



# **Certification Report**

Buheita Fujiwara, Chairman Information-technology Promotion Agency, Japan

## **Target of Evaluation**

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Application date/ID	2007-01-23 (ITC-7130)
Certification No.	C0120
Sponsor	KONICA MINOLTA BUSINESS TECHNOLOGIES,
	INC.
Name of TOE	Japanese : bizhub C550 / bizhub C451 / ineo+ 550 /
	ineo+ 451 Zentai Seigyo Software
	English : bizhub C550 / bizhub C451 / ineo+ 550 /
	ineo+ 451 Control Software
Version of TOE	A00J0Y0-0100-GM0-00
PP Conformance	None
Conformed Claim	EAL3
Developer	KONICA MINOLTA BUSINESS TECHNOLOGIES,
_	INC.
<b>Evaluation Facility</b>	Mizuho Information & Research Institute, Inc.
	Center for Evaluation of Information Security

This is to report that the evaluation result for the above TOE is certified as follows. 2007-10-29

Hideji Suzuki, Technical Manager Information Security Certification Office IT Security Center

**Evaluation Criteria, etc.:** This TOE is evaluated in accordance with the following criteria prescribed in the "IT Security Evaluation and Certification Scheme".

- Common Criteria for Information Technology Security Evaluation Version 2.3 (ISO/IEC 15408:2005)
- Common Methodology for Information Technology Security Evaluation Version 2.3 (ISO/IEC 18045:2005)

## **Evaluation Result: Pass**

"Japanese : bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Zentai Seigyo

Software English : bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Control Software" has been evaluated in accordance with the provision of the "IT Security Certification Procedure" by Information-t echnology Promotion Agency, Japan, and has met the specified assurance requirements.

Notice:

This document is the English translation version of the Certification Report published by the Certification Body of Japan Information Technology Security Evaluation and Certification Scheme.

# Table of Contents

1. Executive Summary	1
1.1 Introduction	1
1.2 Evaluated Product	1
1.2.1 Name of Product	1
1.2.2 Product Overview	1
1.2.3 Scope of TOE and Overview of Operation	2
1.2.4 TOE Functionality	3
1.3 Conduct of Evaluation	5
1.4 Certificate of Evaluation	5
1.5 Overview of Report	5
1.5.1 PP Conformance	6
1.5.2 EAL	6
1.5.3 SOF	6
1.5.4 Security Functions	6
1.5.5 Threat	
1.5.6 Organisational Security Policy	
1.5.7 Configuration Requirements	
1.5.8 Assumptions for Operational Environment	
1.5.9 Documents Attached to Product	20
2. Conduct and Results of Evaluation by Evaluation Facility	21
2.1 Evaluation Methods	
2.2 Overview of Evaluation Conducted	
2.3 Product Testing	
2.3.1 Developer Testing	
2.3.2 Evaluator Testing	23
2.4 Evaluation Result	24
3. Conduct of Certification	25
4. Conclusion	
4.1 Certification Result	
4.2 Recommendations	
5. Glossary	27
6. Bibliography	

## 1. Executive Summary

#### 1.1 Introduction

This Certification Report describes the content of certification result in relation to IT Security Evaluation of "Japanese : bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Zentai Seigyo Software English : bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Control Software Version: A00J0Y0-0100-GM0-00" (hereinafter referred to as "the TOE") conducted by Mizuho Information & Research Institute, Inc. Center for Evaluation of Information Security (hereinafter referred to as "Evaluation Facility"), and it reports to the sponsor, KONICA MINOLTA BUSINESS TECHNOLOGIES, INC..

The reader of the Certification Report is advised to read the corresponding ST and manuals (please refer to "1.5.9 Documents Attached to Product" for further details) attached to the TOE together with this report. The assumed environment, corresponding security objectives, security functional and assurance requirements needed for its implementation and their summary specifications are specifically described in ST. The operational conditions and functional specifications are also described in the document attached to the TOE.

Note that the Certification Report presents the certification result based on assurance requirements conformed to the TOE, and does not certify individual IT product itself.

- Note: In this Certification Report, IT Security Evaluation Criteria and IT Security Evaluation Method prescribed by IT Security Evaluation and Certification Scheme are named CC and CEM, respectively.
- 1.2 Evaluated Product
- 1.2.1 Name of Product

The target product by this Certificate is as follows:

Name of Product: Japanese : bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Zentai Seigyo Software English : bizhub C550 / bizhub C451 /ineo+ 550/ineo+ 451 Control Software

Version:	A00J0Y0-0100-GM0-00
Developer:	KONICA MINOLTA BUSINESS TECHNOLOGIES, INC.

## 1.2.2 Product Overview

This TOE is the embedded software that is installed on the Konica Minolta Business Technologies, Inc. digital MFP (bizhub C550 / bizhub C451 / ineo+ 550/ ineo+ 451) (Hereinafter referred to as "MFP").

This TOE offers the protection from exposure of the highly confidential document stored in the MFP. Moreover, TOE can encrypt 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 installing the encryption board which is the option parts of MFP. 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.

