Certification Practice Statement

Version 1.9.2
23-03-2021

This is the official version of the Cleverbase Certificate Practice Statement.

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1. Introduction

1.1 Overview

PKIoverheid is a *public key infrastructure* (PKI) set up at the initiative of the Dutch government, to be used for electronic signatures, electronic authentication, and confidential electronic communication, and adjusted to relevant Dutch and European legislation. Certificates issued within this PKI are highly reliable. Several trust service providers (TSPs) are active in this PKI and are trusted to issue certificates. Root certificates in this PKI are signed by the State of the Netherlands.

Cleverbase acts as a TSP in PKIoverheid, aiming at providing both citizens and businesses with the certificates they need to exchange, reliably and confidentially, information with each other and the government. As a rule, certificate holders register remotely by way of a video call using a mobile app to have their identities and identity documents verified, after which Cleverbase issues the certificates they apply for.

The key material belonging to the certificate is stored in a trustworthy system supporting server signing (TW4S): usage of the private key is only possible in a hardware security module (HSM) in Cleverbase's datacenter, which is configured in such a way that certificate holders hold exclusive control of their keys. They exert this control using an app that is linked to their mobile phone and a PIN of their own choosing. The TW4S is administered by Ubiqu B.V.

1.2 Document name and identification

This document is Cleverbase's Certification Practice Statement. It is based on the Statement of Requirement PKIoverheid[1], ETSI EN 319 411-1, ETSI EN 319 411-2[2] and the eidas regulation[3]. Its layout is modeled after RFC 3647.

This CPS covers issuance of certificates to the 'persoon burger' target group governed by the certificate policy (CP) as stated in section 3c of the Statement of Requirement PKIoverheid. It supports the purposes of use of authenticity, non-repudiation and encryption. For each combination of target group and purpose of use, a separate OID is defined in the relevant CP. An overview follows:

	authenticity	non-repudiation	encryption*
'persoon burger' (section 3c SoR)	2.16.528.1.1003.1.2.3.1	2.16.528.1.1003.1.2.3.2	2.16.528.1.1003.1.2.3.3

* Cleverbase does not currently issue encryption certificates to clients.

1.3 PKI Participants

The following participants in PKIoverheid are relevant here:

[1] Available at https://www.logius.nl/ondersteuning/pkioverheid/aansluiten-als-tsp/programma-van-eisen/

[2] Both available at https://www.etsi.org/standards

[3] http://eur-lex.europa.eu/legal-content/NL/TXT/?uri=CELEX%3A32014R0910

1.3.1 Certificate authorities

Cleverbase. Cleverbase ID B.V., registered at the Chamber of Commerce under number 67419925.

Cleverbase CA. Cleverbase's certification authority is responsible for issuing certificates.

1.3.2 Registration authorities

Cleverbase. Cleverbase ID B.V., registered at the Chamber of Commerce under number 67419925.

Cleverbase RA. Cleverbase's Registration Authority is responsible for establishing the identity of prospective holders of certificates to be issued by Cleverbase. Staff members of the Registration Authority are called registration officers.

1.3.3 Subscribers

Subscriber. Holders of certificates in the 'Burger' domain are themselves subscribers. In the case of a certificate in the 'Organisatie' domain, the organization for which the certificate is issued is the subscriber.

1.3.4 Relying parties

Relying party. A relying party is anyone who acts trusting a certificate issued by Cleverbase.

1.3.5 Other participants

Policy authority (PA). The policy authority's task is to administer the entire system of agreements and to regulate the required supervision. Logius fulfills this task on behalf of the State of the Netherlands.

Ubiqu. Ubiqu Access B.V. supplies Ubiqu tokens to be issued to personal certificate holders. These tokens consist of two parts: a set of private keys stored in the trustworthy system supporting server signing (TW4S) and an app on the certificate holder's mobile phone. Using this app, certificate holders can exert exclusive control of their private keys. Although Ubiqu administers this system, Cleverbase is the principal responsible for its administration. Certificate holders have exclusive control of their tokens, to be exerted using their mobile phone and PIN.

Certificate holder. The certificate holder is the entity stated in the subject field of the certificate, and the holder of the private key. Holders of personal certificates are natural persons. Holders of certificates in the 'Burger' domain are also subscribers.

