

PUBLIC



**TrustFactory Client
Issuing CA
Certification Practice
Statement**

**21 November 2018
Version: 1.5**



Document History.....	7
1.0 Introduction.....	8
1.1 Overview	8
1.2 Document Name and Identification	8
1.3 PKI Participants.....	8
1.3.1 TrustFactory Certification Authorities	9
1.3.2 Registration Authorities	9
1.3.3 Subscribers	9
1.3.4 Relying Parties	10
1.3.5 Other Participants	10
1.4 Certificate Usage.....	10
1.4.1 Appropriate certificate usage	10
1.4.2 Prohibited Certificate usage	11
1.5 Policy Administration.....	11
1.5.1 Organization Administering the Document.....	11
1.5.2 Contact Person	11
1.5.3 Person Determining CPS Suitability for the Policy	12
1.5.4 CPS Approval Procedures	12
1.6 Definitions and acronyms	12
2.0 Publication and Repository Responsibilities.....	17
2.1 Repositories	17
2.2 Publication of Certificate Information	17
2.3 Time or Frequency of Publication.....	17
2.4 Access control on repositories	17
3.0 Identification and Authentication	18
3.1 Naming	18
3.1.1 Types of Names	18
3.1.2 Need for Names to be Meaningful	18
3.1.3 Anonymity or Pseudonymity of Subscribers.....	18
3.1.4 Rules for Interpreting Various Name Forms	18
3.1.5 Uniqueness of Names.....	18
3.1.6 Recognition, Authentication, and Role of Trademarks	18
3.2 Initial Identity Validation	18
3.2.1 Method to Prove Possession of Private Key	18
3.2.2 Authentication of Organization Identity.....	18
3.2.3 Authentication of Individual identity.....	19
3.2.3.1 EmailPass Certificates.....	19
3.2.3.2 PersonalPass Certificates.....	19
3.2.3.3 PersonalPass Premium Certificates	19
3.2.4 Non Verified Subscriber Information.....	19
3.2.5 Validation of Authority	20
3.2.6 Criteria for Interoperation.....	20
3.3 Identification and Authentication for Renewal Requests	20
3.4 Identification and Authentication for Re-key Requests	20
3.4.1 Identification and Authentication for Routine Re-key	20
3.4.2 Identification and Authentication for Re-key after Revocation	20



3.4.3	Re-verification and Revalidation of Identity When Certificate Information Changes	20
3.5	Identification and Authentication for Revocation Request	20
4.0	Certificate Lifecycle Operational Requirements	22
4.1	Certificate Application	22
4.1.1	Who Can Submit a Certificate Application	22
4.1.2	Enrollment Process and Responsibilities	22
4.2	Certificate Application Processing	22
4.2.1	Performing Identification and Authentication Functions	22
4.2.2	Approval or Rejection of Certificate Applications.....	23
4.2.3	Time to Process Certificate Applications	23
4.3	Certificate Issuance	23
4.3.1	CA Actions during Certificate Issuance	23
4.3.2	Notifications to Subscriber by the CA of Issuance of Certificate.....	23
4.4	Certificate Acceptance	23
4.4.1	Conduct Constituting Certificate Acceptance	23
4.4.2	Publication of the Certificate by the CA	23
4.4.3	Notification of Certificate Issuance by the CA to Other Entities	23
4.5	Key Pair and Certificate Usage	23
4.5.1	Subscriber Private Key and Certificate Usage.....	23
4.5.2	Relying Party Public Key and Certificate Usage	24
4.6	Certificate Renewal.....	24
4.6.1	Circumstances for Certificate Renewal.....	24
4.6.2	Who May Request Renewal	24
4.6.3	Processing Certificate Renewal Requests	24
4.6.4	Notification of New Certificate Issuance to Subscriber	24
4.6.5	Conduct Constituting Acceptance of a Renewal Certificate	24
4.6.6	Publication of the Renewal Certificate by the CA.....	25
4.6.7	Notification of Certificate Issuance by the CA to Other Entities	25
4.7	Certificate Re-Key	25
4.7.1	Circumstances for Certificate Re-Key	25
4.7.2	Who May Request Certification of a New Public Key	25
4.7.3	Processing Certificate Re-Keying Requests.....	25
4.7.4	Notification of New Certificate Issuance to Subscriber	25
4.7.5	Conduct Constituting Acceptance of a Re-Keyed Certificate	25
4.7.6	Publication of the Re-Keyed Certificate by the CA.....	25
4.7.7	Notification of Certificate Issuance by the CA to Other Entities	25
4.8	Certificate Modification	25
4.9	Certificate Revocation and Suspension	25
4.9.1	Circumstances for Revocation	25
4.9.2	Who Can Request Revocation	26
4.9.3	Procedure for Revocation Request.....	27
4.9.4	Revocation Request Grace Period	27
4.9.5	Time Within Which CA Must Process the Revocation Request.....	27
4.9.6	Revocation Checking Requirements for Relying Parties	27
4.9.7	CRL Issuance Frequency	28
4.9.8	Maximum Latency for CRLs	28
4.9.9	On-Line Revocation/Status Checking Availability	28
4.9.10	On-Line Revocation Checking Requirements.....	28
4.9.11	Other Forms of Revocation Advertisements Available	28
4.9.12	Special Requirements Related to Key Compromise.....	28



4.9.13	Notification of Certificate Revocation to Subscriber	28
4.9.14	Circumstances for Suspension.....	28
4.10	Certificate Status Services	28
4.10.1	Operational Characteristics	28
4.10.2	Service Availability.....	28
4.10.3	Operational Features.....	29
4.10.4	End of Subscription	29
4.11	Key Escrow and Recovery.....	29
4.11.1	Key Escrow and Recovery Policy and Practices.....	29
4.11.2	Session Key Encapsulation and Recovery Policy and Practices	29
5.0	Facility, Management, and Operational Controls	30
5.1	Physical Controls.....	30
5.2	Procedural Controls	30
5.3	Personnel Controls.....	30
5.4	Audit Logging Procedures	30
5.4.1	Types of Events Recorded	30
5.4.2	Frequency of Processing Log	31
5.4.3	Retention Period for Audit Log.....	31
5.4.4	Protection of Audit Log	31
5.4.5	Audit Log Backup Procedures.....	31
5.4.6	Audit Collection System (Internal vs. External).....	31
5.4.7	Notification to Event-Causing Subject	31
5.4.8	Vulnerability Assessments.....	31
5.5	Records Archival	32
5.5.1	Types of Records Archived	32
5.5.2	Retention Period for Archive	32
5.5.3	Protection of Archive.....	32
5.5.4	Archive Backup Procedures	32
5.5.5	Requirements for Timestamping of Records	32
5.5.6	Archive Collection System (Internal or External)	32
5.5.7	Procedures to Obtain and Verify Archive Information	32
5.6	Key Changeover	32
5.7	Compromise and Disaster Recovery.....	32
5.8	CA or RA Termination	32
6.0	Technical Security Controls	33
6.1	Key Pair Generation and Installation.....	33
6.1.1	Key Pair Generation.....	33
6.1.2	Private Key Delivery to Subscriber.....	33
6.1.3	Public Key Delivery to Certificate Issuer	33
6.1.4	CA Public Key Delivery to Relying Parties	33
6.1.5	Key Sizes	33
6.1.6	Public Key Parameters Generation and Quality Checking	33
6.1.7	Key Usage Purposes (as per X.509 v3 Key Usage Field)	34
6.2	Private Key Protection and Cryptographic Module Engineering Controls	34
6.2.1	Cryptographic Module Standards and Controls	34
6.2.2	Private Key (n out of m) Multi-Person Control.....	34
6.2.3	Private Key Escrow	34
6.2.4	Private Key Backup	34
6.2.5	Private Key Archival	34



6.2.6	Private Key Transfer Into or From a Cryptographic Module	34
6.2.7	Private Key Storage on Cryptographic Module	34
6.2.8	Method of Activating Private Key	34
6.2.9	Method of Deactivating Private Key	34
6.2.10	Method of Destroying Private Key	34
6.2.11	Cryptographic Module Rating	34
6.3	Other Aspects of Key Pair Management.....	34
6.3.1	Public Key Archival	34
6.3.2	Certificate Operational Periods and Key Pair Usage Periods	34
6.4	Activation Data	35
6.4.1	Activation Data Generation and Installation	35
6.4.2	Activation Data Protection	35
6.4.3	Other Aspects of Activation Data	35
6.5	Computer Security Controls	35
6.6	Lifecycle Technical Controls	35
6.7	Network Security Controls	35
6.8	Time Stamping	35
7.0	Certificate, CRL, and OCSP Profiles	36
7.1	Certificate Profile	36
7.1.1	Version Number(s)	36
7.1.2	Certificate Extensions	36
7.1.3	Algorithm Object Identifiers	36
7.1.4	Name Forms	36
7.1.5	Name Constraints	36
7.1.6	Certificate Policy Object Identifier	36
7.1.7	Usage of Policy Constraints Extension	37
7.1.8	Policy Qualifiers Syntax and Semantics	37
7.1.9	Processing Semantics for the Critical Certificate Policies Extension	37
7.2	CRL Profile	37
7.2.1	Version Number(s)	37
7.2.2	CRL and CRL Entry Extensions	37
7.3	OCSP Profile	37
7.3.1	Version Number(s)	37
7.3.2	OCSP Extensions	37
8.0	Compliance Audit and Other Assessments	38
8.1	Frequency and Circumstances of Assessment	38
8.2	Identity/Qualifications of Assessor	38
8.3	Assessor's Relationship to Assessed Entity	38
8.4	Topics Covered by Assessment	38
8.5	Actions Taken as a Result of Deficiency	38
8.6	Communications of Results	38
9.0	Other Business and Legal Matters	39
9.1	Fees	39
9.1.1	Certificate Issuance or Renewal Fees	39
9.1.2	Certificate Access Fees	39
9.1.3	Revocation or Status Information Access Fees	39
9.1.4	Fees for Other Services	39



9.1.5	Refund Policy.....	39
9.2	Financial Responsibility.....	39
9.3	Confidentiality of Business Information	39
9.4	Privacy of Personal Information	39
9.5	Intellectual Property rights	39
9.6	Representations and Warranties.....	39
9.7	Disclaimers of Warranties	39
9.8	Limitations of Liability.....	39
9.9	Indemnities.....	39
9.10	Term and Termination	39
9.11	Individual Notices and Communications with Participants.....	39
9.12	Amendments	39
9.13	Dispute Resolution Provisions.....	40
9.14	Governing Law	40
9.15	Compliance with Applicable Law.....	40
9.16	Miscellaneous Provisions	40
9.17	Other Provisions	40
10	Annexure A: Client CA Certificate Profiles	41
10.1	TrustFactory Client Issuing CA – Certificate Profile	41
10.2	EMAILPASS CERT PROFILE	42
10.3	PERSONALPASS CERT PROFILE	43
10.4	PERSONALPASS PREMIUM CERT PROFILE	44

Document History

Version	Description	Date
1.0	Initial for review	6 October 2017
1.1	Added certificate serial numbers and certificate profiles. Approved by Policy Authority	7 December 2017
1.2	Updates to Section 9.1 Fees Other minor corrections	15 December 2017
1.3	<p>Key changes as follows:</p> <ul style="list-style-type: none"> • RAs must be approved by SAAA: 1.3.2 • Added validation of DBA name: 3.2.2.2 • Validate via video call: 3.2.3.2 • Removed face-to-face validation via notary public: 3.2.3.3 • TrustFactory does not validate OU field: 3.2.4 • Removed revocation request via email: 3.5 • RA's submit requests over API: 4.1.1 • Provision to reuse validated documents: 4.2.1, 4.6.3 and 4.7.3 • Notification of the status of certificate: 4.3.2 and 4.4.3 • Cater for revocation in case of subscriber's death, being wound up or organization cease to exist: 3.5, 4.9.1 and 4.9.2 • RA notification of revocation: 4.9.13 • TrustFactory does not provide subscriber key management services: 6.1 • CPS Amendments for AES certificates: 9.12 • Added Product Certificate Profiles: 10.2, 10.3, 10.4 <p>Other minor corrections to improve clarity, understanding and remove duplication</p>	10 August 2018
1.4	Change to rectify typographical error in URL for CRL distribution points (sections 2.2, 4.10.1, 10.2, 10.3 and 10.4)	13 September 2018
1.5	Updates to incorporate latest CAB Forum changes on revocation requirements. Other minor corrections and clarifications.	21 November 2018

References and Acknowledgements

1. CA / Browser Forum Network and Certificate System Security Requirements; <http://www.cabforum.org>
2. CA/Browser Forum Baseline Requirements for the Issuance and Management of Publicly-Trusted Certificates; <http://www.cabforum.org>

Digitally Signed by: *TrustFactory (Pty) Ltd*



1.0 Introduction

This Certification Practice Statement (CPS) applies to the products and services of TrustFactory Client Issuing CA. Primarily this pertains to the issuance and lifecycle management of Certificates including validity checking services. This CPS may be updated from time to time as outlined in Section 1.5 Policy Administration. The latest version may be found on the TrustFactory company repository at <https://www.trustfactory.net/repository>.

