NO.	HPCI-CA03-001E-07

HPCI CA

Certification Practice Statement

Ver1.6

2013 April 1st

HPCI CA Policy Management Authority

Revision History

Date issued	Ver.	OID	Description
2011.12.28	1.0	1.3.6.1.4.1.32264.2.1.1	First Release
2012.05.29	1.1	1.3.6.1.4.1.32264.2.1.2	In section "9.12.1 Revision Procedures", modified "Approval of the HPCI PMA will not be required for minor modifications … and a new OID not provided " to "… and a new OID provided."
2012.06.19	1.2	1.3.6.1.4.1.32264.2.1.3	In section "4.9.3 Procedure for revocation request, (2)", edited "the HPCI operating office shall send the revocation application or the same content by paper or electronic media to the HPCI CA and …"
2012.08.16	1.3	1.3.6.1.4.1.32264.2.1.4	In sections "3.2.3 Authentication of individual identity" and "5.2.1 Trusted roles, Chart 5-1", added the confirmation of the host administrator of the servers in National Institute of Informatics. In section "4.3.1 CA actions during certificate issuance", removed "… online over encrypted channels" In section "5.4.4 Protection of audit log", deleted "lockable" Modified the term "Authentication Portal" to "Certificate Issuing System", the term "HPCI ID" to "HPCI-ID"
2012.08.28	1.4	1.3.6.1.4.1.32264.2.1.5	In section "3.2.3 Authentication of individual identity", removed the official document from the candidates to be presented, and added the case of a non-photo-ID

2013.03.01	1.5	1.3.6.1.4.1.32264.2.1.6	In section ″1.1 Overview″ and ″1.3.3 Other parties″, changed the condition of issue of the client certificate. In section ″1.4.2″ and ″6.2.8″, changed the condition of use of the client certificate. In section ″4.9.2 Who can request revocation″, changed ″HPCI Account IdP Operating Organization″ to ″HPCI-ID Management Organization″. In section ″9.6.2 Obligations and Responsibilities of the HPCI-ID Management Organization″, changed ″Changes in certificate user name or affiliated organization″ to ″Changes in certificate user name″
2013.04.01	1.6	1.3.6.1.4.1.32264.2.1.7	In section ″4.3.1 (1) ″, deleted ″All the above procedures … online over encrypted channels.″.

Contents

1. INTRODUCTION

This "HPCI Certification Practice Statement" (hereafter referred to as CPS) describes regulations related to operations of the HPCI Certificate Authority.

The structure of this CP/CPS conforms to the Request For Comments (RFC) 3647 "Internet X.509 Public Key Infrastructure Certificate Policy and Certificate Practices Framework" advocated by the Public-Key Infrastructure Working Group (PKIX) of the Internet Engineering Task Force (IETF). The HPCI Certificate Authority Certification Policy (CP) is also covered in this CP/CPS.

1.1 Overview

The CPS provides information regarding certificate issuance, revocation, and other authentication related procedures managed by the HPCI Certificate Authority.

The HPCI Certificate Authority issues not only client certificates for authentication of users that use HPCI and its associated computing/storage resources but also host and service certificates needed for HPCI computing and storage environment. Certificates are only issued to users which meet the necessary qualifications set out in the "HPCI Consortium Usage Statements" (referred to as "usage statements").

1.2 Document name and identification

The following policy IDs are used to distinguish CP/CPS contents and certificate policy.

Chart 1-1 Object OIDs

OID	Object
1.3.6.1.4.1.32264.2	HPCI Certificate Authority
1.3.6.1.4.1.32264.2.1.X (*1)	HPCI CA Certification Practice Statements
1.3.6.1.4.1.32264.2.2.1	HPCI CA Certificate and CRL Profile

1: "X" is allotted for each CPS major version upgrade.

1.3 PKI participants

1.3.1 HPCI Certificate Authority (CA)

(1) HPCI CA Policy Management Authority

The following decisions concerning operations of the HPCI Certificate Authority shall be made by the HPCI CA Policy Management Authority (hereafter referred to as "HPCI PMA")

- Decisions regarding and approvals of CP/CPS
- Handling CA private key compromise
- Handling of emergencies such as disasters
- Approval of applications to federate from the HPCI Account IdP Operating Organization
- Other important matters concerning CA operations

(2) CA

CA shall issue certificates upon request from RA. Certificate revocation applications received at RA shall be processed to revoke the appropriate certificate and issue the CRL.

(3) RA

RA receives online certificate issuance requests from users and requests the CA to issue the certificate.

RA also confirms that certificate user is distinguished and authorized by the HPCI Account IdP Operating Organization via the HPCI-ID Management Organization. It also receives certificate revocation applications and requests the CA to revoke the certificate, and registers the CRL issued by the CA to the Certificate Authority Repository.

(4) Certificate Authority Repository

Certificate Authority Repository registers and offers CP/CPS, CA Certificates, CRLs and other information to be disclosed to related people.

1.3.2 HPCI-ID Management Organization

(1) HPCI Operating Office

HPCI Operating Office receives an application from the user and assigns it a HPCI-ID. It manages the HPCI-ID and other user's information.

(2) HPCI Account IdP Operating Organization

HPCI Account IdP Operating Organization accepts applications for Certificate Issuance as part of user registration procedures. It distinguishes and authorizes users and issues HPCI accounts to those permitted.

1.3.3 Other parties

(1) Certificate User

Certificate User is a user with a certificate issued by the HPCI Certificate Authority. This includes general users, host administrators and service administrators.

A general user is someone who can use the client certificate to access HPCI resources via single sign on (SSO). A user representative can assume responsibility for applying for certificates for users.

The host administrator and service administrator are administrators of hosts and services necessary for usage of HPCI resources, shall individually apply for certificates through user registration.

(2) Relying Party

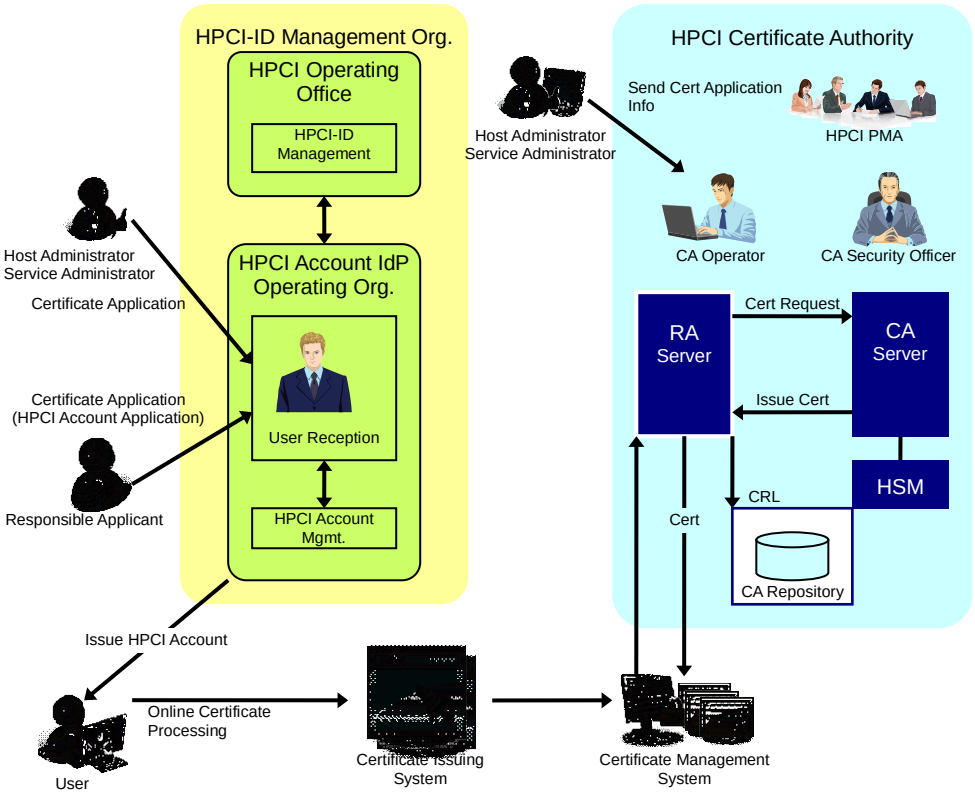
Indicates one who trusts the HPCI Certificate Authority and verifies certificates.