1.4 Certificate usage

1.4.1 Appropriate certificate usage

Certificate usage differs per certificate type. Before elaborating on each certificate type, the following general remarks must be made:

- Certificates must be used in accordance with the general terms and conditions that apply.
- No restrictions apply as to the value of the transaction for which the certificate is used.
- Certificates may be used in interactions with the State of the Netherlands as well as with other natural or legal persons.

Certificates of the 'persoon burger' type may be used by individual natural persons.

Different certificates are issued per type for authentication, confidential communication and electronic signatures. Certificates may only be used for the purpose for which they were issued. The table below shows these purposes per certificate. These purposes of use correspond to the keyUsage field in the certificate.

	authenticity	encryption	signature
'persoon burger' (section 3c SoR)	digitalSignature	keyEncipherment dataEncipherment	nonRepudiation

1.4.2 Prohibited certificate usage

All other certificate usage types than the ones stated in 1.4.1 are prohibited

1.5 Policy administration

1.5.1 Organization administering the document

Cleverbase assesses this CPS and corrects any errors or omissions at least once a year. Intended major revisions of this CPS will be established by the TSP´s management. Minor/administrative revisions will be done without prior announcement. With minor revisions the version number will increase by 0.1, major revisions lead to a new version.

1.5.2 Contact person

Please address any enquiries about the CPS or other communications to:

info@cleverbase.com

Or, alternatively, to:

Cleverbase ID B.V.
Maanweg 174
2516AB
's-Gravenhage

1.5.3 Person determining CPS suitability for the policy

Please refer to section 1.5.1

1.5.4 CPS approval procedures

Please refer to section 1.5.1

1.6 Definitions and Acronyms

Abbreviation	Definition
CA	Certificate Authority
RA	Registration Authority
CRL	Certificate Revocation list. A list of certificates that have been revoked by the issuing Certificate Authority.
OCSP	Online Certificate Status Protocol. A protocol which checks the status of a requested certificate.
CPS	Certification practice statement.
PKI	Public Key Infrastructure. A digital framework for issuing and managing certificates.
TSP	Trust Service Provider.
HSM	Hardware Security Module.
TW4S	Trustworthy Systems Supporting Server Signing.
OID	Object Identifier. A unique number representing a certain object and/or name.

2 Publication and repository responsibilities

2.1 Repositories

Cleverbase has an electronic repository, accessible through www.cleverbase.com. The *certificate revocation list* (CRL) and the OCSP server are available at:

CRL: http://pki.cleverbase.com/cleverbase3c.crl

OCSP: http://pki.cleverbase.com/ocsp/3c

As a rule, the electronic repository is accessible at any time. In the case of (planned) maintenance or a calamity, accessibility can be interrupted for a maximum of four hours.

2.2 Publication of certification information

The following information is accessible in the electronic repository:

- this Certification Practice Statement,
- the general terms and conditions,
- the PKI Disclosure Statement,
- the certificates (end user certificates being accessible for certificate holders only),
- the certificate status service.

The maximum recovery time for this service (the Dissemination Service) is 24 hours. Earlier versions of the CPS and the general terms and conditions are available upon request.

2.3 Time or frequency of publication

The electronic repository is available 24 hours a day and 7 days a week.

- The Certification Practice Statement is published after a revision
- the general terms and conditions are published after a revision
- the PKI Disclosure Statement is published after a revision
- the certificates are published immediately after a successful registration
- the certificate status service is updated immediately after a successful revocation

2.4 Access controls on repositories

The electronic repository is secured against unauthorized modifications. Only the TSP has writing permissions for the electronic repository.

3 Identification and authentication

This section describes the identification and authentication processes during initial registration and prolongation. Two registration processes are supported, one involving remote identification and the other a personal meeting. These processes are described separately.

3.1 Naming

3.1.1 Types of names

The certificate holder is identified in the subject field of the certificate with a *distinguished name* (DN) as meant in X.501. Required DN components differ for various certificate types:

	'persoon burger'
serialNumber	personal number, unique to the CA
commonName	certificate holder's name, formatted as follows: [all given names in full] [maiden name / last name]
countryName	certificate holder's country of residence according to the nationality of the identity document submitted
givenName	all given names of the certificate holder
surName	the certificate holder's surname (maiden name / last name)

Please refer to the certificate profiles as described in Chapter 7 of this document for more information.

