set the value that can be guessed for the user password, secure print password and the user box password.
- The user password and the user box password should be properly changed.
- When the administrator changes the user password or the user box password, make the user to change them promptly.

The administrator executes the following operation.

- Should not set the value that can be guessed for the administrator password, the account password, SNMP password, the HDD lock password, the CF lock password, WebDAV server password and encryption passphrase. Especially not set WebDAV server password equall or less than 7 digits.
- Keep the administrator password, account password, the SNMP password, the HDD lock password, WebDAV server password and the encryption passphrase confidential.
- The administrator password, the account password, the SNMP password, the HDD lock password, the CF lock password, WebDAV server password and the encryption Passphrase should be properly changed.

The service engineer executes the following operation.

- Should not set the value that can be guessed for the CE password.

- Keep the CE password confidential.
- The CE password should be properly changed.
- When the service engineer changes the administrator password, make the administrator to change it promptly.

OE.SETTING-SECURITY (Operation setting of Enhanced Security function)

The administrator makes the setup of the enhanced security function effective for the operation of TOE.

4.3. Security Objectives Rationale

4.3.1. Necessity

The correspondence between the assumptions, threats and security objectives are shown in the following table. It shows that the security objectives correspond to at least one assumption or threat.

Table 1 Conformity of Security Objectives to assumptions and Threats

Assumption/Treat Security objectives	A.ADMIN	A.SERVICE	A.NETWORK	A.SECRET	A.SETTING	T.DISCARD-MFP	T.BRING-OUT-STORAGE	T.ACCESS-PRIVATE-BOX	T.ACCESS-PUBLIC-BOX	T.ACCESS-GROUP-BOX	T.ACCESS-SECURE-PRINT	T.UNEXPECTED-TRANSMISSION	T.ACCESS-SETTING	T.BACKUP-RESTORE	T.BRING-OUT-CF	P.COMMUNICATION-DATA
O.REGISTERED-USER	▨	▨	▨	▨	▨			X	X	X	X					
O.PRIVATE-BOX	▨	▨	▨	▨	▨			X								
O.PUBLIC-BOX	▨	▨	▨	▨	▨				X							
O.GROUP-BOX	▨	▨	▨	▨	▨					X						
O.SECURE-PRINT	▨	▨	▨	▨	▨						X					
O.CONFIG	▨	▨	▨	▨	▨							X	X	X		X
O.OVERWRITE-ALL	▨	▨	▨	▨	▨	X										
O.CRYPT-KEY	▨	▨	▨	▨	▨		X									
O.CHECK-HDD	▨	▨	▨	▨	▨		X									
O.CHECK-CF	▨	▨	▨	▨	▨										X	
O.TRUSTED-PASS	▨	▨	▨	▨	▨											X
O.CRYPTO-MAIL	▨	▨	▨	▨	▨											X
O.CRYPTO-CAPABILITY	▨	▨	▨	▨	▨		X									
O.LOCK-HDD-CAPABILITY	▨	▨	▨	▨	▨		X									
O.LOCK-CF-CAPABILITY	▨	▨	▨	▨	▨										X	
O.AUTH-CAPABILITY	▨	▨	▨	▨	▨			X	X	X	X					
OE.CRYPT							X									
OE.LOCK-HDD							X									
OE.LOCK-CF															X	
OE.FEED-BACK								X	X	X	X	X	X	X		X
OE-SERVER								X	X	X	X					
OE-SESSION								X	X	X	X	X	X	X		X
OE-ADMIN	X															
OE-SERVICE		X														
OE-NETWORK			X													
OE-SECRET				X												
OE-SETTING-SECURITY					X											

4.3.2. Sufficiency of Assumptions

The security objectives for the assumptions are described as follows.

- **A.ADMIN (Personnel Conditions to be an Administrator)**
  This condition assumes that administrators are not malicious.
  With OE.ADMIN, the organization that uses the MFP assigns personnel who are reliable in the organization that uses the MFP, so the reliability of the administrator is realized.

- **A.SERVICE (Personnel Conditions to be a Service Engineer)**
  This condition assumes the service engineer are not malicious.
  With OE.SERVICE, the organization that manages the maintenance of the MFP educates the service engineer. Also the administrator needs to observe the maintenance of the MFP, so that the reliability of service engineers is assured.

- **A.NETWORK (Network Connection Conditions for the MFP)**
  This condition assumes that there are no wiretapping activities for the intra-office LAN and no access by an unspecified person from an external network.
  OE.NETWORK regulates the wiretapping prevention by the installation of devices such as a wiretapping detection device and device to perform the encryption communication on the intra-office LAN. It also regulates the unauthorized access prevention from external by the installation of devices such as firewall in order to block access to the MFP from the external networks, so that this condition is realized.

- **A.SECRET (Operating condition concerning confidential information)**
  This condition assumes each password and encryption passphrase using for the use of TOE should not be leaked by each user.
  OE.SECRET regulates that the administrator makes the user to execute the operation rule concerning the secure print password, the user box password, user password and account password and that the administrator executes the operation rule concerning the administrator password, the HDD lock password, the CF lock password, SNMP password, WebDAV server password, encryption passphrase and account password. It also regulates that the service engineer executes the operation rule concerning the CE password, and that the service engineer makes the administrator to execute the operation rule concerning the administrator password, so that this condition is realized.

- **A.SETTING (Enhanced Security Function Operational Settings Condition)**
  This condition assumes the enhanced security function operational settings condition is satisfied.
  OE.SETTING-SECURITY regulates that this is used after the administrator activates the enhanced security function, so that this condition is realized.

4.3.3. Sufficiency of Threats

The security objectives against threats are described as follows.

- **T.DISCARD-MFP (Lease return and disposal of MFP)**

  This threat assumes the possibility of leaking information from MFP collected from the user.

  O.OVERWRITE-ALL is that TOE offers the function to overwrite data for the deletion of all area of HDD and initializes the information of NVRAM and CF, so that the possibility of the threat is removed by executing this function before MFP is collected.

  Accordingly, this threat is countered sufficiently.

- **T.BRING-OUT-STORAGE (Unauthorized taking out of HDD)**

  This threat assumes the possibility that the image data in HDD leaks by being stolen from the operational environment under MFP used or by installing the unauthorized HDD and taking away with the data accumulated in it.

  For the above, the possibility of the threat is reduced because the HDD lock function is activated by O.LOCK-HDD-CAPABILITY operation supporting to use HDD lock function and by OE.LOCK-HDD operation activating the operation of HDD lock function set bythe administrator and the service engineer. Moreover a series of countermeasure for HDD, the possibility of the threat is more reduced becaused O.CRYPTO-KEY generates the encryption key for TOE to encrypt data to be written in HDD, and O.CRYPTO-CAPABILITY supports the operation of using encryption function, and OE.CRYPTO utilize the encryption function of encryption kit set by the administrator and the service engineer.

  The danger of leaking exists by taking out the HDD and replacing another HDD without the HDD lock function, but the validity of HDD installed by TOE is verified by O.CHECK-HDD, data is not written in the HDD replaced secretly. The possibility of the threat is removed consequently. The possibility of the threat for the unauthorized access by the leak of the management information attached image file is removed because the operation conditions achieved through security enhanced function do not permit to select the condition of O.CRYPTO-KEY and OE.CRYPTO only.

  Accordingly, this threat is countered sufficiently.

- **T.ACCESS-PRIVATE-BOX (Unauthorized access to personal user box using user function)**

  This threat assumes the possibility that an unauthorized operation is done by using the user function for the personal user box which each user uses to store the image file.

  O.REGISTERED-USER is assumed that only the user to whom TOE was registered is permitted to use MFP installed TOE, furthermore, the operation of a personal user box and the user box file in a personal user box is restricted only to the user who is the owner by O.PRIVATE-BOX, so that the possibility of the threat is reduced. When the user information management server is used, the possibility of the threat is reduced because the user identification and authentication function is operated through O.AUTH-CAPABILITY supporting the operation for the user identification and authentication function by the user information management server of Active Directory and through OE.SERVER setting to use the user management by the administrator.

  OE.FEED-BACK uses the application regulating to return the protected feedback for the entered password in the user's authentication, and OE-N.SESSION also requires the log-off operation after the operation ends, so that O.REGISTERED-USER and O.PRIVATE-BOX are supported sufficiently.

  Accordingly, this threat is countered sufficiently.

- **T.ACCESS-PUBLIC-BOX (Unauthorized access to public user box using user function)**
  This threat assumes the possibility that an unauthorized operation is done by using the user function for the public user box which each user shares to store the image file.
  O.REGISTERED-USER assumes that only the user to whom TOE was registered is permitted to use MFP installing TOE, furthermore, the operation of the public user box and the user box file in the public user box is restricted only to the user who is permitted by O.PUBLIC-BOX, so that the possibility of the threat is reduced. When the user information management server is used, the possibility of the threat is reduced because the user identification and authentication function is operated through O.AUTH-CAPABILITY supporting the operation for the user identification and authentication function by the user information management server of Active Directory and through OE.SERVER setting to use the user management by the administrator.
  OE.FEED-BACK uses the application regulating to return the protected feedback for the entered password in the user's authentication and user box's authentication, and OE-N.SESSION requires the log-off operation after the operation ends, so that O.REGISTERED-USER and O.PUBLIC-BOX are supported sufficiently.
  Accordingly, this threat is countered sufficiently.

- **T.ACCESS-GROUP-BOX (Unauthorized access to a group user box using user function)**
  This threat assumes the possibility that an unauthorized operation is performed by using the user function for the group box that is a storage area of image file used by user who is permitted the use of the account, or the user box file in it.
  O.REGISTERED-USER assumes that only the user to whom TOE was registered is permitted to use MFP installed TOE, furthermore, the operation of the group user box and user box file in the group user box is restricted only to the permitted userby O.GROUP-BOX, so that the possibility of the threat is removed. When the user information management server is used, the possibility of the threat is reduced because the user identification and authentication function is operated through O.AUTH-CAPABILITY supporting the operation for the user identification and authentication function by the user information management server of Active Directory and through OE.SERVER setting to use the user management by the administrator.
  OE.FEED-BACK uses the application regulating to return the protected feedback for the entered password in the user's authentication and account's authentication, and OE-N.SESSION also requires the log-off operation after the operation ends, so that O.REGISTERED-USER and O.GROUP-BOX are supported sufficiently.
  Accordingly, this threat is countered sufficiently.

- **T.ACCESS-SECURE-PRINT (Unauthorized access to a secure print file or an ID & print file using the user function)**
  This threat assumes the possibility that an unauthorized operation is done to the secure print and ID & print using user function.
  O.REGISTERED-USER assumes that only the user to whom TOE was registered is permitted to use MFP installing TOE, furthermore, the operation of the secure print and ID & print is limited only to the authorized user by O.SECURE-PRINT, so that the possibility of the threat is reduced. When the user information management server is used, the possibility

of the threat is reduced because the user identification and authentication function is operated through O.AUTH-CAPABILITY supporting the operation for the user identification and authentication function by the user information management server of Active Directory and through OE.SERVER setting to use the user management by the administrator.

OE.FEED-BACK uses the application regulating to return the protected feedback for the entered password in the user's authentication and access authentication to the secure print and ID & print, and OE-N.SESSION requires the log-off operation after the operation ends, so that O.REGISTERED-USER and O.SECURE-PRINT are supported sufficiently.

Accordingly, this threat is countered sufficiently.

- **T.UNEXPECTEC-TRANSMISSION (Transmission to unintended address)**

This threat assumes the possibility of sending the user box file to the address that isn't intended, when the network setting that relates to the transmission is illegally changed. This is concerned about a possibility that the user box file is transmitted to the specified server illegally without the change of the network environment constitution by the malicious person by, for instance, illegally being changed the address of the SMTP server that relays E-mail for the E-mail, or illegally being changed the address of the DNS server where the domain name is inquired when the address of the SMTP server is used for a search of the domain name. For FTP transmission, by being likely to use the mechanism of the search of the domain name is concerned about the similar possibility of the incident might be occurred by E-mailing.

Furthermore, when the network setting which is related to the address of MFP is modified illegally, it assumes the possibility to use the print function to the unauthorized entity from client PC by the user who believes as TOE. Especially, it becomes a problem if a secure print file or an ID & print file which is required to be concealed from other users in the office is transmitted to the unauthorized entity.

The setting of PC-FAX operation and the setting of TSI reception assumes the possibility of unintended box file storing at FAX reception. On the other hand, O.CONFIG regulates that the role to operate the network setting relating to the transmission of TOE, the setting of PC-FAX operation and the setting of TSI reception are limited to the administrator, and so the possibility of this threat is removed.

OE.FEED-BACK uses the application regulating that the feedback protected is returned for the entered password by the administrator's authentication and OE-N.SESSION requires to logoff after the operation ends, so that O.CONFIG is supported sufficiently.

Accordingly, this threat is countered sufficiently.

- **T.ACCESS-SETTING (Unauthorized change of function setting condition related to security)**

This threat assumes the possibility of developing consequentially into the leakage of the user box files, secure print files, or ID & print files by having been changed the specific function setting which relates to security.

O.CONFIG regulates that only the administrator is permitted to perform the setting of the enhanced security function that controls all setting function related to a series of security, and so the possibility of the threat is removed.

OE.FEED-BACK uses the application regulating that the feedback protected is returned for the entered various passwords by the administrator's authentication, and OE-N.SESSION is also requested to logoff respectively after the operations of the administrator mode ends, so that O.CONFIG is supported sufficiently.

Accordingly, this threat is countered sufficiently.

- **T.BACKUP-RESTORE (Unauthorized use of back-up function and restoration function)**

  This threat assumes a possibility that user box files, secure print files, or ID & print files may leak when the back-up function or the restoration function is illegally used. Moreover, this assumes that confidential data such as passwords might leak or various settings are falsified, so that user box files, secure print files, or ID & print files may leak.

  O.CONFIG regulates that the use of the back-up function and the restoration function is permitted only to the administrator, so that the possibility of the threat is removed.

  OE.FEED-BACK uses the application regulating that the protected feedback is returned for the entered password by the administrator authentication and OE-N.SESSION is also requested the log-off operation after the operation ends, and so O.CONFIG is sufficiently supported.

  Accordingly, this threat is countered sufficiently.

- **T.BRING-OUT-CF (Unauthorized taking out of CF)**

  This threat assumes the possibility that the leak of the information data in CF by being taken away or the unauthorized operation by installing the CF with falsified information or TOE.

  For the above, the possibility of the threat is reduced because the CF lock function is activated by O.LOCK-CF-CAPABILITY operation supporting to use CF lock function and by OE.LOCK-CF operation activating the operation of CF lock function set bythe administrator and the service engineer.

  The danger of vulnerable operation for setting values related security exists by taking out the CF and replacing another CF without the CF lock function or another CF disabled CF lock function, but the validity of CF installed by TOE is verified by O.CHECK-CF, the replaced CF does not work. The possibility of the threat is removed consequently.

  Accordingly, this threat is countered sufficiently.

4.3.4. Sufficiency of Organizational Security Policies

Security objective corresponding to organizational security policies is explained as follows.

- **P.COMMUNICATION-DATA (secure communication of image file)**

  This organizational security policy prescribes carrying out processing via trusted pass to a correct destination or encrypting to ensure the confidentiality about the image file which flows on a network in the case of the organization or the user expect to be protected. As this corresponds as one's request, there is no need to provide secure communication function for all communication. At least one secure communication method between MFP and client PC needs to be provided when transmitting the secure print file, the user box file or ID & print file.

  O.TRUSTED-PASS offers the Trusted Channel to a correct destination in the transmition and reception of an image such as from MFP to client PC or from client PC to MFP, for the user box file, the secure print file or ID & print file that is a confidential image, so that the organizational security policies is achieved.

  Also, the security objective offers the transmission function to a correct destination by encrypting the user box file transmitted by e-mail from MFP to client PC by

O.CRYPTO-MAIL, so that the organizational security policies is achieved. Furthermore, O.CONFIG restricts the Trusted Channel function setting data, the management of the user box files' encryption by e-mail and the transmission address data to the administrator. And then, OE.FEED-BACK uses the application regulating that the protected feedback is returned for the entered password in the administrator's authentication, and OE.SESSION is also regulated to log off after the operations of the administrator mode ends, so that O.CONFIG is supported.
Accordingly, this organizational security policies is sufficiently to achieve.

5. Extended Components Definition

5.1. Extended Function Component

In this ST, three extended function components are defined. The necessity of each security function requirement and the reason of the labeling definition are described.

- **FAD_RIP.1**

  This is the security function requirement for the protection of the remaining information of user data and TSF data.

  - Necessity of extension

    The regulation for the protection of the TSF data remaining information is necessary. But the security function requirement to explain the protection of the remaining information exists only in FDP_RIP.1 for the user data. There is no security function requirement to satisfy this requirement.

  - Reason for applied class (FAD)

    There is no requirement to explain both of the user data and the TSF data with no distinction. Therefore new Class was defined.

  - Reason for applied family (RIP)

    As this is the extension upto the TSF data by using the content explained by the relevant family of FDP class, the same label of this family was applied.

- **FIA_EID.1**

  This is the security function requirement for regulating the conditions at the access to external entity from TOE.

  - Necessity of extension

    This is the approval of the action involved by TOE istsef to the external entity, not the action of access to TOE from the external entity. There is no security function requirement to satisfy this requirement.

  - Reason for applied class (FIA)

    As this regulates to distinguish the external entity, FIA class is optimal to summarize the vaious security function requirements for identification certification.

  - Reason for applied family (EID)

    This requirement is judged to be not relevant to the content extension of the existing family. Therefore new Family was defined.

- **FIT_CAP.1**

  This is the security function requirement for regulating the necessary ability for TOE to use effectively the security function of the external entity, IT environment.

  - Necessity of extension

    In case of TOE using the external security functions, the external security function to be surely secure is important, but TOE ability to provide is very important in order to used correctly the external security function. But there is no concept as this requirement in the security function requirements.

  - Reason for applied class (FIT)

    There is no such concept in CC part 2. Therefore new Class was defined.

  - Reason for applied family (CAP)

As similar to class, there is no such concept in CC part 2. Therefore new Family was defined.

5.1.1. FAD_RIP.1 Definition

- **Class name**
  FAD: Protection of all data
  Meaning of abbreviation: FAD (Functional requirement for All Data protection)

- **Class behaviour**
  This class contains a family specifying the requirement related with the protection of the user data and the TSF data with no distinction. One family exists here.

  - Remaining Information Protection of All Data (FAD_RIP);

- **Family behaviour**
  This family corresponds to the necessity never to access the deleted data or newly created object and TSF data which should not set as accessible. This family requires the protection for the information that was deleted or released logically but has a possibility to exist still in TOE.

- **Component leveling**

FAD_RIP.1: "Remaining Information Protection of All Data after the explict deletion operation" requires of TSF to assure that the subset of the defined object controlled by TSF cannot utilize every remainng information of every resource under the allocation of resource or the release of it.

Audit : FAD_RIP.1
The use of the user identification information with the explicit deletion operation
Management : FAD_RIP.1
No expected management activity

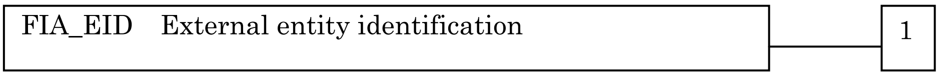
FAD_RIP.1		**Remaining Information Protection of All Data after the explict deletion operation**
FAD_RIP.1		
TSF shall ensure that the content of the information allocated to source before shall not be available after the explicit deletion operation against the object and TSF data.: [assignment: object list and TSF data list]		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

5.1.2. FIA_EID.1 Definition

- **Family behaviour**
  This family corresponds to the necessity to ensure that IT environment entity is not illegally

replaced when IT environment entity out of TOE provides the security functions. This family requires the verification of the authentication of IT environment entity.

- Component leveling



Meaning of abbreviation: EID (External entity IDentification)

FIA_EID.1: "IT environment entity identification becoming an access object of TOE" requires the success of validity verification for IT environment entity before the action is involved in IT environment entity..

Audit : FIA_EID.1
The following actions should be auditable if FAU_GEN Security audit data generation is included in the PP/ST. a) Minimal Unsuccessful use of IT environment entity identification mechanism including offered IT environment entity identification information b) Basic Use all of IT environment entity identification mechanism including offered IT environment entity identification information

Management : FIA_EID.1
The following actions could be considered for the management functions in FMT. a) management of IT environment entiry identification information

FIA_EID.1		**Identification of IT environment becoming an access object from TOE**
FIA_EID.1.1		
TSF shall demand to succeed in the IT environment entity's identification before the action is taken to_IT environment entity by TOE.		
FIA_EID.1.2		
TSF shall stop the start of the action to IT environment entity by TOE if the IT environment entity's identification is failed.		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

5.1.3. FIT_CAP.1 Definition

- Class name

FIT: Support for IT environment entity
Meaning of abbreviation: FIT (Functional requirement for IT environment support)

- Class behaviour

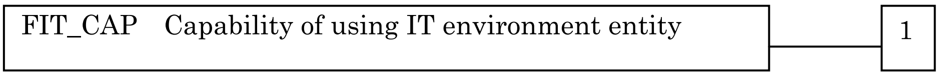
This class contains a family specifying the requirement related with the use of the security service provided by IT environment entity. One family exists here.

- Use of IT environment entity (FIT_CAP);

- Family behaviour

This family corresponds to the capability definition for TOE at the use of security function of IT environment entity.

- **Component leveling**



Meaning of abbreviation: CAP (CAPability of using it environment)

FIT_CAP.1: “Capability of using security seervice of IT environment entity” corresponds to the substantiation of capability needed to use the security function correctly provided by IT environment entity.