A CPS highlights the *"procedures under which a Digital Certificate is issued to a particular community and/or class of application with common security requirements"*. This CPS meets the formal requirements of Internet Engineering Task Force (IETF) RFC 3647, dated November 2003 with regard to content, layout and format.

TrustFactory CAs are governed by the TrustFactory Certificate Policy (CP) together with a Certification Practice Statement (CPS) applicable to the specific CA.

TrustFactory Client Issuing CAs conform to the current version of the Baseline Requirements for the Issuance and Management of Publicly-Trusted Certificates published at <http://www.cabforum.org>. In the event of any inconsistency between this document and the Baseline Requirements, the Baseline Requirements take precedence over this document.

This CPS should be read together with the TrustFactory Certificate Policy. Certain practices, controls, compliance, business and legal matters that are common across all TrustFactory CAs are documented in the TrustFactory CP (and may not be repeated in this CPS – except to aid readability). This CPS addresses the specific technical and procedural practices of the TrustFactory Client Issuing CAs, within the TrustFactory PKI System, that issue Certificates to individuals

1.1 Overview

The TrustFactory CP and this CPS applies to the following Certification Authorities that issue public certificates, managed by TrustFactory:

- **TrustFactory Client Issuing CA**

The purpose of this CPS is to present the TrustFactory Client Issuing CA practices and procedures in managing Certificates and to demonstrate compliance with requirements pertaining to the issuance of Certificates according to TrustFactory's Certificate Policy (CP), this CPS and industry standards.

The Certificate subject names addressed in this CPS are the following:

- CN = TrustFactory Client Issuing Certificate Authority
 - OU = TrustFactory PKI Operations
 - O = TrustFactory(Pty)Ltd
 - L = Johannesburg
 - S = Gauteng
 - C = ZA

1.2 Document Name and Identification

This document is the TrustFactory Client Issuing CA Certification Practice Statement (TrustFactory Client Issuing CA CPS).

The OID for TrustFactory is: {iso(1) identified-organization(3) dod(6) internet(1) private(4) enterprise(1) trustfactory(50318)}

TrustFactory organizes its OID arcs for the various Certificates and documents described in this CP as follows:

1.3.6.1.4.1.50318.1	TrustFactory CA CP
1.3.6.1.4.1.50318.2.2	TrustFactory Client Root CA Certificates Practice Statement
1.3.6.1.4.1.50318.2.4	TrustFactory Client Issuing CA Certificates Practice

1.3 PKI Participants



1.3.1 TrustFactory Certification Authorities

The TrustFactory Client Issuing CA's are chained into the trust hierarchy of the TrustFactory Client Root Certification Authority. This offers certificates with the following hierarchy:

- TrustFactory Client Root Certificate Authority
 - └ TrustFactory Client Issuing Certificate Authority
 - └ PersonalPass Certificate
 - └ PersonalPass Premium Certificate
 - └ EmailPass Certificate

The TrustFactory Client Issuing CA is a Certification Authority that issues Certificates in accordance with this CPS. As a Certification Authority, TrustFactory Client Issuing CA performs functions related to Subscriber registration, Certificate issuance, Certificate renewal, Certificate distribution and Certificate revocation. TrustFactory Client Issuing CA also provides Certificate status information using a Repository in the form of a Certificate Revocation List (CRL) distribution point and/or Online Certificate Status Protocol (OCSP) responder.

The TrustFactory Client Issuing CA will also rely on approved external Registration Authorities (RAs) to conduct subscriber verification and registration.

1.3.2 Registration Authorities

The TrustFactory Client Issuing CA acts as its own Registration Authority for certificates it issues.

TrustFactory Client Issuing CA makes its client certificate services available through authorized Registration Authorities (RA). An RA will be responsible for:

- Accepting, evaluating, approving or rejecting the registration of Certificate applications;
- Registering Subscribers for certification services;
- Providing systems to facilitate the identification of Subscribers (according to the type of Certificate requested);
- Using authorized documents or sources of information to evaluate and authenticate an Applicant;
- Requesting issuance of a Certificate via a strong authentication process following the approval of an application; and
- Initiating the process to revoke, reissue, and renew a Certificate from the applicable TrustFactory Client Issuing CA.

Only Registration Authorities approved by the TrustFactory PA and that have signed the RA Agreement are permitted to submit requests to a TrustFactory Certification Authority for the issuance of Certificates.

RAs that provide Advanced Electronic Signature Certificates are required to be approved by the South African Accreditation Authority.

1.3.3 Subscribers

Subscribers are natural persons or legal entities that successfully apply for and receive a Certificate to support their use in transactions, communications and the application of Digital Signatures.

A Subscriber, as used herein, refers to both the Subject of the Certificate and the entity that contracted with TrustFactory Client Issuing CA for the Certificate's issuance.

Subscribers who have yet to be approved to be issued a certificate are Applicants.

Natural person's names and address can be listed as the Subject of the following Certificate types:

- **PersonalPass Certificates**
- **PersonalPass Premium Certificates**

Email addresses can be listed as the Subject of the following Certificate types:

- **EmailPass Certificates**



1.3.4 Relying Parties

A Relying Party is a subordinate CA, person, entity, or organization that relies on or uses the TrustFactory Client Issuing CA Certificate and/or any other information provided in the TrustFactory repository to verify the identity and public key of a Subscriber. A Relying Party may use information in the certificate to determine the suitability of the certificate for a particular use.

Relying Parties must always refer to TrustFactory Client Issuing CA's revocation information either in the form of a CRL distribution point or an OCSP responder.

1.3.5 Other Participants

The CAs and RAs operating under the CP may require the services of other security, community, and application authorities. The CPS will identify the parties responsible for providing such services, and the mechanisms used to support these services.

1.4 Certificate Usage

A client Certificate allows a person taking part in an electronic transaction to prove his/her identity to other participants in such transaction. Certificates are used in commercial environments as a digital equivalent of an identification card.

1.4.1 Appropriate certificate usage

End entity Certificate use is restricted by using Certificate extensions on key usage and extended key usage.

This CPS is applicable to the following Certificate Types issued by the TrustFactory Client Issuing CAs:

- **TrustFactory EmailPass Certificates**

Email Certificates are used by individuals to digitally sign and encrypt electronic messages via an S/MIME compliant application. The primary purpose of an Email Certificate is to provide authentication, message integrity and non-repudiation of origin (using digital signatures) and privacy (using encryption).

The assurance provided is as follows:

- Individual has demonstrated control of the email address that is the Subject of the certificate. (other information provided on the application form is not verified)

Key Usage and Extended Key Usage parameters are as defined in the Certificate Profiles in Annexure A.

- **TrustFactory PersonalPass Certificates**

Personal Certificates are used by individuals to digitally sign and encrypt electronic documents. These certificates are trusted by the Adobe Approved Trust List program. Personal Certificates help to provide authentication and document integrity.

The assurance provided is as follows:

- The individual name, that is the Subject of the certificate, is verified to a reasonable level of assurance against a certified copy of a valid government issued identity document (ID) such as passport, driver's license, or photo ID card.
- Individual has demonstrated control of the email address that is to be included in the certificate.

Key Usage and Extended Key Usage parameters are as defined in the Certificate Profiles in Annexure A.

- **TrustFactory PersonalPass Premium Certificates**

Advanced Electronic Signature Certificates (AES Certificates) are compliant with the requirements of Advanced Electronic Signatures as prescribed by the ECT Act, and are used by individuals to digitally sign and encrypt electronic documents or messages. The use of AES Certificates for digital signatures permits the authentication of the identity of correspondents, message integrity, and support for non-repudiation. Documents or messages signed with AES certificates can be used as evidence in a court of law in South Africa.

The assurance provided is as follows:



- The individual name, that is the Subject of the certificate, was present at a face-to-face meeting with the RA and he/she hand-signed the subscriber agreement.
- The individual name, that is the Subject of the certificate, is verified to a reasonable level of assurance against an original valid government issued identity document (ID) such as passport, driver's license, or photo ID card.
- Individual has demonstrated control of the email address that is to be included in the certificate.

Key Usage and Extended Key Usage parameters are as defined in the Certificate Profiles in Annexure A.

1.4.2 Prohibited Certificate usage

Certificate use is restricted by using Certificate extensions on key usage and extended key usage.

Any usage of the Certificate inconsistent with these extensions is not authorized and shall be deemed prohibited usage. Certificates are not authorized for use for any transactions above the designated reliance limits that have been indicated in the TrustFactory Warranty Policy.

Certificates issued under this CPS do not guarantee that the Subject is trustworthy, operating a reputable business or that the equipment on which the Certificate has been installed is not free from defect, malware or virus.

Certificates issued under this CPS may not be used:-

- for any application requiring fail safe performance such as:
 - the operation of nuclear power facilities,
 - air traffic control systems,
 - aircraft navigation systems,
 - weapons control systems, and
 - any other system whose failure could lead to injury, death or environmental damage;
- where prohibited by law.

1.5 Policy Administration

1.5.1 Organization Administering the Document

Any enquiry associated with this CPS should be addressed to:

TrustFactory Policy Authority
c/o iSolv Technologies
Firestation Rosebank, 6th Floor
16 Baker St, Rosebank,
Johannesburg, 2196
South Africa
Tel: +27-11-880 6103
Fax: +27-11-880 5443
Email: info@trustfactory.net

1.5.2 Contact Person

TrustFactory General Manager
c/o iSolv Technologies
Firestation Rosebank, 6th Floor
16 Baker St, Rosebank,
Johannesburg, 2196
South Africa
Tel: +27-11-880 6103
Fax: +27-11-880 5443
Email: info@trustfactory.net

Subscribers, Relying Parties, Application Software Suppliers, and other third parties can report suspected Private Key Compromise, Certificate misuse, or other types of fraud, compromise, misuse, inappropriate conduct, or any other matter related to Certificates, through the "Report Abuse" link on the TrustFactory website at www.trustfactory.net



1.5.3 Person Determining CPS Suitability for the Policy

The TrustFactory Policy Authority determines the suitability and applicability of this CPS and the conformance of this CPS to the TrustFactory CP based on the results and recommendations received from a Qualified Auditor. The Policy Authority approves this CPS.

1.5.4 CPS Approval Procedures

The TrustFactory Policy Authority reviews and approves any changes to this CPS. The updated CPS is reviewed against the CP in order to check for consistency. CP changes are also added on as needed basis. Upon approval of a CPS update by the Policy Authority, the new CPS is published in the TrustFactory Client Issuing CA Repository at <https://www.trustfactory.net/repository>.

The updated version is binding upon all Subscribers, for all Certificates that have been issued or are to be issued, including the Subscribers and parties relying on Certificates that have been issued under a previous version of the CPS.

1.6 Definitions and acronyms

Any terms used but not defined herein shall have the meaning ascribed to them in the CA Browser Forum Baseline Requirements.

Adobe Approved Trust List (AATL): A document signing certificate authority trust store created by the Adobe Root CA policy authority implemented from Adobe PDF Reader version 9.0

Advanced Electronic Signature: A specific digital signature that complies with the requirements of the Electronic Communications & Transactions Act in South Africa, and can be relied on for evidence in a court of law.