3.1.2 Need for names to be meaningful

Each DN has a meaningful relation to the represented entity.

3.1.3 Anonymity or pseudonymity of subscribers

Pseudonymous or anonymous certificates are not allowed.

3.1.4 Rules for interpreting various name forms

If opinions on naming differ, the Registration Authority decides.

3.1.5 Uniqueness of names

Each DN is unique.

3.1.6 Recognition, authentication, and role of trademarks

No stipulation

3.2 Initial identity validation

As a rule, Cleverbase registers natural persons remotely, using a dedicated mobile app. If remote registration turns out to be impossible, registration can take place in a personal meeting.

Remote initial identity validation:

The initial remote identity validation is performed using a mobile phone app that allows the TSP to establish the identity remotely and then to install the token on the mobile phone. As a minimum, the registration process comprises the following actions:

(1) The email address of the prospective certificate holder is registered to use as a user name at Cleverbase;
(2) The Authenticate app (part of the Ubiqu token) is installed on the phone. The prospective certificate holder chooses a PIN, and a link is established between PIN, phone, and the (future) identity. A selfie of the prospective certificate holder is made and sent to the Cleverbase server;
(3) A photo of the prospective certificate holder'svalid identity document is made and sent to the server, together with the personal data required for registration. (
(4) The app sets up a video connection with a registration officer, who, before and during the video call, performs the following checks:
    (a) The registration officer checks the quality of the video connection and may give instructions regarding ambient light and sound;
    (b) The registration officer checks the data submitted against the picture of the identity document;
    (c) The registration officer verifies authenticity and validity of the identity document, checking, among other things, whether it has been recorded stolen or missing with an authentic source if publicly available;
    (d) The registration officer checks the identity document's authenticity features;
    (e) The registration officer verifies the prospective certificate holder's identity;
    (f) The registration officer checks whether the applicant has applied for a certificate with Cleverbase before. (In this case, existing certificates are revoked when issuing the new certificates)
    (g) The registration officer requests the applicant to read out a unique code and to express the unambiguous will to apply for a certificate;
(5) If all checks have positive results, the registration officer approves the certificate application;
(6) The prospective certificate holder reconfirms his PIN, thereby proving possession of the private key;

(7) A second registration officer checks the certificate application and approves it if all requirements are met;
(8) The certificate holder receives a revocation code by email to be used if he decides to revoke the certificate later on;

The TSP has controls in place for the continuous improvement of the process described above, including, as a minimum:

- Both Cleverbase's internal auditor and external auditors take periodic checks of old files. All files processed by registration officers that appear to have inadvertently approved one or more certificate applications are reconsidered.
- Applicants with unusual or damaged (although still valid) identity documents, persevering problems in establishing an appropriate video connection, or other peculiarities preventing the process described above from ensuring reliable identification, are invited to have their identities established in a personal meeting at the TSP's premises.

Personal initial identity validation:

Users who are unable to register remotely, but who have both a phone allowing for installation of the registration app and a valid identity document, can register at Cleverbase in person. In such a case the applicant visits TSP's premises, where a registration officer starts by verifying the applicant's identity and identity document. If they decide that the identity can be established and that certificate issuance is possible, the registration process as described in section 3.2.1 is now performed in person, with personal identity validation replacing remote identification. Registration is not possible for users without a suited phone or valid identity document.

3.2.1 Method to prove possession of private key

Please refer to step (7) of section 3.2

3.2.2 Authentication of organization identity

Not supported for the "persoon burger" certificate

3.2.3 Authentication of individual identity

Please refer to steps (3)-(6) and (8) of section 3.2

3.2.4 Non-verified subscriber information

No stipulation

3.2.5 Validation of authority

Not supported with the "persoon burger" certificate

3.2.6 Criteria for interoperation

No stipulation

3.3 Identification and authentication for re-key requests

Re-key of certificates is not supported, certificate renewal involves the same procedure as initial certificate application as described in section 3.2.