Audit：FIT_CAP.1
The following actions should be auditable if FAU_GEN Security audit data generation is included in the PP/ST. a) Minimal　Failure of operation for IT environment entity b) Basic　Use all operation of IT environment entity (success, failure)

Management：FIT_CAP.1
The following actions could be considered for the management functions in FMT. There is no management activity expected

FIT_CAP.1		**Capability of using security service of IT environment entity**
FIT_CAP.1		
TSF shall provide the necessary capability to use the service for [assignment: *security service provided by IT environment entity*].：[assignment: *necessary capability list for the operation of security service*]		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

6. IT Security Requirements

In this chapter, the TOE security requirements are described.

<Definition of Label>

The security function requirements required for the TOE are described. Those regulated in CC Part 2 will be directly used for the functional requirements components, and the same labels will be used as well. The new additional requirement which is not described in CC part 2 is newly established and identified with the label that doesn't compete with CC part 2.

< Method of specifying security function requirement "Operation" >

In the following description, when items are indicated in "italic" and "bold," it means that they are assigned or selected. When items are indicated in "italic" and "bold" with parenthesis right after the underlined original sentences, it means that the underlined sentences are refined. A number in the parentheses after a label means that the functional requirement is used repeatedly.

<Method of clear indication of dependency>

The label in the parentheses "( )" in the dependent section indicates a label for the security functional requirements used in this ST. When it is a dependency that is not required to be used in this ST, it is described as "N/A" in the same parentheses.

6.1. TOE Security Requirements

6.1.1. TOE Security Function Requirements

6.1.1.1. Cryptographic Support

FCS_CKM.1 Cryptographic key generation

FCS_CKM.1.1

The TSF shall generate cryptographic keys in accordance with a specified cryptographic key generation algorithm [assignment: *cryptographic key generation algorithm*] and specified cryptographic key sizes [assignment: *cryptographic key sizes*] that meet the following: [assignment: *list of standards*].

[assignment: *list of standards*] :
Listed in "Table2 Cryptographic key generation Relation of Standards-Algorithm-Key sizes"

[assignment: *cryptographic key generation algorithm*] :
Listed in "Table2 Cryptographic key generation Relation of Standards-Algorithm-Key sizes"

[assignment: *cryptographic key sizes*] :
Listed in "Table2 Cryptographic key generation Relation of Standards-Algorithm-Key sizes"

Hierarchical to : No other components
Dependencies : FCS_CKM.2 or FCS_COP.1 (FCS_COP.1) , FCS_CKM.4 (N/A) ,

Table 2 Cryptographic Key Generation Relation of Standards-Algorithm-Key sizes

List of Standards	Cryptographic Key Generation Algorithm	Cryptographic Key sizes
FIPS 186-2	***Pseudorandom number Generation Algorithm***	***- 128 bit*** ***- 192 bit***

		- 168 bit ***- 256 bit***
KonicaMinolta Encryption specification standard	***KonicaMinolta HDD Encryption Key Generation Algorithm (SHA-256)***	***128 bit***

FCS_COP.1	**Cryptographic operations**

FCS_COP.1.1

The TSF shall perform [assignment: *list of Cryptographic operations*] in accordance with a specified cryptographic algorithm [assignment: *cryptographic algorithm*] and cryptographic key sizes [assignment: cryptographic key sizes] that meet the following: [assignment: *list of standards*].

[assignment: *list of standards*] :
Listed in "Table3 Cryptographic operation
Relation of Algorithm-Key sizes-Cryptographic operation"

[assignment: *cryptographic algorithm*] :
Listed in "Table3 Cryptographic operation
Relation of Algorithm-Key sizes-Cryptographic operation"

[assignment: *cryptographic key sizes*] :
Listed in "Table3 Cryptographic operation
Relation of Algorithm-Key sizes-Cryptographic operation"

[assignment: *list of cryptographic operation*] :
Listed in "Table3 Cryptographic operation
Relation of Algorithm-Key sizes-Cryptographic operation"

Hierarchical to : No other components
Dependencies : FDP_ITC.1 or FDP_ITC.2 or FCS_CKM.1 (FCS_CKM.1 (only a part of events)), FCS_CKM.4 (N/A)

Table 3 Cryptographic Operation Relation of Algorithm-Keysizes-Cryptographic Operation

List of standards	Cryptographic algorithm	Cryptographic key sizes	Contents of Cryptographic operation
FIPS PUB 197	***AES***	***- 128 bit*** ***- 192 bit*** ***- 256 bit***	***Encryption of S/MIME transmission data***
SP800-67	***3-Key-Triple-DES***	***- 168 bit***	***Encryption of S/MIME transmission data***
FIPS 186-2	***RSA***	***- 1024 bit*** ***- 2048 bit*** ***- 3072 bit*** ***- 4096 bit***	***Encryption of cryptographic key to encrypt S/MIME transmission data***

6.1.1.2. User data protection

FDP_ACC.1[1] Subset access control

FDP_ACC.1.1[1]

The TSF shall enforce the [assignment: *access control SFP*] on [assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*].

[assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*] :
Listed in ”Table4 User box access control operational list “

[assignment: *access control SFP*] :
User Box access control

Hierarchical to : No other components
Dependencies : FDP_ACF.1 (FDP_ACF.1[1])

Table 4 User Box Access Control Operational List

Subject	Object	Operational List
A task to act for a user	*User Box*	*-A List of user boxes*
	User Box File	*-Print* *-Transmission (E-mail transmission, FTP transmission, SMB transmission, FAX transmission and WebDAV transmission)* *-Download* *-Move to other user boxes* *-Copy to other user boxes* *-Backup*

FDP_ACC.1[2] Subset access control

FDP_ACC.1.1[2]

The TSF shall enforce the [assignment: *access control SFP*] on [assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*].

[assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*] :
Listed in “Tabel5 Secure print file access control operational list”

[assignment: *access control SFP*] :
Secure print file access control

Hierarchical to : No other components
Dependencies : FDP_ACF.1 (FDP_ACF.1[2])

Table 5 Secure Print File Access Control: Operational List

Subject	Object	Operational list
A task to act for a user	*Secure Print File Access Control*	*-A List of Secure Print Files* *-Print* *-Back-Up*

FDP_ACC.1[3] Subset access control

FDP_ACC.1.1[3]

The TSF shall enforce the [assignment: *access control SFP*] on [assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*].

[assignment: *list of subjects, objects, and operations among subjects and objects covered by the SFP*] :
Listed in “Table6 Setting management access control operational list”

[assignment: *access control SFP*] :
Setting management access control

Hierarchical to	:	No other components
Dependencies	:	FDP_ACF.1 (FDP_ACF.1[3])

Table 6 Setting Management Access Control: Operational List

Subject	Object	Operational list
A task to act for a user	*-SMTP Server Group Object* *-DNS Server Group Object* *-MFP Address Group Object* [6] *-PC-FAX operation setting Object* *-Transmission Address Data Object*	*- Settings* *- Restore*

FDP_ACC.1[4] Subset access control

FDP_ACC.1.1[4]

The TSF shall enforce the [assignment: *access control SFP*] on [assignment: *list of subjects, objects, and operations among subjects and objects covered by SFP*].

[assignment: *list of subjects, objects, and operations among subjects and objects covered by SFP*] :

Listed in "Table7 ID & print Access Control operational list"

[assignment: *access control SFP*] :

ID & print file access control

Hierarchical to	:	No other components
Dependencies	:	FDP_ACF.1 (FDP_ACF.1[4])

Table 7 ID & Print Access Control: Operational List

Subject	Object	Operational list
A task to act for a user	*ID & print File*	*- List* *- Print* *- Backup*

FDP_ACF.1[1] Security attribute based access control

FDP_ACF.1.1[1]

The TSF shall enforce the [assignment: *access control SFP*] to objects based on the following: [assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*].

[assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*] :

<Subject>		***<Subject attributes>***
-A task to act for a user	→	***-User Attribute (User ID)*** ***-Account Name (Account ID)*** ***-User Box Attribute (User Box ID)*** ***-Administrator Attribute***

<Object>		***<Object attributes>***
-User Box	→	***-User Attribute (User ID or Public or Account ID)***
-User Box File	→	***-User Box Attribute (User Box ID)***

[assignment: *access control SFP*] :

User Box access control

FDP_ACF.1.2[1]

The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*].

[6] The MFP address group object is a series of data concerning the address of the main body of MFP such as IP address and the Appletalk printer name.

[assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*] :

<Operation control to Personal user box>

A task to act for a user is permitted to do the list display operation to the user box with the user attribute (user ID) of an object attribute corresponding to the user attribute (user ID) of the subject attribute.

<Operation control to Group user box>

A task to act for a user is permitted to do the list display operation to the user box with the Account Name (account ID) of an object attribute corresponding to the Account Name (account ID) of the subject attribute.

<Operation control to Public user box>

A task to act for the user who is related to the user attribute (user ID) is permitted to do the list display operation to the user box where "Public" is set to the user attributes of the object attribute.

<Operational control to User box file>

A task to act for a user is permitted to print, transmit (E-mail transmission, FTP transmission, SMB transmission, FAX transmission and WebDAV transmission), download, move to other user boxes and copy to the other user boxes, to the user box file that have the matched the user box attribute (user box ID) of the object attribute with the user box attribute (user box ID) of the subject attribute.

FDP_ACF.1.3[1]

The TSF shall explicitly permit access of subjects to objects based on the following additional rules: [assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects].

[assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects] :

-A task to act for the user that has a administrator attribute is permitted to operate displaying of user box list.

-A task to act for the user that has a administrator attribute is permitted to operate the back-up the user box file.

FDP_ACF.1.4[1]

The TSF shall explicitly deny access of subjects to objects based on the [assignment: rules, based on security attributes, that explicitly deny access of subjects to objects].

[assignment: rules, based on security attributes, that explicitly deny access of subjects to objects] :

None

Hierarchical to	:	No other components
Dependencies	:	FDP_ACC.1 (FDP_ACC.1[1]) , FMT_MSA.3 (FMT_MSA.3[1], FMT_MSA.3[3])

FDP_ACF.1[2] Security attribute based access control

FDP_ACF.1.1[2]

The TSF shall enforce the [assignment: *access control SFP*] to objects based on the following: [assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*].

[assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*] :

<Subject>		***<Subject attributes>***
-task substituted for a user	→	***-File attributes (Secure print internal control ID)*** ***-User attributes (User ID)*** ***-Administrator attributes***

<Object>		***<Object attributes>***
-Secure print file	→	***-File attributes (Secure print internal control ID)***

[assignment: *access control SFP*] :

Secure print file access control

FDP_ACF.1.2[2]

The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*].

[assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*] :

-A task to act for a user who has a user attribute (user ID) is permitted to display of the list of all the secure print files.

-A task to act for a user who has the file attribute (the secure print internal control ID) is permitted the print operation to the secure print file that has matched the file attribute (secure print internal control ID) with the file attribute (secure print internal control ID).

FDP_ACF.1.3[2]

The TSF shall explicitly authorize access of subjects to objects based on the following additional rules: [assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects].

[assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects] :

A task to act for a user who has a administrator attribute is permitted to back up secure print file.

FDP_ACF.1.4[2]

The TSF shall explicitly deny access of subjects to objects based on the [assignment: rules, based on security attributes, that explicitly deny access of subjects to objects].

[assignment: rules, based on security attributes, that explicitly deny access of subjects to objects] :

None

Hierarchical to	:	No other components
Dependencies	:	FDP_ACC.1 (FDP_ACC.1[2]) , FMT_MSA.3 (FMT_MSA.3[2])

FDP_ACF.1[3] Security attribute based access control

FDP_ACF.1.1[3]

The TSF shall enforce the [assignment: *access control SFP*] to objects based on the following: [assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*].

[assignment: *list of subjects and objects controlled under the indicated SFP, and for each, the SFP-relevant security attributes, or named groups of SFP-relevant security attributes*] :

<Subject>		***<Subject attributes>***
-Task substituted for a user	→	***-Administrator attributes***

<Object>
-SMTP server group object
-DNS server group object
-MFP address group object
-PC-FAX operation setting object
-Transmission Address data object
****** No Object Attribute***

[assignment: *access control SFP*] :

Setting management access control

FDP_ACF.1.2[3]

The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*].

[assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*] :

-A task act for a user who has a administrator attribute is permitted to set the SMTP server group object, the DNS server group object, the MFP address group object, the PC-FAX operation setting object and Transmission Address data object and to operate the restoration.

FDP_ACF.1.3[3]

The TSF shall explicitly authorize access of subjects to objects based on the following additional rules: [assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects].

[assignment: rules, based on security attributes, that explicitly authorize access of subjects to objects] :

None

FDP_ACF.1.4[3]

The TSF shall explicitly deny access of subjects to objects based on the [assignment: rules, based on security attributes, that explicitly deny access of subjects to objects].
[assignment: rules, based on security attributes, that explicitly deny access of subjects to objects] : ***None***
Hierarchical to : No other components Dependencies : FDP_ACC.1 (FDP_ACC.1[3]) , FMT_MSA.3 (N/A)

FDP_ACF.1[4] Security attribute based access control

FDP_ACF.1.1[4]
The TSF shall enforce the [assignment: *access control SFP*] to objects based on the following: [assignment: *list of the subjects and objects controlled under the indicated SFP, and for each, SFP-relevant security attributes, or named groups of SFP-relevant security attributes*].
[assignment: *list of the subjects and objects controlled under the indicated SFP, and for each, SFP-relevant security attributes, or named groups of SFP-relevant security attributes*] : ***<Subject>*** ***<Subject attributes>*** ***- Task substituting for a user*** → ***- User attributes (user ID)*** ***- Administrator attributes*** --- ***<Object>*** ***<Object attributes>*** ***- ID & print file*** → ***- User attributes (user ID)***
[assignment: *access control SFP*] : ***ID & print file access control***
FDP_ACF.1.2[4]
The TSF shall enforce the following rules to determine if an operation among controlled subjects and controlled objects is allowed: [assignment: *rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects*].
[assignment: *rules governing access used for controlled operations to controlled objects among controlled subjects and controlled objects*] : ***- A task substituting for a user is permitted to list and print the ID & print file whose user attributes of the object attributes are equal to those of the subject attributes (user ID).***
FDP_ACF.1.3[4]
The TSF shall explicitly authorise access of subjects to objects based on the following supplemental rules: [assignment: rules, based on security attributes, that explicitly authorise access of subjects to objects].
[assignment: rules, based on security attributes, that explicitly authorise access of subjects to objects] : ***A task substituting for a user with the administrator attributes is permitted to back up ID & print files.***
FDP_ACF.1.4[4]
The TSF shall explicitly deny access of subjects to objects based on the [assignment: rules, based on security attributes, that explicitly deny access of subjects to objects].
[assignment: rules, based on security attributes, that explicitly deny access of subjects to objects] : ***None***
Hierarchical to : No other components Dependencies : FDP_ACC.1 (FDP_ACC.1[4]) , FMT_MSA.3 (FMT_MSA.3[4])

6.1.1.3. Identification and authentication

FIA_AFL.1[1] Authentication failure handling

FIA_AFL.1.1[1]
The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].
[assignment: *list of authentication events*] : ***-Authentication for accessing the service mode*** ***-Re-authentication for changing the CE password.***

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*]
[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3

FIA_AFL.1.2[1]

When the defined number of unsuccessful authentication attempts has been [selection: *met, surpassed*], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :
Surpassed

[assignment: *list of actions*] :
<Action when it is detected>
-Log off from the authentication status of the service mode if it is, and lock the authentication function which uses the CE password.
-If it's not under the authentication status, lock the authentication function which uses the CE password.
<Operation for recovering the normal condition>
Perform the lock release function of CE authentication by specific operation.
(When CE authentication lock time passed from specific operation, the release process is performed.)

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[1])

FIA_AFL.1[2] Authentication failure handling

FIA_AFL.1.1[2]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].

[assignment: *list of authentication events*] :
-Authentication for accessing the administrator mode
-Re-authentication for changing the administrator password

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] :
[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3

FIA_AFL.1.2[2]

When the defined number of unsuccessful authentication attempts has been [selection: *met, surpassed*], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :
Surpassed

[assignment: *list of actions*] :
<Action when it is detected>
-Log off from the authentication status of the administrator mode if it is, and lock the authentication function which uses the administrator password.
-If it's not under the authentication status, lock the authentication function which uses the administrator password.
<Operation for recovering the normal condition>
- Perform the lock release function offered within the service mode.
- Perform the boot process of the TOE. (Release process is performed after Administrator authentication lock time by the boot process.)

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[2])

FIA_AFL.1[3] Authentication failure handling

FIA_AFL.1.1[3]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator*

configurable positive integer within [assignment: range of acceptable values]] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].
[assignment: *list of authentication events*] : ***Authentication for accessing the MIB object through SNMP***
[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] : ***[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3***
FIA_AFL.1.2[3]
When the defined number of unsuccessful authentication attempts has been [selection: *met, surpassed*], the TSF shall [assignment: *list of actions*].
[selection: *met, surpassed*] : ***Surpassed***
[assignment: *list of actions*] : ***<Action when it is detected>*** ***Deny the access to the MIB object and lock the authentication function to use SNMP password.*** ***<Operation for recovering the normal condition>*** ***-Perform the delete function of authentication failure frequency offered within the administrator mode.***
Hierarchical to : No other components
Dependencies : FIA_UAU.1 (FIA_UAU.2[2])

FIA_AFL.1[4] Authentication failure handling

FIA_AFL.1.1[4]
The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].
[assignment: *list of authentication events*] : ***Authentication for accessing the TOE by user***
[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] : ***[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3***
FIA_AFL.1.2[4]
When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].
[selection: *met, surpassed*] : ***Surpassed***
[assignment: *list of actions*] : ***<Action when it is detected>*** ***- While authentication is performed, log off from the authentication status of the user, and lock the authentication function for the user.*** ***- Otherwise, lock the authentication function for using the user password.*** ***<Operation for recovering the normal condition>*** ***-Perform the delete function of authentication failure frequency offered within the administrator mode.***
Hierarchical to : No other components
Dependencies : FIA_UAU.1 (FIA_UAU.2[3])

FIA_AFL.1[5] Authentication failure handling

FIA_AFL.1.1[5]
The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].
[assignment: *list of authentication events*] : ***Authentication for accessing the secure print file***

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] :

[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3

FIA_AFL.1.2[5]

When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :

Surpassed

[assignment: *list of actions*] :

<Action when it is detected>

Deny the access to the secure print file and lock the authentication function for the secure print file.

<Operation for recovering the normal condition>

Perform the delete function of authentication failure frequency offered within the administrator mode.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[4])

FIA_AFL.1[6] Authentication failure handling

FIA_AFL.1.1[6]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].

[assignment: *list of authentication events*]. :

Authentication for accessing the public user box

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] :

[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3

FIA_AFL.1.2[6]

When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :

Surpassed

[assignment: *list of actions*] :

<Action when it is detected>

- While authentication is performed, log off from the authentication status of the user box, and lock the authentication function for the concerned user box.

- Otherwise, lock the authentication function which uses the user password.

<Operation for recovering the normal condition>

-Perform the delete function of authentication failure frequency offered within the administrator mode.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[5])

FIA_AFL.1[7] Authentication failure handling

FIA_AFL.1.1[7]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].

[assignment: *list of authentication events*] :

-Account authentication: Account authentication when the belonging account of the user who accesses in the synchronized method is not registered.

-Account authentication: Account authentication of the user who accesses in the method not synchronized.

[selection: *[assignment: positive integer number], an administrator configurable positive integer*

within [assignment: range of acceptable values]] :
[assignment: range of acceptable values] : an administrator configurable positive integer within 1~3

FIA_AFL.1.2[7]

When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :
Surpassed

[assignment: *list of actions*] :
<Action when it is detected>
Lock the authentication function for the concerned account, and deny the access to the TOE by the user who permitted the use of the account.
<Operation for recovering the normal condition>
Perform the delete function of authentication failure frequency offered within the administrator mode.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[6])

FIA_AFL.1[8] Authentication failure handling

FIA_AFL.1.1[8]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].

[assignment: *list of authentication events*] :

- ***Authentication when it accesses service mode***
- ***Authentication when it accesses administrator mode from the panel***
- ***User authentication when user accesses TOE from the panel***
- ***Account authentication when user accesses TOE from the panel***
- ***Authentication when it accesses secure print file***
- ***Authentication when it accesses Public user box from the panel***

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] :
[assignment: positive integer number] : 1

FIA_AFL.1.2[8]

When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :
Surpassed

[assignment: *list of actions*] :
<Action when it is detected>
Deny all access from the panel.
<Operation for recovering the normal condition>
Automatically release the lock after 5 seconds.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[1], FIA_UAU.2[2], FIA_UAU.2[3], FIA_UAU.2[4], FIA_UAU.2[5] , FIA_UAU.2[6])

FIA_AFL.1[9] Authentication failure handling

FIA_AFL.1.1[9]

The TSF shall detect when [selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] unsuccessful authentication attempts occur related to [assignment: *list of authentication events*].

[assignment: *list of authentication events*] :

- ***Authentication when accessing by WebDAV***
- ***Re-authentication when changing the WebDAV server password***

[selection: *[assignment: positive integer number], an administrator configurable positive integer within [assignment: range of acceptable values]*] :

[assignment: range of permissible values] : Positive integer values of 1 to 3 that the administrator can set

FIA_AFL.1.2[9]

When the defined number of unsuccessful authentication attempts has been [selection: met, surpassed], the TSF shall [assignment: *list of actions*].

[selection: *met, surpassed*] :

Surpassed

[assignment: *list of actions*] :

<Action when it is detected>

Deny access by WebDAV, and lock the authentication function which uses the WebDAV server password.

<Operation for recovering the normal condition>

Execute the erasure function of the number of times of authentication failure provided in the administrator mode.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[2])

FIA_ATD.1 User attribute definition

FIA_ATD.1.1

The TSF shall maintain the following list of security attributes belonging to individual users: [assignment: *list of security attributes*].