Affiliate: A corporation, partnership, joint venture or other entity controlling, controlled by, or under common control with another entity, or an agency, department, political subdivision, or any entity operating under the direct control of a Government Entity.

Applicant: The natural person or Legal Entity that applies for (or seeks renewal of) a Certificate. Once the Certificate issues, the Legal Entity is referred to as the Subscriber. For Certificates issued to devices, the Applicant is the entity that controls or operates the device named in the Certificate, even if the device is sending the actual Certificate Request.

Applicant Representative: A natural person or human sponsor who is either the Applicant, employed by the Applicant, or an authorized agent who has express authority to represent the Applicant: (i) who signs and submits, or approves a certificate request on behalf of the Applicant, and/or (ii) who signs and submits a Subscriber Agreement on behalf of the Applicant, and/or (iii) who acknowledges the Terms of Use on behalf of the Applicant when the Applicant is an Affiliate of the CA or is the CA.

Application Software Supplier: A supplier of Internet browser software or other Relying Party application software that displays or uses Certificates and incorporates Root Certificates.

Attestation Letter: A letter attesting that Subject Identity Information is correct.

Business Entity: Any entity that is not a Private Organization, Government Entity, or non-commercial entity as defined in the EV Guidelines. Examples include, but are not limited to, general partnerships, unincorporated associations, sole proprietorships, etc.

CDS (Certified Document Services): A document signing architecture created by the Adobe Root CA policy authority implemented from Adobe PDF Reader version 6.0.

Certificate: An electronic document that uses a Digital Signature to bind a Public Key and an identity.

Certificate Beneficiaries: The Subscriber that is a party to the Subscriber Agreement or Terms of Use for the Certificate, all Application Software Suppliers with whom TrustFactory Client Issuing CA has entered into a contract for inclusion of its Root Certificate in software distributed by such Application Software Supplier, and all Relying Parties who reasonably rely on a Valid Certificate.

Certificate Data: Certificate Requests and data related thereto (whether obtained from the Applicant or otherwise) in the CA's possession or control or to which the CA has access.

Certificate Management Process: Processes, practices, and procedures associated with the use of keys, software, and hardware, by which the CA verifies Certificate Data, issues Certificates, maintains a Repository, and revokes Certificates.



Certificate Policy: A set of rules that indicates the applicability of a named Certificate to a particular community and/or PKI implementation with common security requirements.

Certificate Problem Report: A complaint of suspected Key Compromise, Certificate misuse, or other types of fraud, compromise, misuse, or inappropriate conduct related to Certificates.

Certificate Request: Communications described in Section 10 of the Baseline Requirements requesting the issuance of a Certificate.

Certificate Revocation List: A regularly updated timestamped list of revoked Certificates that is created and digitally signed by the CA that issued the Certificates.

Certification Authority: An organization that is responsible for the creation, issuance, revocation, and management of Certificates. The term applies equally to both Roots CAs and Subordinate CAs.

Certification Practice Statement: One of several documents forming the governance framework in which Certificates are created, issued, managed, and used.

Compromise: A violation of a security policy that results in loss of control over sensitive information.

Country: Either a member of the United Nations OR a geographic region recognized as a sovereign nation by at least two UN member nations.

Cross Certificate: A Certificate that is used to establish a trust relationship between two Root CAs.

Digital Signature: To encode a message by using an asymmetric cryptosystem and a hash function such that a person having the initial message and the signer's Public Key can accurately determine whether the transformation was created using the Private Key that corresponds to the signer's Public Key and whether the initial message has been altered since the transformation was made.

Domain Name: The label assigned to a node in the Domain Name System.

Domain Name System: An Internet service that translates Domain Names into IP addresses.

Domain Namespace: The set of all possible Domain Names that are subordinate to a single node in the Domain Name System.

Domain Name Registrant: Sometimes referred to as the "owner" of a Domain Name, but more properly the person(s) or entity(ies) registered with a Domain Name Registrar as having the right to control how a Domain Name is used, such as the natural person or Legal Entity that is listed as the "Registrant" by WHOIS or the Domain Name Registrar.

Domain Name Registrar: A person or entity that registers Domain Names under the auspices of or by agreement with: (i) the Internet Corporation for Assigned Names and Numbers (ICANN), (ii) a national Domain Name authority/registry, or (iii) a Network Information Center (including their affiliates, contractors, delegates, successors, or assigns).

ECT Act: The Electronic Communications and Transactions Act of the Government of South Africa.

Enterprise RA: An employee or agent of an organization unaffiliated with the CA who authorizes issuance of Certificates to that organization or its subsidiaries. An Enterprise RA may also authorize issuance of client authentication Certificates to partners, customers, or affiliates wishing to interact with that organization.

Expiry Date: The "notAfter" date in a Certificate that defines the end of a Certificate's Validity Period.

Fully-Qualified Domain Name: A Domain Name that includes the labels of all superior nodes in the Internet Domain Name System.

Government Entity: A government-operated legal entity, agency, department, ministry, branch, or similar element of the government of a Country, or political subdivision within such Country (such as a state, province, city, county, etc.).

Hash (e.g. SHA1 or SHA256): An algorithm that maps or translates one set of bits into another (generally smaller) set in such a way that:

- A message yields the same result every time the algorithm is executed using the same message as input.
- It is computationally infeasible for a message to be derived or reconstituted from the result produced by the algorithm.
- It is computationally infeasible to find two different messages that produce the same hash result using the same algorithm.

Hardware Security Module (HSM): An HSM is type of secure crypto processor targeted at managing



digital keys, accelerating crypto processes in terms of digital signings/second and for providing strong authentication to access critical keys for server applications.

High Risk Certificate Request: A Request that the CA flags for additional scrutiny by reference to internal criteria and databases maintained by the CA, which may include names at higher risk for phishing or other fraudulent usage, names contained in previously rejected certificate requests or revoked Certificates, names listed on the Miller Smiles phishing list or the Google Safe Browsing list, or names that the CA identifies using its own risk-mitigation criteria.

Incorporate by Reference: To make one document a part of another by identifying the document to be incorporated, with information that allows the recipient to access and obtain the incorporated message in its entirety, and by expressing the intention that it be part of the incorporating message. Such an incorporated message shall have the same effect as if it had been fully stated in the message.

Incorporating Agency: In the context of a Private Organization, the government agency in the Jurisdiction of Incorporation under whose authority the legal existence of the entity is registered (e.g., the government agency that issues certificates of formation or incorporation). In the context of a Government Entity, the entity that enacts law, regulations, or decrees establishing the legal existence of Government Entities.

Individual: A natural person.

Issuing CA: In relation to a particular Certificate, the CA that issued the Certificate. This could be either a Root CA or a Subordinate CA.

Jurisdiction of Incorporation: In the context of a Private Organization, the country and (where applicable) the state or province or locality where the organization's legal existence was established by a filing with (or an act of) an appropriate government agency or entity (e.g., where it was incorporated). In the context of a Government Entity, the country and (where applicable) the state or province where the Entity's legal existence was created by law.

Key Compromise: A Private Key is said to be Compromised if its value has been disclosed to an unauthorized person, an unauthorized person has had access to it.

Key Pair: The Private Key and its associated Public Key.

Legal Entity: An association, corporation, partnership, proprietorship, trust, government entity or other entity with legal standing in a Country's legal system.

Object Identifier (OID): A unique alphanumeric or numeric identifier registered under the International Organization for Standardization's applicable standard for a specific object or object class.

OCSP Responder: An online server operated under the authority of the CA and connected to its Repository for processing Certificate status requests. See also, Online Certificate Status Protocol.

Online Certificate Status Protocol: An online Certificate-checking protocol that enables Relying Party application software to determine the status of an identified Certificate. See also OCSP Responder.

Place of Business: The location of any facility (such as a factory, retail store, warehouse, etc.) where the Applicant's business is conducted.

Private Key: The key of a Key Pair that is kept secret by the holder of the Key Pair, and that is used to create Digital Signatures and/or to decrypt electronic records or files that were encrypted with the corresponding Public Key.

Private Organization: A non-governmental legal entity (whether ownership interests are privately held or publicly traded) whose existence was created by a filing with (or an act of) the Incorporating Agency or equivalent in its Jurisdiction of Incorporation.

Public Key: The key of a Key Pair that may be publicly disclosed by the holder of the corresponding Private Key and that is used by a Relying Party to verify Digital Signatures created with the holder's corresponding Private Key and/or to encrypt messages so that they can be decrypted only with the holder's corresponding Private Key.

Public Key Infrastructure (PKI): A set of hardware, software, people, procedures, rules, policies, and obligations used to facilitate the trustworthy creation, issuance, management, and use of Certificates and keys based on Public Key cryptography.

Publicly-Trusted Certificate: A Certificate that is trusted by virtue of the fact that its corresponding Root Certificate is distributed as a trust anchor in widely-available application software.

Qualified Auditor: A natural person or Legal Entity that meets the requirements of Section 8.2 (Identity/Qualifications of Assessor).

Registered Domain Name: A Domain Name that has been registered with a Domain Name Registrar.



Registration Authority (RA): Any Legal Entity that is responsible for identification and authentication of Subjects of Certificates, but is not a CA, and hence does not sign or issue Certificates. An RA may assist in the Certificate application process or revocation process or both. When “RA” is used as an adjective to describe a role or function, it does not necessarily imply a separate body, but can be part of the CA.

Reliable Method of Communication: A method of communication, such as a postal/courier delivery address, telephone number, or email address, that was verified using a source other than the Applicant Representative.

Reliable Data Source: An identification document or source of data used to verify Subject Identity Information that is generally recognized among commercial enterprises and governments as reliable, and which was created by a third party for a purpose other than the Applicant obtaining a Certificate.

Relying Party: Any natural person or Legal Entity that relies on a Valid Certificate. An Application Software Supplier is not considered a Relying Party when software distributed by such supplier merely displays information relating to a Certificate.

Repository: An online database containing publicly-disclosed PKI governance documents (such as Certificate Policies and Certification Practice Statements) and Certificate status information, either in the form of a CRL or an OCSP response.

Root CA: The top level Certification Authority whose Root Certificate is distributed by Application Software Suppliers and that issues Subordinate CA Certificates.

Root Certificate: The self-signed Certificate issued by the Root CA to identify itself and to facilitate verification of Certificates issued to its Subordinate CAs.

Subject: The natural person, device, system, unit, or Legal Entity identified in a Certificate as the Subject. The Subject is either the Subscriber or a device under the control and operation of the Subscriber.

Subject Identity Information: Information that identifies the Certificate Subject. Subject Identity Information does not include a Domain Name listed in the subjectAltName extension or the commonName field.

Subordinate CA: A Certification Authority whose Certificate is signed by the Root CA, or another Subordinate CA.

Subscriber: A natural person or Legal Entity to whom a Certificate is issued and who is legally bound by a Subscriber Agreement or Terms of Use.

Subscriber Agreement: An agreement between the CA and the Applicant/Subscriber that specifies the rights and responsibilities of the parties.

Technically Constrained Subordinate CA Certificate: A Subordinate CA certificate which uses a combination of Extended Key Usage settings and Name Constraint settings to limit the scope within which the Subordinate CA Certificate may issue Subscriber or additional Subordinate CA Certificates.

Terms of Use: Provisions regarding the safekeeping and acceptable uses of a Certificate issued in accordance with the Baseline Requirements when the Applicant/Subscriber is an Affiliate of the CA.

Trusted Platform Module (TPM): A hardware cryptographic device which is defined by the Trusted Computing Group. <https://www.trustedcomputinggroup.org/specs/TPM>.

Trustworthy System: Computer hardware, software, and procedures that are: reasonably secure from intrusion and misuse; provide a reasonable level of availability, reliability, and correct operation; are reasonably suited to performing their intended functions; and enforce the applicable security policy.

Unregistered Domain Name: A Domain Name that is not a Registered Domain Name.

Valid Certificate: A Certificate that passes the validation procedure specified in RFC 5280.