#### 1.2.3 Scope of TOE and Overview of Operation

This TOE exists on the flash memory on the MFP controller, which built in the body of the MFP, and is loaded on the RAM. Figure 1-1 shows the relationship between this TOE and the MFP. Shaded region on the figure 1-1 indicates the TOE and "\*" shows the option parts of MFP.

Flash memory is the storage medium that stores the object code of the MFP Control Software that is TOE. It also stores the message data of each country's language to display the response accessed through the panel and network, OS (VxWorks), and so on.

NVRAM is the nonvolatile memory that stores various setting values needed for the operation of the MFP used for processing of TOE. On the encryption board, the hardware-based cryptographic function, which is the integrated circuit for encryption, is installed in order to encipher all data to be written in HDD.

HDD 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.

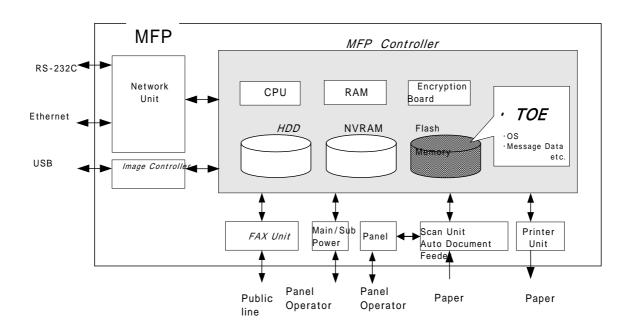


Figure 1-1 : Hardware structure that relates to TOE

Next, the logical structure of this TOE is shown. MFP includes the function that is not associated with the security directly such as basic function, user choice function, and remote diagnosis function other than the function that is indicated in "1.2.4 TOE functionality".

Basic function is a series of function for the office work concerning the image such as copy, print scan and fax and TOE performs the core control in the operation of these functions.

Remote diagnosis function is used for managing the operation status of MFP, and the device information like the number of prints by using the methods for the connection, such as the modem connection via a FAX public line mouth or a RS-232C and the E-Mail, etc, and communicating with the support center of MFP produced by Konica

Minolta business technologies, Inc.

MFP user who can use these functions uses each function that TOE provides, via the panel or the network.

The roles of the person that relate to the use of the MFP are defined as follows.

1) User

MFP's user who is registered into MFP (In general, the employee in the office is assumed.)

2) Administrator

MFP's user who carries out the management of the operation of MFP. An administrator performs the operation management of MFP and the management of user. (In general, it is assumed that the person elected from the employees in the office plays this role.)

#### 3) Service Engineer

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

4) Person in charge at the Organization that uses the MFP

A person in charge at the organization that manages the office where the MFP is installed. This person assigns an administrator who carries out the management of the operation of the MFP.

5) Person in charge at the Organization that manages the Maintenance of the MFP

A person in charge at the organization that carries out management of the maintenance for the MFP. This person assigns service engineers who perform the maintenance management for the MFP.

Besides this, though not a user of TOE, a person who goes in and out in the office are assumed as an accessible person to TOE.

#### 1.2.4 TOE Functionality

This TOE has the following functions.

1) Secure Print Function

When the secure print password is received with the printing data, the image data is stored as the standby status. And the print command and password input from the panel allows printing.

2) User Box Function

The directory named a use box can be created as an area to store the image file in HDD. Three types of user box exist; the first is the personal user box which a user possesses, the second is the public user box which the registered user making a group within a certain number uses jointly and the third is the group box which the users belong to same account uses jointly. 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 group box, the operation is limited only for the user who the use of the account is permitted. TOE processes the operation for an operation requests that is transmitted from the panel or the network unit through a network from a client PC.

#### 3) User Authentication Function

TOE can limit the user who uses MFP. Also, when accessing it via the panel and the network, TOE identifies and authenticates that the user is permitted to use the MFP by applying the user ID and user password. When the identification and authentication succeeds, TOE permits the user the use of the basic function and the user box function, etc.

The method of the user authentication has two methods of the machine authentication and the external server authentication. The method of the external server authentication assumed in this application is applied only the case with Active Directory.

#### 4) Account Authentication Function

TOE can manage the MFP users by grouping them into Account unit.

The methods of Account Authentication are has the method synchronized with User Authentication and the Method not synchronized with User Authentication.

5) Administrator Function

TOE provides the functions such as the management of the user boxes, the management of various settings of the network and image quality, and the management of user information at the time of machine authentication in the administrator mode that only authenticated administrator can operate. Also, it offers the operation setting function related to the behavior of the other function. It deletes the various setting values and the data stored by user.

#### 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.

7) Encryption key generation function

When the encryption board, an optional product, is installed in MFP controller, the encoding and decoding is processed on the encryption board due to the reading and writing data in HDD. (TOE does not process the encryption and description itself.)

The operation setting of this function is performed by the administrator function. When it operates, TOE generates the encryption key by the encryption passphrase that was entered on the panel.

#### 8) HDD Lock Function

HDD has the HDD lock function as measure against the illegal taking out, when the password is set. 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.)

#### 9) Encryption Communication Function

TOE can encrypt the data transmitted from PC to MFP and the data received by download from MFP by using SSL/TLS.