[assignment: *list of security attributes*] :

-User attributes (User ID)
-User box attributes (User box ID)
-File attributes (Secure print internal control ID)
-Account name (Account ID)
-Administrator Attribute

Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[1] Verification of secrets

FIA_SOS.1.1[1]

The TSF shall provide a mechanism to verify that secrets ***(Administrator Password, CE Password)*** meet [assignment: *a defined quality metric*].

[assignment: *a defined quality metric*] :

-Number of digits: 8- digits
- Character type: possible to choose from 92 or more characters
-Rule :
(1) Do not compose by only the same kind of character strings.
(2) Do not set the same password as the current setting.

Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[2] Verification of secrets

FIA_SOS.1.1[2]

The TSF shall provide a mechanism to verify that secrets ***(SNMP Password)*** meet [assignment: *a defined quality metric*].

[assignment: *a defined quality metric*] :

-Number of digits: 8- digits or more
- Character type: possible to choose from 93 or more characters

Hierarchical to	:	No other components

Dependencies	:	No dependencies

FIA_SOS.1[3] Verification of secrets

FIA_SOS.1.1[3]		
The TSF shall provide a mechanism to verify that secrets ***(User Password)*** meet [assignment: *a defined quality metric*].		
[assignment: *a defined quality metric*] : ***-Number of digits: 8- digits or more*** ***- Character type: possible to choose from 95 or more characters*** ***-Rule : Do not composed by only the same kind of character strings.***		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[4] Verification of secrets

FIA_SOS.1.1[4]		
The TSF shall provide a mechanism to verify that secrets ***(HDD Lock Password, CF Lock Password, Encryption passphrase)*** meet [assignment: *a defined quality metric*].		
[assignment: *a defined quality metric*] : ***-Number of digits: 20- digits*** ***- Character type: possible to choose from 83 or more characters*** ***-Rule :*** ***(1) Do not compose by only the same kind of character strings.*** ***(2) Do not set the same password or passphrase as the current setting.***		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[5] Verification of secrets

FIA_SOS.1.1[5]		
The TSF shall provide a mechanism to verify that secrets ***(Secure Print Password, Box Password, Account Password)*** meet [assignment: *a defined quality metric*].		
[assignment: *a defined quality metric*] : ***-Number of digits: 8- digits or more*** ***- Character type: possible to choose from 95 or more characters*** ***-Rule : Do not composed by only the same kind of character strings.***		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[6] Verification of secrets

FIA_SOS.1.1[6]		
The TSF shall provide a mechanism to verify that secrets ***(Session Information)*** meet [assignment: *a defined quality metric*].		
[assignment: *a defined quality metric*]: ***10^{10} and above***		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_SOS.1[7] Verification of secrets

FIA_SOS.1.1[7]
The TSF shall provide a mechanism to verify that secrets ***(WebDAV server password)*** meet

[assignment: *a defined quality metric*].	
[assignment: *a defined quality metric*]: ***- Character type: possible to choose from 95 or more characters***	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIA_SOS.2 TSF Generation of secrets

FIA_SOS.2.1	
The TSF shall provide a mechanism to generate secrets ***(Session information)*** that meet [assignment: *a defined quality metric.*].	
[assignment: *a defined quality metric.*] : ***$10^{10}$and above***	
FIA_SOS.2.2	
The TSF shall be able to enforce the use of TSF generated secrets for [assignment: *list of TSF functions*].	
[assignment: *list of TSF functions*] : ***-Administrator authentication (Access through the network)*** ***-User authentication (Access through the network)*** ***-User box authentication (Access through the network)***	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIA_UAU.2[1] User authentication before any action

FIA_UAU.2.1[1]	
The TSF shall require each user ***(Service Engineer)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(Service Engineer)***.	
Hierarchical to	: FIA_UAU.1
Dependencies	: FIA_UID.1 (FIA_UID.2[1])

FIA_UAU.2[2] User authentication before any action

FIA_UAU.2.1[2]	
The TSF shall require each user ***(Administrator)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(Administrator)***.	
Hierarchical to	: FIA_UAU.1
Dependencies	: FIA_UID.1 (FIA_UID.2[2])

FIA_UAU.2[3] User authentication before any action

FIA_UAU.2.1[3]	
The TSF shall require each user ***(User)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(User).***	
Hierarchical to	: FIA_UAU.1
Dependencies	: FIA_UID.1 (FIA_UID.2[3])

FIA_UAU.2[4] User authentication before any action

FIA_UAU.2.1[4]	
The TSF shall require each user ***(User who is permitted to use secure print file)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use secure print file)***	

Hierarchical to	:	FIA_UAU.1
Dependencies	:	FIA_UID.1 (FIA_UID.2[4])

FIA_UAU.2[5] User authentication before any action

FIA_UAU.2.1[5]

The TSF shall require each user ***(User who is permitted to use the public user box)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use the public user box)***

Hierarchical to	:	FIA_UAU.1
Dependencies	:	FIA_UID.1 (FIA_UID.2[5])

FIA_UAU.2[6] User authentication before any action

FIA_UAU.2.1[6]

The TSF shall require each user ***(User who is permitted to use the account)*** to be successfully authenticated before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use the account)***

Hierarchical to	:	FIA_UAU.1
Dependencies	:	FIA_UID.1 (FIA_UID.2[6])

FIA_UAU.6 Re-authenticating

FIA_UAU.6.1

The TSF shall re-authenticate the use under the conditions [assignment: *list of conditions under which re-authentication is required*].

[assignment: *list of conditions under which re-authentication is required*]

-When the administrator modifies the administrator password.
-When the service engineer modifies the CE password.
-When the administrator changes the HDD lock setting.
-When the administrator changes the Encryption function setting.
-When the administrator changes the CF lock setting.

Hierarchical to	:	No other components
Dependencies	:	No dependencies

FIA_UAU.7 Protected authentication feedback

FIA_UAU.7.1

The TSF shall provide only [assignment: *list of feedback*] to the user while the authentication is in progress.

[assignment: *list of feedback*] :

Display "*" every character data input.

Hierarchical to	:	No other components
Dependencies	:	FIA_UAU.1 (FIA_UAU.2[1], FIA_UAU.2[2], FIA_UAU.2[3], FIA_UAU.2[4], FIA_UAU.2[5], FIA_UAU.2[6])

FIA_UID.2[1] User identification before any action

FIA_UID.2.1[1]

The TSF shall require each user ***(Service Engineer)*** to identify itself before allowing any other TSF-mediated actions on behalf of that user ***(Service Engineer).***

Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[2] User identification before any action

FIA_UID.2.1[2]		
The TSF shall require each user ***(Administrator)*** to identify itself before allowing any other TSF-mediated actions on behalf of that user ***(Administrator).***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[3] User identification before any action

FIA_UID.2.1[3]		
The TSF shall require each user ***(User)*** to identify itself before allowing any other TSF-mediated actions on behalf of that user ***(User).***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[4] User identification before any action

FIA_UID.2.1[4]		
The TSF shall require each user ***(User who is permitted to use secure print file)*** to be successfully identified before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use secure print file) .***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[5] User identification before any action

FIA_UID.2.1[5]		
The TSF shall require each user ***(User who is permitted to use the public user box)*** to be successfully identified before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use the public user box) .***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[6] User identification before any action

FIA_UID.2.1[6]		
The TSF shall require each user ***(User who is permitted to use the account)*** to be successfully identified before allowing any other TSF-mediated actions on behalf of that user ***(User who is permitted to use the account) .***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_UID.2[7] User identification before any action

FIA_UID.2.1[7]		
The TSF shall require each user ***(External Server)*** to be successfully identified before allowing any other TSF-mediated actions on behalf of that user ***(External Server) .***		
Hierarchical to	:	FIA_UID.1
Dependencies	:	No dependencies

FIA_USB.1 User-subject binding

FIA_USB.1.1		
The TSF shall associate the following user security attributes with subjects acting on the behalf of that user: [assignment; *list of user security attributes*].		
[assignment; *list of user security attributes*]: ***-User attributes (User ID)*** ***-User box attributes (User box ID)*** ***-File attributes (Secure print internal control ID)*** ***-Account name (Account ID)*** ***-Administrator Attribute***		
FIA_USB.1.2		
The TSF shall enforce the following rules on the initial association of user security attributes with subjects acting on the behalf of users: [assignment: *rules for the initial assocication of attributes*].		
[assignment: *rules for the initial assocication of attributes*]: ***<User box attribute>*** ***The user box ID of the concerned user box associates to the task acting on the behalf of users when authenticated with the access to the user box*** ***<Account Name>*** ***-In the method not synchronized with User authentication, the account ID of the concerned account associates to the task acting on the behalf of users when authenticated with the access to the account.*** ***-In the method synchronized with User authentication, the account ID that is set to the concerned user associates to the task acting on the behalf of users when authenticated with the access to the user.*** ***<File attribute>*** ***The secure print internal control ID of the concerned secure print file associates to the task acting on the behalf of users when authenticated with the access to the secure print file.*** ***<User attribute>*** ***The user ID of the concerned user associates to the task acting on the behalf of users when authenticated with the access to the user*** ***<Administrator attribute>*** ***The Administrator ID associates to the task acting on the behalf of users when authenticated with the access to the Administrator***		
FIA_USB.1.3		
The TSF shall enforce the following rules governing changes to the user security attributes associated with subjects acting on the behalf of users: [assignment: *rules for the changing of attributes*].		
[assignment: *rules for the changing of attributes*]. ***None***		
Hierarchical to	:	No other components
Dependencies	:	FIA_ATD.1 (FIA_ATD.1)

6.1.1.4. Security management

FMT_MOF.1[1]	Management of security functions behavior	
FMT_MOF.1.1[1]		
The TSF shall restrict the ability to [selection: *determine the behavior of, disable, enable, modify the behavior of*] the functions [assignment: *list of functions*] to [assignment: *the authorized identified roles*].		
[assignment: *list of functions*] : ***-Enhanced Security Setting***		
[selection: *determine the behavior of, disable, enable, modify the behavior of*] : ***disable***		
[assignment: *the authorized identified roles*] : ***-Administrator*** ***-Service Engineer***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[1], FMT_SMR.1[2])

FMT_MOF.1[2] Management of security functions behavior

FMT_MOF.1.1[2]

The TSF shall restrict the ability to [selection: *determine the behavior of, disable, enable, modify the behavior of*] the functions [assignment: *list of functions*] to [assignment: *the authorized identified roles*].

[assignment: *list of functions*] ：

-User Authentication Function
-S/MIME function
-SNMP password authentication function
-ID & print function

[selection: *determine the behavior of, disable, enable, modify the behavior of*] ：

modify the behavior of

[assignment: *the authorized identified roles*] ：

Administrator

Hierarchical to	：	No other components
Dependencies	：	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MOF.1[3] Management of security functions behavior

FMT_MOF.1.1[3]

The TSF shall restrict the ability to [selection: *determine the behavior of, disable, enable, modify the behavior of*] the functions [assignment: *list of functions*] to [assignment: *the authorized identified roles*].

[assignment: *list of functions*] ：

-Account Authentication Function
-Trusred Channel Function

[selection: *determine the behavior of, disable, enable, modify the behavior of*] ：

disable, modify the behavior of

[assignment: *the authorized identified roles*] ：

Administrator

Hierarchical to	：	No other components
Dependencies	：	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MOF.1[4] Management of security functions behavior

FMT_MOF.1.1[4]

The TSF shall restrict the ability to [selection: *determine the behavior of, disable, enable, modify the behavior of*] the functions [assignment: *list of functions*] to [assignment: *the authorized identified roles*].

[assignment: *list of functions*] ：

Maintenance Function

[selection: *determine the behavior of, disable, enable, modify the behavior of*] ：

Enable

[assignment: *the authorized identified roles*] ：

Service engineer

Hierarchical to	：	No other components
Dependencies	：	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[1])

FMT_MSA.1[1] Management of security attributes

FMT_MSA.1.1[1]

The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to restrict the ability to [selection: *change_default, query, modify, delete*, [assignment: *other operations*]] the security attributes [assignment: *list of security attributes*] to [assignment: *the authorized identified roles*].

[assignment: *list of security attributes*] ：

User attributes of the user box that is set user's own [user ID].

[selection: *change_default, query, modify, delete*, [assignment: *other operations*]] ：

Modify (modify to other user's [User ID], [account ID] or [public])		
[assignment: *the authorized identified roles*] : ***-User*** ***-Administrator***		
[assignment: *access control SFP, information flow control SFP*] : ***User box access control***		
Hierarchical to	:	No other components
Dependencies	:	FDP_ACC.1 or FDP_IFC.1 (FDP_ACC.1[1]) , FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[3])

FMT_MSA.1[2] Management of security attributes

FMT_MSA.1.1[2]		
The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to restrict the ability to [selection: *change_default, query, modify, delete*, [assignment: *other operations*]] the security attributes [assignment: *list of security attributes*] to [assignment: *the authorized identified roles*].		
[assignment: *list of security attributes*] : ***User attributes of user box that is set the [public].***		
[selection: *change_default, query, modify, delete*, [assignment: *other operations*]] : ***modify (modify to [User ID] or [account ID])***		
[assignment: *the authorized identified roles*] : ***-User who is permitted to use that public user box*** ***-Administrator***		
[assignment: *access control SFP, information flow control SFP*] : ***User box access control***		
Hierarchical to	:	No other components
Dependencies	:	FDP_ACC.1 or FDP_IFC.1 (FDP_ACC.1[1]) , FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[4])

FMT_MSA.1[3] Management of security attributes

FMT_MSA.1.1[3]		
The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to restrict the ability to [selection: *change_default, query, modify, delete*, [assignment: *other operations*]] the security attributes [assignment: *list of security attributes*] to [assignment: *the authorized identified roles*].		
[assignment: *list of security attributes*] : ***User attributes of user box that is set the [Account ID].***		
[selection: *change_default, query, modify, delete*, [assignment: *other operations*]] : ***modify (modify to [user ID], [public] or other [account ID])***		
[assignment: *the authorized identified roles*] : ***-User who is permitted to use that account*** ***-Administrator***		
[assignment: *access control SFP, information flow control SFP*] : ***User box access control***		
Hierarchical to	:	No other components
Dependencies	:	FDP_ACC.1 or FDP_IFC.1 (FDP_ACC.1[1]) , FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[6])

FMT_MSA.3[1] Static attribute initialization

FMT_MSA.3.1[1]
The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to provide [selection, choose one of: *restrictive, permissive, [assignment: other property]*] default values for security attributes (***User attributes of the user box***) that are used to enforce the SFP.
[selection, choose one of: *restrictive, permissive, [assignment: other property]*] :

[assignment: other property] : ***Responded the registered situation of the user box classified into the following cases.*** ***(1) [Public], when an user box is registered by the operation of user or administrator*** ***(2) [User ID] of the user who performed the relevant job, when an user box is registered automatically according to the operation of stored job specifying unregistered user box.***		
[assignment: *access control SFP, information flow control SFP*] : ***User box access control***		
FMT_MSA.3.2[1]		
The TSF shall allow the [assignment: *the authorized identified roles*] to specify alternative initial values to override the default values when an object or information is created.		
[assignment: *the authorized identified roles*] ***Case (1) identified in [assignment: other property] of FMT_MSA.3.1 : User, administrator*** ***Case (2) identified in [assignment: other property] of FMT_MSA.3.1 : None***		
Hierarchical to	:	No other components
Dependencies	:	FMT_MSA.1 (FMT_MSA.1[1], FMT_MSA.1[2]) , FMT_SMR.1 (FMT_SMR.1[3])

FMT_MSA.3[2] Static attribute initialization

FMT_MSA.3.1[2]		
The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to provide [selection, choose one of: *restrictive, permissive, [assignment: other property]*] default values for security attributes (***Secure print internal control ID***) that are used to enforce the SFP.		
[selection, choose one of: *restrictive, permissive, [assignment: other property]*] : ***[assignment: other property] : Identified uniquely***		
[assignment: *access control SFP, information flow control SFP*] : ***Secure print file access control***		
FMT_MSA.3.2[2]		
The TSF shall allow the [assignment: *the authorized identified roles*] to specify alternative initial values to override the default values when an object or information is created.		
[assignment: *the authorized identified roles*] ***None***		
Hierarchical to	:	No other components
Dependencies	:	FMT_MSA.1 (N/A) , FMT_SMR.1 (N/A)

FMT_MSA.3[3] Static attribute initialization

FMT_MSA.3.1[3]		
The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to provide [selection, choose one of: *restrictive, permissive, [assignment: other property]*] default values for security attributes (***User box attributse of user box file***) that are used to enforce the SFP.		
[selection, choose one of: *restrictive, permissive, [assignment: other property]*] : ***[assignment: other property] : Corresponds with the value of the user box attributes of the user box that selected as a target to store the user box file concerned.***		
[assignment: *access control SFP, information flow control SFP*] : ***User box access control***		
FMT_MSA.3.2[3]		
The TSF shall allow the [assignment: *the authorized identified roles*] to specify alternative initial values to override the default values when an object or information is created.		
[assignment: *the authorized identified roles*] ***None***		
Hierarchical to	:	No other components
Dependencies	:	FMT_MSA.1 (N/A) , FMT_SMR.1 (N/A)

FMT_MSA.3[4] Static attribute initialization

FMT_MSA.3.1[4]

The TSF shall enforce the [assignment: *access control SFP, information flow control SFP*] to provide [selection: choose one of: *restrictive, permissive, [assignment: other property]*] default values for the security attributes (***User attributes of ID & print***) that are used to enforce the SFP.

[selection: choose one of: *restrictive, permissive, [assignment: other property]*] :

[assignment: other property] : Shall be equal to the values of the user attributes of the user who registers that ID & print file.

[assignment: *access control SFP, information flow control SFP*] :

ID & print file access control

FMT_MSA.3.2[4]

The TSF shall allow the [assignment: *the authorised identified roles*] to specify alternative initial values to override the default values when an object or information is created.

[assignment: *the authorized identified roles*]

None

Hierarchical to	:	No other components
Dependencies	:	FMT_MSA.1 (N/A) , FMT_SMR.1 (N/A)

FMT_MTD.1[1] Management of TSF data

FMT_MTD.1.1[1]

(When the [machine authentication] is selected as the User authentication method) The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

User password

[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] :

[assignment: ***other operations***] ***: Registration***

[assignment: *the authorized identified roles*] :

Administrator

Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MTD.1[2] Management of TSF data

FMT_MTD.1.1[2]

(When the [machine authentication] is selected as the User authentication method) The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

User's own user password

[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] :

modify

[assignment: *the authorized identified roles*] :

-User

-Administrator

Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[3])

FMT_MTD.1[3] Management of TSF data

FMT_MTD.1.1[3]

The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

- User ID

- Account ID ***- Account password*** ***- Secure print password*** ***- Panel auto log-off time*** ***- Threshold Number of authentication failure*** ***- External server authentication setting data*** ***- S/MIME certificate***[7] ***- Belonging Account of User*** ***- Administrator authentication lock time*** ***- Encryption passphrase*** ***- HDD lock password*** ***- CF lock password*** ***- SNMP password*** ***- TSI receiving setting data*** ***- WebDAV server password***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***modify***		
[assignment: *the authorized identified roles*] : ***Administrator***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MTD.1[4] Management of TSF data

FMT_MTD.1.1[4]		
The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].		
[assignment: *list of TSF data*] : ***User box password of the relevant user box***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***modify***		
[assignment: *the authorized identified roles*] : ***-User who is permitted to use that public user box*** ***-Administrator***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[4])

FMT_MTD.1[5] Management of TSF data

FMT_MTD.1.1[5]		
The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].		
[assignment: *list of TSF data*] : ***User box password***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***[assignment: other operations] : Registration***		
[assignment: *the authorized identified roles*] : ***-User*** ***-Administrator***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[3])

[7] It intends the operation of replacing a settable digital certificate for each user in stead of the modification of the value itself.

FMT_MTD.1[6]	Management of TSF data

FMT_MTD.1.1[6]

The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

Administrator password

[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] :

modify

[assignment: *the authorized identified roles*] :

-Administrator
-Service Engineer

Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[1], FMT_SMR.1[2])

FMT_MTD.1[7]	Management of TSF data

FMT_MTD.1.1[7]

The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

-SNMP password
-User password
-Account password
-User box password
-Secure print password
-Enryption passphrase
-WebDAV server password

[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] :

query

[assignment: *the authorized identified roles*] :

Administrator

Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MTD.1[8]	Management of TSF data

FMT_MTD.1.1[8]

The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

Secure print password

[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] :

[assignment: other operations] : Registration

[assignment: *the authorized identified roles*] :

User

Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[3])

FMT_MTD.1[9]	Management of TSF data

FMT_MTD.1.1[9]

The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].

[assignment: *list of TSF data*] :

-CE password ***-CE authentication lock time***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***modify***		
[assignment: *the authorized identified roles*] : ***Service Engineer***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[1])

FMT_MTD.1[10] Management of TSF data

FMT_MTD.1.1[10]		
The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].		
[assignment: *list of TSF data*] : ***User ID***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***[assignment: other operations] : Registration***		
[assignment: *the authorized identified roles*] : ***Administrator, External server***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[5])

FMT_MTD.1[11] Management of TSF data

FMT_MTD.1.1[11]		
The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].		
[assignment: *list of TSF data*] : ***-Account ID*** ***-Account password*** ***-S/MIME certificate*** ***-Encryption passphrase***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***[assignment: other operations] : Registration***		
[assignment: *the authorized identified roles*] : ***Administrator***		
Hierarchical to	:	No other components
Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2])

FMT_MTD.1[12] Management of TSF data

FMT_MTD.1.1[12]		
The TSF shall restrict the ability to [selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] the [assignment: *list of TSF data*] to [assignment: *the authorized identified roles*].		
[assignment: *list of TSF data*] : ***Belonging Account of a user oneself***		
[selection: *change_default, query, modify, delete, clear*, [assignment: *other operations*]] : ***[assignment: other operations] : Registration***		
[assignment: *the authorized identified roles*]: ***Administrator, the user who is permitted to use of the account***[8]		
Hierarchical to	:	No other components

[8] A user who isn't related with an account name, and who was informed of the account password for the account ID from the administrator off-line.