(3) Certificate Management System

In tandem with the RA, a system which creates user key pairs, and stores and manages client certificates.

(4) Certificate Issuing System

A web system which offers users an interface for certificate issuance applications.



1.4 Certificate usage

1.4.1 Certificate types

The following are certificates issued by the HPCI Certificate Authority

- Client Certificate
- Host Certificate
- Service Certificate

1.4.2 Appropriate certificate uses

Certificates issued by the HPCI Certificate Authority are expected to be for the following usage or application:

Table 1-2 Types and Application of Certificate

Type	Application
Client Certificate	Client authentication when using HPCI and its associated resources
Host Certificate	Server authentication when using HPCI resources
Service Certificate	Service authentication when using HPCI resources

1.4.3 Prohibited certificate usage

Certificates issued by HPCI CA should not be used outside of the scope described in "1.4.2 Appropriate certificate uses."

1.5 Policy administration

1.5.1 Organization administering the document

The CPS shall be maintained and administrated by the HPCI PMA.

1.5.2 Contact person

Contacts for questions regarding the CPS

Department: National Institute of Informatics, Cyber Science Infrastructure Development Department, Academic Infrastructure Division
Address: 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8430
Tel: +81-3-4212-2226
e-mail: hpci-ca-support@nii.ac.jp

1.5.3 Person determining CPS suitability for the policy

No stipulation.

1.5.4 CPS approval procedures

Establishment and modifications to the CP/CPS require approval of the HPCI PMA and the CA security officer. When the HPCI PMA determines it is necessary, approval will be sought following examination by the Member Integrated X.509 PKI Credential Services (MICS) of The Asia Pacific Grid Policy Management Authority (APGrid PMA).

1.6 Definitions and acronyms

・Certificate Authority (CA)

An organization that issues, revokes, or suspends public key certificates for key pair (private and public key) owners.

・Certificate Policy (CP)

Applicable policy pertaining to certificates for particular communities or applications having accompanying general security requirements.

・Certificate Practices Statement (CPS)

Document that precisely stipulates external relationships, general contractual conditions, and procedures for applying the policies stipulated in the CP to the operation of the CA.

・Certificate Revocation List (CRL)

List that identifies certificates that have been revoked before the term of validity expires. It is digitally signed by the CA.

・FIPS

Federal Information Processing Standards (USA). FIPS140-2 is the standards for encryption module assessment.

・High Performance Computing Infrastructure (HPCI)

Innovative high performance computing infrastructure. This document refers to all computing and storage systems linking to the HCPI, and any other systems operating as part of the HPCI environment as the HPCI System.

・HPCI-ID

A unique ID for HPCI users. HPCI-ID will not change even after the user changes affiliation.

・HPCI Account

An account for Single-Sign-On on the HPCI environment. Users will use the HPCI account to apply for certificates via the Certificate Issuing System.

・Object Identifier (OID)

Identifiers allotted to reciprocally distinguish data regardless of its meaning. They are managed in tree form to ensure uniqueness.

・Public Key Cryptography Standards (PKCS)

Industry standards proposed by the USA RSA Laboratories governing encryption algorithms and encryption calculations aimed at interconnectivity and portability between applications.

PKCS#12: Standards concerning personal information

・Public Key Infrastructure (PKI)

Infrastructure to enable public key certificates that ensure the validity of the public key. It enables stricter (more reliable) identity authentication on the Internet.

・Registration Authority (RA)

Registers users with PKI system, issues public key certificates and examines revocation applications.

・Rivest-Shamir-Adleman (RSA)

Currently the most common form of public key encryption. Utilizes the fact that factorization of the value derived by multiplication of two sufficiently large prime factors is difficult as the foundation for encryption technology.

・Designated holiday

Day established by Article 8, Section 1 of the regulations concerning working hours, holidays and breaks.

2. PUBLICATION AND REPOSITORY RESPONSIBILITIES

2.1 Certificate Authority Repository

Repository

- The repository shall disclose information stipulated in ″2.2 Publication of certification information″ and shall enable users to search for pertinent information and CRL.
- Except temporary shutdowns for scheduled maintenance, the goal for operation of the repository shall be 24 hours a day, 365 days a year.
- Advance notification shall be provided if the repository is to be shut down for reasons such as scheduled maintenance. In the case of unavoidable circumstances such as emergencies, operation may be shut down without advance notification.
- It shall not be guaranteed that the CRLs stored in the repository are the latest available at the point in time in which they are requested.
- Information registered in the repository shall be protected.

2.2 Publication of certification information

The following information is published in the Certificate Authority Repository managed by the HPCI CA:

Table 2-1 Publication information of HPCI Certificate Authority

Document	Publishing Site(URL)
Fingerprint of CA Certificate, and other information concerning the HPCI Certificate Authority	https://www.hpci.nii.ac.jp/ca/
CA certificate of the HPCI Certificate Authority	https://www.hpci.nii.ac.jp/ca/hpcica.cer
CRL	https://www.hpci.nii.ac.jp/ca/hpcica.crl
CP/CPS	https://www.hpci.nii.ac.jp/ca/hpcicacps.pdf

The various application procedures and usage regulations of the HPCI system is in accordance with the HPCI consortium public information.

2.3 Timing and frequency of publication

Frequency of information publication is as follows:。

- CA certificates and CA certificate fingerprints will be published in the repository whenever issued.
- The CRL published in the repository will be periodically updated as stipulated in ″4.9.7 CRL issuance frequency″.
- The CP/CPS and information concerning the HPCI Certificate Authority will be published in the repository whenever updated.

2.4 Access controls on repositories

There is no restriction concerning access to information stipulated in ″2.2 Publication of certification information ″.

The ability to update disclosed information is restricted to authorized parties at the HPCI CA.

3. IDENTIFICATION AND AUTHENTICATION

3.1 Naming

3.1.1 Types of names

The DN of certificates issued by the HPCI Certificate Authority is determined according to the format of X.500 DN (DN: Distinguished name).

3.1.2 Need for names to be meaningful

Attributes used as names of certificates issued by the HPCI Certificate Authority are provided in Table 3-1.

Table 3-1 Attributes use by certificates

Attributes used	Description	Set point
commonName	User name and HPCI-ID (Client certificate)	[User's full name (Hepburn style Roman alphabet) HPCI-ID]
	Host name (Host Certificate)	[FQDN]
	Service name (Service Certificate)	[Service name /FQDN]
organizationalUnitName	Organizational unit name	HPCI (fixed)
organizationName	Organizational name	NII (fixed)
countryName	Country name	JP (fixed)

The client certificate commonName will be set by the Certificate Issuing System having retrieved the HPCI-ID and alphabet name from the HPCI operating office using the attributes received in the SAML assertion from the HPCI Account IdP Operating Organization.