#### 10) 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.

#### 1.3 Conduct of Evaluation

Based on the IT Security Evaluation/Certification Program operated by the Certification Body, TOE functionality and its assurance requirements are being evaluated by evaluation facility in accordance with those publicized documents such as "IT Security Evaluation and Certification Scheme"[2], "IT Security Certification Procedure"[3] and "Evaluation Facility Approval Procedure"[4].

Scope of the evaluation is as follow.

- Security design of the TOE shall be adequate;
- Security functions of the TOE shall be satisfied with security functional requirements described in the security design;
- This TOE shall be developed in accordance with the basic security design;
- Above mentioned three items shall be evaluated in accordance with the CC Part 3 and CEM.

More specific, the evaluation facility examined "bizhub C550 / bizhub C451 / ineo<sup>+</sup> 550 / ineo<sup>+</sup> 451 Zentai Seigyo Software Security Target" as the basis design of security functions for the TOE (hereinafter referred to as "the ST")[1], the evaluation deliverables in relation to development of the TOE and the development, manufacturing and shipping sites of the TOE. The evaluation facility evaluated if the TOE is satisfied both Annex B of CC Part 1 (either of [5], [8] or [11]) and Functional Requirements of CC Part 2 (either of [6], [9] or [12]) and also evaluated if the development, manufacturing and shipping environments for the TOE is also satisfied with Assurance Requirements of CC Part 3 (either of [7], [10] or [13]) as its rationale. Such evaluation procedure and its result are presented in "bizhub C550 / bizhub C451 / ineo<sup>+</sup> 550 / ineo<sup>+</sup> 451 Zentai Seigyo Software Evaluation Technical Report" (hereinafter referred to as "the Evaluation Technical Report") [17]. Further, evaluation methodology should comply with the CEM (either of [14], [15] or [16]).

#### 1.4 Certification

The Certification Body verifies the Evaluation Technical Report and Observation Report prepared by the evaluation facility and evaluation evidence materials, and confirmed that the TOE evaluation is conducted in accordance with the prescribed procedure. Certification review is also prepared for those concerns found in the certification process. Evaluation is completed with the Evaluation Technical Report  $\hat{\Xi}$  October 2007 submitted by the evaluation facility and those problems pointed out by the Certification Body are fully resolved and confirmed that the TOE evaluation is appropriately conducted in accordance with CC and CEM. The Certification Body prepared this Certification Report based on the Evaluation Technical Report submitted by the evaluation facility and concluded fully certification activities.

#### 1.5 Overview of Report

#### 1.5.1 PP Conformance

There is no PP to be conformed.

## 1.5.2 EAL

Evaluation Assurance Level of TOE defined by this ST is EAL3 conformance.

#### 1.5.3 SOF

This ST claims "SOF-basic" as its minimum strength of function.

This TOE assumes the use in the general office environment that is protected from the attack of the external network. The access via the panel or the internal network to TOE is under the management by the administrator and does not assume the complex attack. Therefore, it is reasonable to assume the attacking ability to attacker is "low-level."

Thus, it is adequate with the SOF-Basic..

#### 1.5.4 Security Functions

Security functions of the TOE are as follow.

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.

a. Administrator Identification and Authentication Function

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

b. Auto Logoff Function of administrator mode

It logs off from the administrator mode automatically when any operation was not performed for the panel auto logoff period or more, during the access to the administrator mode from the panel.

c. 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.

Change of the administrator password

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

It resets the number of authentication failure when succeeding in the re-authentication.

It returns "\*" 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.)

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.

#### User Settings

User Registration (Only the user who uses for 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, only user name is registered when the machine is authenticated.) and registering the user password. It verifies that user password set newly is not composed of one kind of character with 8 digits or more by using ASCII code (0x20~0x7E).

While the external server authentication is effective, the user password cannot be registered.

Moreover, the account name (account ID) is registered and related. (Account setting is necessary beforehand.)

It performs the change of the account name related to user, and deletion of user.

#### User Box Settings

It registers as Personal user box or Public user box by setting the user attributes to the unregistered user box ID. It performs the setting and change of the user box password, and the change of the user attributes of the user box. User box password is set with 8 digits by using ASCII code (0x20~0x7E) (A total of 95 characters are selectable.)

Also, it shall not be composed of one kind of character.

The user attribute of personal user box can be changed to the other user's personal user box by specifying the registered user or to the group user box or to the public user box.

#### Release of Lock

It resets (0 clear) the number of authentication failure for each users, each secure prints, each user boxes, each account, and SNMP password. If access locked exists, the lock is released.

#### Setting of user authentication function

An authentication method in a user authentication function is set to the machine authentication or the external server authentication.

Also, the account authentication function used with a user authentication function is set.

#### Setting of unauthorized access detection threshold

The unauthorized access detection threshold in the authentication operation prohibition function is set in the range for 1-3 times.

#### Setting and execution of all area overwrite deletion function

The deletion method shown in the following table is selected first, and then the overwrite deletion at the data area of HDD and NVRAM. (Perform F.OVERWRITE-ALL.)