Dependencies	:	FMT_SMF.1 (FMT_SMF.1) , FMT_SMR.1 (FMT_SMR.1[2], FMT_SMR.1[6])

FMT_SMF.1 Specification of Management Functions

FMT_SMF.1.1

The TSF shall be capable of performing the following security management functions: [assignment: *list of security management functions to be provided by the TSF*].

[assignment: *list of security management functions to be provided by the TSF*] :

- ***Stop Function of Enhanced security function by administrator***
- ***Operation setup function of ID & print function by administrator***
- ***Operation Method Setting Function of User Authentication Function by administrator***
- ***Operation Method Setting Function of Account Authentication Function by administrator***
- ***Operation Setting Function of SNMP password authentication function by administrator***
- ***Setting function of authentication failure frequency threshold by administrator in the authentication operation prohibition function***
- ***Backup Function by administrator*** [9]
- ***Restoration Function by administrator*** [10]
- ***Registration function of account ID by administrator***
- ***Modification function of account ID by administrator***
- ***Registration function of account password by administrator***
- ***Modification function of account password by administrator***
- ***Panel Auto Log-off Time Setting Function by administrator***
- ***Modification function of administrator password by administrator***
- ***Modification function of SNMP password by administrator***
- ***Registration function of user box password by administrator***
- ***Modification function of user box password by administrator***
- ***Modification function of WebDAV server password by administrator***
- ***User box registration function by administrator (However, only when the [public] is registered for user attribute.)***
- ***Modification function of user attribute of the user box by the administrator (However, only when the user attribute of previous setting is "user ID")***
- ***Registration function of user ID by administrator***
- ***Registration function of user password when method of user authentication by administrator is machine authentication***
- ***Modification function of user password when method of user authentication by administrator is machine authentication***
- ***Registration function of S/MIME certificate by administrator***
- ***Registration modification function of S/MIME certificate by administrator***
- ***Operation setting function of S/MIME function by administrator***
- ***Operation setting function of Trusted Channel function by administrator***
- ***Registration function of Belonging Account of user by administrator***
- ***Modification function of Belonging Account of user by administrator***
- ***Modification function of Administrator authentication lock time by administrator***
- ***Modification function of HDD Lock password by administrator***
- ***Modification function of CF Lock password by administrator***
- ***Modification function of Encryption passphrase by administrator***
- ***Operation setting function of Function to use encryption function realized by encryption kit by administrator***
- ***Modification function of TSI receiving setting data by administrator***
- ***Modification function of service engineer password by service engineer***
- ***Modification function of administrator password by service engineer***
- ***Stop function of Enhanced Security function by service engineer***
- ***Modification function of CE authentication lock time by service engineer***
- ***Operation function of Maintenance function by service engineer***
- ***Overwrite function for the default value of the user attribute of the user box by the user.***

[9] A part of a backup function corresponds to the inquiry function of TSF data.

[10] A part of the restoration function corresponds to the modification function of the TSF data.

-Modification function of user password when method of user authentication is machine authentication by user *-Registration function of user box password by user* *-Modification function of user attribute of user box by user* *-Registration function of Belonging Account of user oneself by user who is permitted the use of the account* *-User box registration function by user* *-Automatic Personal user box registration function by user box stored job that specifies unregistered box by user* *-Machine non-registered users' user ID automatic registration function with external server when user authentication method is external server authentication* *-Registration function of secure print password according to secure print file registration by user* *-Modification function of user attribute of user box by user who is permitted the use of public user box* *-Modification function of user box password of the user box by user who is permitted the use of public user box* *-Modification function of the concerned user box's user attribute by user who is permitted the use of the group box*		
Hierarchical to	:	No other components
Dependencies	:	No dependencies

FMT_SMR.1[1] Security roles

FMT_SMR.1.1[1]		
The TSF shall maintain the roles [assignment: *the authorized identified roles*].		
[assignment: *the authorized identified roles*] : ***Service Engineer***		
FMT_SMR.1.2[1]		
The TSF shall be able to associate users with roles.		
Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[1])

FMT_SMR.1[2] Security roles

FMT_SMR.1.1[2]		
The TSF shall maintain the roles [assignment: *the authorized identified roles*].		
[assignment: *the authorized identified roles*] : ***Administrator***		
FMT_SMR.1.2[2]		
The TSF shall be able to associate users with roles.		
Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[2])

FMT_SMR.1[3] Security roles

FMT_SMR.1.1[3]		
The TSF shall maintain the roles [assignment: *the authorized identified roles*].		
[assignment: *the authorized identified roles*] : ***User***		
FMT_SMR.1.2[3]		
The TSF shall be able to associate users with roles.		
Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[3])

FMT_SMR.1[4] Security roles

FMT_SMR.1.1[4]

The TSF shall maintain the roles [assignment: *the authorized identified roles*].

[assignment: *the authorized identified roles*] :

User who is authorized to use that public user box

FMT_SMR.1.2[4]

The TSF shall be able to associate users with roles.

Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[5])

FMT_SMR.1[5] Security roles

FMT_SMR.1.1[5]

The TSF shall maintain the roles [assignment: *the authorized identified roles*].

[assignment: *the authorized identified roles*] :

External server

FMT_SMR.1.2[5]

The TSF shall be able to associate users with roles.

Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[7])

FMT_SMR.1[6] Security roles

FMT_SMR.1.1[6]

The TSF shall maintain the roles [assignment: *the authorized identified roles*].

[assignment: *the authorized identified roles*] :

The user who is permitted to use of the account

FMT_SMR.1.2[6]

The TSF shall be able to associate users with roles.

Hierarchical to	:	No other components
Dependencies	:	FIA_UID.1 (FIA_UID.2[6])

6.1.1.5. TOE Access

FTA_SSL.3 **TSF-initiated termination**

FTA_SSL.3.1

The TSF shall terminate an interactive session after a [assignment: *time interval of user inactivity*].

[assignment: *time interval of user inactivity*] :

Time decided from the final operation depending on the panel auto logoff time (1-9 minute/s) while a administrator or a user is operating on the panel

Hierarchical to	:	No other components
Dependencies	:	No dependencies

6.1.1.6. Trusted pass/channel

FTP_ITC.1 **Inter-TSF trusted channel**

FTP_ITC.1.1

The TSF shall provide a communication channel between itself and a other trusted IT product that is logically distinct from other communication channels and provides assured identification of its end points and protection of the channel data from modification or disclosure.

FTP_ITC.1.2

The TSF shall permit [selection : *the TSF, the other trusted IT product*] to initiate communication via the trusted channel.

[selection : *the TSF, the other trusted IT product*]

The other trusted IT product

FTP_ITC.1.3

The TSF shall initiate communication via the trusted channel for [assignment : *list of functions for which a trusted channel is required*].

[assignment : *list of functions for which a trusted channel is required*]

-Download of the user box file.

-Upload of the image file that will be stored as a user box file.

-Upload of the image file that will be the secure print file.

Hierarchical to	:	No other components
Dependencies	:	No dependencies

6.1.1.7. Extension: Remaining all information protection

FAD_RIP.1 Protection of all remaining information after explicit deletion operation

FAD_RIP.1.1

TSF shall guarantee not to be able to use the content of any information before having been assigned to the resource on the explicit deleting operation to the following objects and the TSF data: [assignment: *list of object and list of TSF data*].

[assignment : *List of object and list of TSF data*] :

<Objects>
-User Box file
-Secure print file
-ID & print file
-On memory image file
-Stored image file
- HDD remaining image file
- CF remaining image file
-Image-related file
-Transmission addressee data file
<TSF data>
-HDD lock password
-CF lock password
-Encryption passphrase
-Administrator password
-SNMP password
-WebDAV server password
-User ID
-User password
-User Box password
-Secure print password
-Account ID
-Account password
-S/MIME certificate
-Trusted Channel setting data
-Remaining TSF data[11]

Hierarchical to	:	No other components
Dependencies	:	No dependencies

[11] TSF data remaining in the HDD data area, that cannot be deleted only by the deletion of the file management area.

6.1.1.8. Extension: Approval of access destination

FIA_EID.1[1]	**Identification of IT environment becoming an access object from TOE**
FIA_EID.1.1[1]	
TSF shall demand to succeed in the IT environment entity's (***HDD***) identification before the action is taken to IT environment entity's (***HDD***) by TOE.	
FIA_NEW.1.2[1]	
TSF shall stop the start of the action to IT environment entity's (***HDD***) identification by TOE if the IT environment entity's (***HDD***) identification is failed.	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIA_EID.1[2]	**Identification of IT environment becoming an access object from TOE**
FIA_EID.1.1[2]	
TSF shall demand to succeed in the IT environment entity's (***CF***) identification before the action is taken to IT environment entity's (***CF***) by TOE.	
FIA_NEW.1.2[2]	
TSF shall stop the start of the action to IT environment entity's (***CF***) identification by TOE if the IT environment entity's (***CF***) identification is failed.	
Hierarchical to	: No other components
Dependencies	: No dependencies

6.1.1.9. Extension: Capability of using IT environment entity

FIT_CAP.1[1]	**Capability of using security service of IT environment entity**
FIT_CAP.1.1[1]	
TSF shall provide the necessary capability to use the service for [assignment: *security service provided by IT environment entity*]. : [assignment: *necessary capability list for the operation of security service*]	
[assignment: *security service provided by IT environment entity*] : ***User identification and authentication function of user information management server using ActiveDirectory***	
[assignment: *necessary capability list for the operation of security service*] : ***-Inquirey function of authentication information for the identification and authentication target user*** ***-Acquirement function of authentication information for the identification and authentication target user***	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIT_CAP.1[2]	**Capability of using security service of IT environment entity**
FIT_CAP.1.1[2]	
TSF shall provide the necessary capability to use the service for [assignment: *security service provided by IT environment entity*]. : [assignment: *necessary capability list for the operation of security service*]	
[assignment: *security service provided by IT environment entity*] : ***Encryption function achieved by encryption kit***	
[assignment: *necessary capability list for the operation of security service*] : ***Support function of the the image files processing by encryption function***	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIT_CAP.1[3]	**Capability of using security service of IT environment entity**
FIT_CAP.1.1[3]	
TSF shall provide the necessary capability to use the service for [assignment: *security service provided by IT environment entity*]. : [assignment: *necessary capability list for the operation of security service*]	
[assignment: *security service provided by IT environment entity*] : ***HDD lock function achieved by HDD***	
[assignment: *necessary capability list for the operation of security service*] : ***-Support function of modifying HDD lock password*** ***-Support function of releasing HDD lock function***	
Hierarchical to	: No other components
Dependencies	: No dependencies

FIT_CAP.1[4]	**Capability of using security service of IT environment entity**
FIT_CAP.1.1[4]	
TSF shall provide the necessary capability to use the service for [assignment: *security service provided by IT environment entity*]. : [assignment: *necessary capability list for the operation of security service*]	
[assignment: *security service provided by IT environment entity*] : ***CF lock function achieved by CF***	
[assignment: *necessary capability list for the operation of security service*] : ***-Support function of modifying CF lock password*** ***-Support function of releasing CF lock function***	
Hierarchical to	: No other components
Dependencies	: No dependencies

6.1.2. TOE Security Assurance Requirements

The TOE is a commercial office product that is used in a general office environment, and therefore a TOE security assurance requirement that is required for EAL3 conformance, which is a sufficient level as an assurance for commercial office products, is applied. The following table summarizes the applied TOE security assurance requirements.

Table 8 TOE Security Assurance Requirements

TOE Security Assurance Requirements		Component
Class ADV: Development	Security architecture description	ADV_ARC.1
	Functional specification with complete summary	ADV_FSP.3
	Architectural design	ADV_TDS.2
Class AGD: Guidance documents	Operational user guidance	AGD_OPE.1
	Preparative procedures	AGD_PRE.1
Class ALC: Life Cycle Support	Authorisation controls	ALC_CMC.3
	Implementation representation CM coverage	ALC_CMS.3
	Delivery procedures	ALC_DEL1
	Identification of security measures	ALC_DVS.1
	Developer defined life-cycle model	ALC_LCD.1
Class ASE: Security Target Evalation	Conformance claims	ASE_CCL.1
	Extended components definition	ASE_ECD.1

TOE Security Assurance Requirements		Component
	ST introduction	ASE_INT.1
	Security objectives	ASE_OBJ.2
	Derived security requirements	ASE_REQ.2
	Security problem definition	ASE_SPD.1
	TOE summary specification	ASE_TSS.1
Class ATE: Tests	Analysis of coverage	ATE_COV.2
	Testing: basic design	ATE_DPT.1
	Functional testing	ATE_FUN.1
	Independent testing - sample	ATE_IND.2
Class AVA: Vulnerability Assessment	Vulnerability analysis	AVA_VLA.1

6.2. IT Security Requirements Rationale

6.2.1. Rationale for IT Security Functional Requirements

6.2.1.1. Necessity

The correspondence between the security objectives and the IT security functional requirements are shown in the following table. It shows that the IT security functional requirements correspond to at least one security objective.

Table 9 Conformity of IT Security Functional Requirements to Security Objectives

Security Objective / Security Functional Requirements	O.REGISTERED-USER	O.PRIVATE-BOX	O.PUBLIC-BOX	O.GROUP-BOX	O.SECURE-PRINT	O.CONFIG	O.OVERWRITE-ALL	O.CRYPT-KEY	O.CHECK-HDD	O.CHECK-CF	O.TRUSTED-PASS	O.CRYPTO-MAIL	O.AUTH-CAPABILITY	O.CRYPTO-CAPABILITY	O.LOCK-HDD-CAPABILITY	O.LOCK-CF-CAPABILITY	* set.admin	* set.service
set.admin	X	X	X	X	X	X												
set.service	X	X	X	X	X	X												
FCS_CKM.1								X				X						
FCS_COP.1												X						
FDP_ACC.1[1]		X	X	X		X												
FDP_ACC.1[2]					X	X												
FDP_ACC.1[3]						X												
FDP_ACC.1[4]					X	X												
FDP_ACF.1[1]		X	X	X		X												
FDP_ACF.1[2]					X	X												
FDP_ACF.1[3]						X												
FDP_ACF.1[4]					X	X												
FIA_AFL.1[1]																		X
FIA_AFL.1[2]																	X	
FIA_AFL.1[3]						X												

Security Objective Security Functional Requirements	O.REGISTERED-USER	O.PRIVATE-BOX	O.PUBLIC-BOX	O.GROUP-BOX	O.SECURE-PRINT	O.CONFIG	O.OVERWRITE-ALL	O.CRYPT-KEY	O.CHECK-HDD	O.CHECK-CF	O.TRUSTED-PASS	O.CRYPTO-MAIL	O.AUTH-CAPABILITY	O.CRYPTO-CAPABILITY	O.LOCK-HDD-CAPABILITY	O.LOCK-CF-CAPABILITY	* set.admin	* set.service
FIA_AFL.1[4]	X																	
FIA_AFL.1[5]					X													
FIA_AFL.1[6]			X															
FIA_AFL.1[7]				X														
FIA_AFL.1[8]	X		X	X	X												X	X
FIA_AFL.1[9]						X												
FIA_ATD.1		X	X	X	X	X												
FIA_SOS.1[1]																	X	X
FIA_SOS.1[2]						X												
FIA_SOS.1[3]	X																	
FIA_SOS.1[4]						X												
FIA_SOS.1[5]			X	X	X													
FIA_SOS.1[6]	X		X														X	
FIA_SOS.1[7]						X												
FIA_SOS.2	X		X														X	
FIA_UAU.2[1]																		X
FIA_UAU.2[2]						X											X	
FIA_UAU.2[3]	X																	
FIA_UAU.2[4]					X													
FIA_UAU.2[5]			X															
FIA_UAU.2[6]				X														
FIA_UAU.6						X											X	X
FIA_UAU.7	X		X	X	X												X	X
FIA_UID.2[1]																		X
FIA_UID.2[2]						X											X	
FIA_UID.2[3]	X																	
FIA_UID.2[4]					X													
FIA_UID.2[5]			X															
FIA_UID.2[6]				X														
FIA_UID.2[7]	X																	
FIA_USB.1		X	X	X	X	X												
FMT_MOF.1[1]						X												
FMT_MOF.1[2]	X				X	X												
FMT_MOF.1[3]				X		X												
FMT_MOF.1[4]						X												
FMT_MSA.1[1]		X				X												
FMT_MSA.1[2]			X			X												
FMT_MSA.1[3]				X		X												
FMT_MSA.3[1]		X	X															
FMT_MSA.3[2]					X													
FMT_MSA.3[3]		X	X	X														
FMT_MSA.3[4]					X													
FMT_MTD.1[1]	X																	
FMT_MTD.1[2]	X					X												

Security Objective Security Functional Requirements	O.REGISTERED-USER	O.PRIVATE-BOX	O.PUBLIC-BOX	O.GROUP-BOX	O.SECURE-PRINT	O.CONFIG	O.OVERWRITE-ALL	O.CRYPT-KEY	O.CHECK-HDD	O.CHECK-CF	O.TRUSTED-PASS	O.CRYPTO-MAIL	O.AUTH-CAPABILITY	O.CRYPTO-CAPABILITY	O.LOCK-HDD-CAPABILITY	O.LOCK-CF-CAPABILITY	* set.admin	* set.service
FMT_MTD.1[3]	X		X	X	X	X											X	X
FMT_MTD.1[4]			X			X												
FMT_MTD.1[5]			X															
FMT_MTD.1[6]																	X	
FMT_MTD.1[7]						X												
FMT_MTD.1[8]					X													
FMT_MTD.1[9]																		X
FMT_MTD.1[10]	X																	
FMT_MTD.1[11]				X		X												
FMT_MTD.1[12]				X														
FMT_SMF.1	X	X	X	X	X	X											X	X
FMT_SMR.1[1]						X											X	X
FMT_SMR.1[2]	X	X	X	X	X	X											X	
FMT_SMR.1[3]	X	X			X													
FMT_SMR.1[4]			X															
FMT_SMR.1[5]	X																	
FMT_SMR.1[6]				X														
FTA_SSL.3	X																X	
FTP_ITC.1											X							
FAD_RIP.1							X											
FIA_EID.1[1]									X									
FIA_EID.1[2]										X								
FIT_CAP.1[1]													X					
FIT_CAP.1[2]														X				
FIT_CAP.1[3]															X			
FIT_CAP.1[4]																X		

Note) **set.admin** and **set.service** indicates the set of the requirements. And the security objectives assumed to have the correspondence and presented by " X " also correspond to a series of requirement set associated by * set.admin and * set.service shown in column.

6.2.1.2. Sufficiency

The IT security functional requirements for the security objectives are described as follows.

- **O.REGISTERED-USER (Usage of a registered user)**

This security objective limits the utilization of MFP installing TOE to only the registered user, and needs various requirements that related to the user identification and authentication.

<Necessary requirement for identification and authentication of the user>
It identifies and authenticates that the user who accesses is a registered user by FIA_UID.2[3]

and FIA_UAU.2[3].
FIA_UAU.7 returns "*" for each entered character as feedback protected by the panel and supports the authentication.
In the case of the failure authentication from the panel, FIA_AFL.1 [8] refuses all input acceptances from the panel for 5 seconds in every failure. When the authentication failure reaches 1-3 times, FIA_AFL.1 [4] locks the authentication function for that user from then on. This lock status is released by the administrator's release operation.
FMT_MOF.1[2] permits only the administrator the selection of the user authentication methods which are "Machine authentication" and "External server authentication". FMT_MTD.1[3] permits only the administrator the setting (modification) of the threshold of the Authentication failure frequency which is the trial frequency of the failure authentication in the user authentication.
FIA_SOS.1[6] secures the quality verification of the session information used in the user authentication via the network, and FIA_SOS.2 secures the quality of the session information which is generated and used.

<Necessary requirements for managing session of user who is identified and authenticated>
The duration of session of the user who is identified and authenticated contributes to reduce the chance of attacking associated with unnecessary session connection, by ending the session after the panel automatic logoff time elapses with FTA_SSL.3. when it logs in from the panel. The change in the panel auto logoff time is limited to the administrator by FMT_MTD.1[3].

<Necessary requirement for managing the identification and authentication information of the user>
When "the machine authentication" is chosen in a method of the user authentication by FMT_MTD.1[1], the initial registration of a user password in the user's registration is permitted only by the administrator.
When "the machine authentication" has been selected in the method of the user authentication, the registration of the user ID in the user registration is permitted to the administrator by FMT_MTD.1[10]. When the "external server authentication" (has been selected in the user authentication method, the user who is authenticated the identification is permitted from an external server and registered automatically by this requirement. (This corresponds to the user ID registration of the "external server".) At this registration, the external server accessing TOE is identified the external server registered by FIA_UID.2[7]. This management behavior is maintained as the role of the external server by FMT_SMR.1 [5]. In addition, the registration function of user ID is specified for the administration function by FMT_SMF.1.
The setting change operation of an external server is limited to only the administrator by FMT_MTD.1[3].

The quality of the user password is verified by FIA_SOS.1[3]. When "machine authentication" is selected in the method of the user authentication, a change of the user password is limited to the user itself and the administrator by FMT_MTD.1[2].

<Necessary requirement to keep the administrator secure>
→ refer to set.admin

<Necessary requirement to keep the service engineer secure>
→ refer to set.service

<Role and management function for each management>
The role to do these managements is maintained as a administrator by FMT_SMR.1[2] and a user by FMT_SMR.1[3]. Moreover, these management functions are specified by FMT_SMF.1.

This security objective is satisfied by the completion of these multiple functional requirements.

- O.PRIVATE-BOX (personal user box access control)

  This security objective limits access to the personal user box and the user box file in the personal user box to only the user who owns that user box, and needs various requirements that relate to the access control.