Validity Period: The period of time measured from the date when the Certificate is issued until the Expiry Date.

Vetting Agent: Someone who performs the information verification duties specified by the Baseline Requirements.

WebTrust Program for CAs: The then-current version of the AICPA/CICA WebTrust Program for Certification Authorities.

WebTrust Seal of Assurance: An affirmation of compliance resulting from the WebTrust Program for CAs.

WHOIS: Information retrieved directly from the Domain Name Registrar or registry operator via the protocol defined in RFC 3912, the Registry Data Access Protocol defined in RFC 7482, or an HTTPS website.



Wildcard Certificate: A Certificate containing an asterisk (*) in the left-most position of any of the Subject Fully-Qualified Domain Names contained in the Certificate.

X.509: The standard of the ITU-T (International Telecommunications Union-T) for Certificates.

AATL	Adobe Approved Trust List
AES	Advanced Electronic Signature
AICPA	American Institute of Certified Public Accountants
API	Application Programming Interface
CA	Certification Authority
ccTLD	Country Code Top-Level Domain
CICA	Canadian Institute of Chartered Accountants
CP	Certificate Policy
CPS	Certification Practice Statement
CRL	Certificate Revocation List
DBA	Doing Business As
DNS	Domain Name System
EKU	Extended Key Usage
ERA	Enterprise Registration Authority
EV	Extended Validation
FIPS	(US Government) Federal Information Processing Standard
FQDN	Fully Qualified Domain Name
IANA	Internet Assigned Numbers Authority
ICANN	Internet Corporation for Assigned Names and Numbers
ID	Identity document
IETF	Internet Engineering Task Force
ISO	International Organization for Standardization
NIST	(US Government) National Institute of Standards and Technology
OCSF	Online Certificate Status Protocol
OID	Object Identifier
PA	Policy Authority
PKI	Public Key Infrastructure
QGIS	Qualified Government Information Source
QGTIS	Qualified Government Tax Information Source
QIIS	Qualified Independent Information Source
RA	Registration Authority
RFC	Request for Comments
SAAA	South African Accreditation Authority
S/MIME	Secure MIME (Multipurpose Internet Mail Extensions)
SSL	Secure Sockets Layer
TLD	Top-Level Domain
TLS	Transport Layer Security
VAT	Value Added Tax



2.0 Publication and Repository Responsibilities

2.1 Repositories

TrustFactory Client Issuing CA publishes all CA Certificates, revocation data for issued Certificates, CP, CPS, and Relying Party agreements and Subscriber Agreements in Repositories at

<https://www.trustfactory.net/repository>

TrustFactory Client Issuing CA may publish submitted information on publicly accessible directories for the provision of Certificate status information.

TrustFactory Client Issuing CA refrains from making sensitive and/or confidential documentation including security controls, operating procedures and internal security policies publicly available. These documents are, however, made available to Qualified Auditors as required during any WebTrust or SAAA audit performed on TrustFactory Client Issuing CA.

2.2 Publication of Certificate Information

TrustFactory Client Issuing CA publishes its CP, CPS, Subscriber Agreements, and Relying Party agreements at <https://www.trustfactory.net/repository>

CRLs are published in online repositories. The CRLs contain entries for all revoked unexpired Certificates with a validity period that depends on Certificate type and/or position of the Certificate within the Certificate chain.

TrustFactory Client Issuing CA's Certificate statuses are published in two formats:

1. The TrustFactory Client Issuing CA Certificate Revocation List is accessible through the web-interface at: <http://www.trustfactory.net/crl/tf-client-subscriber.crl>
2. The TrustFactory Client Issuing CA Certificate Revocation List is accessible through an Online Certificate Status Protocol (OSCP) Responder at <http://ocsp.trustfactory.net/tf-client-issuing>

The TrustFactory Client Issuing CA will ensure that revocation data for issued Certificates and its Root Certificate are available through a Repository 24 hours a day, 7 days a week.

2.3 Time or Frequency of Publication

The TrustFactory PA will annually review this CPS and may make revisions and updates to policies as required by changes in standards, laws and regulations or other circumstances. Any updates become binding for all Certificates that have been issued or are to be issued upon the date of the publication of the updated version of this CPS.

New or modified versions of the CP, this CPS, Subscriber Agreements, or Relying Party agreements are published within ten days after being approved and digitally signed by the TrustFactory PA.

2.4 Access control on repositories

The repository is publicly accessible information with Read-only access for the public.

Access control policies are implemented to prevent unauthorized persons from adding, deleting, or modifying repository entries. TrustFactory ensures that the integrity and authenticity of its public documentation is maintained by digitally signing the Adobe PDF format of the documents.



3.0 Identification and Authentication

TrustFactory Client Issuing CA will rely on authorized RAs to perform authentication of identities and verification of attributes of the Applicants. Where authentication and verification by the RA is successful then the RA may submit the CSR to the TrustFactory Client Issuing CA.

3.1 Naming

3.1.1 Types of Names

TrustFactory Client Issuing CA Certificates are issued with subject DNs (Distinguished Names) which meet the requirements of X.500 naming. Common Names (CNs) respect name space uniqueness and are not misleading.

The common name will be the name associated with the Subscriber to which the Subscriber Certificate is to be issued.

3.1.2 Need for Names to be Meaningful

The value of the common name attribute used in naming Subscribers for Client subscriber certificates will contain names with commonly understood semantics permitting the determination of the identity of the individual that is the subject of the certificate.

3.1.3 Anonymity or Pseudonymity of Subscribers

Pseudonyms (names other than a subscriber's true personal or organizational name) will not be permitted, except for the purposes of issuing certificates for testing or demonstration purposes.

3.1.4 Rules for Interpreting Various Name Forms

Distinguished names in Certificates are interpreted using X.500 standards and ASN.1 syntax.

3.1.5 Uniqueness of Names

TrustFactory Client Issuing CA enforces the uniqueness of each Subject name in a Certificate Authority as follows:

- The combination of the Common Name and all the attributes of the Distinguished Name (DN), together with the certificate serial number provides a unique electronic identity for the Subscriber.

3.1.6 Recognition, Authentication, and Role of Trademarks

TrustFactory Client Issuing CA may not use registered trademarks when assigning the distinguished names to Subscribers.

3.2 Initial Identity Validation

TrustFactory Client Issuing CA or authorized RAs may perform identification of the Applicant using any legal means of communication or investigation necessary to identify the Legal Entity or individual.

3.2.1 Method to Prove Possession of Private Key

Subscribers must prove possession of the Private Key corresponding to the Public Key being registered either as a Certificate Signing Request (CSR) in PKCS#10 format.

This requirement does not apply where a key pair is generated by the TrustFactory Client Issuing CA on behalf of a subscriber, for example where pre-generated keys are placed on smart cards.

3.2.2 Authentication of Organization Identity

3.2.2.1 Validation of Organization Identity

For all Certificates that include an organization identity, Applicants are required to provide the organization's name and registered or trading address. For all Certificates, the legal existence, legal name, assumed name, legal form (where included in the request or part of the legal name in the jurisdiction of incorporation) and requested address of the organization are verified using one of the following:



- A government agency in the jurisdiction of the Applicant, or a superior governing governmental agency if the Applicant claims they are a government agency themselves; or
- A Reliable Data Source that has been approved by TrustFactory PA as being reasonably accurate and reliable; or
- An attestation letter confirming that Subject Identity Information is correct written by a Commissioner of Oaths, Notary Public, or other reliable third party customarily relied upon for such information;
- An independent verification agency that operates in the jurisdiction in which the company is registered; or
- A site visit by the RA

3.2.2.2 Use of Tradename or DBA name

For organization that include a Tradename or DBS in the Certificate, TrustFactory verifies the Applicant's right to use the DBA/tradename using at least one of the following methods:

- Documentation provided by, or communication with, a government agency in the jurisdiction of the Applicant's legal creation, existence, or recognition;
- A Reliable Data Source has been approved by TrustFactory PA as being reasonably accurate and reliable;
- Communication with a government agency responsible for the management of such DBAs or tradenames;
- An Attestation Letter accompanied by documentary support; or
- A utility bill, bank statement, credit card statement, government-issued tax document, or other form of identification that the CA determines to be reliable.

3.2.2.3 Verification of Country

If the CountryName field is specified in the Certificate, then TrustFactory verifies the country of the Applicant using a proof of address such as utility bill, bank statement, credit card statement, government-issued tax document, or other form of identification that TrustFactory Validation Specialists determines to be reliable.

3.2.3 Authentication of Individual identity

TrustFactory RAs will authenticate individuals depending upon the type of Certificate as indicated below.

3.2.3.1 EmailPass Certificates

- Individual has demonstrated control of the email address that is the Subject of the certificate.

3.2.3.2 PersonalPass Certificates

- The individual name, that is the Subject of the certificate, is verified to a reasonable level of assurance against a certified copy of a valid government issued photo identity document (ID) such as passport, driver's license, or photo ID card.
- TrustFactory will confirm the authenticity of the individual by means of a secure video call with the individual and confirm that the ID details match with the person on the video call.
- The Applicant's address is verified against a valid utility bill or bank/credit card statement which shows the physical address.
- Individual has demonstrated control of the email address that is to be included in the certificate.

3.2.3.3 PersonalPass Premium Certificates

- The individual name, that is the Subject of the certificate, must present at a face-to-face meeting with the RA or authorized RA representative and submit a hand-signed subscriber agreement.
- The individual name, that is the Subject of the certificate, is verified to a reasonable level of assurance against an **original** valid government issued ID such as passport, driver's license, or photo ID card.
- If the Applicant's address is included in the Certificate, then address is verified against a valid utility bill or bank/credit card statement which shows the physical address.
- Individual has demonstrated control of the email address that is to be included in the certificate.

3.2.4 Non Verified Subscriber Information

TrustFactory does not verify the Subject Organizational Unit (OU) field in a Certificate. For all other fields, information that is not verified will not be included in the certificates.



3.2.5 Validation of Authority

Before issuing certificates that assert organizational authority, TrustFactory or the RA shall validate the subscriber's authority to act in the name of the organization.

A confirmation by telephone, confirmatory email, (using independently sourced telephone number and email) or comparable procedure to the Applicant Representative or with an authoritative source within the Applicant's organization (e.g. the Applicant's main business offices, corporate offices, human resource offices, information technology offices, or other appropriate department), to confirm certain information about the organization, confirm that the organization has authorized the certificate application, and confirm that the person submitting the certificate application on behalf of the certificate applicant is authorized to do so.

An organization may provide TrustFactory with an Authority Letter that specifies the individuals who may request Certificates. TrustFactory will verify the Authority Letter and thereafter TrustFactory will not accept any certificate requests that are outside this specification. Other Applicants from the organization will be directed to the approved list of requestors.

3.2.6 Criteria for Interoperation

No stipulation

3.3 Identification and Authentication for Renewal Requests

Certificate renewal requests will be authenticated.

TrustFactory Client Issuing CAs permit Certificate renewal prior to the expiry of the Subscriber's existing Certificate. Subscriber identity is established through log in to the Subscriber Management Portal and the current signature key is used to issue a CSR for the new certificate.

However identity will be re-validated following the same procedures as the initial registration if 825 days has elapsed since the previous validation.

3.4 Identification and Authentication for Re-key Requests

TrustFactory Client Issuing CA supports re-key requests from Subscribers prior to the expiry of the Subscriber's existing Certificate. Re-key is only allowed for changing the Public key information on a certificate. Re-issue for client certificates is not supported.

3.4.1 Identification and Authentication for Routine Re-key

For re-key of any certificates issued, the identity is established through use of Subscriber Account credentials on the Subscriber Management Portal.

3.4.2 Identification and Authentication for Re-key after Revocation

A routine re-key after revocation is not supported. After a Certificate has been revoked, the Subscriber/RA is required to go through the initial registration process described elsewhere in this document to obtain a new Certificate.

3.4.3 Re-verification and Revalidation of Identity When Certificate Information Changes

If at any point any Subject name information embodied in a Certificate is changed in any way, then the new certificate registration process will be followed and the identity proofing procedures for a new certificate outlined in this requirement will be re-performed and a new Certificate issued with the validated information.