Method	Overwritten data type and their order
Mode:1	0x00
Mode:2	Random numbers Random numbers 0x00
Mode:3	0x00 0xFF Random numbers Verification

Method		01	verwritter	n data typ	e and the	eir order	
Mode:4	Randor	n numbei	rs 0x0	0 0xFl	<b>?</b>		
Mode:5	0x00	0xFF	0x00	0xFF			
Mode:6	0x00	0xFF	0x00	0xFF	0x00	0xFF	Random
	number	rs					
Mode:7	0x00	0xFF	0x00	0xFF	0x00	0xFF	0xAA
Mode:8	0x00	0xFF	0x00	0xFF	0x00	0xFF	OxAA
	Verifica	ation					

Setting of auto logoff function

The panel auto logoff time is set in the range of 1 - 9 minutes.

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. )

Execution of back-up and restoration function

All the setting data stored in NVRAM and HDD is backed-up and re-stored except the administrator password and the CE password.

#### Operation setting function of HDD lock function

When turning HDD lock function ON from OFF, it verifies that the newly set HDD lock password satisfies the following qualities.

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.

HDD lock password is composed of 20-digits by using ASCII code. (0x21 to 0x7E, except 0x22, 0x28, 0x29, 0x2C, 0x3A, 0x3B, 0x3C, 0x3E, 0x5B, 0x5C, and 0x5D) ( A total of 83 characters are selectable )

Return "\*" for each character as feedback for the entered HDD lock password in verification.

Also, it shall not be composed of one kind of character.

**Operation setting of encryption function** 

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

Change the encryption passphrase. By using the encryption passphrase currently set, when it is re-authenticated as an administrator, and the new encryption passphrase satisfies the quality, it is changed and F.CRYPT is performed.

Encryption passphrase is composed of 20-digits by using ASCII code. (0x21 to 0x7E, except 0x22, 0x28, 0x29, 0x2C, 0x3A, 0x3B, 0x3C, 0x3E, 0x5B, 0x5C, and 0x5D) ( A total of 83 characters are selectable )

Return "\*" for each character as feedback for the entered encryption passphrase in verification.

Also, it shall not be composed of one kind of character.

Function related to Enhanced Security function

The settings of enhanced security function are invalidated by

executing the overwrite deletion of all area.

Change of SNMP password

Change the SNMP password (Privacy password and Authentication password), and verify the quality of new password.

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."

Setting of Account

Account is registered by setting the account ID and registering the account password. It verifies that the account password set newly is not composed of one kind of character with 8 digits by using ASCII code (0x20-0x7E). Also, it performs the change of account ID and account password, and the deletion of account.

Setting of Administrator Authentication Lock Time

Set the administrator authentication lock time between  $1\,$  -  $\,60\,$  minutes.

Setting of Trusted Channel function

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

Setting of S/MIME transmission function

Set the setting data (Transmission destination data: e-mail address, registration and modification of S/MIME certificate and the setting of Encryption Strength) which are used when the User Box file is S/MIME transmitted.

#### 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 PC, and then permits the operation of a setting function of the network only to the administrator whose identification and authentication was succeeded.

a. 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.

b. 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.

**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. Change of SNMP password

SNMP password (Privacy password, Authentication password) is changed. It verifies that SNMP password newly set is 8 digits or more by using ASCII code (0x20-0x7E).

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."

#### 3) F.SERVICE (Service mode function)

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

a. Service engineer identification authentication function

It identifies and authenticates the accessing user as the service engineer in response to the access request to the service mode from the panel.

b. 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.

Change of CE password

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

CE password is composed of 8-digits by using ASCII code. (0x21 to 0x7E, except 0x22 and 0x2B) Also, it shall not be composed of all the same character. Reset the number of authentication failure when succeeding in the re-authentication.

Return "\*\*" for each character as feedback for the entered CE password.

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 accessed from the panel, and locks all the authentication functions to use the CE password. (The access to the service mode is refused.)

Change of administrator password

Change the administrator password. It verifies that the administrator password newly set satisfies the following qualities.

- It is composed of 8 digits by using ASCII code (0x21 0x7E, except 0x22 and 0x2B). Also, it shall not be composed of one kind of character.
- It shall not be matched with the current value.

Function that relates to Enhanced Security function

- The following functions are offered.
  - HDD logical format function

The function to re-write system file of OS in HDD. The

setting of the Enhanced Security function is invalidated along with the execution of this logical format.

• HDD physical format function

The 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.

• HDD installation setting function

The function to make the installed HDD effective. The setting of the Enhanced Security function is invalidated by nullifying this HDD installation setting.

• 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.

Function that relates to password initialization function

The following functions are offered.

- Initialization function
  - Function to reset various setting values written in NVRAM to the factory default.
- HDD physical format function

The function to rewrite the entire disk in HDD with a regulated pattern including the signal rows such as the track and sector information.

Release of the lock of the Administrator authentication function

Resets (0 clear) the number of authentication failure for the Administrator. If access is locked, the lock is released.