  <User box access control (a personal user box)>
  After the user has been identified and authorized, the user ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1. By FDP_ACC.1[1] and FDP_ACF.1[1], the task of acting the user has a user ID, and is permitted to display the list of the user box with a corresponding user attribute. In addition, after the user box has been selected, when the user box ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1, the operation such as a print, a download, transmissions, a movement, and a copy is permitted to the user box file that has a corresponding object attribute to user ID and user box ID of the subject attribute.

  <Management of a personal user box>
  FMT_MSA.1[1] permits to the user and the administrator the change operation of the user attribute of the user box where the user ID is set.
  As for the registration of the user box, public is appointed to the user attribute of the user box by FMT_MSA.3[1], and it is permitted only to the user and administrator to give the initial value to change the public attribute. In addition, when the job to store the non-registered user box into the user box appointed is executed due to the same requirement, a user ID of the user who executes a job concerned is appointed automatically.
  As for the box attribute of the user box file, the value consistent with the box attribute of the user box which was selected as the file saved is set up by FMT_MSA.3[3].

  <Necessary requirement to keep the administrator secure>
  → refer to set.admin

  <Necessary requirement to keep the service engineer secure>
  → refer to set.service

  <Role and controlling function for each management>
  As the role of doing these managements, FMT_SMR.1[2] maintains an administrator and FMT_SMR.1[3] maintains a user permitted the use of the user box. FMT_SMF.1 specifies these management functions.

This security objective is satisfied by the completion of these multiple functional requirements.

- O.PUBLIC-BOX (a public user box access control)

This security objective permits the inspection of the public user box to all users, and limits the setting of the public user box and the operation of the user box file in the public user box only to the user who permitted the utilization of that public user box. And it needs the various requirements that related to the access control.

<User box access control (a public user box)>
After the user has been identified and authorized, the user ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1. FDP_ACC.1[1] and FDP_ACF.1[1] permits the list display operation to the user box where public is set to the user attribute to the task of acting the user who has user ID.
It is required to be a user who is permitted the use of the user box to operate the user box file in the public user box. FIA_UID.2[5] and FIA_UAU.2[5] identifies and authenticates that it is a user who is permitted the use of the user box.
FIA_UAU.7 returns "*" for each entered character as feedback protected by the panel and supports the authentication.
In the case of the failure authentication from the panel, FIA_AFL.1 [8] refuses all input acceptances from the panel for 5 seconds in every failure. When the authentication failure reaches 1-3 times, FIA_AFL.1 [6] locks the authentication function for that user from then on. This lock status is released by the administrator's release operation.
FMT_MTD.1[3] permits only to the administrator the setting of the threshold of the unauthorized access detection value that is the trial frequency of the failure authentication in the authentication of the user who is permitted the use of the user box.
When FIA_ATD.1 and FIA_USB.1 relates a user box ID to the task of acting use, FDP_ACC.1[1] and FDP_ACF.1[1] permit the user box file that has a corresponding object attribute to the user box ID of the subject attribute and is set public to the user attribute of user box, the operation such as a print, a download, transmissions, a movement, and a copy.
FIA_SOS.1[6] secures the quality verification of the session information used in the user box authentication via the network, and FIA_SOS.2 secures the quality of the session information which is generated and used.

<Management of a public user box>
FMT_MSA.1[2] permits the user who is permitted the use of the user box to operate the change of the user attribute of use box which "Public" is set. FMT_MTD.1[4] permits the change in the user box password only to the administrator and the user who is permitted to the use of the user box. FIA_SOS.1[5] verifies the quality of the user box password.
As for the user box registration, FMT_MSA.3[1] specifies the public to the user attribute of the user box, and permits only the user and administrator to give the initial value to change the user attribute. FMT_MTD.1[5] permits the registration of the user box password only to the user or the administrator.
For the user box attribute of the user box file, the user box attribute value of the selected user box as storage is set by FMT_MSA.3[3].

<Necessary requirement to keep the administrator secure>
→ refer to set.admin

<Necessary requirement to keep the service engineer secure>
→ refer to set.service

<Role and controlling function for each management>
As the role of doing these managements, FMT_SMR.1[2] maintains an administrator and FMT_SMR.1[4] maintains a user permitted the use of the user box. FMT_SMF.1 specifies these management functions.

This security objective is satisfied by the completion of these multiple functional requirements.

- **O.GROUP-BOX (Group user box access control)**

This security objective permits the browser of the group box only to the user who is permitted the use of the account, and limits the operation of the user function of the box file in the group user box, set of the group box only to the user who is permitted the use of the group user box, and requires various requirements that relate to the access control.

<User box access control (a group user box)>
After the user has been identified and authorized, the user ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1 And after the account has been authorized, the account ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1 FDP_ACC.1[1] and FDP_ACF.1[1] permits a task to act for the user to operate the list to the user box (group user box) where the user attribute corresponded with the Account Name (account ID) in the security attribute of the subject is set.
It is required to be a user who is permitted the use of the group user box to operate the user box file in the group user box. When the Account authentication method is "the method not synchronized", FIA_UID.2[6] and FIA_UAU.2[6] identifies and authenticates that it is a user who is permitted the use of the group user box. When the account authentication method is "synchronized method" and the Account that user belongs to is not registered, FIA_UID.2[6] and FIA_UAU.2[6] identifies and authenticates that it is a user who is permitted the use of the account.
FIA_UAU.7 returns "*" for each entered character as feedback protected by the panel and supports the authentication.
In the case of the failure authentication from the panel, FIA_AFL.1[8] refuses all input acceptances from the panel for 5 seconds in every failure. When the authentication failure reaches 1-3 times, FIA_AFL.1[7] locks the authentication function for that account from then on. This lock status is released by the administrator's release operation.
FMT_MTD.1[3] permits only the administrator the setting of the threshold of the unauthorized access detection value that is the trial frequency of the failure authentication in the authentication of the user who is permitted the use of the group user box.
When FIA_ATD.1 and FIA_USB.1 relates to the user box ID under the task to act for user,
FDP_ACC.1[1] and FDP_ACF.1[1] permits the user box file that has a corresponding object attribute to the account ID and the user box ID of the subject attribute the operation such as

print, download, transmissions, movement and copy.

<Necessary requirement to manage the group box>
FMT_MAS.1[3] permits the modification operation of the user attribute of the user box that is set "account ID" to the user who is permitted the access to the group user box.
For the user box attribute of the user box file, the user box attribute value of the selected user box as storage is set by FMT_MSA.3[3].

<Necessary requirement to manage the subject attribute related with the group user box>
FMT_MTD.1[11] restricts the registration of the account ID and account password only to the administrator. Also, FMT_MTD.1[3] restricts the modification of the account ID and account password only to the administrator.
FMT_MTD.1[12] restricts the registration of the belonging account assigned to the user, to the administrator and to the user who is permitted the use of the account.
FIA_SOS.1[5] verifies the quality of the account password .

<Management of the account authentication method>
FMT_MOF.1[3] restricts the behavior management of the account authentication function and the stop operation management to the administrator.

<Necessary requirement to keep the administrator secure>
→ refer to set.admin

<Necessary requirement to keep the service engineer secure>
→ refer to set.service

<Role and controlling function for each management>
As the role of doing these managements, FMT_SMR.1[2] maintains an administrator and FMT_SMR.1[6] maintains a user permitted the use of the group user box. FMT_SMF.1 specifies these management functions.

This security objective is satisfied by the completion of these multiple functional requirements.

O.SECURE-PRINT (Access control of secure print file and ID & print file)
These security objectives explain the policy for the secure print file and ID & print file.
First, for secure print file, this security objective limits the print of the secure print file only for the user, who is permitted the use of the secure print file, and requires various requirements that relate to the access control.

<Secure print file access control>
After the user has been identified and authorized, the user ID is related to the task of acting a use by FIA_ATD.1 and FIA_USB.1. FDP_ACC.1[2] and FDP_ACF.1[2] permits the list display operation of every secure print user box to the task of acting the user who has user ID. As it must be a user who is permitted the use of the secure print file to print it, FIA_UID.2[4] and FIA_UAU.2[4] identifies and authenticates that it is a user who is permitted the use of

the secure print file.
FIA_UAU.7 returns "*" for each entered character as feedback protected by the panel and supports the authentication.
FIA_AFL.1 [8] refuses all input acceptances from the panel for 5 seconds in every failure. When the authentication failure reaches 1-3 times, FIA_AFL.1 [5] locks the authentication function for to the concerned secure print file. This lock status is released by the administrator's release operation.
FMT_MTD.1[3] permits only to the administrator the setting of the threshold of the authentication failure frequency that is the trial frequency of the failure authentication in the authentication of the user who is permitted the use of the secure print file.
When FIA_ATD.1 and FIA_USB.1 relate the secure print internal control ID to the task of acting use, FDP_ACC.1[2] and FDP_ACF.1[2] permit the print operation to the secure print file that has a corresponding object attribute to the secure print internal control ID of the subject attribute.
As for secure print internal control ID, FMT_MSA.3[2] gives the value uniquely identified when the secure print file is registered.

<Secure print password>
FMT_MTD.1[8] permits only to the user the registration of the secure print password used for the authentication. FIA_SOS.1[5] verifies the quality of the secure print password.

Next, for ID & print file, this security objective limits the print of the ID & print file only for the user who registered that file, so that various requirements regarding access control are necessary.

<ID & print file access control>
FDP_ACC.1[4] and FDP_ACF.1[4] permit the task substituting for a user with a user ID to list and print the ID & print file with the user attribute consistent with the user ID.
For the user attribute set in the ID & print file, the user ID of the user who registers the file when the file is registered is set by FMT_MSA.3[4].

<Operation management of the ID & print function>
Management of this operation mode is limited only to the administrator by FMT_MOF.1[2].

<Necessary requirement to keep the administrator secure>
→ refer to set.admin

<Necessary requirement to keep the service engineer secure>
→ refer to set.service

<Role and controlling function for each management>
As the role of doing these managements, FMT_SMR.1[2] maintains an administrator and FMT_SMR.1[3] maintains a user. Moreover, FMT_SMF.1 specifies these management functions.

This security objective is satisfied by the completion of these multiple functional requirements.

- O.CONFIG (Access limitation to an management function)
  This security objective limits the setting related to the SMTP server, the setting related to the DNS server, the setting related to the Enhanced Security function, the backup function, and the restorations function to the administrator, and needs various requirements to limit the access to a series of setting function and the management function.

<Management of network setting>
When the administrator attribute is associated with the task of substituting the use, FDP_ACC.1[3] and FDP_ACF.1[3] permits the task of substituting the user to operate the SMTP server group object, DNS server group object, settings for the MFP address group object, PC-FAX operation setting object, and transmission address data object.

<Operation limitation of Backup and restoration function>
When the administrator attribute is associated with the task of acting the use by FIA_ATD.1 and FIA_USB.1, the task of acting the user is permitted the back-up operation of;
- the user box files by FDP_ACC.1[1] and FDP_ACF.1[1].
- the secure print files by FDP_ACC.1[2] and FDP_ACF.1[2].
- the ID & print files by FDP_ACC.1[4] and FDP_ACF.1[4].

In addition, the restoration operation is permitted for
- SMTP server group object, DNS server group object, MFP address group object, PC-FAX operation setting object, and transmission address data object by FDP_ACC.1[3] and FDP_ACF.1[3].

Moreover, the restoration operation (modification operation) is permitted only to the administrator for the following data:
- the enhanced security setting data by FMT_MOF.1[1]
- the operation setting data of user authentication function, encryption strength setting data for S/MIME function and setting data of SNMP password authentication function by FMT_MOF.1[2].
- the Trusted Channel setting data and account authentication function operation setting data by FMT_MOF.1[3].
- the user attribute of the user box by FMT_MSA.1[1], FMT_MSA.1[2] and FMT_MSA.1[3].
- the user password by FMT_MTD.1[2].
- the user ID, the SNMP password, the panel auto logoff time, the authentication failure frequency, the secure print password, the external authentication setting data, the account ID, the account password, the S/MIME certificate, the belonging account of user, administrator authentication lock time, TSI receiving setting, WebDAV server password and encryption passphrase by FMT_MTD.1[3].
- the user box password by FMT_MTD.1[4].

FMT_MTD.1[7] permits only to the administrator the backup operation (inquiry operation) of the SNMP password, the user password, the user box password, and the secure print password, the account password, WebDAV server password and encryption passphrase.

<Operational limitation of Enhanced Security function>
FMT_MOF.1[1] permits only the administrator and service engineer to disable the setting

for the enhanced security function. FMT_MOF.1[4] permits only the service engineer to enable the operation setting (activation) for the maintenance function.

<Management of HDD lock password, encryption passphrase and CF lock password>
FMT_MTD.1[3] permits the modification operation to the HDD lock password, the encryption passphrase and CF lock password. FIA_SOS.1[4] verifies the quality of the HDD lock password, the encryption passphrase and CF lock password. In order to change the HDD lock password, encryption passphrase and CF lock password, FIA_UAU.6 re-authenticates that a user is an administrator by collating with the registered HDD lock password and encryption Passphrase object. When the authentication is succeeded, the HDD lock password, encryption passphrase and CF lock password are allowed to be changed.
Moreover, FMT_MTD.1[11] permits only to the administrator to register the encryption passphrase.

<Necessary requirement for accessing MIB object>
The SMTP server group object, the DNS server group object and the MFP address group object exists as an MIB object as well, so that the restriction is necessary even in the access from the SNMP.
FIA_UID.2[2] and FIA_UAU.2[2] identifies and authenticates that the user who accesses the MIB object is an administrator.
FIA_AFL.1[3] locks the authentication function to access the MIB object when the failure authentication reaches 1-3 times. This lock is released by the start of TOE or the lock release operation by the administrator.
FMT_MTD.1[3] restricts the threshold setting of the unauthorized access detection value that is the trial frequency of the failure authentication in the administrator authentication using the SNMP password only to the administrator
FMT_MTD.1[3] restricts the change in the SNMP password to the administrator. FIA_SOS.1[2] verifies the quality of the SNMP password.
FMT_MOF.1[2] restricts the method of the SNMP password authentication function only to the administrator.

<Requirements for the counter management function (access by WebDAV)>
FIA_UID.2[2] and FIA_UAU.2[2] identify and authenticate that the user accessing by WebDAV is an administrator.
FMT_MTD.1[7] permits the identified and authenticated administrator to perform inquiry operations of user passwords and account passwords.
FIA_AFL.1[9] locks the administrator authentication function which uses the WebDAV server password when authentication has failed once, twice, or three times. This lock state is released by the administrator's unlock operation.
When an administrator is authenticated by the WebDAV server password, FMT_MTD.1[3] restricts the setup of the maximum number of times of unsuccessful authentication only to the administrator.
FMT_MTD.1[3] restricts the change of the WebDAV server password only to the administrator. FIA_SOS.1[1] verifies the quality of the WebDAV server password. Besides, when the WebDAV server password is changed, FIA_UAU.6 re-authenticates the

administrator.

< Operational Limit of Trusted Channel function setting data>
The behavior and the stop setting of Trusted Channel function are permitted only to the administrator by FMT_MOF.1[3].

<Operational Limit for S/MIME function>
The registration of the S/MIME certificate is permitted only to the administrator by FMT_MTD.1[11]. The modification of the S/MIME certificate registered is permitted only to the administrator by FMT_MTD.1[3]. In addition, the setup of transmission address data is permitted only to the administrator by FDP_ACC.1[3] and FDP_ACF.1[3].
The behavior of the S/MIME function is permitted only to the administrator by the FMT_MOF.1[2].

<Necessary requirements to keep the administrator secure>
→ refer to set.admin

<Necessary requirements to keep the service engineer secure>
→ refer to set.service

<Role and controlling function for each management>
As the role of doing these managements, FMT_SMR.1[1] maintains a service engineer and FMT_SMR.1[2] maintains an administrator. Moreover, FMT_SMF.1 specifies these management functions.

This security objective is satisfied by the completion of these multiple functional requirements.

- **O.OVERWRITE-ALL (Complete overwrite deletion)**

This security objective regulates that it deletes all data areas of HDD and initializes the concealed information of NVRAM that is set by the user, and requires various requirements that relate to the deletion.
FAD_RIP.1 guarantees that these objective information not to be able to use the content of any previous information by the deletion operation.

This security objective is satisfied by the completion of these multiple functional requirements.

- **O.CRYPT-KEY (Encryption key generation)**

This security objective regulates that, when the encryption protection chip is installed, the encryption key necessary to encrypt all the data written in HDD is generated, and needs various requirements that relate to the encryption key generation.
Using KonicaMinolta HDD encryption key generation mechanism (SHA256) according to KonicaMinolta encryption specification standard, FCS_CKM.1 generates the 128bit encryption key.
This security objective is satisfied by the completion of this function requirement.

- **O.CHECK-HDD (Validity confirmation of HDD)**

  This security objective regulates that it verifies the validity of HDD in order to confirm the unauthorized HDD doesn't exist, and needs various requirements that relate to the verification of an external entity from TOE.

  FIA_EID.1[1] identifies HDD before the action from TOE to HDD, and cancels the scheduled action when the identification fails.

  This security objective is satisfied by the completion of this function requirement.

- **O.CHECK-CF (Validity confirmation of CF)**

  This security objective regulates that it verifies the validity of CF in order to confirm the unauthorized CF doesn't exist, and needs various requirements that relate to the verification of an external entity from TOE.

  FIA_EID.1[2] identifies CF before the action from TOE to CF, and cancels the scheduled action when the identification fails.

  This security objective is satisfied by the completion of this function requirement.

- **O.TRUSTED-PASS(Usage of Trusted Channel)**

  This security objective generates the Trusted Channel in the transmission and reception such as a user box file, a secure print file and an ID & print file, and the requirement that relates with the Trusted Channel is necessary. FTP_ITC.1 generates the Trusted Channel according to the requirement from the other Trusted IT product, and it is applied to the transmission and reception, such as the user box file, a secure print file and an ID & print file.

  This security objective is satisfied by the completion of this function requirement,

- **O.CRYPTO-MAIL (Usage of Encryption mail)**

  This security objective regulates the encryption of a user box file when transmitting the user box file by e-mail, and various requirements related to the encryption are necessary.

  FCS_CKM.1 generates the encryption key (128bit, 168bit, 192bit or 256bit) by using Pseudorandom number Generation Algorithm according to FIPS 186-2.

  FCS_COP.1 encrypts the user box file by using AES (encryption key: 128bit, 192bit or 256bit) of FIPS PUB 197 (it becomes a transmission data of S/MIME). Also, the same requirement encrypts the user box file by using 3-Key-Triple-DES (encryption key: 168bit) of SP800-67. (By the same token, it becomes a transmission data of S/MIME.)

  FCS-COP.1 encrypts these encryption keys are encrypted by RSA of FIPS 186-2 that is a public key of S/MIME certificate of each destination.

  This security objective is satisfied by the completion of these plural function requirements.

- **O.AUTH-CAPABILITY (Support action to use user identification and authentication function)**

  This security objective regulates that the user identification and authentication function is used by the user information management server that is the entity of a necessary IT environment for the security maintenance of TOE, and needs various requirements that relate to the encryption.

  Applying FIT_CAP.1[1], the inquiry and the acquirement function for the identification and authentication objective user are achieved for the user identification and authentication

function by the ActivrDirectory of the user information management server.
This security objective is satisfied by the completion of this function requirement.

- **O.CRYPTO-CAPABILITY (Support action to use the encryption function)**
  This security objective regulates that TOE's support action for the data stored in HDD is encrypted by the encryption kit that is the entity out of TOE, and needs various requirements that regulates the support of external entity action.
  Applying FIT_CAP.1[2], the support function to process the image file through encryption function is achieved for the encryption function of the encryption kit.
  This security objective is satisfied by the completion of this function requirement.

- **O.LOCK-HDD-CAPABILITY (Support action to use the HDD lock function)**
  This security objective regulates that TOE'S support action refuses the unauthorized access from MFP other than the one that is set by the HDD that is the entity out of TOE, and needs various requirements that regulates the support of external entity action.
  Applying FIT_CAP.1[3], the support function to change the HDD lock password and to release the HDD lock function for the HDD lock function achieved by the HDD.
  This security objective is satisfied by the completion of this function requirement.

- **O.LOCK-CF-CAPABILITY (Support action to use the CF lock function)**
  This security objective regulates that TOE'S support action refuses the unauthorized access from MFP other than the one that is set by the CF that is the entity out of TOE, and needs various requirements that regulates the support of external entity action.
  Applying FIT_CAP.1[4], the support function to change the CF lock password and to release the CF lock function for the CF lock function achieved by the CF.
  This security objective is satisfied by the completion of this function requirement.

➢ ***set.admin* (Set of necessary requirement to keep administrator secure)**

<Identification and Authentication of an administrator>
FIA_UID.2[2] and FIA_UAU.2[2] identifies and authenticates that the accessing user is a administrator.
FIA_UAU.7 returns "*" for each character entered as feedback protected in the panel, and supports the authentication.
FIA_AFL.1[8] refuses, in case of the failure authentication tried from the panel, all the input receipts from the panel for five seconds in every failure. When the failure authentication reaches 1-3 times, FIA_AFL.1[2] logoffs if it's under authentication, and locks all the authentication functions that use the administrator password from then on. The release function is executed by starting TOE with turning OFF and ON the power supply, so that the lock is released after the administrator authentication lock time passed.
FMT_MTD.1[3] permits only to the administrator the setting of the threshold of the authentication failure frequency which is the trial frequency of the failure authentication in the administrator authentication.

<Management of session of identified and authenticated administrator>
The duration of session of the administrator who is identified and authenticated contributes to reduce the chance of attacking associated with unnecessary session connection by ending

the session after the panel automatic logoff time elapses by FTA_SSL.3. if it logs in from the panel. The change in the panel auto logoff time is limited to the administrator by FMT_MTD.1[3].