3.1.3 Anonymity or pseudonymity of subscribers

No stipulation.

3.1.4 Rules for interpreting various name forms

Distinguished names used will obey rules from Table 3-1.

3.1.5 Uniqueness of names

The distinguished name given on the certificate will include the unique HPCI-ID issued to the user. RA will confirm that there is not any overlapping distinguished name to ensure the uniqueness of the name.

3.1.6 Recognition, authentication, and role of trademarks

No stipulation.

3.2 Initial identity validation

This section describes regulations for identification and authentication when client certificate, host certificate, and service certificate are newly issued.

3.2.1 Method to prove possession of private key

(1) Client certificate

As the private key for client certificates is created and stored in the Certificate Management System, users do not possess their private key.

(2) Host certificate, Service certificate

HPCI Certificate Authority confirms the ownership of the private key by examining the public key within the CSR signature to confirm that it is signed with the private key.

3.2.2 Authentication of organization identity

Confirmation of the (valid) existence of certificate user's organization is done by the HPCI operating office in the HPCI system usage application procedure.

3.2.3 Authentication of individual identity

(1) User confirmation

The reception staff of the HPCI-ID Management Organization shall vet the user identity during user registration. The responsible applicant shall present the user list with copies of a photo-ID face-to-face to the reception staff. The reception staff, having confirmed the applicants' own photo-ID, shall confirm that each user on the list matches the given photo-ID. It is assumed that the applicant has confirmed beforehand the validity of all applicants' photo-ID. In cases where the applicants' own

ID does not include a photo, it should be considered acceptable if the reception staff can confirm the applicants own official document that does include a photo. In the same way, any user ID on the list that does not include a photo should be considered acceptable if the applicant can confirm that user's official document that does include a photo.

(2) Confirmation of host administrator, service administrator

The reception staff of the HPCI-ID Management Organization shall confirm host administrators' and Service administrators' identities during user registration. The host administrator or service administrator shall present the host name or service name face-to-face to the reception staff. The reception staff shall confirm the host administrator or service administrator's photo-ID and if the host name or service name in the FQDN matches with information provided. If the host administrator or service administrator's own ID does not include a photo, it shall be considered acceptable if the reception staff can confirm the applicants' own official document that does include a photo.

The CA security officer is responsible for confirming the identities of host administrators of servers that are part of the HPCI CA system.

3.2.4 Non-verified subscriber information

Only name and affiliation will be used and all other information will be not used for the examination.

3.2.5 Validation of authority

The HPCI-ID Management Organization will confirm whether the user is eligible using the information managed by the HPCI operating office.

3.2.6 Criteria for interoperation

No stipulation.

3.3 Identification and authentication for re-key requests

3.3.1 Identification and authentication for routine re-key (renewal of expired certificate)

It is possible to omit face-to-face confirmation at the user reception desk when renewing expired certificates in the following cases:

- It is within 5 years from the original issuance of the certificate
- When there is no change in the user's affiliated organization and subjects written in the certificate
- The HPCI account will be continued

If the above is not applicable, follow the registration procedure stipulated in CP/CPS "3.2.2 Authentication of organization identity" and "3.2.3 Authentication of individual identity".

3.3.2 Identification and authentication for re-key after revocation

For identification and authentication during key renewal after revocation, follow the registration procedure mention in CP/CPS "3.2.2 Authentication of organization identity" and "3.2.3 Authentication of individual identity".

3.4 Identification and authentication for revocation request

Identification and authentication when applying to revoke a certificate shall follow the registration procedure mention in CP/CPS "3.2.2 Authentication of organization identity" and "3.2.3 Authentication of individual identity".

In the case of an emergency, however, application for revocation may be accepted from the certificate user in person or by e-mail . If presented in person, the user shall be confirmed by presentation of a photo-ID. In the case of e-mail, it shall be confirmed that the application is received from an e-mail address registered in the HPCI operating system.

However, client, host, or service certificate revocation applications by parties other than the above will be accepted when it can be determined that the private key has been disclosed or the encryption algorithm used is confirmed to be compromised.

4. CERTIFICATE LIFE-CYCLE OPERATIONAL REQUIREMENTS

Operation requirements for client certificates, host certificate, and service certificates are as follows:

4.1 Certificate application

Application for a client certificate is included in the application for an HPCI account necessary for using the HPCI system. Application for an HPCI account means a client certificate application is also submitted.

Submission of an HPCI Certificate Authority official application is required for issuance of host and service certificates.

4.1.1 Who can submit a certificate application

Certificate applications will be submitted to the HPCI-ID Management Organization shall be done by the applicant, host or service administrator.

HPCI Certificate Authority online certificate issuance shall be done by users, host or service administrators.

4.1.2 Enrollment process and responsibility

(1) Client Certificate

Users shall submit a copy of a photo-ID to the applicant. The applicant shall confirm the legitimacy of the photo-ID and submit the documents to the user reception desk. The applicant must present accurate information to the HPCI-ID Management Organization.

(2) Host certificates and service certificates

Host administrators and service administrators shall submit a copy of a photo-ID, host name or service name list to the HPCI-ID Management Organization's user reception desk. Host administrators and service administrators must present accurate information to the HPCI-ID Management Organization.

4.2 Certificate application processing

4.2.1 Performing identification and authentication functions

Examination by the HPCI operating office and HPCI Account IdP Operating Organization will be conducted according to CP/CPS "3.2.2 Authentication of organization identity" and

″3.2.3 Authentication of individual identity″.

The HPCI Certificate Authority will confirm that the certificate user has passed examination by the HPCI-ID Management Organization.

4.2.2 Approval and rejection of certificate applications

Applications will be accepted only after the HPCI-ID Management Organization has confirmed that there are no problems with contents of the application submitted by the applicant, host or service administrator.

When the HPCI Certificate Authority judges that there are no problems with the HPCI-ID Management Organization examination results, it will accept online certificate issuance requests from the certificate user.

4.2.3 Time to process certificate application

(1) Client certificates

Within 5 days (holidays excluded) from the day after the HPCI Account IdP Operating Organization accepts the application, the HPCI account will be issued and the user will be notified.

(2) Host certificates and service certificates

Within 5 days (holidays excluded) from the day after the HPCI Account IdP Operating Organization accepts the application, information required for application to the HPCI Certificate Authority will be notified to the host or service administrator.

4.3 Certificate issuance

4.3.1 CA actions during certificate issuance

(1) Client certificate

Users will use HPCI account to input certificate issuance application information into the Certificate Issuing System. User authentication information will be sent to the Certificate Management System from the Certificate Issuing System and corresponding key pair will be created within the system. The Certificate Management System will send the certificate issuance application to the RA server. Certificate issuance will be requested to the CA server and the client certificate will be created at the CA server.

The client certificate issued by the HPCI Certificate Authority will be stored in the Certificate Management System.

(2) Host certificate and service certificate

Host administrator or service administrator will create key pair for the servers and then send CSRs to the HPCI Certificate Authority. After the HPCI Certificate Authority receives the CSR, it will issue the host and service certificate after verification by the CP/CPS "3.2.1 Method to prove possession of private key".

Host and service certificates issued by the HPCI Certificate Authority will be sent online to the host administrator or service administrator.