Setting of the CE authentication lock time

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

### 4) F.USER (User Function)

It identifies and authenticates the user of the use of MFP various function. To the identified and authentication user, it offers the management functions 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.

a. 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.

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

method

The Account Name is required after the user identification and authentication. If succeeding in the account authentication, the successful account ID is registered as the account name.

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.

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.

Also, 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.

b. 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.

c. 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.

5) F.BOX (User Box Function)

This 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 pubic box, and the access control function to permit various operations of the concerned user box and the user box file after the authentication.

a. Registration of user box by user operation

By selecting the user attribute to the non-registration user box ID selected, this registers a personal user box or a pubic user box. 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.

b. 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.

c. Personal User Box Function

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

Access control function to a user box file in 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 attribute and the user box attribute corresponding to the user attribute and 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, download, the removing to other user boxes, and the copy operations to other user boxes.

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 account ID is specified, a user who is permitted the use of the account concerned 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 verifies that the user box password satisfies the

regulated conditions.

## d. Public User Box Function

Authentication function in access to a public user box

For the access request for each public user box, after authentication of a user ID, the user who accesses is authenticated that it is a user permitted the use of a public user box concerned respectively. 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.

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 been set the public to the user attribute and 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, download, the movement to other user boxes, and the copy operations to other user boxes.

User attribute change of a public user box

The user attribute of the user box can be changed. Specify the registered user, and it is possible to change to a personal user box for the registered user. Also, 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.

#### 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 regulated qualities, it is changed. 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.

e. Group User Box Function

Access control function to 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.

#### 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 attribute and the user box attribute corresponding to the user attribute and 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, download, the removing to other user boxes, and the copy operations to other user boxes.

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. Moreover, specify a registered user, it is also possible to change to a personal user box of registered user.

## 6) F.PRINT (Secure Print Function)

F.PRINT is a series of security function related to the secure print such as 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 user to use the secure print file for the access to the secure print file from the panel to the identified and authenticated user as a registered user.

a. 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.

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.

#### b. Access control function to 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 secure print internal control ID of the authenticated secure print file for 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.

#### c. 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.

Registration of the secure print password

It verifies that the registered security print password satisfies the quality of the specified password.

Giving of the secure print internal control ID

For the registration request of secure print file, when the verification of the secure print password is completed, the secure print internal control ID uniquely identified is set to the concerned secure print file.

#### 7) F.OVERWRITE-ALL (All area overwrite deletion function)

F.OVERWRITE-ALL executes the overwrite deletion in the data area of HDD and initializes the setting value of the password that is set to NVRAM as well.

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. The HDD lock password and the encryption passphrase cannot be used for being turned off the operation setting of the HDD lock function and the encryption function. The setting of the Enhanced Security function becomes invalid in the execution of this function.

#### 8) F.CRYPTO (Encryption key generation function)

This generates the encryption key to encrypt all data written in HDD by using

KonicaMinolta HDD encryption key generation algorithm (SHA-1) that is regulated by the KonicaMinolta encryption specification standard. KonicaMinolta HDD encryption key generation algorithm (SHA-1) is the algorithm to generate the encryption key by using the SHA-1 regulated by FIPS 180-1.

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-1 algorithm.

#### 9) F.HDD (HDD verification function)

This 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. As a result of status check, 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.

10) F.RESET (Authentication Failure Frequency Reset Function)

This is a function to release the lock by resetting the authentication failure frequency when the account locks in the administrator authentication and CE authentication.

The administrator authentication function lock release is executed by turning OFF and ON of the main power supply, and the lock is released after the administrator authentication lock release time. The CE certificates function lock release is executed by the specific operation, and the lock is released after CE certificates lock release time.

11) F.TRUSTED-PASS (Trusted Channel Function)

This 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 PC and MFP.

·User box file (download from MFP to PC)

• Image file that is stored as a user box file (upload from PC to MFP)

·Image file that is stored as Secure Print file (upload from PC to MFP)

#### 12) 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.

a. User box file Encryption Key generation

The Encryption key is generated to encrypt the user box file by the pseudorandom number Generation Algorithm FIPS 186 provides. (Encryption key length is 128bit, 168bit, 192bit or 256bit.)

- b. 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.

c. Encryption of User box file Encryption key

- The encryption key to encrypt the user box file is encrypted by RSA which FIPS 186-1 provides.
- The key length of the encryption key used in this case is 1024 bit, 2048bit, 3072bit or 4096bit.

#### 1.5.5 Threat

This TOE assumes such threats presented in Table 1-1 and provides functions for countermeasure to them.