<Management of administrator's authentication information>
FIA_SOS.1[1] verifies the quality of the administrator password. Moreover, FIA_SOS.[6] verifies the quality of session information used to authenticate the administrator via the network, and FIA_SOS.2 secures the quality of session information that is generated and used. FMT_MTD.1[6] restricts the change in the administrator password to the administrator and the service engineer. When the administrator changes the administrator password, FIA_UAU.6 re-authenticates it. In this re-authentication, when the failure authentication reaches 1-3 times, FIA_AFL.1[2] logoffs it if it's under authentication, and releases the authentication status of the administrator from then on. And it locks all the authentication functions to use the administrator password. The release function is executed by starting TOE with turning OFF and ON the power supply, so that the lock is released after the administrator authentication lock time passed.

<Role and management function for each management>
FMT_SMR.1[1] have service engineer maintain the role to do these management, and FMT_SMR.1[2] have the administrator do the same. Additionally, FMT_SMF.1 specifies these management functions.

- ***set.service*** **(Set of necessary requirement to keep service engineer secure)**

  <Identification and Authentication of a service engineer>
  FIA_UID.2[1] and FIA_UAU.2[1] identifies and authenticates that the accessing user is a service engineer.
  FIA_UAU.7 returns "*" every one character entered as the feedback protected in the panel, and supports the authentication.
  FIA_AFL.1[8] refuses all the input receipts from the panel for five seconds at each failure, and when the failure authentication reaches 1-3 times, FIA_AFL.1[1] logoffs it if it's under authentication, and locks all the authentication functions to use the CE password. The CE authentication lock release function is executed and the CE authentication lock time goes by, so that this lock status is released.
  FMT_MTD.1[3] permits only to the administrator the setting of the threshold of the authentication failure frequency that is the trial frequency of the failure authentication in the service engineer authentication. FMT_MTD.1[9] permits only to the service engineer the setting of the CE authentication lock time.

  <Management of service engineer's authentication information>
  FIA_SOS.1[1] verifies the quality of the CE password. FMT_MTD.1[9] restricts the change in the CE password to the service engineer. Moreover, FIA_UAU.6 re-authenticates it. In this re-authentication, when the failure authentication reaches 1-3 times, FIA_AFL.1[1] releases the authentication status of the service engineer and locks all the authentication functions to use the CE password. The secret lock release function is executed and the CE authentication lock time goes by, so that this lock status is released.

<Role and management function for each management>
FMT_SMR.1[1] maintains the role to do these management as a service engineer. FMT_SMF.1 specifies these management functions.

6.2.1.3. Dependencies of the IT Security Functional Requirements

The dependencies of the IT security functional requirements components are shown in the following table. When a dependency regulated in CC Part 2 is not satisfied, the reason is provided in the section for the "dependencies Relation in this ST."

Table 10 Dependencies of IT Security Functional Requirements Components

N/A : Not Applicable

Functional Requirements Component for this ST	Dependencies on CC Part 2	Dependencies Relation in this ST
FCS_CKM.1	FCS_CKM.2 or FCS_COP.1, FCS_CKM.4	FCS_COP.1 (only partial event) The satisfied events: The encryption of the attached file by the S/MIME communication. <The reason not to fulfill partially FCS_CKM.2 or FCS_COP.1> As the cryptographic operation is performed using the function of encryption protection chip on the encryption that is out of TOE, so there is no need to adapt FSC_COP.1 for the key generated Konica Minolta HDD cryptographic key generation algorithm. And the generated encryption key is distributed out of TSF control range, the adaption of FCS_CKM.2 might be reasonable. But it is not necessary to fullfil this dependency because the encryption key is stored in the medium which is impossible to be ascessed arbitrarily and is set to the encryption kit by administrator or service engineer when the encryption function is under operation. <The reason not to apply FCS_CKM.4> The encryption key is regularly kept for the stored data. Moreover, an arbitrary access to the storage medium is difficult, and there is no necessity of the encryption key cancellation.
FCS_COP.1	FCS_CKM.1 or FDP_ITC.1 or FDP_ITC.2, FCS_CKM.4	FCS_CKM.1 (only a part of the phenomenon) The satisfied events: The encryption key for enciphering the attached file by the S/MIME communication is generated. <The reason not to satisfy a part of the FCS_CKM.1 or FDP_ITC.1 or FDP_ITC.2> - It seems proper to use FDP_ITC.1 because the public key to encrypt the encryption key for the data encryption of S/MIME is imported outside of TSF control area, but S/MIME certificate is registered by the administrator's operation. In that case, it is unnecessary to consider whether it passes thorough the untrusted channel or not. There is not inevitability to apply the security requirement (The use under the condition that

Functional Requirements Component for this ST	Dependencies on CC Part 2	Dependencies Relation in this ST
		A.NETWORK is realized) . - Also, the attribute information of imported encryption key doesn't apply to the security attribute used for the access control, etc., is not related to the initialization, etc., so there is no necessity to apply. - In FMT_MTD.1[11], it is expressed as registration of TSF data, and the object of import operation is assigned to an appropriate role. - As a result, the event corresponding to the key management is explained by using not the security requirement that is showed in the dependencies but other security requirement, so that it's no problem even if this dependencies is not satisfied. <The reason not apply FCS_CKM.4> The Encryption Key is stored constantly for the stored data. The arbitrary access to the storring media is difficult, so it is not necessary to cancel the Encryption Key.
FDP_ACC.1[1]	FDP_ACF.1	FDP_ACF.1[1]
FDP_ACC.1[2]	FDP_ACF.1	FDP_ACF.1[2]
FDP_ACC.1[3]	FDP_ACF.1	FDP_ACF.1[3]
FDP_ACC.1[4]	FDP_ACF.1	FDP_ACF.1[4]
FDP_ACF.1[1]	FDP_ACC.1, FMT_MSA.3	FDP_ACC.1[1], FMT_MSA.3[1], FMT_MSA.3[3]
FDP_ACF.1[2]	FDP_ACC.1, FMT_MSA.3	FDP_ACC.1[2] FMT_MSA.3[2]
FDP_ACF.1[3]	FDP_ACC.1, FMT_MSA.3	FDP_ACC.1[3] <The reason not to apply FMT_MSA.3> There is no necessity for applying this requirement because the object attribute doesn't exist.
FDP_ACF.1[4]	FDP_ACC.1, FMT_MSA.3	FDP_ACC.1[4] FMT_MSA.3[4]
FIA_AFL.1[1]	FIA_UAU.1	FIA_UAU.2[1]
FIA_AFL.1[2]	FIA_UAU.1	FIA_UAU.2[2]
FIA_AFL.1[3]	FIA_UAU.1	FIA_UAU.2[2]
FIA_AFL.1[4]	FIA_UAU.1	FIA_UAU.2[3]
FIA_AFL.1[5]	FIA_UAU.1	FIA_UAU.2[4]
FIA_AFL.1[6]	FIA_UAU.1	FIA_UAU.2[5]
FIA_AFL.1[7]	FIA_UAU.1	FIA_UAU.2[6]
FIA_AFL.1[8]	FIA_UAU.1	FIA_UAU.2[1], FIA_UAU.2[2], FIA_UAU.2[3], FIA_UAU.2[4], FIA_UAU.2[5], FIA_UAU.2[6]
FIA_AFL.1[9]	FIA_UAU.1	FIA_UAU.2[2]
FIA_ATD.1	None	N/A
FIA_SOS.1[1]	None	N/A
FIA_SOS.1[2]	None	N/A
FIA_SOS.1[3]	None	N/A
FIA_SOS.1[4]	None	N/A
FIA_SOS.1[5]	None	N/A
FIA_SOS.1[6]	None	N/A
FIA_SOS.1[7]	None	N/A

Functional Requirements Component for this ST	Dependencies on CC Part 2	Dependencies Relation in this ST
FIA_SOS.2	None	N/A
FIA_UAU.2[1]	FIA_UID.1	FIA_UID.2[1]
FIA_UAU.2[2]	FIA_UID.1	FIA_UID.2[2]
FIA_UAU.2[3]	FIA_UID.1	FIA_UID.2[3]
FIA_UAU.2[4]	FIA_UID.1	FIA_UID.2[4]
FIA_UAU.2[5]	FIA_UID.1	FIA_UID.2[5]
FIA_UAU.2[6]	FIA_UID.1	FIA_UID.2[6]
FIA_UAU.6	None	N/A
FIA_UAU.7	FIA_UAU.1	FIA_UAU.2[1], FIA_UAU.2[2], FIA_UAU.2[3], FIA_UAU.2[4], FIA_UAU.2[5], FIA_UAU.2[6]
FIA_UID.2[1]	None	N/A
FIA_UID.2[2]	None	N/A
FIA_UID.2[3]	None	N/A
FIA_UID.2[4]	None	N/A
FIA_UID.2[5]	None	N/A
FIA_UID.2[6]	None	N/A
FIA_UID.2[7]	None	N/A
FIA_USB.1	FIA_ATD.1	FIA_ATD.1
FMT_MOF.1[1]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[1], FMT_SMR.1[2]
FMT_MOF.1[2]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2]
FMT_MOF.1[3]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2]
FMT_MSA.1[1]	FDP_ACC.1 or FDP_IFC.1, FMT_SMF.1, FMT_SMR.1	FDP_ACC.1[1], FMT_SMF.1, FMT_SMR.1[2], FMT_SMR.1[3]
FMT_MSA.1[2]	FDP_ACC.1 or FDP_IFC.1, FMT_SMF.1, FMT_SMR.1	FDP_ACC.1[1], FMT_SMF.1, FMT_SMR.1[2], FMT_SMR.1[4]
FMT_MSA.1[3]	FDP_ACC.1 or FDP_IFC.1, FMT_SMF.1, FMT_SMR.1	FDP_ACC.1[1], FMT_SMF.1, FMT_SMR.1[2], FMT_SMR.1[6]
FMT_MSA.3[1]	FMT_MSA.1, FMT_SMR.1	FMT_MSA.1[1], FMT_MSA.1[2], FMT_SMR.1[3]
FMT_MSA.3[2]	FMT_MSA.1, FMT_SMR.1	Neither is applicable. <The reason not to apply FMT_MSA.1> This is the internal control ID that is identified uniquely, and this does not require the management such as change or deletion, after this is assigned once. <FMT_SMR.1> The assignment of FMT_MSA.3.2[2] is not applicable. FMT_SMR.1 is the dependency that is set relating to the following and so there is no necessity of application.
FMT_MSA.3[3]	FMT_MSA.1, FMT_SMR.1	Neither is applicable. <The reason not to apply FMT_MSA.1> The user box attribute of a user box file always needs

Functional Requirements Component for this ST	Dependencies on CC Part 2	Dependencies Relation in this ST
		to correspond with the user box. Therefore, the value only has to be given at the time of storage. It is not necessary to change the value of this attribute at the time of other operational timing. Accordingly, the management requirement is unnecessary. <FMT_SMR.1> The assignment of FMT_MSA.3.2[3] is not applicable. FMT_SMR.1 is the dependency that is set relating to the following and so there is no necessity of application.
FMT_MSA.3[4]	FMT_MSA.1, FMT_SMR.1	Neither is applicable. <The reason not to apply FMT_MSA.1> It is the concept of ID & print that the object is a print object to which only the person who registered it can access, so it is not assumed that the object is transferred to any other user. Consequently, it is not necessary to change the value of the attribute when the user performs operations other than registration, so that the management requirement is unnecessary. <FMT_SMR.1> The assignment of FMT_MSA.3.2[4] is not applicable. FMT_SMR.1 is the dependency that is set relating to the following and so there is no necessity of application.
FMT_MTD.1[1]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2]
FMT_MTD.1[2]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2] , FMT_SMR.1[3]
FMT_MTD.1[3]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2]
FMT_MTD.1[4]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2], FMT_SMR.1[4]
FMT_MTD.1[5]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2], FMT_SMR.1[3]
FMT_MTD.1[6]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[1], FMT_SMR.1[2]
FMT_MTD.1[7]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[2]
FMT_MTD.1[8]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1, FMT_SMR.1[3]
FMT_MTD.1[9]	FMT_SMF.1, FMT_SMR.1	FMT_SMF.1 FMT_SMR.1[1]
FMT_MTD.1[10]	FMT_SMF.1 FMT_SMR.1	FMT_SMF.1 FMT_SMR.1[2], FMT_SMR.1[5]
FMT_MTD.1[11]	FMT_SMF.1 FMT_SMR.1	FMT_SMF.1 FMT_SMR.1[2]
FMT_MTD.1[12]	FMT_SMF.1 FMT_SMR.1	FMT_SMF.1 FMT_SMR.1[2] FMT_SMR.1[6]
FMT_SMF.1	None	N/A
FMT_SMR.1[1]	FIA_UID.1	FIA_UID.2[1]

Functional Requirements Component for this ST	Dependencies on CC Part 2	Dependencies Relation in this ST
FMT_SMR.1[2]	FIA_UID.1	FIA_UID.2[2]
FMT_SMR.1[3]	FIA_UID.1	FIA_UID.2[3]
FMT_SMR.1[4]	FIA_UID.1	FIA_UID.2[5]
FMT_SMR.1[5]	FIA_UID.1	FIA_UID.2[7]
FMT_SMR.1[6]	FIA_UID.1	FIA_UID.2[6]
FTA_SSL.3	None	N/A
FTP_ITC.1	None	N/A
FNEW_RIP.1	None	N/A
FIA_EID.1[1]	None	N/A
FIA_EID.1[2]	None	N/A
FIT_CAP.1[1]	None	N/A
FIT_CAP.1[2]	None	N/A
FIT_CAP.1[3]	None	N/A
FIT_CAP.1[4]	None	N/A

6.2.2. Rationale for IT Security Assurance Requirements

This TOE is installed and used in an environment where adequate security is maintained in terms of the physical, personnel, and connectivity. Nonetheless, adequate effectiveness in the environment where the TOE is used must be assured. As a general commercial office product, the execution of tests based on function specifications and high level design, and analysis of the strength of function and a search for vulnerabilities are required. In addition, it is desirable that it has a development environment control, a configuration management for the TOE and a secure distribution procedure. And therefore the selection of EAL3, which provides an adequate assurance level, is reasonable.

The secure requirement dependency analysis is assumed to be appropriate because the package EAL has been selected, therefore details are not discussed.

7. TOE Summary Specification

The list of the TOE security function led from the TOE security function requirement is shown in the following Table 11. The detailed specification is explained in the paragraphs described below.

Table 11 The list of the name and identifier of TOE Security function

No.	TOE Security Function	
1	F.ADMIN	Administrator function
2	F.ADMIN-SNMP	SNMP administrator function
3	F.SERVICE	Service mode function
4	F.USER	User function
5	F.BOX	User box function
6	F.PRINT	Secure print function, ID & print function
7	F.OVERWRITE-ALL	All area overwrite deletion function
8	F.CRYPT	Encryption key generation function
9	F.VALIDATION-HDD	HDD validation function
10	F.VALIDATION-CF	CF validation function
11	F.RESET	Authentication Failure Reset function
12	F.TRUSTED-PASS	Trusted Channel function
13	F.S/MIME	S/MIME encryption processing function
14	F.SUPPORT-AUTH	External Server authentication operation support function
15	F.SUPPORT-CRYPTO	Cryption kit operation support function
16	F.SUPPORT-HDD	HDD lock operation support function
17	F.SUPPORT-CF	CF lock operation support function
18	F.ADMIN-WebDAV	WebDAV administrator function

7.1. F.ADMIN (Administrator Function)

F.ADMIN is a series of security function that administrator operates, such as an administrator identification authentication function in an administrator mode accessing from a panel or through a network, and a security management function that includes a change of an administrator password and a lock cancellation of a locked user box. (Nevertheless, all functions are not feasible functions through both a panel and a network.)

7.1.1. Administrator identification authentication function

It identifies and authenticates the accessing user as the administrator in response to the access request to the administrator mode.

- Offers the administrator authentication mechanism authenticating by the administrator password that consists of the character shown in Table 12.
  - ➢ Offers the administrator authentication mechanism using the session information besides the administrator password, after the administrator is authenticated to the access from the network,
  - ➢ According to protocol, use the session information of more than 10^{10}, or generate and use the session information more than 10^{10}.

- Return "*" for each character as feedback for the entered administrator password.
- Resets the number of authentication failure when succeeding in the authentication.
- In the case of access from a panel, it doesn't accept the input from a panel for five seconds when failing in the authentication.
- Locks all the authentication functions to use the administrator password when detecting the authentication failure that becomes 1~3 times at total in each authentication function by using the administrator password. (Refuse the access to the administrator mode)
  - ➢ The administrator specifies the failure frequency threshold by the unauthorized access detected threshold setting function.
- F.RESET works and the lock release function of the administrator authentication function in F.SERVICE is carried out, and the lock of authentication function is released.

As described above, FIA_AFL.1[2], FIA_AFL.1[8], FIA_SOS.1[6], FIA_SOS.2. FIA_UAU.2[2], FIA_UAU.7 and FIA_UID.2[2] are realized.

Table 12 character and number of digits used for password

Objectives	Number of digits	Characters
CE Password	8-digits	92 characters in total can be selected ASCII code (0x21 - 0x7E, except 0x22 and 0x2B) -Number : 0 - 9 -Alphabet : Capital letter and small letter -Symbols : !, #, $, %, &, ' , (,), *, , , - , . , / , : , ; , <, =, >, ?, @, [, ¥ ,] , ^ , _ , ` , { , | , } , ~
Administrator Password		
HDD Lock Password	20-digits	83 characters in total can be selected ASCII code (0x21-0x7E, except 0x22, 0x28, 0x29, 0x2C, 0x3A, 0x3B, 0x3E, 0x3F, 0x5B, 0x5C and 0x5D) -Number : 0 - 9 - Alphabets : Capital letter and small letter - Symbols : ! , # , $, % , & , ', * , + , - , . , / , <, =, @, ^, _ , ` , { , | , } , ~
CF Lock Password	20-digits	84 characters in total can be selected ASCII code (0x21-0x7E, except 0x22, 0x28, 0x29, 0x2C, 0x3A, 0x3B, 0x3E, 0x5B, 0x5C and 0x5D) -Number : 0 - 9 - Alphabets : Capital letter and small letter - Symbols : ! , # , $, % , & , ', * , + , - , . , / , <, =, @, ^, _ , ` , { , | , } , ~
Encryption passphrase		
User Password	8-digits or more	95 character in total can be selected ASCII code (0x21-0x7E) -Number : 0 - 9 -Alphabets : Capital letter and small letter -Symbols : ! , # , $, % , & , ' , (,) , * , , , - , . , / , : , ; , < , = , > , ? , @ , [, ¥ ,] , ^ , _ , ` , { , | , } , ~ , “, +, *SPACE*
WebDAV Password	0- 8-digits	
Account Password	8-digits	
User Box Password		
Security Print Password		

<table>
<tr><td>SNMP Password
-Privacy Password
-Authentication Password</td><td>8-digits or more</td><td>93 characters in total can be selected
ASCII code (0x20 - 0x7E, except 0x5C)
-Number : 0 - 9
-Alphabets : Capital letter and small letter
-Symbols : ! , # , $, % , &amp; , ' , (,) , * , , , - , . , / , : , ; , < , = , > , ? , @ , [,] , ^ , _ , ` , { , | , } , ~ , ” , +</td></tr>
</table>

7.1.2. Auto logoff function of administrator mode

While accessing an administrator mode from a panel, if not accepting any operation during the panel automatic logoff time, it logs off the administrator mode automatically.

As described above, FIA_SSL.3 is realized.

7.1.3. Function offered in Administrator mode

When a user is identified and authenticated as an administrator by the administrator identification authentication function at the accessing request to the administrator mode, the administrator authority is associated with the task substituting the user. And the following operations and the use of the functions are permitted.

As described above, FIA_ATD.1 and FIA_USB.1 are realized.

7.1.3.1. Change of Administrator password

When a user is re-authenticated as an administrator by the panel and the new password satisfies the quality, the password is changed.

- Offers the administrator authentication mechanism that is authenticated by the administrator password which consists of the character shown in Table 12.
- Resets the number of authentication failure when succeeding in the re-authentication.
- Return "*" for each character as feedback for the entered administrator password in the re-authentication by the access from the panel.
- When the authentication failure that becomes 1-3 times at total in each authentication function by using the administrator password is detected, it logoffs the administrator mode accessing from the panel, and locks all the authentication functions to use the administrator password. (The access to the administrator mode is refused.)
    - ➢ The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- F.RESET works or the lock release function of the administrator authentication function in F.SERVICE is carried out, so that the lock of the authentication function is released.
- Verify the new administrator password if the following qualities are satisfied.
    - ➢ It is composed of the characters and by the number of digits, shown in the Table 12.
    - ➢ It shall not be composed of one kind of character.
    - ➢ It doesn't match with the current value.

As described above, FIA_AFL.1[2], FIA_SOS.1[1], FIA_UAU.6, FIA_UAU.7, FMT_MTD.1[6], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.2. User Settings

- User Registration (Only the user who uses with the machine authentication as User authentication method.)
  User is registered by setting the user ID (Though user ID is composed of the user name and the authentication server information[12], only user name is registered in case of the machine authentication.) and registering the user password. It verifies whether the user password newly set have been satisfied the following qualities.
  - It is composed of the characters and by the number of digits, shown in the Table 12.
  - It shall not be composed of one kind of character.

  While the external server authentication is effective, the user password cannot be registered. Also register the belonging account (account ID), and relate. (The account setting is necessary beforehand.)

- Change of user password (Only the user who uses with the machine authentication as User authentication method.)
  User password is changed. It verifies whether the user password newly set have been satisfied the following qualities.
  - It is composed of the characters and by the number of digits, shown in the Table 12.
  - It shall not be composed of one kind of character.

- User deletion
  User ID and user password is deleted.
  - When a personal user box that a concerned user owns exists, that personal user box is automatically set to the public user box of “user attributes: public.”