TrustFactory Client Issuing CA will not re-key a Certificate without additional authentication if doing so would allow the Subscriber to use the Certificate beyond the limits described above.

3.5 Identification and Authentication for Revocation Request



TrustFactory will accept revocation requests from:

1. The Subscriber, requested via the Subscriber Management Portal (login to the portal is acceptable authentication of the subscriber)
2. The RA Administrator, requested via the RA application API or pre-determined trusted path
3. The TrustFactory operations team, after it is approved by the CA Administrator
4. Duly authorized third parties may submit a request upon subscriber's death, being wound up or organization cease to exist.

Revocation requests are granted after they are suitably authenticated and validated by the relevant TrustFactory RA.



4.0 Certificate Lifecycle Operational Requirements

4.1 Certificate Application

4.1.1 Who Can Submit a Certificate Application

TrustFactory Client Issuing CA may accept a new certificate applications from:

- the Applicant directly via the TrustFactory website at www.trustfactory.net
- an approved RA, provided that it is authorized by the original Applicant, or
- an organization administrator (Applicant Representative) who retains responsibility for the Private Key on behalf of an organization

The Subscriber Management Portal on the TrustFactory website is the mechanism through which an Applicant / Subscriber submits New certificate requests, Renewal requests, Re-key requests and Revocation requests.

Approved external RAs can submit certificate application via a trusted path and the RA is identified using strong authentication mechanisms (this is generally done over the secure API).

TrustFactory Client Issuing CA maintains its own blacklists database of individuals from whom, and entities from which, it will not accept Certificate applications. The blacklist includes all previously revoked Certificates and previously rejected certificate requests due to suspected phishing or other fraudulent usage or concerns.

4.1.2 Enrollment Process and Responsibilities

Applicants must submit sufficient information to allow TrustFactory Client Issuing CA or the TrustFactory authorized RA to successfully perform the required verification. TrustFactory Client Issuing CA and RAs will protect communications and securely store information presented by the Applicant during the application process in compliance with the TrustFactory Privacy Policy.

Generally, if the application is successful the enrolment process includes the following steps (but not necessarily in this order as some workflow processes generate Key Pairs after the validation has been completed):

- Agreeing to a Subscriber Agreement or other applicable terms and conditions; and paying any applicable fees;
- Submit a CSR from the Subscriber to the TrustFactory Client Issuing CA; if an external RA is used then it submits the request via a trusted path and the RA is identified using strong authentication mechanisms;
- The TrustFactory Client Issuing CA will validate the Subscriber CSR and certificate data submitted; and
- Issue the Subscriber Certificate.

4.2 Certificate Application Processing

4.2.1 Performing Identification and Authentication Functions

Initial identity verification for individual certificates will be performed as set forth in Section 3.2. All information to be included in the Certificate must be supported with additional documents to enable the TrustFactory or authorized RA's validation specialists to verify the information.

All communications sent through, either physical or electronic, are securely stored.

Once verification processes are completed, TrustFactory Client Issuing CA will retain all relevant information received in conformance with the requirements of the TrustFactory Privacy Policy and for a period of seven years after the expiry or revocation of the Certificate.

TrustFactory may use the documents and data provided in Section 3.2 to verify certificate information, and may reuse previous validations themselves, provided that the data or document was obtained no more than 825 days prior to issuing the Certificate.

TrustFactory Client Issuing CA checks for High Risk Certificate Requests and will not issue new or replacement Certificates to an entity if it is deemed High Risk.



4.2.2 Approval or Rejection of Certificate Applications

Assuming all verification steps can be completed successfully following the procedures in this CPS then TrustFactory Client Issuing CA will generally approve the Certificate Request. TrustFactory Client Issuing CA may reject applications including for the following reasons:

- TrustFactory Client Issuing CA is unable to successfully verify the information provided by the Applicant.
- TrustFactory Client Issuing CA may reject requests based on potential brand damage to TrustFactory Client Issuing CA in accepting the request.
- TrustFactory Client Issuing CA may also reject applications for Certificates from Applicants who have previously been rejected or have previously violated a provision of their Subscriber Agreement or are listed on the internal blacklist database or deemed High Risk.

TrustFactory Client Issuing CA is under no obligation to provide a reason to an Applicant for rejection of a Certificate Request.

4.2.3 Time to Process Certificate Applications

TrustFactory Client Issuing CA will ensure that all reasonable methods are used in order to evaluate and process Certificate applications within 30 days of receiving the application. Where issues outside of the control of TrustFactory Client Issuing CA occur, TrustFactory Client Issuing CA will strive to keep the Applicant duly informed.

4.3 Certificate Issuance

4.3.1 CA Actions during Certificate Issuance

TrustFactory Client Issuing CA accepts certificate issuance requests directly from the Applicant or from RAs approved by the TrustFactory PA. TrustFactory Client Issuing CAs will communicate with approved RAs requesting certificate issuance using a pre-established trusted path. After satisfying itself that the verification checks have been successfully completed, the TrustFactory Client Issuing CA may generate and digitally sign the Certificate applied for.

4.3.2 Notifications to Subscriber by the CA of Issuance of Certificate

Notification of the status of certificate issuance is available to the Subscriber on the Subscriber Management Portal. TrustFactory Client Issuing CA will notify the Subscriber of the issuance of a Certificate at an email address which was supplied by the Subscriber during the enrollment process or by any other equivalent method.

4.4 Certificate Acceptance

4.4.1 Conduct Constituting Certificate Acceptance

The Subscriber is responsible for verifying the accuracy of the data incorporated into the Certificate. Unless the Subscriber notifies TrustFactory Client Issuing CA of any errors, within seven (7) days from issuance, the Certificate is deemed accepted, or the Certificate is deemed accepted upon first use.

4.4.2 Publication of the Certificate by the CA

TrustFactory Client Issuing CA publishes the Certificate by making it available to the Subscriber.

4.4.3 Notification of Certificate Issuance by the CA to Other Entities

Issuance status information is made available to external RAs over the software API, if they were involved in the initial enrollment.

4.5 Key Pair and Certificate Usage

4.5.1 Subscriber Private Key and Certificate Usage



TrustFactory Client Issuing CA does not generate key pairs for subscribers. Subscribers must protect their Private Key taking care to avoid disclosure to third parties. TrustFactory Client Issuing CA's Subscriber Agreement identifies the obligations of the Subscriber with respect to Private Key protection.

The Subscriber shall use his/her private key and the Certificate in strict compliance with this CPS. Private Keys must only be used as specified in the appropriate key usage and extended key usage fields as indicated in the corresponding Certificate. Where it is possible to make a backup of a Private Key, Subscribers must use the same level of care and protection attributed to the live Private Key. At the end of the useful life of a Private Key, Subscribers must securely delete the Private Key and any fragments that it has been split into for the purposes of backup.

4.5.2 Relying Party Public Key and Certificate Usage

Relying Parties must verify that the Certificate is valid by examining the CRL or OCSP Responders provided by TrustFactory Client Issuing CA before initiating a transaction involving such Certificate.

TrustFactory Client Issuing CA provides a Relying Party agreement to Subscribers, the content of which should be presented to the Relying Party. Relying Parties should check the status of the Certificate before relying on the Certificate and perform a risk assessment to ensure that their reliance is appropriate according to the defined key usage. Relying Parties must assess:

1. The appropriateness of the use of a Certificate for any given purpose and that it is not prohibited or otherwise restricted by this CPS.
2. That the certificate is being used in accordance with the KeyUsage field extensions included in the certificate
3. The revocation status of the certificate and all the CAs in the chain that issued the certificate.

Software used by Relying Parties should be fully compliant with X.509 standards.

4.6 Certificate Renewal

4.6.1 Circumstances for Certificate Renewal

TrustFactory Client Issuing CA may renew a Certificate so long as:

- The original Certificate to be renewed has not been revoked;
- The original Certificate to be renewed has not expired;
- The Public Key from the original Certificate has not been blacklisted for any reason; and
- All details within the Certificate remain accurate and no new or additional validation is required.

The original Certificate will be revoked after renewed certificate is issued.

The TrustFactory system will automatically generate and send an email notifying the Subscriber of the need for renewal of a certificate, at least 28 days before the expiry date. The email will be sent the registered subscriber email address.

4.6.2 Who May Request Renewal

TrustFactory Client Issuing CA may accept a renewal request from the Subscriber or an RA, provided that it is authorized by the original Subscriber, or an organization administrator who retains responsibility for the Private Key on behalf of a Subscriber. A renewal is requested via login to the Subscriber Management Portal or the RA's management system.

4.6.3 Processing Certificate Renewal Requests

Certificate Renewal requests do not generally require additional validation procedures as changes to certificate details are not allowed during renewal, except that identity will be re-validated following the same procedures as the initial registration if 825 days has elapsed since the previous validation.

TrustFactory will reuse previously validated documents, if they are still considered valid, to process the renewal request.

4.6.4 Notification of New Certificate Issuance to Subscriber

As per 4.3.2

4.6.5 Conduct Constituting Acceptance of a Renewal Certificate



As per 4.4.1

4.6.6 Publication of the Renewal Certificate by the CA

As per 4.4.2

4.6.7 Notification of Certificate Issuance by the CA to Other Entities

As per 4.4.3

4.7 Certificate Re-Key

4.7.1 Circumstances for Certificate Re-Key

Subscribers may request routine re-key. TrustFactory Client Issuing CA may re-key a Certificate

as long as:

- The original Certificate to be re-keyed has not been revoked;
- The original Certificate to be renewed has not expired;
- The new Public Key has not been blacklisted for any reason; and
- All details within the Certificate remain accurate and no new or additional validation is required.

The original Certificate will be revoked after re-key certificate is issued.

4.7.2 Who May Request Certification of a New Public Key

TrustFactory Client Issuing CA may accept a re-key request from the Subscriber or an RA, provided that it is authorized by the original Subscriber, or an organization administrator who retains responsibility for the Private Key on behalf of a Subscriber. A re-key is requested via login to the Subscriber Management Portal or the RA's management system.

A CSR is mandatory with any new Public Key to be certified.

4.7.3 Processing Certificate Re-Keying Requests

TrustFactory Client Issuing CA does not allow changes to certificate details during re-key. In the case of a re-key, authentication through the Subscriber Management Portal is acceptable. A CSR is required for issuing the new certificate.

TrustFactory will reuse previously validated documents, if they are still considered valid, to process the rekey request.

4.7.4 Notification of New Certificate Issuance to Subscriber

As per 4.3.2

4.7.5 Conduct Constituting Acceptance of a Re-Keyed Certificate

As per 4.4.1

4.7.6 Publication of the Re-Keyed Certificate by the CA

As per 4.4.2

4.7.7 Notification of Certificate Issuance by the CA to Other Entities

As per 4.4.3

4.8 Certificate Modification

Modifying a certificate is not permitted. Subscribers should instead submit a request for new certificates.

4.9 Certificate Revocation and Suspension

4.9.1 Circumstances for Revocation

Revocation of a Subscriber Certificate will be performed within twenty-four (24) hours under the following circumstances:



1. The Subscriber requests through the Subscriber Management Portal that TrustFactory Client Issuing CA revoke the Certificate;
2. The Subscriber notifies TrustFactory Client Issuing CA that the original certificate request was not authorized and does not retroactively grant authorization;
3. TrustFactory CA operations obtains evidence that the Subscriber's Private Key corresponding to the Public Key in the Certificate suffered a Key Compromise.