Identifier	Threat
T.DISCARD-MFP	<ul> <li>When the leaser returned or the discarded MFP were collected, secure print file, a user box file, on memory image file, the stored image file, the 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 in MFP.</li> </ul>
T.BRING-OUT -STORAGE	<ul> <li>A secure print file, a user box file, a on memory image file, a stored image file, a remaining image file, an image-related file, a transmission address data file and the set-up various passwords can leak by a person or a user with malicious intent illegally taking out and analyzing an HDD in MFP.</li> <li>A person or a user with malicious intent illegally replaces as HDD in MFP. In the replaced HDD, new files of the secure print file, a user box file, on memory image file, a stored image file, a remaining image file, an image related file, a transmission address data file and set various passwords are accumulated. A person or a user with malicious intent takes out and analyzes the replaced HDD and image files leak.</li> </ul>
T.ACCESS-PRIVATE-BOX T.ACCESS-PUBLIC -BOX	<ul> <li>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, and SMB transmission)</li> <li>Exposure of the user box file when a person or the user with malicious intent accesses the</li> </ul>
T.ACCESS-GROUP-BOX	<ul> <li>public user box which is not permitted to use, and downloads, prints, transmits (E-mail transmission, FTP transmission, FAX transmission and SMB transmission) and removes and copies to the other user box the user box file.</li> <li>Exposure of the user box file when a person or the user with malicious intent accesses the</li> </ul>

 Table 1-1 Assumed Threats

	group user box which the account to which the user does not belong possesses, and downloads, prints and transmits the user box file (E-mail transmission, FTP transmission, fax transmission, and SMB transmission)
T.ACCESS-SECURE-PRINT	•Exposure of the secure print file when a person or the user with malicious intent prints the secure print file which is not permitted to use.
T.ACCESS-NET -SETTING	<ul> <li>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 a user box file is exposed.</li> <li><the is="" network="" related="" setting="" to="" user<br="" which="">box file transmission&gt; Setting related to the SMTP server</the></li> <li>Setting related to the DNS server</li> <li>Malicious person or user changes the network setting which set in MFP to identify MFP itself where TOE installed, by setting to the value of the entity such as another illegal MFP from the value of MFP (NetBIOS name, AppleTalk printer name, IP address etc) that TOE is originally installed, so that secure print file is</li> </ul>
T.ACCESS -SETTING	exposed. • The possibility of leaking user box file and secure print file rises because malicious person or user changes the settings related to the enhanced security function.
T.BACKUP -RESTORE	'The user box file and the secure print file can leak by malicious person or user using the backup function and the restoration function illegally. Also, highly confidential data such as password can be exposed and each setting values are falsified.

1.5.6 Organisational Security Policy

Organisational security policy required in use of the TOE is presented in Table 1-2.

Identifier	Organisational Security Policy
P.COMMUNICATION-	The highly confidential image file (Secure Print
DATA	file, User box file) which transmitted or received
	between IT equipments is communicated via
	trusted pass to the correct destination, or has to

# Table 1-2 Organisational Security Policy

be encrypted.

## 1.5.7 Configuration Requirements

The TOE operates on the bizhub C550 / bizhub C451 / ineo<sup>+</sup> 550 / ineo<sup>+</sup> 451 which is the digital MFP provided by the Konica Minolta Business Technologies, Inc. The Encryption board is option parts and is not equipped as a standard. When the encryption board is not installed, the function that relates to the encryption cannot be used.

## 1.5.8 Assumptions for Operational Environment

Assumptions required in environment using this TOE presents in the Table 1-3. The effective performance of the TOE security functions are not assured unless these preconditions are satisfied.

Identifier	Assumptions
A.ADMIN	·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	• Service engineers, in the role given to them, will
	not carry out a malicious act during the series
	of permitted operations given to them.
A.NETWORK	'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	·Each password and encryption passphrase does
	not leak from each user in the use of TOE.
A.SETTING	·MFP with the TOE is used after enabling the
	enhanced security function.
A.SERVER	·When the external server authentication is used
	for the user authentication method, the user
	information management server that is
	connected with the intra-official LAN installing
	MFP with TOE are performed appropriately the
	management of the account, access control and
	patch application, etc.

## Table 1-3 Assumptions in Use of the TOE

## 1.5.9 Documents Attached to Product

Documents attached to the TOE are listed below.

Documents attached to the TOE are listed below.

< Document for administrator / general user >

1) bizhub C550 / bizhub C451 User's Guide Security Operations (Ver. : 1.02) (Japanese)

2) bizhub C550 / bizhub C451User's Guide [Security Operations] (Ver.1.02) (English)

3) ineo+ 550 / ineo+ 451 User's Guide [Security Operations] (Ver.1.02) (English) < Document for service engineer >

1) bizhub C550 / bizhub C451 Service Manual Security Function (Ver. 1.02) (Japanese)

2) bizhub C550 / bizhub C451 / ineo+ 550 / ineo+ 451 Service Manual Security Function (Ver. 1.02) (English)

## 2. Conduct and Results of Evaluation by Evaluation Facility

## 2.1 Evaluation Methods

Evaluation was conducted by using the evaluation methods prescribed in CEM in accordance with the assurance requirements in CC Part 3. Details for evaluation activities are report in the Evaluation Technical Report. It described the description of overview of the TOE, and the contents and verdict evaluated by each work unit prescribed in CEM.

## 2.2 Overview of Evaluation Conducted

The history of evaluation conducted was present in the Evaluation Technical Report as follows.