- Change of the belonging account
  The belonging account that related to user is changed

As described above, FIA_SOS.1[3], FMT_MTD.1[1], FMT_MTD.1[2], FMT_MTD.1[3], FMT_MTD.1[10], FMT_MTD.1[12], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.3. User Box Settings

- User Box Registration
  To register a personal user box or a public user box by selecting the user attribute to the non-registration user box ID selected. When it’s registered, it is possible to select "User ID" in the user attribute of the user box which have been specified "Public" as a default value.
  - In the case of the personal user box, the arbitrary user ID registered is specified.
  - In the case of the public user box, verify that a user box password registered satisfies the following conditions.
    - It is composed of the characters and by the number of digits, shown in the Table 12.
    - It shall not be composed of one kind of character.
  - Specify the arbitrary account ID registered when Group user box.

[12] It associates with the external server authentication setting data that is set in the case of the use of the external server (only Active Directly method is applicable) as the method of the user authentication function. Because it deals when there are plural user information management servers, there is the case which plural authentication server information are included in the external server information setting data.

- Change of User Box Password
  - The user box password set to the public user box is changed.
  - It verifies whether the user box password newly set have been satisfied the following qualities.
    - It is composed of the characters and by the number of digits, shown in the Table 12.
    - It shall not be composed of one kind of character.

- Change of user attribute of user box
  - Specify the user attribute of a personal user box to the other user or the account that registered.
  - Specify the user attribute of group user box to the user or the other account that registered.
  - Specify the user attribute of public user box to the user or account that registered.
  - Specify the user attribute of a personal user box or group user box to public.
    - The registration of a user box password is necessary at the same time, and then the processing which is similar to a change of the above-mentioned user box password should be done.

- User Box setting
  - Allow to view the list of boxes when the user attribute is related to administrator..

As described above, FDP_ACC.1[1], FDP_ACF.1[1], FIA_SOS.1[1], FMT_MSA.1[1] , FMT_MSA.1[2] , FMT_MSA.1[3] , FMT_MSA.3[1], FMT_MTD.1[4], FMT_MTD.1[5], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.4. Release of Lock

Reset (0 clear) the number of authentication failure for each users.

- If there is a user to whom access is locked, the lock is released.

  Reset (0 clear) the number of authentication failure for all secure prints.
- If there is a secure print to which access is locked, the lock is released.

  Reset (0 clear) the number of authentication failure of each user boxes.
- If there is a user box to which access is locked, the lock is released.

  Reset (0 clear) the number of authentication failure of each account.
- If there is a user account to which access is locked, the lock is released.

  Reset (0 clear) the number of authentication failure of SNMP password.
- If there is a MIB object to which access is locked, the lock is released.

  Reset (0 clear) the number of authentication failure of WebDAV password.
- If there is a WebDAV server to which access is locked, the lock is released.

As described above, FIA_AFL.1[3], FIA_AFL.1[4], FIA_AFL.1[5], FIA_AFL.1[6], FIA_AFL.1[7], and FIA_AFL.1[9] are realized.

7.1.3.5. Setting of user authentication function

Set the following authentication method in a user authentication function.

- Machine authentication: Authentication method which utilizes a user password managed on MFP sides.
- External server authentication : Authentication method which utilizes a user password managed with a user information management server connected through a network.(Only Active Directory method is object)
  - ➢ When external server authentication is used, the external server authentication setting data(Contain the multiple authentication server information, such as domain name to which external server belongs) needs to be set.

Set the following authentication method in the account authentication function used with a user authentication function.

- Account authentication function : synchronized method
  The method which utilizes an account ID related to user ID beforehand.
- Account authentication function : method not synchronized
  The method to authenticate by the account ID and the account password at the time of access, without utilizing the account ID that related to user ID beforehand.
- Account authentication function : not use
  Utilize only the authentication function by user ID, and not utilize the authentication by account information.

As described above, FMT_MOF.1[2], FMT_MOF.1[3], FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.6. Unauthorized access setting

- Setting of unauthorized access detection threshold
  The unauthorized access detection threshold in the authentication operation prohibition function is set for 1-3 times.
- Setting of Administrator Authentication Lock Time
  Set the Administrator Authentication Lock Time between 5-60 minutes.

As described above, FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.7. Setting of auto logoff function

The panel auto logoff time which is the setting data of the auto logoff function should be set within the following time range.

- panel auto logoff time : 1 - 9 minutes

As described above, FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.8. Network Settings

A setup operation of the following setting data is performed.

- A series of setup data that relates to SMTP server (IP address, Port Number, etc.)
- A series of setup data that relates to DNS server (IP address, Port Number, etc.)
- A series of setup data that relates to MFP address (IP address, NetBIOS Name, AppleTalk Printer Name, etc.)

As described above, FDP_ACC.1[3] and FDP_ACF.1[3] are realized.

7.1.3.9. Execution of back-up and restoration function

All the setting data stored in NVRAM, CF and HDD is backed-up and re-stored except the administrator password, the CE password, CF lock password and HDD lock password. As the object related to security, due to the relation of confidentiality and completeness, the one shown by the following classifications is targeted.

<Type A : Object to which back-up and restoration should be limited>

- SNMP password
- User password
- Account password
- Secure print password
- User Box password
- Encryption passphrase
- WebDAV server password

<Type B : Object to which restoration should be limited>

- A series of data that relates to SMTP server setting
- A series of data that relates to DNS server setting
- A series of data that relates to MFP address setting
- Operation setting data of SNMP password authentication function
- Setting data of Enhanced Security function
- Setting data of operation method of user authentication function
- Authentication failure frequency threshold of authentication operation prohibition function
- Panel auto logoff time
- User ID
- User attribute of user box
- User box ID
- S/MIME certificate
- Transmission address data
- Encryption strength setting data in S/MIME function
- Trusted Channel function setting data
- Belonging Account of user
- Administrator authentication lock time
- PC-FAX operation setting
- TSI receiving setting data
- Operation setting data of account authentication function
- External server authentication setting data

<Type C : Object to which back-up should be limited>

- Secure print file
- User box file
- ID & print file

As described above, FDP_ACC.1[1], FDP_ACC.1[2], FDP_ACC.1[3], FDP_ACC.1[4], FDP_ACF.1[1], FDP_ACF.1[2] , FDP_ACF.1[3], FDP_ACF.1[4], FMT_MOF.1[1] , FMT_MOF.1[2] , FMT_MOF.1[3], FMT_MSA.1[1] , FMT_MSA.1[2] , FMT_MSA.1[3], FMT_MTD.1[2] , FMT_MTD.1[3] , FMT_MTD.1[4] , FMT_MTD.1[7], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.10. Operation setting function of HDD lock function

<Modification of HDD lock password>

Change the HDD lock password. By using the HDD lock password currently set, when it is re-authenticated as an administrator, and the new password satisfies the quality, it is changed.

- Offers the HDD lock password verification mechanism that verified the HDD lock password that consists of the character shown in Table 12.
- Return, in verification, "*" for each character as feedback for the entered HDD lock password.
- Verify the HDD lock password newly set if the following qualities are satisfied.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.
  - It shall not be matched with the current value.

As described above, FIA_SOS.1[4], FIA_UAU.7, FIA_UAU.6, FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.11. Operation setting function of CF lock function

<Modification of CF lock password>

Change the CF lock password. By using the CF lock password currently set, when it is re-authenticated as an administrator, and the new password satisfies the quality, it is changed.

- Offers the CF lock password verification mechanism that verified the CF lock password that consists of the character shown in Table 12.
- Return, in verification, "*" for each character as feedback for the entered CF lock password.
- Verify the CF lock password newly set if the following qualities are satisfied.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.
  - It shall not be matched with the current value.

As described above, FIA_SOS.1[4], FIA_UAU.7, FIA_UAU.6, FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.12. Operation setting of encryption function

(* When an optional encryption board is installed to MFP, it can be operated.)

<Operation Setting ON>

When turning it ON from OFF, it verifies that the encryption passphrase newly set satisfies the following qualities, and F.CRYPT is performed.

- It is composed of the characters and by the number of digits shown in Table 12.
- It shall not be composed of one kind of character.

As described above, FIA_SOS.1[4], FMT_MTD.1[11], FMT_SMF.1 and FMT_SMR.1[2] are realized.

<Encryption Passphrase Change, Operation Setting OFF>
Change the encryption passphrase and turn operation setting OFF. by using the encryption passphrase currently set, when it is re-authenticated as an administrator. When the new encryption passphrase satisfies the quality, F.CRYPT is performed and the encryption passphrase is changed.

- In re-authentication, offer the encryption passphrase verification mechanism that verified the encryption passphrase that consists of the character shown in Table 12.
- Return, in verification, "*" for each character as feedback for the entered encryption passphrase.
- Verify the encryption passphrase newly set if the following qualities are satisfied.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.
  - It shall not be matched with the current value.

As described above, FIA_SOS.1[4], FIA_UAU.7, FIA_UAU.6, FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.13. Change of SNMP password

The SNMP password (Privacy password and Authentication password) is changed. Verify that the SNMP password newly set satisfies the following qualities.

- It is composed of the characters and by the number of digits shown in Table 12.

As described above, FIA_SOS.1[2], FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.14. Setting of SNMP password authentication function

The authentication method in the SNMP password authentication function is set to "Only Authentication password" or the "Authentication password and Privacy password".

As described above, FMT_MOF.1[2], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.15. Account Settings

- Account registration

  Account is registered by setting the account ID and registering the account password. It verifies whether the account password newly set have been satisfied the following qualities.
  - It is composed of the characters and by the number of digits, shown in Table 12.
  - It shall not be composed of one kind of character.
- Change of account ID and account password

  Account ID and account password is changed. It verifies whether the account password newly set have been satisfied the following qualities.
  - It is composed of the characters and by the number of digits, shown in Table 12.
  - It shall not be composed of one kind of character.
- Account deletion

  Account ID and account password are deleted.
  - When the Group box of the account ID exists, that group user box is automatically set to the public user box of “user attributes: public.”

As described above, FIA_SOS.1[5], FMT_MSA.1[3], FMT_MTD.1[3], FMT_MTD.1[11], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.16. Setting of Trusted Channel function

Set the setting data of Trusted Channel function by SSL/TLS

- Communication Encryption Strength Setting (Modification of the communication encryption method.)
- Operation and Stop Setting of theTrusted Channel function

As described above, FMT_MOF.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.17. Setting of S/MIME transmission function

Set the setting data which are used when the user box file is S/MIME transmitted.

- Transmission address data (e-mail address)
- Registration and modification of S/MIME certificate
- Setting of Encryption Strength for S/MIME function

As described above, FDP_ACC.1[3], FDP_ACF.1[3], FMT_MOF.1[2], FMT_MTD.1[3], FMT_MTD.1[11], FMT_SMF.1, and FMT_SMR.1[2] are realized.

7.1.3.18. Change of WebDAV Server Password

The WebDAV server password is changed. It is verified that the WebDAV server password which is newly set up satisfies the quality below.

- The characters and the number of digits of this password conform to those specified in Table 12.

As described above, FIA_SOS.1[7], FMT_MTD.1[3], FMT_SMF.1, and FMT_SMR.1[2] are realized.

7.1.3.19. Setting of PC-FAX

Set the setting data of FAX related settings as follows,

- PC-FAX operation Setting
  - Setting either of two modes at PC-FAX operation which are to store in each box and to store in common area for all users according to the desiginated information at FAX transmission.
- TSI receiving Setting
  - Setting the storing box at TSI receiving relating the transimitter’s telephone number with the box as the identification information of transimitter’s terminal.

As described above, FDP_ACC.1[3], FDP_ACP.1[3], FMT_MTD.1[3], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.20. Function related to Enhanced Security function

The function that influences the setting of the Enhanced Security function that the administrator operates is as follows. (* It has explained the influence of the backup and restoration function in 7.1.3.9.)

- Operation setting of Enhanced Security function
  Function to set valid or invalid of Enhanced Security function.
- HDD logical format function
  Function to write the default value of management data using the file system of HDD. Along with the execution of this logical format, the setting of the Enhanced Security function is invalidated.
- All area overwrite deletion function
  The settings of enhanced security function are invalidated by executing the overwrite deletion of all area

As described above, FMT_MOF.1[1], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.21. Function that relates to password initialization function

The function that relates to the initialization of the password that the administrator operates is as follows.

- All area overwrite deletion function
  The settings of the administrator password and the SNMP password are initialized to the values at factory shipment by executing the overwrite deletion of all area

As described above, FMT_MTD.1[3] , FMT_MTD.1[6], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.1.3.22. Operational Setup of the ID & Print Function

The operation modes of the ID & print function are set up as follows:

- ID & print automatic operation mode
  An operation mode that registers a print file sent from a client PC as an ID & print file even if printing is requested by the normal print setup.
- ID & print specified operation mode
  An operation mode that registers a print file sent from a client PC as an ID & print file only when it is requested to register that file as an ID & print file.

As described above, FMT_MOF.1[2], FMT_SMF.1, and FMT_SMR.1[2] are realized.

7.2. F.ADMIN-SNMP (SNMP administrator function)

F.ADMIN-SNMP is a security function, which identifies and authenticates the administrator in the access through the network by using SNMP from client PC, and then permits the operation of a setting function of the network only to the administrator whose identification and authentication was succeeded.

7.2.1. Identification and authentication function by SNMP password

It identifies and authenticates by the SNMP password, that the user who accesses the MIB object through the network with the use of SNMP is an administrator

- Offers the SNMP authentication mechanism which authenticates by the SNMP password that consists of the character shown in Table 12.

- ➢ Only Authentication password or both the Privacy password and the Authentication password is used.
- ➢ In the case of SNMP, the SNMP password is used for every session without requiring the administrator authentication mechanism by the separate session information.

- ● Reset the authentication failure frequency if it succeeds in authentication.
  - ➢ In the case of both the Privacy password and the Authentication password are used, the authentication failure frequency is reset only when both passwords together succeeded in the authentication.
- ● When the authentication failure that becomes the 1-3 times at total in each authentication function by using the SNMP password is detected, all the authentication functions to use the SNMP password are locked. (The access to the MIB object is refused.)
  - ➢ The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
  - ➢ In the case of both the Privacy password and the Authentication password are utilized, even though both passwords together fails in authentication, it is detected as one failure.
- ● The lock status is released when the lock release function to the MIB object of F. ADMIN is performed.

As described above, FIA_AFL.1[3] , FIA_UAU.2[2] and FIA_UID.2[2] are realized.

7.2.2. Management function using SNMP

When it is identified and authenticated that the user is an administrator by the SNMP password, the access to the MIB object is permitted, and then the operation of the setting data shown as followings is permitted to be done.

(1) Network Settings

Setting operation of the following setting data is performed.

- ➢ Setting data that relates to SMTP server (IP address, port number, etc.)
- ➢ Setting data that relates to DNS server (IP address, port number, etc.)
- ➢ A series of setting data that relates to MFP address (IP address, NetBIOS name, AppleTalk printer name, etc.)

As described above, FDP_ACC.1[3] and FDP_ACF.1[3] are realized

(2) Change of SNMP password

The SNMP password (Privacy password and Authentication password) is changed. Verify that the SNMP password newly set satisfies the following qualities.

- ➢ It is composed of the characters and by the number of digits shown in Table 12.

As described above, FIA_SOS.1[2], FMT_MTD.1[3] , FMT_SMF.1 and FMT_SMR.1[2] are realized.

(3) Setting of SNMP password authentication function

The authentication method in the SNMP password authentication function is set to the "Authentication password only" or the "Privacy password and the Authentication password".

As described above, FMT_MOF.1[2] , FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.3. F.SERVICE (Service mode function)

F.SERVICE is a series of security function that the service engineer operates, such as the service engineer identification authentication function in service mode accessing from a panel, and a security management function that includes a change in the CE password and the administrator password.

7.3.1. Service engineer identification authentication function

It is identified and authenticated the accessing user as the service engineer in response to the access request to the service mode from the panel.

- Offers the CE authentication mechanism that is authenticated by the CE password that consists of the character shown in Table 12.
  - The CE authentication mechanism by the separate session information is not required because the service mode can only be accessed from the panel.

- Return "*" for each character as feedback for the entered CE password.
- Resets the number of the authentication failure when succeeding in the authentication.
- Not accept the input from the panel for five seconds when the authentication failed.
- When the authentication failure that becomes 1-3 times at total in each authentication function by using the CE password is detected, it locks all the authentication functions to use the CE password. (The access to the service mode is refused.)
  - The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- Lock of authentication function is released with F.RESET function operated.

As described above, FIA_AFL.1[1], FIA_AFL.1[8], FIA_UAU.2[1] , FIA_UAU.7 and FIA_UID.2[1] are realized.

7.3.2. Function offered in service mode

When a user is identified and authenticated as a service engineer by the service engineer identification authentication function at the access request to the service mode, the use of the following functions is permitted.

(1) Change of CE password

When a user is re-authenticated as a service engineer and the new password satisfies the quality, it is changed.

- Offers the CE authentication mechanism that is re-authenticated by the CE password that consists of the characters shown in Table 12.
- Resets the number of authentication failure when succeeding in the re-authentication.
- Return "*" for each character as feedback for the entered service codes in the re-authentication.
- When the authentication failure that becomes 1-3 times at total in each authentication function by using the CE password is detected, it logoffs the service mode accessing from the panel, and locks all the authentication functions to use the CE password. (The access to

the service mode is refused.)

- The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.

- ➢ The F.RESET function operates to release the lock of the authentication function.
- ➢ It verifies that the CE password newly set satisfies the following qualities.
  - It is composed of the characters and by the number of digits, shown in the Table 12.
  - It shall not be composed of one kind of character.
  - It shall not be matched with the current value.

As described above, FIA_AFL.1[1], FIA_SOS.1[1], FIA_UAU.2[1], FIA_UAU.6, FIA_UAU.7, FMT_MTD.1[9], FMT_SMF.1 and FMT_SMR.1[1] are realized.

(2) Change of administrator password

Change the administrator password. Verify that the administrator password newly set satisfies the following qualities.

- ➢ It is composed of the characters and by the number of digits, shown in the Table 12.
- ➢ It shall not be composed of one kind of character.
- ➢ It shall not be matched with the current value.

As described above, FIA_SOS.1[1], FMT_MTD.1[6], FMT_SMF.1 and FMT_SMR.1[1] are realized.

(3) Release of the lock of administrator authentication function

Reset (0 clear) the number of authentication failure for the administrator authentication.

- ➢ If access is locked, the lock is released.

As described above, FIA_AFL.1[2] is realized.

(4) Setting of CE Authentication Lock Time

Set the CE Authentication Lock Time between 1 - 60 minutes.

As described above, FMT_MTD.1[9], FMT_SMF.1 and FMT_SMR.1[1] are realized.

(5) Function that relates the operation setting of maintenance function

Set the operation of the aintenance function. (Available to change from the halt condition to startup condition)

As described above, FMT_MOF.1[4], FMT_SMF.1 and FMT_SMR.1[1] are realized.

(6) Function that relates to Enhanced Security function

The functions that influence the setting of the Enhanced Security function that the service engineer operates are as follows.

- ➢ HDD logical format function

  Function to write the value of management data using the file system of HDD. The setting of the Enhanced Security function is invalidated along with the execution of this logical format.
- ➢ HDD physical format function

  A function to rewrite the entire disk in HDD with a regulated pattern including the signal rows such as the track and sector information. The setting of the Enhanced Security function is invalidated along with the execution of this physical format.

- ➢ Initialization function
  Function to reset every setting value written in NVRAM to the factory default. The setting of the Enhanced Security function is invalidated by executing this initialization function.

As described above, FMT_MOF.1[1], FMT_SMF.1 and FMT_SMR.1[1] are realized.

7.4. F.USER (User Function)

F.USER identifies and authenticates the user for the use of MFP various function. To the identified and authenticated user, it offers the management function of the user password that is managed in the MFP at the time of machine authentication, besides the permission of the use of functions such as F.BOX and F.PRINT.

7.4.1. User Identification and Authentication Function

<Account Authentication : User identification and authentication in the synchronized method>

When the access request for the user box and the request for the registration of the secure print file, it is identified and authenticated to be a user. Account Name (account ID) is associated with the concerned user ID that is set up beforehand besides the user ID for the identified and authenticated user, and the use of F.BOX and F.PRINT is permitted to the identified and authenticated user.

- ● Return "*" for each character as feedback for the entered user password.
- ● Resets the number of authentication failure when succeeding in the authentication.
- ● Not accept the access from the panel for five seconds when the authentication failed.
- ● When the authentication failure that becomes 1-3 times at total for the concerned user is detected, it locks all the authentication functions to the user.
  - ➢ The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- ● To release the lock of the authentication function is to perform the lock release function to the user authentication of F.ADMIN.

As described above, FIA_AFL.1[4], FIA_AFL.1[8], FIA_UAU.2[3], FIA_UAU.7 and FIA_UID.2[3] are realized.

<Account Authentication : Account registration function when the belonging account of user is not registered in the synchronized method>

- ● Require the Account authentication after User identification and authentication.
- ● Register the successful account ID as account name when succeeding in the account authentication. (By this, FMT_MTD.1[12], FMT_SMS.1 and FMT_SMR.1[6] are realized.)
  (The detail of the account authentication is the same as processing of the items explained in the following <Account authentication: User identification and authentication in the authentication method not synchronized>)

<Account Authentication :User identification and authentication in the authentication method not synchronized>

When the access request for the user box and the request for the registration of the secure print file, it is identified and authenticated to be a user. The detail of user authentication is the same as account authentication: user identification and authentication in the synchronized method. In the case of the access from the panel, the account authentication is required, Account Name is associated with the user ID if succeeding the account authentication, and the use of F.BOX and F.PRINT is permitted to the user who is identified and authenticated.

- Offers account authentication mechanism that is authenticated the account by the account password that consists of the characters shown in Table 12.
- Return "*" for each character as feedback for the entered account password.
- Resets the number of authentication failure when succeeding in the authentication.
- Not accept the access from the panel for five seconds when the authentication failed.
- When the authentication failure that becomes 1-3 times at total for the concerned account is detected, it locks all the authentication functions to the account.
  - The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- The lock of the authentication function is to perform the lock release function to the concerned account of F.ADMIN.