4.3.2 Notification to subscriber by the CA of issuance of certificate

(1) Client Certificate

After the client certificate is issued, notification mails will be sent by the Certificate Management System to the user's e-mail address obtained from the HPCI-ID Management Organization.

(2) Host certificate and service certificate

Host or service certificate sent from the HPCI Certificate Authority will serve as notification to the host or service administrator.

4.4 Certificate acceptance

4.4.1 Conduct constituting certificate acceptance

(1) Client certificate

A download of the client certificate from the Certificate Mananement System by the user will be acknowledged as "received". If not downloaded, the certificate is counted as "received" at the point when the client certificate is stored in the Certificate Management System.

(2) Host certificate and service certificate

After receiving the host or service certificate, confirmation of the certificate content is done by the host or service administrator.

4.4.2 Publication of the certificates by CA

Client, host and service certificates are not published.

4.4.3 Notification of certificate issuance by the CA to other entities

No stipulation.

4.5 Key pair and certificate usage

4.5.1 Subscriber private key and certificate usage

Used for applications stipulated in "1.4.2 Appropriate certificate uses".

4.5.2 Relying party public key and certificate usage

Used for applications stipulated in "1.4.2 Appropriate certificate uses".

4.6 Certificate renewal without re-key

HPCI CA renews key pairs when renewing certificates in all cases. Certificates cannot be renewed without renewing key pairs.

4.7 Certificate re-key

4.7.1 Circumstance for certificate re-key

Certificates are renewed in the following cases:

- Validity of a client certificate has expired.
- When reissued after certificate revocation due to compromise of user private key, change in the information contained in the certificate, etc.

4.7.2 Who may request certification of a new public key

Certificate renewal applications shall be submitted to the HPCI-ID Management Organization by the applicant or host/service administrator.

4.7.3 Processing certificate re-keying requests

(1) When validity of a client certificate has expired

Renewal process of client certificates, host certificates, and service certificates shall follow procedures stipulated in CP/CPS "4.1 Certificate application -- 4.4 Certificate acceptance". Note that "4.2.1 Performing identification and authentication functions" shall follow "3.3.1 Identification and authentication for routine re-key (renewal of expired certificate)".

Renewal applications can be submitted beginning 1 month prior to the expiration date.

(2) Reissuing after certificate revocation

Refer to procedures "4.1 Certificate application -- 4.4 Certificate acceptance" for applying for a reissue after revocation.

4.7.4 Notification of new certificate issuance to subscriber

Users shall be notified of certificate renewal in accordance with "4.3.2 Notification to subscriber by the CA of issuance of certificate."

4.7.5 Conduct constituting acceptance of a renewed certificate

Acceptance of renewed certificates shall be done in accordance with "4.4.1 Conduct constituting certificate acceptance".

4.7.6 Publication of the renewed certificate by the CA

Renewed certificates shall be done in accordance with "4.4.2 Publication of the certificates by CA."

4.7.7 Notification of certificate issuance by the CA to other entities

Notification of certificate issuance to other concerned parties shall be carried out in accordance with "4.4.3 Notification of certificate issuance by the CA to other entities."

4.8 Certificate modification

No stipulation.

4.9 Certificate revocation and suspension

4.9.1 Circumstances for revocation

HPCI CA will revoke certificates under the following conditions:

(1) Revocation initiated by certificate user

- Change of certificate content (such as change in the name, etc.)
- The private key is reported or suspected to be compromised

(2) Revocation initiated by HPCI-ID Management Organization

- Certificate user's existence confirmation could not be done
- Loss of eligibility

(3) Revocation initiated by the HPCI CA

- Violation of the CP/CPS or user regulations by the certificate user
- Leakage or compromise of private key stored in the Certificate Management System
- It is determined that the HPCI CA wrongly issued a certificate
- Leakage or compromise of the CA private key in the HPCI CA
- The HPCI CA ceases authentication operations

4.9.2 Who can request revocation

(1) If there is cause for revocation from the user

Revocation applications shall be submitted to the HPCI-ID Management Organization by the applicant, host administrator, or service administrator. In the case of emergency, revocation applications may be accepted from the certificate user at the discretion of the HPCI CA.

(2) If there is cause for revocation from the HPCI-ID Management Organization

Revocation application will be submitted to the HPCI CA by the HPCI operating office.

(3) If there is cause for revocation from the HPCI CA

Revocation shall be done at the discretion of CA security officer or HPCI PMA.

4.9.3 Procedure for revocation request

(1) Revocation by certificate user

- Client Certificate

  If the user has cause for a client certificate to be revoked, the user should fill in application sheet as soon as possible and submit them to the applicant. The applicant should verify user's identity and reason for revocation, and then submit the application to the user reception desk. In an emergency, the user can submit an application directly to the user reception desk either in person or by e-mail.

  User reception desk shall perform examinations of the applicant or user in accordance with "3.4 Identification and authentication for revocation request".

  User reception desk shall send revocation applications to the HPCI CA and request revocation of the appropriate certificate.

- Host certificate, service certificate

  When there is cause for revocation, the host or service administrator should fill in application sheet as soon as possible and submit it to user reception desk.

User reception desk shall perform examinations of the host or service administrator in accordance with "3.4 Identification and authentication for revocation request".

User reception desk shall send revocation applications to the HPCI CA and request revocation of the appropriate certificate.

(2) Procedures for revocation by the HPCI-ID Management Organization

When conditions stipulated in CP/CPS "4.9.1 Circumstances for revocation" are met, the HPCI operating office shall send the revocation application, or other document containing the same content, by paper or electronic media to the HPCI CA and request revocation of the appropriate certificate.

(3) Procedures for revocation by the HPCI CA

When conditions stipulated in CP/CPS "4.9.1 Circumstances for revocation" are met, the CA security officer or HPCI PMA shall determine revocation of the appropriate certificate.

After the revocation process, the HPCI CA will notify the HPCI-ID Management Organization that the revocation has been completed.

4.9.4 Revocation request grace period

When there is cause for revocation, the user, HPCI-ID Management Organization or HPCI CA must request revocation to the HPCI CA as soon as possible.

4.9.5 Time within which CA must process the revocation request

The HPCI CA will determine revocation promptly when a revocation request is received. When revocation is approved, the HPCI CA will promptly proceed with revocation within 1 day excluding prescribed holidays.

4.9.6 Revocation checking requirement for relying parties

Relying parties shall confirm validity of certificates by obtaining the latest CRL published in the Certificate Authority Repository.

4.9.7 CRL issuance frequency

The HPCI CA will issue the CRL with every revocation, and also periodically. The valid term of the CRL is 30 days and a new CRL will be issued at the latest 7 days before

expiration.

During normal operations, CRLs will be issued every 24 hours.

4.9.8 Maximum latency for CRLs

After the CRL is issued by the CA, it will take a maximum of 12 hours to publish it in the Certificate Authority Repository.

4.9.9 On-line revocation/status (OCSP) checking availability

The HPCI CA does not provide certificate validity information by OCSP.

4.9.10 On-line revocation/status (OCSP) checking requirements

No stipulation.

4.9.11 Other forms of revocation advertisements available

No stipulation.

4.9.12 Special requirements re-key compromise

No stipulation.

4.9.13 Circumstances for suspension

The HPCI CA does not suspend certificates.

4.9.14 Who can request suspension

No stipulation.

4.9.15 Procedure for suspension request

No stipulation.