Evaluation has started from January, 2007 and concluded by completion the Evaluation Technical Report on October 2007. The evaluation facility received a full set of evaluation deliverables necessary for evaluation provided by developer, and examined the evidences in relation to a series of evaluation conducted. Additionally, the evaluation facility directly visited the development and manufacturing sites on July 2008 and examined procedural status conducted in relation to each work unit for configuration management, delivery and operation and lifecycle by investigating records and staff hearing. Further, the evaluation facility executed sampling check of conducted testing by developer and evaluator testing by using developer testing environment at developer site on July 2007.

Concerns found in evaluation activities for each work unit were all issued as Observation Report and were reported to developer. These concerns were reviewed by developer and all problems were solved eventually.

As for concerns indicated during evaluation process by the Certification Body, the certification review was sent to the evaluation facility. These were reflected to evaluation after investigation conducted by the evaluation facility and the developer.

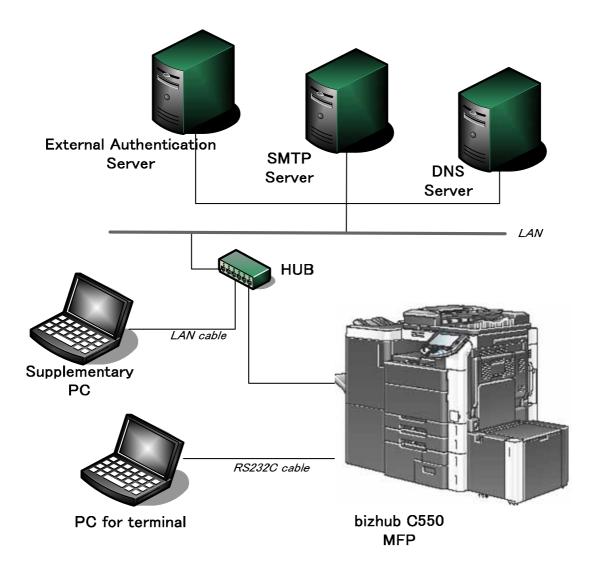
2.3 Product Testing

Overview of developer testing evaluated by evaluator and evaluator testing conducted by evaluator are as follows.

## 2.3.1 Developer Testing

## 1) Developer Test Environment

Figure 2-1 shows the test configurations used by the developer.



## Figure 2-1 Configuration of Developer Testing

2) Outlining of Developer Testing

Outlining of the testing performed by the developer is as follow.

a. Test configuration

The configurations of the tests performed by the developer are shown in Figure 2-1. Developer testing is performed at the same TOE testing environment with the TOE configuration identified in ST.

b. Testing Approach

For the testing, following approach was used.

About the behavior of TSF related to the operation panel, confirm the behavior of the security function by the observing the operation for the operation panel and the display of the operation panel.

About the behavior of TSF related to the power supply OFF and ON, confirm the operational change of the result after having turned off the power supply of MFP and on with the operation panel (or through Network).

About the behavior of TSF related to a network, confirm the behavior of the security function by connecting to TOE from PSWC or a test tool using various

protocols, by operating and observing on the WEB screen for PSWC, and by transmitting and receiving the test data of each protocol.

About the behavior of the function related to the Enhanced Security Function (HDD logical format function, HDD physical format function, HDD installation setting function, Initialization function), confirm that these functions are restricted to a service engineer and an administrator (some of the functions), and that the panel display of the icon which shows the Enhanced Security Setting ON is disappeared and the value which each function makes applicable to initialization is in an initialization state after executing these functions.

In the developer testing, the change of the setting value, authentication method and the check of the access control to the security function are confirmed the output message, etc by using the external interface (the operation panel, the power supply OFF and ON and a network) by visual check.

- As for the security function that cannot be verified by using these external interfaces (SF-OA-1, SF-C-1, SF-H-1, SF-TP-1), confirm that the behavior is proper by performing the individual test approach.
- c. Scope of Testing Performed

Testing is performed about 169 items by the developer.

The coverage analysis is conducted and examined to testing satisfactorily all of the security functions described in the functional specification and the external interface. Then, the depth analysis is conducted and examined to testing satisfactorily all the subsystems described in the high-level design and the subsystem interfaces.

d. Result

The evaluator confirmed consistencies between the expected test results and the actual test results provided by the developer. The evaluator confirmed the developer testing approach performed and legitimacy of items performed, and confirmed consistencies between the testing approach described in the test plan and the actual test results.

#### 2.3.2 Evaluator Testing

- 1) Evaluator Test Environment The evaluator used test configuration that are identical to those used by the developer.
- 2) Outlining of Evaluator Testing

Outlining of testing performed by the evaluator is as follow.

a. Test configuration

The configuration of the tests performed by the evaluator is shown in figure 2-1. The evaluator tests were performed in TOE test environment identical to the TOE configuration identified by ST.

b. Testing Approach

For the testing, the following approach was used.

About the behavior of TSF related to the operation panel, confirm the behavior of the security function by the observing the operation for the operation panel and the display of the operation panel.

About the behavior of TSF related to the power supply OFF and ON, confirm the operational change of the result after having turned off the

power supply of MFP and on with the operation panel (or through Network).

About the behavior of TSF related to a network, confirm the behavior of the security function by connecting to TOE from PSWC or a test tool using various protocols, by operating and observing on the WEB screen for PSWC, and by transmitting and receiving the test data of each protocol.