As described above, FIA_AFL.1[7], FIA_AFL.1[8], FIA_UAU.2[6], FIA_UAU.7 and FIA_UID.2[6] are realized.

When accessing from a network, the account is not authenticated after the user authentication but the user and the account are processed with one sequence. When authenticating the account, the account ID is associated with the user ID, and the user ID and the account ID are measured by the session information which is the same as user identification and authentication in the account authentication: the synchronized method.

- Provides the user authentication mechanism that authenticates the user that consists of the characters shown in Table 12.
  - After the user is authenticated to the access from the network, the user authentication mechanism using session information besides the user password is offered.
  - According to the protocol, it uses the session information more than 10^{10} or it generates and uses the session information more than 10^{10}.

As described above, , FIA_SOS.1[6], FIA_SOS.2, FIA_ATD.1 and FIA_USB.1 are realized.

<Automatic registration of the User ID>

In the case of the “External server authentication”has been selected as the user authentic method, the identified and authenticated user is registered as an user ID with the user name and authentication server information that was used with identification and authentication.

As described above, FIA_UID.2[7], FMT_MTD.1[10], FMT_SMF.1 and FMT_SMR.1[5] are realized.

7.4.2. Auto logoff function in user identification and authentication domain

While the user who is identified and authenticated is accessing from a panel, if it does not accept any operations for more than the “panel automatic logoff time”, it logs off from a user identification and authentication domain automatically.

As described above, FTA_SSL.3 is realized.

7.4.3. Modification function of user password

When the identification and authentication are succeeded, and the access to the user identification and authentication domain is permitted, the user is permitted to change its own password. When the external server authentication is effective, this function cannot be applied.

When the user password newly set satisfies the following qualities, it is changed.

- ➢ It is composed of the characters and by the number of digits, shown in the Table 12.
- ➢ It shall not be composed of one kind of character.

As described above, FIA_SOS.1[3], FMT_MTD.1[2], FMT_SMF.1 and FMT_SMR.1[3] are realized.

7.5. F.BOX (User Box Function)

F.BOX is a series of security function related to the user box to the user who is identified and authenticated that you are the registered user, such as the permission of the operation and management of the personal user box of the user, the authentication to the user who is permitted the utilization of the user box in the access to the public box, and the access control function to permit various operations of the concerned user box and the user box file after the authentication.

<Registration of user box by user operation>

To register a personal user box, a group user box or public user box by selecting the user attribute to the non-registration user box ID selected. When it’s registered, it is possible to select "User ID" or “Account ID” in the user attribute of the user box which have been specified "Public" as a default value.

- ● In the case of the personal user box, the arbitrary user ID registered is specified.
- ● In the case of the public user box, verify that a user box password registered satisfies the following conditions.
  - ➢ It is composed of the characters and by the number of digits, shown in the Table 12.
  - ➢ It shall not be composed of one kind of character.
- ● In the case of group user box, the arbitrary account ID registered is specified.

As described above, FIA_SOS.1[5], FMT_MSA.3[1], FMT_MTD.1[5], FMT_SMF.1 and FMT_SMR.1[3] are realized.

<Automatic registration of user box>

- ● In the user box operation to store of the copy job and the print job, when the specified user box is unregistered, the personal user box which is set the user ID of the user who operates the job concerned is automatically registered.

As described above, FMT_MSA.3[1] and FMT_SME.1 are realized.

<Registration of user box file>

- ● In the new registration operation, move or copy operation of user box file, the user box ID equivalent to the user box specified as target storage is set to the user box attribute as the user box file.

As described above, FMT_MSA.3[3] is realized.

7.5.1. Personal User Box Function

(1) Access control function to personal user box

The task to act for the identified and authenticated user has "User ID" of the user who is identified and authenticated for the user attribute. This task is permitted the display of the list of the personal user box which has a corresponding user attribute with this user attribute. As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.

(2) Access control function to a user box file in a personal user box

When the user box to operate is selected, "User Box ID" of the user box is related to the task as a user box attribute in addition to the user attribute. This task is permitted, to the user box file with the user box attribute corresponding to the user box attribute of itself, the printing, the E-mail transmission (include the S/MIME transmission), the FTP transmission, the FAX transmission, the SMB transmission, WebDAV transmission, download, the removing to other user boxes, and the copy operations to other user boxes.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.

(3) User attribute change of a personal user box

The user attributes can be changed.

- ➢ If another registered user is specified, it becomes a personal user box that another user manages.
- ➢ If public is specified, it becomes a public user box. It is necessary to register the user box password. In this case, it is verified that the user box password meets the following requirements.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.
- ➢ If account ID is specified, it becomes a group user box that can be accessed by a user who is permitted the use of the concerned account.

As described above, FIA_SOS.1[5], FMT_MSA1.[1], FMT_SMF.1 and FMT_SMR.1[2] are realized.

7.5.2. Public User Box Function

When the user is identified and authenticated as a registered user, the task to act for the user who is identified and authenticated has "User ID" of the identified and authenticated user as the user attribute. This task is permitted the display of the list of the public user box which is set the public as the user attribute. The operation specification of each public user box is as follows.

(As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.)

- ● Authentication function in access to a public user box

  For the access request for each public user box, after the above-mentioned verification function is operated, the user who accesses is authenticated that it is a user permitted the use of a user box concerned respectively.

  - ➢ Offers the user box authentication mechanism that is authenticated by the user box password that consists of the character shown in Table 12.
    - After the user box is authenticated to the access from the network, it offers the user

box authentication mechanism using the session information besides the user box password.

- According to protocol, it utilizes the 10^{10} session information or more, or generated and uses the 10^{10} session information or more.
- Return "*" for each character as feedback for the entered user box password.
- Resets the number of authentication failure when succeeding in the authentication.
- In case of the access from the panel, when it fails in the authentication, an input from the panel is not accepted for five seconds.
- When the authentication failure that becomes the 1-3 times in total is detected for the public user box concerned, the authentication function to the public user box concerned is locked.

  -The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- The lock of the authentication function is released by the lock release function to the public user box of F.ADMIN executed.

As described above, FIA_AFL.1[6], FIA_AFL.1[8], FIA_SOS.1[6], FIA_SOS.2, FIA_UAU.2[5], FDP_UAU.7 and FIA_UID.2[5] are realized.

The following is a function that the user who is permitted the use of the user box is offered in the user box identification and authentication domain of the user box.

- Access control to a user box file in a public user box

  The task to act for the user is related the "User Box ID" of the user box as a user box attribute in addition to the user attribute. This task is permitted the user box file, which have a corresponding user box attribute to the user box attribute of the subject attribute, to do the printing, the E-mail transmission (include the S/MIME transmission), the FTP transmission, the fax transmission, the SMB transmission, WebDAV transmission, download, the movement to other user boxes, and the copy operations to other user boxes.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.

- User attribute change of a public user box

  The user attribute of the user box can be changed.
  - Specify the registered user. And change to a personal user box for the registered user.
  - Specify the account ID, and then it becomes a group user box that can be accessed by a user who is permitted the use of the concerned account.

As described above, FMT_MSA.1[2], FMT_SMF.1 and FMT_SMR.1[4] are realized.

- Change of a public user box password

  Change the user box password of the public user box. When the user box password newly set satisfies the following qualities, it is changed.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.

As described above, FIA_SOS.1[5], FMT_MTD.1[4], FMT_SMF.1 and FMT_SMR.1[4] are realized.

7.5.3. Group User Box Function

(1) Access control function for Group User Box

The task to act for the identified and authenticated user has the"Account ID"as the Account Name that is related to the identified and authenticated user. This task is permitted the display of the list of the group user box which has a corresponding user attribute with this account ID.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.

(2) Access control function to a user box file in a group user box

When the user box to operate is selected, "User Box ID" of the user box is related to the task as a user box attribute in addition to the user attribute. This task is permitted, to the user box file with the user box attribute corresponding to the user box attribute of subject attribute, the printing, the E-mail transmission (include the S/MIME transmission), the FTP transmission, the FAX transmission, the SMB transmission, WebDAV transmission, download, the removing to other user boxes, and the copy operations to other user boxes.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[1] and FDP_ACF.1[1] are realized.

(3) User attribute change of a group user box

The user attributes can be changed.

- If another account ID is specified, the user of another Account Name becomes an accessible group user box.
- If public is specified, it becomes a public user box. It is necessary to register the user box password. In this case, it is verified that the user box password satisfies the following requirements.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.
- Specify a registered user, and change to a personal user box for the registered user.

As described above, FIA_SOS.1[5], FMT_MSA.1[3], FMT_SMF.1 and FMT_SMR.1[6] are realized.

7.6. F.PRINT (Secure Print Function, ID & Print Function)

F.PRINT is a security function related to the secure print function and ID & print function.

It provides the access control function that allows the printing and displaying the list of the secure print file after authenticating if a user is the authorized person to use the secure print file for the access to the secure print file from the panel to the identified and authenticated user.

Moreover, for the user who was identified and authenticated as a registered user, when ID & print files are accessed from the panel, F.PRINT provides the access control function that allows the printing and displaying the list of only the ones registered by the user.

7.6.1. Secure Print Function

(1) Authentication function by the secure print password

When the user is identified and authenticated as the registered user, it authenticates that the accessing user is a user to whom the use of the secure print file concerned is permitted, in response to the access request to each secure print file.

- Offers the secure print password authentication mechanism that is authenticated by the secure print password that consists of the character shown in Table 12.
- The secure print authentication mechanism by the separate session information is not needed because it becomes only an access from the panel in the case of the secure print.
- Return "*" for each character as feedback for the entered secure print password.
- Resets the number of authentication failure when succeeding in the authentication.
- The access from the panel is not accepted for 5 seconds when the authentication is failed.
- When the authentication failure that becomes the 1-3 times in total for the secure print file concerned is detected, the authentication function to the secure print file is locked.
  - The administrator specifies the failure frequency threshold by the unauthorized access detection threshold setting function.
- The lock is released by the lock release function to the secure print file of F.ADMIN executed.

As described above, FIA_AFL.1[5], FIA_AFL.1[8], FIA_UAU.2[4], FIA_UAU.7 and FIA_UID.2[4] are realized.

(2) Access control function to a secure print file

The secure print file access control operates when it is authenticated.

- The task to act for the user who is identified and authenticated has the authenticated secure print internal control ID as the file attribute.
- This task is permitted the printing to the secure print file with a corresponding file attribute to the file attribute of this task.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[2] and FDP_ACF.1[2] are realized.

(3) Registration function of a secure print file

When it is authenticated as a registered user in the registration request of the secure print file, the user is permitted to register the secure print password with the concerned secure print file.

As described above, FMT_MTD.1[8], FMT_SMF.1 and FMT_SMR.1[3] are realized.

- Registration of the secure print password

  The registered secure print password is verified to meet the following requirements.
  - It is composed of the characters and by the number of digits shown in Table 12.
  - It shall not be composed of one kind of character.

As described above, FMT_SOS.1[5] is realized.

- Giving of the secure print internal control ID

  When the verification of the secure print password is completed in a registration request of the secure print file, the secure print internal control ID uniquely identified is set to the concerned secure print file.

As described above, FMT_MSA.3[2] is realized.

7.6.2. ID & print Function

7.6.2.1. ID & Print File Registration Function

When it is requested to register an ID & print file, if the user is authenticated as a registered user, that file is registered.

- The user ID of the user who tries to register the file is set as a user attribute of that ID & print file.

As described above, FIA_MSA.3[4] is realized,

7.6.2.2. ID & Print File Access Control Function

When the user is authenticated as a registered user, the ID & print file access control operates.

- The task substituting for the identified and authenticated user has a user ID as a user attribute.
- This task is allowed to list and print ID & print files with the user attribute which is equal to this user attribute.

As described above, FIA_ATD.1, FIA_USB.1, FDP_ACC.1[4], and FDP_ACF.1[4] are realized,

7.7. F.OVERWRITE-ALL (All area overwrite deletion function)

F.OVERWRITE-ALL executes the overwrite deletion in the data area of HDD and CF, and initializes the setting value of the password that is set to NVRAM and CF as well. The object for the deletion or the initialization is as follows.

<Object for the deletion : HDD>

- Secure print file
- User box file
- ID & print file
- On memory image file
- Stored image file
- HDD remaining image file
- Image related file
- Transmission address data file
- User ID
- User password
- User box password
- Secure print password
- Account ID
- Account password
- S/MIME certificate
- Remaining TSF data

< Object for the deletion : CF>

- CF remaining image file

<Object for the initialization : NVRAM>

- Administrator Password
- Operation setting of HDD lock function (OFF) --- HDD lock password is deleted.
- Operation setting of CF lock function (OFF) --- CF lock password is deleted.
- Operation setting of Encryption function (OFF) --- Encryption Passphrase is deleted.
- Trusted Channel setting data --- Trusted Channel setting data is deleted, because initialization has no default value.

<Object for the initialization : CF>

- SNMP Password
- WebDAV server password

The deletion methods such as the data written in HDD and the written frequency is executed according to the deletion method of all area overwrite deletion function set in F.ADMIN (Table 13). The HDD lock password, CF lock password and the encryption passphrase cannot be used for being turned off the operation setting of the HDD lock function, CF lock function and the encryption function. The setting of the Enhanced Security function becomes invalid in the execution of this function. (Refer to the description for the operation setting of the Enhanced Security function in F.ADMIN.)

As described above, FAD_RIP.1 is realized.

Table 13 A type of overwrite deletion of all area and the method of overwriting

Method	Overwritten data type and their order
Mode:1	0x00
Mode:2	Random numbers → Random numbers → 0x00
Mode:3	0x00 → 0xFF → Random numbers → Verification
Mode:4	Random numbers → 0x00 → 0xFF
Mode:5	0x00 → 0xFF → 0x00 → 0xFF
Mode:6	0x00 → 0xFF → 0x00 → 0xFF → 0x00 → 0xFF → Random numbers
Mode:7	0x00 → 0xFF → 0x00 → 0xFF → 0x00 → 0xFF → 0xAA
Mode:8	0x00 → 0xFF → 0x00 → 0xFF → 0x00 → 0xFF → 0xAA → Verification

7.8. F.CRYPT (Encryption key generation function)

F.CRYPT is generated the encryption key to encrypt image data written in HDD by using the HDD encryption key generation algorithm (SHA-256) that is regulated by the KonicaMinolta encryption specification standard. KonicaMinolta HDD encryption key generation algorithm (SHA-256) is the algorithm to generate the encryption key by using the SHA-256 regulated by FIPS 180-2.

When the encryption passphrase is decided in the encryption functional operation setting to which the access is restricted in F.ADMIN, the encryption key of 128bit length is generated from the encryption passphrase by applying the SHA-256 algorithm.

As described above, FCS_CKM.1 is realized.

7.9. F.VALIDATION-HDD (HDD verification function)

F.VALIDATION-HDD is a check function to permit reading from and writing in the HDD only when it is verified that the illegal HDD is not installed and is confirmed validity when the HDD lock password is set to HDD

When the HDD lock password is set to HDD, the status of HDD is confirmed in the HDD operation verifying at the time of TOE starting. When the HDD lock password certainly being set is returned as the result of status confirmation, the access to HDD is permitted. If the HDD lock password not being set is returned, the access to HDD is refused because of an illegitimate possibility.

As described above, FIA_EID.1[1] is realized.

7.10. F.VALIDATION-CF (CF verification function)

F.VALIDATION-CF is a check function to permit reading from and writing in the CF only when it is verified that the illegal CF is not installed and is confirmed validity when the CF lock password is set to CF

When the CF lock password is set to CF, the status of CF is confirmed in the CF operation verifying at the time of TOE starting. When the CF lock password certainly being set is returned as the result of status confirmation, the access to CF is permitted. If the CF lock password not being set is returned, the access to CF is refused because of an illegitimate possibility.

As described above, FIA_EID.1[2] is realized.

7.11. F.RESET (Authentication Failure Frequency Reset Function)

F.RESET is a function that releases the lock by resetting the authentication failure frequency when the account locks in the administrator authentication and CE authentication.

(1) CE Authentication function lock release processing function

The function is executed by the specific operation, and the lock is released by clearing the failure frequency of the CE authentication to 0 after CE authentication lock time.

As described above, FIA_AFL.1[1] is realized.

(2) Administrator authentication function lock release processing function

The function is executed by OFF/ON of the main power supply, and the lock is released by clearing the failure frequency of the administrator authentication to 0 after the administrator authentication lock time.

As described above, FIA_AFL.1[2] is realized.

7.12. F.TRUSTED-PASS (Trust Channel Function)

F.TRUSTED-PASS is a function that generates and achieves the Trusted Channel by using SSL or TSL protocol when transmitting and receiving the following image file between client PC and MFP.

- User box file (download from MFP to client PC)
- Image file that will be stored as a user box file (upload from client PC to MFP)
- Image file that will be stored as Secure Print file (upload from client PC to MFP)
- Image file that will be stored as ID & Print file (upload from client PC to MFP)

As described above, FTP_ITC.1 is realized.

7.13. F.S/MIME (S/MIME Encryption Processing Function)

F.S/MIME is a function to encrypt the User box file when transmitting the User box file as S/MIME.

<User box file Encryption Key generation>

- The Encryption key is generated to encrypt the user box file by the pseudorandom number Generation Algorithm which FIPS 186-2 provides. (Encryption key length is 128bit, 168bit, 192bit or 256bit.)

As described above, FCS_CKM.1 is realized.

<Encryption of User box file >

- It is encrypted by AES which FIPS PUB 197 provides by using encryption key (128bit, 168bit and 256bit) to encrypt the user box file.
- It is encrypted by the 3-Key-Triple-DES which SP800-67 provides by using the encryption key (168bit) to encrypt the user box file.

As described above, FCS_COP.1 is realized.

<Encryption of User box file Encryption key>

- The encryption key to encrypt the user box file is encrypted by RSA which FIPS 186-2 provides.
- The key length of the encryption key used in this case is 1024 bit, 2048bit, 3072bit or 4096bit.

As described above, FCS_COP.1 is realized.

7.14. F.SUPPORT-AUTH (External Server authentication operation support function)

F.SUPPORT-AUTH is the function that realizes the user identification and authentication function in cooperation with the user information management server of ActiveDirectory. (the function that operates with F.USER.)

When the user information management server is used for user identification method, the inquiry for the identification of the user is done for the user information management server under the user's request of the identification and authentication process. After this inquiry, the user identification and authentication process is realized by getting the user identification information returned back from user information management server.

As described above, FCS_CAP.1[1] is realized.

7.15. F.SUPPORT-CRYPTO (Cryption kit operation support function)

F.SUPPORT-CRYPTO is the function that operates the cryption function by cryption kit under TOE support.

The encryption process for the image files written in HDD is achieved through the cryption kit by setting the encryption key that F.CRYPTO generates, on it.

Furthermore the decryption process for the image files read from HDD is achieved through the cryption kit by setting the encryption key, that F.CRYPTO generates, on it.

As described above, FCS_CAP.1[2] is realized.

7.16. F.SUPPORT-HDD (HDD lock operation support function)

F.SUPPORT-HDD is the function to operate HDD lock function of HDD from TOE.

<Release process of HDD lock state>

At the MFP power ON, the release process of HDD lock state of HDD lock function is achieved.

- Release process is requested to HDD by using HDD lock password stored in HDD.

<Modification process of HDD lock password>

F.ADMIN requests to change the HDD lock password.

- Modification process is requested to HDD by using HDD lock password stored in NVRAM and new HDD lock password.

As described above, FIT_CAP.1[3] is realized.

7.17. F.SUPPORT-CF (CF lock operation support function)

F.SUPPORT-CF is the function to operate CF lock function of CF from TOE.

<Release process of CF lock state>

At the MFP power ON, the release process of CF lock state of CF lock function is achieved.

- Release process is requested to CF by using CF lock password stored in CF.

<Modification process of CF lock password>

F.ADMIN requests to change the CF lock password.

- Modification process is requested to CF by using CF lock password stored in NVRAM and new CF lock password.

As described above, FIT_CAP.1[4] is realized.

7.18. F.ADMIN-WebDAV (WebDAV Administrator Function)

F.ADMIN-WebDAV is the security function that identifies and authenticates administrator when accessed via a network from a client PC using WebDAV, and permits only the administrator who was identified and authenticated successfully to operate the counter management function. (The counter management function includes TSF data. This is described in detail below.)

7.18.1. Identification and Authentication Function by WebDAV Server Password

It is identified and authenticated by the WebDAV server password that a user accessing via a network using WebDAV is an administrator.

- The WebDAV authentication mechanism which authenticates the user by the WebDAV server password consisting of the characters shown in Table 12 shall be usable.
  - For WebDAV, no separate mechanism to authenticate the administrator based on the session information, but a WebDAV server password is used for each session.

- When re-authentication has succeeded, the authentication failure frequency is reset.
- When authentication failure which results in the second, fourth, and sixth time in total is detected by each authentication function utilizing a WebDAV server password, all the authentication functions utilizing the WebDAV server password is locked out. (Access using WebDAV is denied.)
  - The maximum number of times of failure is specified by the administrator by the unauthorized access detection threshold setup function.
- The lock-out of the authentication function is released when the F.ADMIN's unlock function is performed to WebDAV authentication.

As described above, FIA_AFL.1[9], FIA_UAU.2[2], and FIA_UID.2[2] are realized.

7.18.2. Management Function Utilizing WebDAV

When it is identified and authenticated that the user is an administrator by the WebDAV server password, access utilizing WebDAV is permitted, and it is permitted to set up the data below:

7.18.2.1. Obtention of User Password

User password is obtained for each registered user.

As described above, FMT_MTD.1[7], FMT_SMF.1, and FMT_SMR.1[2] are realized.

7.18.2.2. Obtention of Account Password

Account password is obtained for each registered user.

As described above, FMT_MTD.1[7], FMT_SMF.1, and FMT_SMR.1[2] are realized.