4.9.16 Limits on suspension period

No stipulation.

4.10 Certificate status services

4.10.1 Operational characteristics

The HPCI CA shall provide certificate revocation information by publishing the CRL in the repository.

4.10.2 Service availability

Service usage time shall be as stipulated in "2.3 Timing and frequency of publication".

4.10.3 Optional features

No stipulation.

4.11 End of subscription

Certificate users may quit according to "4.9.3 Procedure for revocation request ".

4.12 Key escrow and recovery

The HPCI CA does not offer key escrow service.

5. FACILITY, MANAGEMENT, AND OPERATIONAL CONTROLS

5.1 Physical controls

5.1.1 Site location and construction

Equipment shall be setup in a place within the HPCI CA facilities not easily subject to damage due to disasters such as flooding, earthquake and fire. Safety measures shall be incorporated into the building structure to prevent unauthorized access and withstand earthquakes and fire. Names that explicitly or implicitly indicate the location of the HPCI CA shall not be included on signs or labels inside or outside the building.

5.1.2 Physical access

It is necessary to register with the security system in advanced to receive authorization to enter the room containing the machines set up in the HPCI CA. Every time the room is accessed, it is necessary for multiple persons with authority to access the room to be identified and authenticated by authentication equipment. Entry and exit logs will be recorded and managed. Entry and exit logs will be checked periodically. If an individual or individuals without access authorization are to enter the facilities, those individuals must be accompanied by multiple individuals having authorization to access the facilities. The purpose for entry will be confirmed, when the room is to be accessed by an unauthorized individual or individuals. A record of accompaniment of two personnel with authorization to access the room will be kept and periodically reviewed.

When exiting the machine room, the number of people leaving will be checked against the number who entered.

CA machineries will be housed in a dedicated, lockable rack in the machine room.

5.1.3 Power and air conditioning

CA equipment will be powered by a dedicated power line from the power distribution board with sufficient capacity.

The machine room will be equipped with air-conditioning equipment to maintain the proper service environment and appropriate working environment for the personnel.

5.1.4 Water exposures

The machine room will have water leakage alarms installed, and be in a location that has a low risk of water damage.

5.1.5 Fire prevention and protection

The HPCI CA building will be fireproofed, and prepared with automatic fire alarm and fire extinguishing equipment.

5.1.6 Media storage

Media will be stored in a lockable storage cabinet within a room with appropriate entry control.

5.1.7 Waste disposal

When disposing of HPCI CA documents or storage media with important personal information of certificate users and private keys, it must be completely physically destroyed or otherwise made impossible to recover the data.

5.1.8 Off-site backup

The HPCI CA will not engage in offsite backups.

5.1.9 Earthquake protection

CA machineries etc., will be set in a dedicated rack complete with safety devices against falling.

5.2 Procedural Controls

5.2.1 Trusted roles

The following show the HPCI CA operation systems and roles:

Chart 5-1 HPCI CA Operation Systems and Roles

Person in charge / Agency	Primary Role

CA Security Officer	・Authentication Operations Headquarters ・Management of CA private key ・Management of CA machinery dedicated rack (physical) keys ・Identification of host administrator of the servers of the system related to the authentication infrastructure operated by the National Institute of Informatics, and confirmation of their relationship to the FQDN.
CA Operator	・Activation/ Deactivation of CA private key ・Operation and maintenance management of CA system (CA server/ RA server/ repository)
Log Manager	・Management of back-up log and archive media ・Management of (physical) keys for fire proof safes and cabinets ・Examination of system logs and reports (security audit)
CA help desk	・Answer questions regarding certificate usage from the HPCI help desk

The followings show the HPCI-ID Management Organization operation systems and roles:

Chart 5-2 HPCI-ID Management Organization operation systems and roles

Person in charge / Agency	Primary role
HPCI Account IdP Operating Organization User Reception Desk	・Confirmation of identification of the applicant, and confirmation of photo-ID of applicants ・Identification of host administrator or service administrator, and confirmation of their relationship to the FQDN ・Confirmation of user qualifications ・Storage of documents submitted by the certificate users, examination results etc.
HPCI Operating Office	・Confirmation of existence of the certificate users' affiliated organization, and storage of the confirmation results ・Submission of revocation applications to the HPCI CA after loss of user qualifications

5.2.2 Number of persons required per task

In accordance with "5.2.1 Trusted roles", the required number of workers will be allocated for the following work from the perspective of privilege separation and mutual

supervision.

Chart 5-3 Required number of personnel in the CA management service

Job	Personnel (required number)
Authentication Operations Headquarters	CA Security Officer (1)
Operation and management of CA private key	CA Security Officer (1), CA Operator (1)
Activation/ Deactivation of CA private key	CA Operator (2)
CA server, management of RA server	CA Operator (2)
Maintenance management of CA system	CA Operator (2)
Management of physical key of safe, etc.	Log Manager (1)
Management of audit log and archive media	Log Manager (1)
CA help desk	CA help desk (1)

5.2.3 Identification and authentication for each role

When operation is done by the CA Operator, the system identifies/authenticates if the operator has proper authority to operate the system.

5.2.4 Roles requiring separation of duties

Concurrency between the CA Security Officer, CA Operator, and Log Manager is not allowed.

5.3 Personnel Controls

5.3.1 Qualifications, experience, and clearance requirements

Contract requirements, penalties, competence examination, staff reshuffling, etc., for HPCI CA operation staff will be done in accordance with a separately established personnel regulations.

5.3.2 Background check procedures

No stipulation.

5.3.3 Training requirements

Education and training in the techniques, knowledge, and operations of machines in order to operate the HPCI CA will be provided. The history of education and training provided will be stored.

5.3.4 Retraining frequency and requirements

Staff will receive education and training for staff reshuffling or changes in work procedure at the discretion of the CA Security Officer.

5.3.5 Job rotation frequency and sequence

No stipulation.

5.3.6 Sanctions for unauthorized actions

If a member or members of the staff violate the policy or procedures stipulated or other procedures of the HPCI CA, appropriate penalties will be applied, regardless of whether the violation was intended or not.

5.3.7 Independent contractor requirements

No stipulation.

5.3.8 Documentation supplied to personnel

The staff will be provided with all documents, based on this CP/CPS, necessary in order to operate the HPCI CA appropriate to their role including operation procedures and related operation manuals, etc..

5.4 Audit logging procedures

In order to ensure a safe environment, the HPCI CA will keep an audit log of all events that occur in RA, CA and operation procedures.

5.4.1 Type of events recorded

The HPCI CA will record the following information: Each record includes the type of event, date and time of event, and event source information (system name, operator's name, etc.).

- CA log
  - CA access log
  - Certificate issue/revocation log and CRL issue log
  - Error log
- RA log
  - RA access log
  - Certificate issue/revocation log
  - Error log
- OS login/logout/reboot log
- Hardware security module (hereafter HSM) log
- Machine room access record
- Machine room work record
- Key lending administration log
- Education and training history
- Record of work audit (check list) of the HPCI-ID management organization

5.4.2 Frequency of log audit

Verification of the audit log will be based on instructions of the CA Security Officer.

5.4.3 Retention period for audit log

Auditing logs will be kept for a period of three years. However, CA logs and HSM logs will be stored for 10 years.

5.4.4 Protection of audit log

Access control by OS function shall be implemented for CA, RA and HSM logs.

Audit logs will be kept in a cabinet within a room with proper access administration to prevent unauthorized browsing or tampering.