Revocation of a Subscriber Certificate will be performed within five (5) days under the following circumstances:

1. The Certificate no longer complies with the requirements of Sections 6.1.5 and 6.1.6;
2. TrustFactory CA operations obtains evidence that the Certificate was misused;
3. TrustFactory CA operations is made aware that a Subscriber has violated one or more of its material obligations under the Subscriber Agreement or Terms of Use;
4. TrustFactory CA operations is made aware of a material change in the information contained in the Certificate;
5. TrustFactory CA operations is made aware that the Certificate was not issued in accordance with the Baseline Requirements or the CA's Certificate Policy or Certification Practice Statement;
6. TrustFactory CA operations determines or is made aware that any of the information appearing in the Certificate is inaccurate;
7. TrustFactory Client Issuing CA's right to issue Certificates under these Requirements expires or is revoked or terminated, unless the CA has made arrangements to continue maintaining the CRL/OCSP Repository;
8. Revocation is required by the TrustFactory Client Issuing CA's Certificate Policy and/or Certification Practice Statement; or
9. The TrustFactory CA operations is made aware of a demonstrated or proven method that exposes the Subscriber's Private Key to compromise, methods have been developed that can easily calculate it based on the Public Key (such as a Debian weak key, see <http://wiki.debian.org/SSLkeys>), or if there is clear evidence that the specific method used to generate the Private Key was flawed.
10. TrustFactory CA operations receives a certified copy of the subscribers death certificate
11. TrustFactory CA operations receives documentation that a subscriber that is a legal person has been wound up or registered or has ceased to exist (i.e. organization)

Revocation of a Subscriber Certificate may also be performed within a commercially reasonable period of time under the following circumstances:

- TrustFactory Client Issuing CA receives notice or otherwise become aware that the Subscriber has been added as a denied party or prohibited person to a blacklist, or is operating from a prohibited destination under the laws of TrustFactory Client Issuing CA's jurisdiction of operation;
- Overdue payment of applicable fees by the Subscriber;
- Under certain licensing arrangements, TrustFactory Client Issuing CA may revoke Certificates following expiration or termination of the license agreement;
- TrustFactory Client Issuing CA determines the continued use of the Certificate is otherwise harmful to the business of TrustFactory Client Issuing CA or third parties. When considering whether Certificate usage is harmful to TrustFactory's or a third party's business or reputation, TrustFactory Client Issuing CA will consider, among other things, the nature and number of complaints received, the identity of the complainant(s), relevant legislation in force, and responses to the alleged harmful use by the Subscriber.

4.9.2 Who Can Request Revocation

TrustFactory Client Issuing CA will accept revocation requests submitted via login to the Subscriber Management Portal. A revocation request may be accepted from an organization administrator who retains responsibility for the Private Key on behalf of a Subscriber, or an affiliated organization named in the Certificate, or from an authorized RA. TrustFactory Client Issuing CA may also at its own discretion revoke Certificates.

Individuals, who are duly authorized, may request revocation by sending relevant documentation in cases of subscriber's death, or a legal person has been wound up or registered or organization has ceased to exist.

Additionally, Subscribers, Relying Parties, Application Software Suppliers, and other third parties may submit Certificate Problem Reports, through the TrustFactory website at www.trustfactory.net, informing the TrustFactory Client Issuing CA of reasonable cause to revoke the certificate.



4.9.3 Procedure for Revocation Request

The primary method for requesting and authenticating revocation requests is through the Subscriber user account, via the online Subscriber Management Portal.

Authentication of the revocation request from the Subscriber or RA is done according to the process described in Section 3.5

TrustFactory Client Issuing CA will record each request for revocation and authenticate the source, taking appropriate action to revoke the Certificate if the request is authentic and approved.

Once revoked, the serial number of the Certificate and the date and time will be added to the appropriate CRL. CRL reason codes may be included. CRLs are published according to this CPS.

The TrustFactory Client Issuing CA provides Subscribers, Relying Parties, Application Software Suppliers, and other third parties with clear instructions for reporting suspected Private Key Compromise, Certificate misuse, or other types of fraud, compromise, misuse, inappropriate conduct, or any other matter related to Certificates. TrustFactory provides the instructions for Certificate Problem Reports through its website at www.trustfactory.net.

TrustFactory Client Issuing CA does not support bulk revocation.

4.9.4 Revocation Request Grace Period

Revocation requests shall be made as soon as reasonably practicable, but not more than 24 hours after detecting the loss or compromise of the Private Key.

4.9.5 Time Within Which CA Must Process the Revocation Request

TrustFactory Client Issuing CA will begin investigating Certificate Problem Reports within twenty-four (24) hours of receipt of the report, and provide a preliminary report on its findings to both the Subscriber and the entity who filed the Certificate Problem Report.

After reviewing the facts and circumstances, the TrustFactory CA operations will work with the Subscriber and any entity reporting the Certificate Problem Report or other revocation-related notice to establish whether or not the certificate will be revoked, and if so, a date which the CA will revoke the certificate. The period from receipt of the Certificate Problem Report or revocation-related notice to published revocation will not exceed the time frames stipulated in Section 4.9.1. The date selected for revocation will consider the following criteria:

1. The nature of the alleged problem (scope, context, severity, magnitude, risk of harm);
2. The consequences of revocation (direct and collateral impacts to Subscribers and Relying Parties);
3. The number of Certificate Problem Reports received about a particular Certificate or Subscriber;
4. The entity making the complaint; and
5. Relevant legislation.

TrustFactory Client Issuing CA will revoke certificates as quickly as practical upon receipt of a proper revocation request. Section 4.9.1 states various circumstances under which the revocation request will be processed within either 24 hours or 5 days or within a commercially reasonable period of time.

Revocation requests will be processed before the next CRL is published, excepting those requests received within twelve hours of next CRL issuance.

4.9.6 Revocation Checking Requirements for Relying Parties

Prior to relying upon a Certificate, Relying Parties must validate the suitability of the Certificate to the purpose intended and ensure the Certificate is valid. Relying Parties will need to consult the CRL or OCSP information for each Certificate in the chain as well as validating that the Certificate chain itself is complete and follows IETF PKIX standards.

PDF signing Certificates also require Relying Parties to check the status of the Adobe Root CRL. This CRL is outside the scope of this CPS but is located at <http://crl.adobe.com/cds.crl>



4.9.7 CRL Issuance Frequency

TrustFactory Client Issuing CA, that operates online, publishes CRLs at least every 24 hours and is valid for 7 days.

4.9.8 Maximum Latency for CRLs

CRLs are posted to the repository within 4 hours after generation.

4.9.9 On-Line Revocation/Status Checking Availability

OCSP responses conform to RFC6960 and RFC5019. OCSP responses are either:

1. Signed by TrustFactory Client Issuing CA that issued the Certificates whose revocation status is being checked, or
2. Signed by an OCSP Responder whose Certificate is signed by the TrustFactory Client Issuing CA that issued the Certificate whose revocation status is being checked. In this case, the OCSP signing Certificate contains an extension of type id-pkix-ocsp-nocheck, as defined by RFC6960.

4.9.10 On-Line Revocation Checking Requirements

The TrustFactory Client Issuing CA updates information provided via an Online Certificate Status Protocol at least every 24 hours and information is available to relying parties within 4 hours of CRL publication. OCSP responses from this service have a maximum expiration time of ten days.

Relying Parties must confirm revocation information otherwise all warranties becomes void.

The Client Issuing CA does not sign error messages when returned in response to certificate status requests.

4.9.11 Other Forms of Revocation Advertisements Available

No stipulation

4.9.12 Special Requirements Related to Key Compromise

In the event of compromise of a TrustFactory Client Issuing CA Private Key used to sign Subscriber Certificates, TrustFactory operations will as soon as practically possible inform the Subscriber that the private key may have been Compromised. This includes cases where TrustFactory operations at its own discretion decides that evidence suggests a possible Key Compromise has taken place.

Where Key Compromise is not disputed, TrustFactory Client Root CA will revoke Issuing CA Certificates within 24 hours and publish the updated CRL within 24 hours of creation.

4.9.13 Notification of Certificate Revocation to Subscriber

A Subscriber is notified of the revocation of a Certificate using the email information submitted during the enrollment process.

If the RA was involved in the revocation process, then revocation request status is made available over the API.

4.9.14 Circumstances for Suspension

Certificate suspension is not supported and not permitted. Subscribers should follow the Certificate Revocation procedures.

4.10 Certificate Status Services

4.10.1 Operational Characteristics

TrustFactory Client Issuing CA provides a Certificate status service either in the form of a CRL distribution point or an OCSP responder or both. These services are presented to Relying Parties within the Certificate and may refer to any of the following URLs

- <http://www.trustfactory.net/crl/tf-client-subscriber.crl>
- <http://ocsp.trustfactory.net/tf-client-issuing>

Revocation entries on a CRL or OCSP Response are not be removed until after the Expiry Date of the revoked Certificate.

CRLs and OCSP responses are signed by the TrustFactory Client Issuing CA Private Key.

4.10.2 Service Availability



The TrustFactory Client Issuing CA maintains an online 24x7 Repository that application software can use to automatically check the current status of all unexpired Certificates issued by the CA.

The TrustFactory CA maintains a continuous 24x7 ability to respond internally to a high-priority Certificate Problem Report, and where appropriate, forward such a complaint to law enforcement authorities, and/or revoke a Certificate that is the subject of such a complaint.

4.10.3 Operational Features

No stipulation

4.10.4 End of Subscription

Subscribers may end their subscription to Certificate services by having their Certificate revoked or naturally letting it expire.

4.11 Key Escrow and Recovery

4.11.1 Key Escrow and Recovery Policy and Practices

CA Private Keys are never escrowed. TrustFactory Client Issuing CA does not offer key escrow services.

4.11.2 Session Key Encapsulation and Recovery Policy and Practices

Not applicable



5.0 Facility, Management, and Operational Controls

TrustFactory Client Issuing operate under physical and environmental security policies designed to provide reasonable assurance of the detection, deterrence and prevention of unauthorized logical or physical access to CA related facilities.

5.1 Physical Controls

Controls are as defined in the TrustFactory CP.

5.2 Procedural Controls

Controls are as defined in the TrustFactory CP.

5.3 Personnel Controls

Controls are as defined in the TrustFactory CP.

5.4 Audit Logging Procedures

5.4.1 Types of Events Recorded

Audit log files are generated for all events relating to the security and services of the CA. Where possible, the security audit logs are automatically generated. Where this is not possible, a logbook, ceremony script, paper form, or other physical mechanism will be used. All security audit logs, both electronic and non-electronic, will be retained and made available during compliance audits.

TrustFactory Client Issuing CA ensures all events relating to the lifecycle of Certificates are logged in a manner to ensure the traceability to a person in a trusted role for any action required for CA services.

The TrustFactory Client Issuing CA, and RA's where applicable, records at least the following events:

1. CA key lifecycle management events, including:
 - a. Key generation, backup, storage, recovery, archival, and destruction;
 - Withdrawal of keying material from service;
 - Identity of the entity authorizing a key management operation;
 - Identity of the entity handling any keying material (such as key components or keys stored in portable devices or media);
 - Compromise of a private key.
 - b. Cryptographic device lifecycle management events:
 - device receipt and installation;
 - placing into or removing a device from storage;
 - device activation and usage;
 - device change in state of use.
2. CA, RA and Subscriber Certificate lifecycle management events, including:
 - a. Certificate requests, renewal, and re-key requests, and revocation;
 - b. All verification activities stipulated in this CPS;
 - c. Date, time, phone number used, persons spoken to, and end results of verification telephone calls;
 - d. Name of submitting RA,
 - e. Acceptance and rejection of certificate requests;
 - f. Issuance of Certificates;
 - g. The subscriber's acceptance of the Subscriber Agreement; and
 - h. Where required under privacy legislation, the Subscriber's consent to allow TrustFactory to keep records containing personal data, pass this information to specified third parties, and publication of certificates.
 - i. Generation of Certificate Revocation Lists and OCSP entries.
3. Security events, including:
 - a. Successful and unsuccessful PKI system access attempts;
 - b. PKI and security system actions performed;
 - c. Security profile changes;
 - d. System crashes, hardware failures, and other anomalies; (MANUAL)
 - e. Firewall and router activities; and
 - f. Entries to and exits from the CA facility.

At a minimum, each audit record includes the following (either recorded automatically or manually) elements:

- date and time of the entry;
- Identity of the person making the journal entry; and



- Description of the entry.

5.4.2 Frequency of Processing Log

Audit logs are reviewed as follows:

1. the Security Officer reviews logs of security events on the IT and security infrastructure on a weekly basis for any evidence of malicious activity.
2. the Internal Auditors review logs of certificate lifecycle management events as part of their quarterly audits.