About the behavior of the function related to the Enhanced Security Function (HDD logical format function, HDD physical format function, HDD installation setting function, Initialization function), confirm that these functions are restricted to a service engineer and an administrator (some of the functions), and that the panel display of the icon which shows the Enhanced Security Setting ON is disappeared and the value which each function makes applicable to initialization is in an initialization state after executing these functions.

In the developer testing, the change of the setting value, authentication method and the check of the access control to the security function are confirmed the output message, etc by using the external interface (the operation panel, the power supply OFF and ON and a network) by visual check.

 $\cdot$ As for the security function that cannot be verified by using these external interfaces (SF-OA-1, SF-C-1, SF-H-1, SF-TP-1), confirm that the behavior is proper by performing the individual test approach.

c. Scope of Testing Performed

Total of 75 items of testing; namely 38 items from testing devised by the evaluator and 37 items from testing from sampling of developer testing was conducted. As for selection of the test subset, the following factors are considered.

- 1. Security function that is suspected to operate along the specifications by the developer test.
- 2. More important security function than other security function
- 3. Security function set as the object of strength of function
- 4. Function that is used from different interface
- d. Result

All evaluator testing conducted is completes correctly and could confirm the behavior of the TOE. The evaluator also confirmed that all the test results are consistent with the behavior.

#### 2.4 Evaluation Result

The evaluator had the conclusion that the TOE satisfies all work units prescribed in CEM by submitting the Evaluation Technical Report.

## 3. Conduct of Certification

The following certification was conducted based on each materials submitted by evaluation facility during evaluation process.

1. Contents pointed out in the Observation Report shall be adequate.

- 2. Contents pointed out in the Observation Report shall properly be reflected.
- 3. Evidential materials submitted were sampled, its contents were examined, and related work units shall be evaluated as presented in the Evaluation Technical Report.
- 4. Rationale of evaluation verdict by the evaluator presented in the Evaluation Technical Report shall be adequate.
- 5. The Evaluator's evaluation methodology presented in the Evaluation Technical Report shall conform to the CEM.

Concerns found in certification process were prepared as certification review, which were sent to evaluation facility.

The Certification Body confirmed such concerns pointed out in Observation Report and certification review were solved in the ST and the Evaluation Technical Report.

## 4. Conclusion

## 4.1 Certification Result

The Certification Body verified the Evaluation Technical Report, the Observation Report and the related evaluation evidential materials submitted and confirmed that all evaluator action elements required in CC Part 3 are conducted appropriately to the TOE. The Certification Body verified the TOE is satisfied the EAL3 assurance requirements prescribed in CC Part 3.

## 4.2 Recommendations

None

# 5. Glossary

The abbreviations used in this report are listed below.

CC	Common Criteria for Information Technology Security Evaluation
CEM	Common Methodology for Information Technology Security Evaluation
EAL	Evaluation Assurance Level
PP	Protection Profile
SOF	Strength of Function
ST	Security Target
TOE	Target of Evaluation
TSF	TOE Security Functions
MFP	Multiple Function Peripheral
HDD	Hard Disk Drive
LAN	Local Area Network
IP	Internet Protocol
SMTP	Simple Mail Transfer Protocol
FTP	File Transfer Protocol
SNMP	Simple Network Management Protocol
DNS	Domain Name System
NVRAM	Non-Volatile Random Access Memory
USB	Universal Serial Bus
SSL	Secure Socket Layer

The glossaries used in this report are listed below.

MFP Controller	Controller that controls all the operation of MFP including the operation control process received from the network or the MFP panel and the management of image data. TOE is the software that operates on that controller.
Flash Memory	Memory device that performs the high speed and high integration of EEPROM and carried the batch deletion mechanism.
PC Print	Send the print data of file desired to print to MFP by using the printer driver from PC. MFP converts the data into image file and prints that image data.
Secure Print	This is the printing method that restricts by the password authentication. Specify the password by the printer driver and printing by MFP is allowed only when that password is authenticated.
User Box	Directory that is created in the HDD area in order to store the image files in the MFP.
Service Engineer	A user who performs the management of maintenance for the MFP. Performs the repair and adjustment of MFP. In general, it is the person in charge at the sales companies or agencies that performs the maintenance service of MFP and that is in cooperation with Konica Minolta Business Technologies, Inc.
Service Mode	Operation panel screen area which can operate MFP function that is prepared for the service engineer.
CE password	Kind of password collating when entering the service mode
Overlay Image File	Image file used as a background image of copy, etc.
HDD Accumulation Image	Image file that stored in the HDD of MFP by PC print.
Remaining Image File	File that remains in the HDD data area. It is the image file that cannot be deleted by general deletion operation.
Account Lock	Unable to perform continuous password authentication when the operation of password authentication is failed consecutively, or its situation.
Transmission Address Data File	File including address transmitting an image, such as an E-mail address and a phone number etc.
MFP Address Group	Generation terms, such as an IP address of MFP set up by the network setting function in administrator maintenance mode from the operation panel of MFP.

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