5.4.5 Audit log backup procedures

The CA Operator will periodically acquire various types of logs recorded in the CA, etc., and shall maintain a safe environment.

5.4.6 Audit collection system

No stipulation.

5.4.7 Notification to event-causing subject

No stipulation.

5.4.8 Vulnerability assessments

No stipulation.

5.5 Records archival

5.5.1 Types of records archived

The following information will be stored as archive data: Each version of documents including revision history will be kept.

(Storage in the HPCI CA)

- All certificates and CRLs issued by the HPCI CA
- Notification documents to the certificate users
- Work records concerning CA keys
- Audit logs stipulated in "5.4.1 Type of events recorded"
- Operation personnel chart
- Explanatory documents to users
- The CP/CPS, certificate and CRL profile design and operation procedures
- Other important documents pertaining to HPCI PMA decisions

(Storage in the HPCI-ID Management Organization)

- Applications received from certificate users, copies of photo-IDs along with their examination results, etc.
- Operation audit records (checklists)

5.5.2 Retention period for archive

Archive data will be kept as stipulated in "5.4.3 Retention period for audit log". However, "Record of every type of application form, copy of photo-ID, and examination results, etc." will be stored for 5 years in the HPCI-ID Management Organization.

5.5.3 Protection of archive

Archive data will be protected as stipulated in "5.4.4 Protection of audit log".

5.5.4 Archive backup procedures

Archive data will be backed up as stipulated in "5.4.5 Audit log backup procedures ".

5.5.5 Requirements for time-stamping of records

Archive data stored in electronic form will include time stamps.

5.5.6 Archive collection system

No stipulation.

5.5.7 Procedures to obtain and verify archive information

No stipulation.

5.6 Key changeover

5.6.1 Validity period of client certificate

Validity period of the certificate issued by the HPCI CA is as follows:

Chart 5-4 Validity period of certificate

Types	Validity period
Client certificate	One month after the end of the academic year in which the certificate was issued
Host certificate	One month after the end of the academic year in which the certificate was issued
Service certificate	One month after the end of the academic

	year in which the certificate was issued

5.6.2 Validity period of CA certificate

CA certificates are valid for 10 years.

Before the term of validity of the CA private key becomes shorter than that of the client certificate, the HPCI CA shall stop issuing new client certificates, host certificate, and service certificates with the existing private key.

5.7 Compromise and disasters recovery

5.7.1 Recovery procedure for CA private key compromise

The following procedure will be carried out based on the decision of the HPCI PMA:

- If an HSM is stolen or the CA private key compromised, operations will be halted after notifying all related parties.
- If the CA private key is compromised, the key will be used to deactivate the system that verifies the trust of the HPCI CA, in accordance with defined procedures, and all certificates, including the CA certificates, will be revoked.
- As soon as safety of the HPCI CA is confirmed, a new key pair will be generated and the system will be reconfigured.

5.7.2 Computing resources, software, and/or data are corrupted

When hardware, software and data has been damaged or destroyed, it will be restored from backup hardware, software and data as soon as possible.

5.7.3 Entity private key compromise procedures

When user private key has been compromised or there is a possibility of compromise, the user must apply to the HPCI CA for revocation as soon as possible. Also, when user private key stored in the CA has been compromised or there is a possibility of compromise, the CA Security Officer must apply for revocation as soon as possible.

5.7.4 Business continuity capabilities after a disaster

When the CA private key has not been compromised and there is no doubt that it may have been compromised, operations can be resumed in ″5.7.2 Computing resources, software, and/or data are corrupted″.

5.8 CA termination

Concerning cessation of authentication operations by the HPCI CA and accompanied storage of backup data, etc., the CA Security Officer will notify all concerned parties in advance and will carry out the stipulated procedures for shutting down operations.

6. TECHNICAL SECURITY CONTROLS

6.1 Key pair generation and installation

6.1.1 Key pair generation

(1) CA Key

The CA key pair will be generated in the HSM by the CA security officer and a CA operator.

(2) User key

The certificate user key pair will be generated within the Certificate Management System during online certificate issuing.

Host and service key pairs are generated by the host administrators or service administrators within each host or service.

6.1.2 Distribution of Private Keys

(1) User private key

- When client certificates are stored only in the Certificate Management System
  User private keys are stored only within the Certificate Management System, and not distributed to users.
- When client certificates are downloaded by the user
  User private keys are downloaded in PKCS#12 form by users through the Certificate Management System when they download the client certificate.

(2) Host and service private keys

Private keys are generated within each host or service and are not distributed.

6.1.3 Transmission of User Public Key to the CA

User public keys are generated within the Certificate Management System and transmitted to the RA server. The RA server then sends the key to the CA server as a certificate issue request.

Host or service public keys are generated by the host administrators or service administrators and transmitted as CSR's to the HPCI CA.

6.1.4 Distribution of CA Public Key to Verifiers

CA certificates will be published in the Certificate Authority Repository and distributed.

6.1.5 Algorithm and Key Length

The algorithm and key length are as follows:

Chart 6-1 Key Length Used

Types		Algorithm and Key length
CA key		RSA 2048bit
User key	Client certificate	RSA 2048bit
	Host certificate	RSA 2048bit
	Service certificate	RSA 2048bit

6.1.6 Public Key Parameter Generation and Validation

No stipulation.

6.1.7 Objective of Key Usage (X.509 v3 Key Usage Field)

Key usage for CA, user, host, and service public keys is configured in the following extensions of X.509 v3:

Chart 6-2 Objective of Key Use

Target	Objective of key use
CA certificate	keyCertSign, cRLSign
Client certificate	digitalSignature ,keyEncipherment
Host certificate	digitalSignature ,keyEncipherment
Service certificate	digitalSignature ,keyEncipherment

6.2 Private Key Protection and Encryption Module Technology Management

This section stipulates regulation regarding the CA private key and user private keys. Host and service private keys are managed by the host or service administrators.

6.2.1 Encryption Module Standards and Management

(1) CA private keys

Protected by a FIPS140-2 level 3 HSM or its equivalent.

(2) User private key

・When client certificates are stored only within the Certificate Management System

User private keys will be encrypted when they are stored in the Certificate Management System. Access the Certificate Management System within the machine room will be restricted to authorized managers or servers.

・When users download the client certificate

Users will download the private key in the PKCS#12 from the Certificate Management System. The user is responsible for protecting the downloaded certificates and keys.

6.2.2 Control of Private Key by Multiple Persons (n out of m)

Operations using CA private key will be conducted by the CA Security Officer and multiple CA Operators.

6.2.3 Deposit of Private Keys

The HPCI CA will not deposit private keys.

6.2.4 Backups for Private Key

(1) CA private keys

Backup of CA private key shall be carried out by the CA Security Officer and CA Operator. Backed up CA private keys will be saved in an HSM token and stored in a fireproof safe.

(2) User private key

・When client certificate is stored only within the Certificate Management System

The manager of the Certificate Management System will carry out the system backup. Backup media will be stored in a lockable safe box within a room with appropriate access management.

・When client certificates are downloaded by users

Certificates downloaded by the user must be backed up by the user and the backup media must be stored in a safe place.

6.2.5 Archive of Private Keys

Private keys are not archived.

6.2.6 Transmission to Private Key Encryption Module

(1) CA private key

CA private keys are generated within the HSM module located in the machine room of HPCI CA and are not transmitted.