Unauthorized or suspicious activity detected during the reviews is investigated.

Any important operation involving the Issuing CA HSM is conducted through documented CA ceremony scripts which are witnessed by the internal auditors.

5.4.3 Retention Period for Audit Log

Audit log records are retained for at least seven years or held for a period of time as appropriate to provide necessary legal evidence in accordance with any applicable legislation. Records may be required at least as long as any transaction relying on a Valid Certificate can be questioned.

5.4.4 Protection of Audit Log

The events are logged in a way that they cannot be deleted or destroyed (except for transfer to long term media) for any period of time that they are retained.

The records of events are protected to prevent alteration and detect tampering and to ensure that only individuals with authorized trusted access are able to perform any operations without modifying integrity, authenticity and confidentiality of the data.

Digital signatures are used to protect the integrity of audit logs where applicable or required to satisfy legal requirements.

The records of events are date stamped in a secure manner that guarantees, from the date of creation of the record to the end of the archive period that there is a trusted link between the event and the time of its realization.

5.4.5 Audit Log Backup Procedures

Audit logs and audit summaries are backed-up using online backup mechanism to the disaster recovery site. However they remain under the control of an authorized trusted role, and separated from their component source generation. Audit log backup is protected to the same degree as originals.

5.4.6 Audit Collection System (Internal vs. External)

Audit processes are initiated at system start up and finish only at system shutdown. The audit collection system ensures the integrity and availability of the data collected. In the case of a problem occurring during the process of the audit collection TrustFactory determines whether to suspend TrustFactory Client Issuing CA operations until the problem is resolved, duly informing the TrustFactory impacted users.

5.4.7 Notification to Event-Causing Subject

No stipulation.

5.4.8 Vulnerability Assessments

TrustFactory Client Issuing CA performs regular vulnerability assessments covering all TrustFactory Client Issuing CA systems related to Certificate issuance, products and services.

Additionally, the CA's security program includes an annual Risk Assessment that:

1. Identifies foreseeable internal and external threats that could result in unauthorized access, disclosure, misuse, alteration, or destruction of any Certificate Data or Certificate Management Processes;
2. Assesses the likelihood and potential damage of these threats, taking into consideration the sensitivity of the Certificate Data and Certificate Management Processes; and
3. Assesses the sufficiency of the policies, procedures, information systems, technology, and other arrangements that the CA has in place to counter such threats.



5.5 Records Archival

5.5.1 Types of Records Archived

TrustFactory Client Issuing CAs archive records with enough detail to establish the validity of a signature and of the proper operation of the CA system. The records that are archived are listed in section 5.4.1.

5.5.2 Retention Period for Archive

The TrustFactory Client Issuing CA retains all documentation relating to certificate requests and the verification thereof, and all Certificates and revocation thereof, for at least seven years after any Certificate based on that documentation ceases to be valid.

5.5.3 Protection of Archive

The archives are created in such a way that they cannot be deleted or destroyed (except for transfer to long term media) within the period of time for which they are required to be held. Archive protections ensure that only authorized trusted access is able to make operations without modifying integrity, authenticity and confidentiality of the data. If the original media cannot retain the data for the required period, a mechanism to periodically transfer the archived data to new media will be defined by the archive site.

5.5.4 Archive Backup Procedures

Archive data is backed up over the network to a storage media within the DR data center vault.

Paper records are transferred to a secure storage facility that is access controlled.

5.5.5 Requirements for Timestamping of Records

If a timestamping service is used to date the records, then it has to comply with the requirements defined in Section 6.8. Irrespective of timestamping methods, all logs will have data indicating the date and time at which the event occurred.

5.5.6 Archive Collection System (Internal or External)

No stipulation

5.5.7 Procedures to Obtain and Verify Archive Information

Media storing of TrustFactory Client Issuing CA archive information is checked upon creation.

Only authorized TrustFactory CA equipment, trusted role and other authorized persons are allowed to access the archive. Requests to obtain archive information are coordinated by people in trusted roles (the manager in charge of the process and the security officer).

5.6 Key Changeover

Towards the end of the Client Issuing CA private key's lifetime, in accordance with Section 6.3.2, a new CA signing key pair is commissioned by the TrustFactory PA and all subsequently issued Certificates and CRLs are signed with the new private signing key. Both keys may be concurrently active. Private Keys used to sign previous Subscriber Certificates are maintained until such time as all Subscriber Certificates have expired.

Certificate Subject information may also be modified and Certificate profiles may be altered to adhere to best practices.

The corresponding new Issuing CA Certificate is provided to Subscribers and relying parties through the online repository at www.trustfactory.net/repository.

5.7 Compromise and Disaster Recovery

Controls are as defined in the TrustFactory CP.

5.8 CA or RA Termination

Controls are as defined in the TrustFactory CP.



6.0 Technical Security Controls

6.1 Key Pair Generation and Installation

6.1.1 Key Pair Generation

The signing key pair for the TrustFactory Client Issuing CA was created during the initial startup of the CA application and is protected by the master keys for the TrustFactory Client Issuing CA. Hardware key generation is used which is compliant to FIPS 140-2 level 3 and uses FIPS 186-2 key generation techniques.

TrustFactory Client Issuing CA generates its CA Key Pairs under the following conditions:

1. in a physically secured environment, that has access control;
2. using personnel in trusted roles under the principles of multiple person control and split knowledge,
3. generate the CA keys within a cryptographic module which is certified at least to FIPS 140-2 level 3 or above;
4. log its CA key generation activities;
5. prepares and follows a Key Generation Script; and
6. witnessed by a qualified independent auditor

TrustFactory Client Issuing CA does not provide subscriber key generation or key management services

6.1.2 Private Key Delivery to Subscriber

The Applicant shall be responsible for the generation and safeguarding of its private keys unless otherwise required and approved by the TrustFactory PA.

6.1.3 Public Key Delivery to Certificate Issuer

TrustFactory Client Issuing CA only accepts Public Keys from Subscribers that are delivered to the TrustFactory Client Issuing CA in a Certificate Signing Request (CSR) as part of the certificate application process.

6.1.4 CA Public Key Delivery to Relying Parties

The TrustFactory Client Issuing CA ensures that its Public Keys are delivered to Relying Parties in such a way as to prevent substitution attacks.

TrustFactory Client Issuing CA Public Keys are available via a Repository operated by TrustFactory Client Issuing CA at <https://www.trustfactory.net/repository>

6.1.5 Key Sizes

The TrustFactory Client Issuing CA utilizes a key size of 4096 bits (RSA) with hash algorithm SHA-256.

Subscriber Certificates meet the following requirements for algorithm type and key size:

(1) Subscriber Certificates

Digest algorithm	SHA-256, SHA-384 or SHA- 512
Minimum RSA modulus size (bits)	2048
ECC curve	NIST P-256, P-384, or P-521
Minimum DSA modulus and divisor size (bits)***	L= 2048, N= 224 or L= 2048, N= 256

*** L and N (the bit lengths of modulus p and divisor q, respectively) are described in the Digital

6.1.6 Public Key Parameters Generation and Quality Checking

TrustFactory Client Issuing CA generates Key Pairs in accordance with FIPS 186 and uses reasonable techniques to validate the suitability of Public Keys presented by Subscribers, according to Baseline



Requirements. Known weak keys will be tested for and rejected at the point of submission.

6.1.7 Key Usage Purposes (as per X.509 v3 Key Usage Field)

TrustFactory Client Issuing CA sets key usage and enhanced usage of Subscriber Certificates via the v3 Key Usage Field for X.509 v3 (see Section 7.1).

Subscribers and Relying Parties shall only use Subscriber Certificates in compliance with the TrustFactory Client Issuing CA CPS and applicable laws.

TrustFactory Client Issuing CA's Private Keys may be used for Digital Certificate signing and CRL and OCSP response signing. Keys may also be used to authenticate the TrustFactory Client Issuing CA to a Repository. Refer to Client Issuing CA Certificate Profile in Annexure A.

Key Usage and Extended Key Usage parameters for the various Subscriber certificate types are defined in the Certificate Profiles in Annexure A.

Any other use not specified above is prohibited.

6.2 Private Key Protection and Cryptographic Module Engineering Controls

6.2.1 Cryptographic Module Standards and Controls

Controls as per the TrustFactory CP

6.2.2 Private Key (n out of m) Multi-Person Control

Controls as per the TrustFactory CP

6.2.3 Private Key Escrow

Controls as per the TrustFactory CP

6.2.4 Private Key Backup

Controls as per the TrustFactory CP

6.2.5 Private Key Archival

Controls as per the TrustFactory CP

6.2.6 Private Key Transfer Into or From a Cryptographic Module

Controls as per the TrustFactory CP

6.2.7 Private Key Storage on Cryptographic Module

Controls as per the TrustFactory CP

6.2.8 Method of Activating Private Key

Controls as per the TrustFactory CP

6.2.9 Method of Deactivating Private Key

Controls as per the TrustFactory CP

6.2.10 Method of Destroying Private Key

Controls as per the TrustFactory CP

6.2.11 Cryptographic Module Rating

See Section 6.2.1

6.3 Other Aspects of Key Pair Management

6.3.1 Public Key Archival

TrustFactory Client Issuing CA archives Public Keys from Certificates.

6.3.2 Certificate Operational Periods and Key Pair Usage Periods



TrustFactory Client Issuing CA Certificates and renewed Certificates have a maximum Validity Period of 15 years.

TrustFactory end-entity Subscriber Certificates and renewed Certificates have a maximum Validity Period of 2 years.

TrustFactory Client Issuing CA complies with the Baseline Requirements with respect to the maximum Validity Period.

6.4 Activation Data

6.4.1 Activation Data Generation and Installation

Generation and use of TrustFactory Client Issuing CA activation data used to activate TrustFactory Client Issuing CA Private Keys are made during a key ceremony (Refer to Section 6.1.1). Activation data is generated automatically by the appropriate HSM. It is then delivered to a holder of a share of the key who is a person in a trusted role. The delivery method maintains the confidentiality and the integrity of the activation data.

6.4.2 Activation Data Protection

TrustFactory Client Issuing CA activation data is protected from disclosure through a combination of cryptographic and physical access control mechanisms. TrustFactory Client Issuing CA activation data is stored on hardware tokens.

6.4.3 Other Aspects of Activation Data

TrustFactory Client Issuing CA activation data may only be held by personnel in trusted roles.

6.5 Computer Security Controls

Controls as per the TrustFactory CP.

6.6 Lifecycle Technical Controls

Controls as per the TrustFactory CP.

6.7 Network Security Controls

Controls as per the TrustFactory CP.

6.8 Time Stamping

Controls as per the TrustFactory CP.



7.0 Certificate, CRL, and OCSP Profiles

Typical content of information published on a TrustFactory Client Certificate may include but is not limited to the following elements of information:

- Serial number
- Signature algorithm
- Signature hash algorithm
- Issuer
- Valid from
- Valid to
- Subject
- Public key
- Basic Constraints
- Key Usage
- Authority Information Access
- Certificate Policies
- CRL Distribution Points
- Enhanced key usage

7.1 Certificate Profile

TrustFactory Client Issuing CA generates non-sequential subscriber Certificate serial numbers greater than zero (0) containing at least 64 bits of output from a CSPRNG.

7.1.1 Version Number(s)

TrustFactory Client Issuing CA issues Certificates in compliance with X.509 Version 3.

7.1.2 Certificate Extensions

TrustFactory Client Issuing CA issues Certificates in compliance with RFC 5280 and meets the requirements for Certificate content and extensions as specified in the Baseline Requirements.