(2) User private key

・When client certificate is stored only within the Certificate Management System

Private keys will be generated and controlled within the Certificate Management System, and transmission will not be done.

・When client certificates are downloaded by users

Users will download in the form of PKCS#12.

6.2.7 Private Key Storage in the Encryption Module

(1) CA private key

Registration to the HSM encryption module will be conducted when keys are generated and during recovery from backup media. In either case, the process is conducted by the CA Security Officer and CA Operator. A password consisting of at least 15 characters will be required.

(2) User private key

・When client certificate is stored only within the Certificate Management System

Registration to the encryption module in the Certificate Management System will be done when keys are generated during the online certificate issue procedures by the user. A password over 12 characters long will be necessary for authentication.

・When client certificates are downloaded by users

After the certificate download, the private key will be registered to the encrypted module within the user's computer.

6.2.8 Private Key Activation Method

(1) CA private key

CA private keys will be activated by 2 CA Operators within the HSM.

(2) User private key

・When client certificate is stored only within the Certificate Management System

Activation will be done within the Certificate Management System during authentication for use of resources. Authentication with a password that is at least 12 characters long is required for activating private keys.

・When client certificates are downloaded by users

Certificate user keys are activated within the user computer when authenticating for resource use. Authentication with a password that is at least 12 characters long is required for activating private keys.

6.2.9 Private Key Deactivation Method

CA private keys will be deactivated by 2 CA Operators within the HSM.

6.2.10 Private Key Destruction Method

(1) CA private key

CA private keys within the HSM will be destroyed by re-initializing the HSM by the CA Security Officer and CA Operator. If the HSM cannot be initialized and is to be taken out of the room, it must be physically destroyed.

When backup media containing discarded CA private keys are to be taken out of the room, they must be physically destroyed.

(2) User private key

・When client certificate is stored only within the Certificate Management System

Destruction of user private keys in the Certificate Management System or backup media will be done by the person in charge at the Certificate Management System using designated procedures to ensure the keys cannot be reused.

・When client certificates are downloaded by users

Users will take responsibility for destruction of downloaded certifications and backup media.

6.2.11 Encryption Module Assessment

HSM containing CA private keys will meet criteria equivalent to FIPS140-2 level 3.

6.3 Other Aspects Concerning Key Pair Management

6.3.1 Archive of Public Keys

Public keys are included within archived data. The storage period will be as stipulated in "5.5.2 Retention period for archive".

6.3.2 Time Period for Certificate Operation and Key Pair Usage Periods

As stipulated in "5.6.1 Validity period of " and "5.6.2 Validity period of CA certificate".

6.4 Private Key Activation Data

6.4.1 Generation and Setting of Activation Data

(1) CA private key

CA private keys will be activated using both a password and HSM physical key. The password will consist of at least 15 characters decided by the CA Operator and inputted into the HSM.

(2) User private key

User private key activation data is the password consisting of over 12 characters input by the user during online certificate issue procedures. This password will be set as the user access password to the private key.

6.4.2 Protection of Activation Data

(1) CA private key

The CA Operator will use and modify CA private key activation data in accordance with established regulations. The HSM physical key will be kept by the CA Security Officer in locked cabinet.

(2) User private key

It is the user's responsibility to store the activation data that the user inputted.

6.4.3 Other Aspects of Activation Data

No stipulation.

6.5 Computer Security Management

6.5.1 Specific Computer Security Technical Requirements

The CA server is a dedicated machine with only the functions needed for the HPCI CA, and only used for the limited operations regulated in the CP/CPS.

6.5.2 Computer Security Assessment

No stipulation.

6.6 Life cycle Security Management

6.6.1 System Development Management

No stipulation.

6.6.2 Security Management

No stipulation.

6.6.3 Life cycle Security Management

No stipulation.

6.7 Network Security Management

The HPCI CA will prevent unauthorized access from outside networks by a firewall.

Connection between CA and RA servers, and between RA servers and the Certificate Management System, will be restricted to a designated communication port, and security measures will be taken to prevent unauthorized access. The communication route between CA and RA, and RA and Certificate Management System will be encrypted.

6.8 Time Stamp

The HPCI CA will synchronize with a time server in order to accurately record the day and time for certificates issuance, logs, etc.

7. CERTIFICATE, CRL, AND OCSP PROFILE

The certificate and CRL profile is based on RFC5280 and follows the separately set design specifications for certificate and CRL profiles. OCSP profile is not stipulated.

8. COMPLIANCE INSPECTIONS AND OTHER EVALUATIONS

8.1 Frequency and Requirements of Compliance Inspections

HPCI CA performs an internal audit every year to check if operations are in compliance with the CP/CPS.

The HPCI-ID Management Organization performs an internal audit every year according to the audit check list presented by the HPCI CA, and the results are reported to the HPCI CA.

8.2 Identification and Qualifications of Auditors

Auditors should be familiar with auditing and authentication operations.

8.3 Relationship of Auditors and Auditees

The auditor is a person who is not involved in operation of the HPCI CA and has no interest in the HPCI CA.

8.4 Items Handled in the Audit

The audit will cover whether authentication operations of the HPCI CA are carried out in accordance with the CP/CPS and other operation procedure documents.

8.5 Response to Matters Pointed Out by the Audit

The HPCI PMA should study corrective measures for matters pointed out by audit and decide on a course of action without delay. After deciding on the course of action, the HPCI PMA will present the plan to the auditor and the situation will be monitored until the HPCI CA completes the measures.

8.6 Disclosure of Auditing Results

All operation staff members of the HPCI PMA and HPCI CA will be informed the audit results. The HPCI PMA will consider whether or not to disclose the audit results to others.

9. LEGAL PROBLEMS AND OTHER PROBLEMS ENCOUNTERED WHILE PERFORMING WORK

9.1 Fees

Fees will be determined by the usage regulations of the HPCI Consortium.

9.2 Legal Liability

No stipulation.

9.3 Confidentiality of Work Information

Protection and handling of confidential information by the HPCI CA will be stipulated in the following regulations of the National Institute of Informatics:

Information/System Research Organization of Security Policy

http://nsin.op.nii.ac.jp/NII_staff/plan/lan/pdf/K1001.pdf

9.3.1 Confidential Information

With the exception of information indicated in "2.2 Publication of certification information", all pertinent information is to be confidential. Confidential information will not be disclosed or leaked to any third party and not be used except where required. Information designated as confidential will be safely stored under administration of a designated person in charge.

9.3.2 Information Not Considered Confidential

Information given in "2.2 Publication of certification information" is not treated as confidential.

In the case of a revoked client certificate, the reason the certificate was revoked is also published in the CRL. The date and reason for revocation contained in the CRL will not be considered as confidential information. Other information concerning revocation will not be disclosed to the public.

9.4 Protection of Personal Information

The HPCI CA will not use personal information provided by users to the HPCI-ID Management Organization for anything other than issuing or revoking certificates.

If there is a request from the user, the following information may be disclosed after

confirming the user's identity:

- Application to issue a certificate submitted to the HPCI CA or HPCI-ID Management Organization
- Certificate contents
- Certificate status

Apart from the above, the following regulations regarding handling of personal information stipulated by the National Institute of Informatics will be followed:

- Information/System Research Organization Personal Information Protection Regulations
  http://www.rois.ac.jp/pdf/3-10.pdf
- For NII Personal Information Protection Disclosure Requests:
  http://www.nii.ac.jp/top/disclosure/privacy/

9.5 Intellectual Property Rights

The HPCI CA will not claim any IPR for certificates issued.

9.6 Manifest Assurance

9.6.1 Obligations and Responsibilities of HPCI CA

The HPCI CA will have the following responsibilities concerning CA operations:

- Certificate issuance and validation will be based on the CP/CPS.
- Excluding times of system emergency or maintenance, CA certificate information and CRL will be published to the Certificate Authority Repository.
- Applicable CP/CPS will be specified when certificates are issued.
- Authentication operations are performed in accordance with the CP/CPS, and the HPCI CA has full responsibility for the credibility of certificates or CRL from the point they are issued. However, even though HPCI CA adds signatures to this information, it can't guarantee credibility when the data is falsified by a third person (found by attacks), or the signature algorithm becomes obsolete.
- Appropriate authentication operations are done in accordance with CP/CPS to protect the HPCI CA private key from compromise due to theft and/or loss.
- Approval of cooperative applications from the HPCI-ID Management Organization.
- Identification and authentication of the certificate user and/or organization will be done with cooperation of the HPCI-ID Management Organization.
- Operation requirements will be presented to the HPCI-ID Management

Organization in the form of an audit checklist, and everything done to ensure that the requirements are being fulfilled.

- All communication lines between the HPCI-ID Management Organization and Certificate Management System will be encrypted for safe and reliable transmission.

9.6.2 Obligations and Responsibilities of the HPCI-ID Management Organization

The HPCI-ID Management Organization will have the following obligations and responsibilities:

- Processing of applications for certificate issue, renewal and revocation, including identification and authentication of users and/or organizations will be done in accordance with the CP/CPS.
- Changes in certificate user name and loss of usage qualification should be detected as soon as possible, and a revocation application will be sent to the HPCI CA.
- Send user's certificate information (HPCI-ID, roman alphabet name) safely by coordinating with the Certificate Issuing System of the HPCI CA.
- Cooperate with the Certificate Management System to notify the user of the completion of issuance of their certificate.
- Certificate user information used for each application will be safely stored for the period stipulated in the CP/CPS
- Regular internal audits are conducted to ensure the HPCI CA operation requirements are being fulfilled, and the results are reported to the HPCI PMA

9.6.3 Obligations and Responsibilities of Users

The certificate user will have the following obligations and responsibilities:

- Present accurate information when applying for certificate issue or revocation to the HPCI-ID Management Organization and HPCI CA
- Acquire certificates using the procedure provided by the HPCI CA
- Do not use certificates for purposes other than those stipulated in the CP/CPS, and do not use certificates that has expired.
- Store the activation password of the private key in a safe place
- Assume the responsibility to manage the private key so as to avoid compromising the key and certificate due to theft or loss.
- To apply for revocation immediately in the event the private key has been stolen,

lost (when the private key has a possibility of compromise or is compromised), or the suspension of the usage of the certificate

- Host administrators and service administrators must associate the host/service certificate to one network entity

9.6.4 Obligations and Responsibility of Verifiers

The relying party will have the following obligations and responsibilities:

- Relying Parties must understand and agree with the CP/CPS in the Certificate Authority Repository of the HPCI CA
- Certificates should not be used for purpose other than what is stipulated in the CP/CPS "4.5.2 Relying party public key and certificate usage"
- Relying Parties should confirm that the target certificate is a valid certificate issued by the HPCI CA and is not falsified

9.7 Non-Assurance

The HPCI CA will strictly observe the contents of the CP/CPS and see to it that the HPCI CA is operated in accordance with the CP/CPS. However, the HPCI CA will assume no responsibility for damages that may result.

The HPCI CA will provide users and/or relying parties with the necessary information concerning the CP/CPS, and recommend the contents to be strictly observed, but does not guarantee to other concerned parties that users and/or relying parties will strictly observe the contents of "9.6.3 Obligations and Responsibilities of Users" and "9.6.4 Obligations and Responsibility of Verifiers."

9.8 Limitation of Liability (breach of obligation)

The HPCI CA will take no responsibility concerning damages to concerned parties resulting from a user being in violation of "9.6.3 Obligations and Responsibilities of Users" or a party being in violation of 9.6.4 Obligations and Responsibility of Verifiers.".

9.9 Compensation

Users will be obligated to provide compensation for damages suffered by a third party or parties as a result of failure to comply with "9.6.3 Obligations and Responsibilities of Users." Verifiers will be obligated to provide compensation for damages suffered by a third party or parties as a result of failure to comply with "9.6.4 Obligations and Responsibility of

Verifiers." Any dispute that may occur between or among concerned parties will be settled between or among said concerned parties.

9.10 Period of Validity and Expiration of Documents

The CP/CPS will become invalid immediately following the HPCI CA ceasing operations.

9.11 Individual Notifications and Contact Among Participants

No stipulation.

9.12 Revisions

9.12.1 Revision Procedures

The HPCI CA will modify the CP/CPS as needed.

Modified content will be decided on and approved by the HPCI PMA. Also, re-approval will be needed when CP/CPS changes have been approved by the APGrid PMA for MICS compliance.

The major version No. of the modified CP/CPS will be updated and provided with a new OID.

Approval of the HPCI PMA will not be required for minor modifications such as correction of typographical errors. In this case the document will be modified at the discretion of the CA Security Officer, and the minor version No. will be updated and a new OID provided.

9.12.2 Notification Method and Time Period

When the CP/CPS is modified, it will be published in the Certificate Authority Repository without delay. Publishing in the Certificate Authority Repository will serve as notice of the new CP/CPS users and relying parties.

9.12.3 OID Modification

OID will be modified in accordance with "9.12.1 Revision Procedures".

9.13 Procedures for Solving Disputes

No stipulation.

9.14 Governing Law

Any disputes that arises between the HPCI CA and concerned party or parties will be settled in accordance with Japanese domestic law.

9.15 Observance of Applicable Laws

No stipulation.

9.16 Miscellaneous Provisions

9.16.1 Provision of the Entire Agreement

Stipulations of the CP/CPS or any other contract or agreement that directly affect the rights and/or obligations of concerned parties cannot be revised, discarded, added, modified, deleted or ended in writing or orally, unless otherwise stipulated.

9.16.2 Provisions of Transferring Rights

Rights and/or obligations stipulated or by other contract or agreement cannot be transferred to or inherited by any third party without the advance consent of the HPCI CA.

9.16.3 Provision of Separation

Even if a portion of the CP/CPS or other contract or agreement becomes invalid or cannot be executed to any degree, it does not affect the validity of the CP/CPS or any other contract or agreement, and will be interpreted to match the purpose intended by the HPCI CA as much as rationally possible.

9.16.4 Compulsory Execution Provision (legal fees and waiver)

If it is determined that rights/obligations stipulated in the CP/CPS or other contract or agreement have not been fulfilled, or if a question arises concerning interpretation of matters stipulated in the CP/CPS, other contract or agreement, or the documents themselves, the HPCI CA can terminate the CP/CPS or other contract or agreement without the consent of the other party or parties.

Users and/or relying parties may be requested to pay legal fees incurred by the HPCI CA when settling a dispute with users and/or relying parties.

9.16.5 Force Majeure Provision

The HPCI CA and all concerned parties bear no responsibility to users or relying parties in the event of the followings:

(1) Damage due to natural disaster such as earthquake, flood or volcanic eruption

(2) Damage due to disasters such as fire or power failure

(3) Damage resulting from war, strife or other force majeure

9.17 Other Provisions

No stipulation.