Subscriber Certificates

- a. `certificatePolicies`
This extension is not set as critical.
`certificatePolicies:policyIdentifier` is populated in accordance to Section 1.2
- b. `cRLDistributionPoints`
This extension is not set as critical, and it contains the HTTP URL of the CA's CRL service.
- c. `authorityInformationAccess`
This extension is not set as critical, and it contains the HTTP URL of the Issuing CA's OCSP responder (`accessMethod` = 1.3.6.1.5.5.7.48.1).
- d. `keyUsage`
Populated based on certificate type described in Section 1.4.1 and set in accordance with RFC 5280
- e. `extKeyUsage` (required)
Populated based on certificate type described in Section 1.4.1 and set in accordance with RFC 5280

7.1.3 Algorithm Object Identifiers

No stipulation

7.1.4 Name Forms

TrustFactory Client Issuing CA issues Certificates with name forms compliant to RFC 5280. By issuing a Subscriber Certificate, the TrustFactory Client Issuing CA represents that it followed the procedure set forth in this CPS to verify that, as of the Certificate's issuance date, all of the Subject Information was accurate.

7.1.5 Name Constraints

No stipulation.

7.1.6 Certificate Policy Object Identifier

TrustFactory Client Issuing CA issues certificates to Subscribers that comply with the latest version of the CAB Forum Baseline Requirements.



7.1.7 Usage of Policy Constraints Extension

No stipulation

7.1.8 Policy Qualifiers Syntax and Semantics

No stipulation

7.1.9 Processing Semantics for the Critical Certificate Policies Extension

No stipulation

7.2 CRL Profile

7.2.1 Version Number(s)

TrustFactory Client Issuing CA issues Version 2 CRLs in compliance with RFC 5280. CRLs have the following fields:

- **Issuer:**
 - CN = TrustFactory Client Issuing Certificate Authority
 - OU = TrustFactory PKI Operations
 - O = TrustFactory(Pty)Ltd
 - L = Johannesburg
 - S = Gauteng
 - C = ZA
- **Effective date** Date and Time issued
- **Next update** Date and Time of next issue
- **Signature Algorithm** sha256RSA
- **Signature Hash Algorithm** sha256
- **Serial Number(s)** List of revoked serial numbers
- **Revocation Date** Date of Revocation

7.2.2 CRL and CRL Entry Extensions

CRLs have the following extensions:

- **CRL Number** Monotonically increasing serial number for each CRL
- **Authority Key Identifier** AKI of the Issuing CA for chaining/validation requirements

7.3 OCSP Profile

TrustFactory Client Issuing CA operates an Online Certificate Status Profile (OCSP) responder in compliance with RFC 6960 and RFC5019 and highlights this within the AIA extension via an OCSP responder URL.

7.3.1 Version Number(s)

TrustFactory Client Issuing CA issues Version 1 OCSP responses with following fields:

- **Responder ID** SHA-1 Hash of responder's Public Key
- **Produced Time** the time at which this response was signed
- **Certificate Status** Certificate status referenced (good/revoked/unknown)
- **ThisUpdate/NextUpdate** Recommended validity interval for the response
- **Signature Algorithm** SHA256RSA
- **Signature** Signature value generated by the responder
- **Certificates** the OCSP responder's Certificate

An OCSP request must contain the following data:

- Protocol version
- Service request
- Target Certificate identifier

7.3.2 OCSP Extensions

No stipulation.



8.0 Compliance Audit and Other Assessments

The procedures within this CPS encompass all relevant portions of currently applicable PKI standards for the various vertical PKI industries in which TrustFactory Client Issuing CA operates. CAs are audited for compliance to the current applicable version of the one or more of the following standards:

- WebTrust for Certification Authorities
-
- South African Accreditation Authority – ECT Act Regulations

8.1 Frequency and Circumstances of Assessment

Controls as per TrustFactory CP.

8.2 Identity/Qualifications of Assessor

Controls as per TrustFactory CP

8.3 Assessor's Relationship to Assessed Entity

Controls as per TrustFactory CP.

8.4 Topics Covered by Assessment

Controls as per TrustFactory CP.

8.5 Actions Taken as a Result of Deficiency

Controls as per TrustFactory CP.

8.6 Communications of Results

Controls as per TrustFactory CP.



9.0 Other Business and Legal Matters

9.1 Fees

9.1.1 Certificate Issuance or Renewal Fees

Controls as per the TrustFactory CP

9.1.2 Certificate Access Fees

Controls as per the TrustFactory CP

9.1.3 Revocation or Status Information Access Fees

Controls as per the TrustFactory CP

9.1.4 Fees for Other Services

Controls as per the TrustFactory CP

9.1.5 Refund Policy

Controls as per the TrustFactory CP

9.2 Financial Responsibility

Controls as per the TrustFactory CP

9.3 Confidentiality of Business Information

Controls as per the TrustFactory CP.

9.4 Privacy of Personal Information

Controls as per the TrustFactory CP.

9.5 Intellectual Property rights

Controls as per the TrustFactory CP.

9.6 Representations and Warranties

Controls as per the TrustFactory CP.

9.7 Disclaimers of Warranties

Controls as per the TrustFactory CP.

9.8 Limitations of Liability

Controls as per the TrustFactory CP.

9.9 Indemnities

Controls as per the TrustFactory CP.

9.10 Term and Termination

Controls as per the TrustFactory CP.

9.11 Individual Notices and Communications with Participants

Controls as per the TrustFactory CP.

9.12 Amendments

Controls as per the TrustFactory CP

With respect to Advanced Electronic Signature certificates, significant changes are defined as changes that impact on the:

- identification process
- reliance limits of certificates
- key generation, storage and usage

In compliance with the regulations of the ECT Act in relation to Advanced Electronic Signature certificates, TrustFactory will submit a notification of the significant changes and updated edition in writing to the South African Accreditation Authority and notify relying parties and subscribers by publishing a notice of intention



to effect change on the Repository, at least 30 days prior to the changes taking effect.

9.13 Dispute Resolution Provisions

Controls as per the TrustFactory CP.

9.14 Governing Law

Controls as per the TrustFactory CP.

9.15 Compliance with Applicable Law

Controls as per the TrustFactory CP.

9.16 Miscellaneous Provisions

Controls as per the TrustFactory CP.

9.17 Other Provisions

Controls as per the TrustFactory CP



10 Annexure A: Client CA Certificate Profiles

10.1 TrustFactory Client Issuing CA – Certificate Profile

V1 Fields	
Version	V3
Serial number	
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	CN = TrustFactory Client Root Certificate Authority OU = TrustFactory PKI Operations O = TrustFactory(Pty)Ltd L = Johannesburg S = Gauteng C = ZA
Validity	15 years
Subject	CN = TrustFactory Client Issuing Certificate Authority OU = TrustFactory PKI Operations O = TrustFactory(Pty)Ltd L = Johannesburg S = Gauteng C = ZA
Public key	RSA (4096 bits)
Critical Extensions	
Basic Constraints	Subject Type=CA
	Path Length Constraint=0
Key Usage	Digital Signature Certificate Signing Off-line CRL Signing CRL Signing
Extensions	
Authority Information Access	[1]Authority Info Access Access Method=On-line Certificate Status Protocol (1.3.6.1.5.5.7.48.1) Alternative Name: URL= http://ocsp.trustfactory.net/tf-client-issuing
Certificate Policies	[1]Certificate Policy: Policy Identifier=1.3.6.1.4.1.50318.1 [1,1]Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: https://www.trustfactory.net/repository
CRL Distribution Points	[1]CRL Distribution Point Distribution Point Name: Full Name: URL= http://www.trustfactory.net/crl/tf-client-issuing.crl
Properties	
Thumbprint algorithm	SHA1



10.2 EMAILPASS CERT PROFILE

EMAILPASS V1 Fields	
Version	V3
Serial number	
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	CN = TrustFactory Client Issuing Certificate Authority OU = TrustFactory PKI Operations O = TrustFactory(Pty)Ltd L = Johannesburg S = Gauteng C = ZA
Validity	1 or 2 years
Subject	emailAddress=
Public key	RSA (minimum 2048 bits)
Extensions	
Basic Constraints	Subject Type=EndEntity Path Length Constraint=None
Key Usage	Digital Signature Key Encipherment
Enhanced key usage (property)	Email Protection
Authority Information Access	[1]Authority Info Access Access Method=On-line Certificate Status Protocol (1.3.6.1.5.5.7.48.1) Alternative Name: URL=http://ocsp.trustfactory.net/tf-client-issuing [2] Access Method=Certification Authority Issuer (1.3.6.1.5.5.7.48.2) Alternative Name: URL= https://www.trustfactory.net/repository/tf-online-client.crt
Certificate Policies	[1]Certificate Policy: Policy Identifier=1.3.6.1.4.1.50318.2.4 [1,1]Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: https://www.trustfactory.net/repository
CRL Distribution Points	[1]CRL Distribution Point Distribution Point Name: Full Name: URL=http://www.trustfactory.net/crl/tf-client-subscriber.crl
SubjectAltName	emailAddress
Properties	
Thumbprint algorithm	SHA1



10.3 PERSONALPASS CERT PROFILE

PERSONALPASS V1 Fields	
Version	V3
Serial number	
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	CN = TrustFactory Client Issuing Certificate Authority OU = TrustFactory PKI Operations O = TrustFactory(Pty)Ltd L = Johannesburg S = Gauteng C = ZA
Validity	1 or 2 years
Subject	CN = <i>first name and surname</i> OU = <i>(optional)</i> O = <i>(optional)</i> L = <i>(optional)</i> ST = <i>(optional)</i> C = <i>country</i> emailAddress=
Public key	RSA (<i>minimum 2048 bits</i>)
Extensions	
Basic Constraints	Subject Type= EndEntity
	Path Length Constraint=None
Key Usage	Digital Signature Key Encipherment Non-Repudiation Data Encipherment Key Agreement
Enhanced key usage (property)	Email Protection Client Authentication
Authority Information Access	[1]Authority Info Access Access Method=On-line Certificate Status Protocol (1.3.6.1.5.5.7.48.1) Alternative Name: URL=http://ocsp.trustfactory.net/tf-client-issuing [2] Access Method=Certification Authority Issuer (1.3.6.1.5.5.7.48.2) Alternative Name: URL= https://www.trustfactory.net/repository/tf-online-client.crt
Certificate Policies	[1]Certificate Policy: Policy Identifier=1.3.6.1.4.1.50318.2.4 [1,1]Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: https://www.trustfactory.net/repository [2] Policy Identifier=1.3.6.1.4.1.50318.3.1
CRL Distribution Points	[1]CRL Distribution Point Distribution Point Name: Full Name: URL=http://www.trustfactory.net/crl/tf-client-subscriber.crl
SubjectAltName	emailAddress
Properties	
Thumbprint algorithm	SHA1



10.4 PERSONALPASS PREMIUM CERT PROFILE

PERSONALPASS PREMIUM V1 Fields	
Version	V3
Serial number	
Signature algorithm	sha256RSA
Signature hash algorithm	sha256
Issuer	CN = TrustFactory Client Issuing Certificate Authority OU = TrustFactory PKI Operations O = TrustFactory(Pty)Ltd L = Johannesburg S = Gauteng C = ZA
Validity	1 or 2 years
Subject	CN = first name and surname OU = (optional) O = (optional) L = (optional) ST = (optional) C = country emailAddress=
Public key	RSA (minimum 2048 bits)
Extensions	
Basic Constraints	Subject Type= EndEntity
	Path Length Constraint=None
Key Usage	Digital Signature Key Encipherment Non-Repudiation Data Encipherment Key Agreement
Enhanced key usage (property)	Email Protection Client Authentication
Authority Information Access	[1]Authority Info Access Access Method=On-line Certificate Status Protocol (1.3.6.1.5.5.7.48.1) Alternative Name: URL=http://ocsp.trustfactory.net/tf-client-issuing [2] Access Method=Certification Authority Issuer (1.3.6.1.5.5.7.48.2) Alternative Name: URL= https://www.trustfactory.net/repository/tf-online-client.crt
Certificate Policies	[1]Certificate Policy: Policy Identifier=1.3.6.1.4.1.50318.2.4 [1,1]Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: https://www.trustfactory.net/repository [2] Policy Identifier=1.3.6.1.4.1.50318.3.1 [3] Policy Identifier=1.3.6.1.4.1.50318.3.2
CRL Distribution Points	[1]CRL Distribution Point Distribution Point Name: Full Name: URL=http://www.trustfactory.net/crl/tf-client-subscriber.crl
SubjectAltName	emailAddress
Properties	
Thumbprint algorithm	SHA1