3.3.1 Identification and authentication for routine re-key

No stipulation

3.3.2 Identification and authentication for re-key after revocation

No stipulation

3.4 Identification and authentication for revocation requests

Certificate holders can identify for revocation requests in any of the following ways:

- Certificate holders use the revocation code provided to them and enter it in the public section of Cleverbase's website.
- Certificate holders contact Cleverbase by phone and answer a few questions relating to their personal data, by which the registration officer establishes their identity.
- Certificate holders send a letter or email to Cleverbase, enclosing a copy of their identity document.

4 Certificate life-cycle operation requirements

4.1 Certificate application

4.1.1 Who can submit a certificate application

A natural person with a valid identity document as defined in article 1 Wid[4] can apply for a certificate of the 'persoon burger' type. Cleverbase maintains an allowlist of identity documents on a risk based approach. As such Cleverbase retains the right to disallow the use of a specific identity document at its sole discretion.

4.1.2 Enrollment process and responsibilities

Prospective certificate holders apply for certificates of the 'persoon burger' type. At that moment they enter into an agreement with Cleverbase. Applicants can only complete the application after having agreed with the general terms and conditions published in accordance with section 2.2.

During the application process prospective certificate holders' identities are verified as described in section 3.

Certificate holders can retrieve certificates at the TSP's web portal after login.

4.2 Certificate application processing

4.2.1 Performing identification and authentication functions

Please refer to section 4.1.

4.2.2 Approval or rejection of certificate applications

Please refer to section 4.1.

[4] Hoofdstuk I Wet op de identificatieplicht

4.2.3 Time to process certificate applications

The usual time to process the application is within a day. This can take up to 5 working days when additional personal identity validation is required.

4.3 Certificate issuance

4.3.1 CA actions during certificate issuance

The CA validates the completion of the process described in section 3.2 before issuance of a certificate.

4.3.2 Notification to subscriber by the CA of issuance of certificate

Subscriber receives an email notification after issuance of the certificates.

4.4 Certificate acceptance

4.4.1 Conduct constituting certificate acceptance

Certificates of the 'persoon burger' type are accepted by implication.

4.4.2 Publication of the certificate by the CA

The certificates are published in the electronic repository, please refer to section 2.2

4.4.3 Notification of certificate issuance by the CA to other entities

No stipulation

4.5 Key pair and certificate usage

4.5.1 Subscriber private key and certificate usage

Any agreement entered into by a subscriber and a certificate holder entails their obligation to use the certificate in accordance with this CPS, the general terms and conditions, and the usage purposes described in the certificate (please refer to section 1.4).

4.5.2 Relying party public key and certificate usage

Before trusting a certificate, relying parties should check the following:

(1) certificate chain and validity of the certificate;
(2) certificate usage in accordance with the usage purposes described in the certificate and the general terms and conditions;
(3) the certificate's validity and the entire certificate chain belonging to it up to the root certificate at the moment they trust it, by consulting certificate status information;

4.6 Certificate renewal

Certificate renewal is not supported. If a certificate holder applies for a new certificate with a new key pair, the same procedures as during initial certificate application are followed. Any changes in terms or conditions resulting from interim reviews are pointed out during application.

4.6.1 Circumstance for certificate renewal

No stipulation, please refer to 4.6

4.6.2 Who may request renewal

No stipulation, please refer to 4.6

4.6.3 Processing certificate renewal requests

No stipulation, please refer to 4.6

4.6.4 Notification of new certificate issuance to subscriber

No stipulation, please refer to 4.6

4.6.5 Conduct constituting acceptance of a renewal certificate

No stipulation, please refer to 4.6

4.6.6 Publication of the renewal certificate by the CA

No stipulation, please refer to 4.6

4.6.7 Notification of certificate issuance by the CA to other entities

No stipulation, please refer to 4.6

4.7 Certificate re-key

Certificate re-key is not supported.

4.7.1 Circumstance for certificate re-key

No stipulation, please refer to 4.7

4.7.2 Who may request certification of a new public key

No stipulation, please refer to 4.7

4.7.3 Processing certificate re-keying requests

No stipulation, please refer to 4.7

4.7.4 Notification of new certificate issuance to subscriber

No stipulation, please refer to 4.7

4.7.5 Conduct constituting acceptance of a re-keyed certificate

No stipulation, please refer to 4.7

4.7.6 Publication of the rekeyed certificate by the CA

No stipulation, please refer to 4.7

4.7.7 Notification of certificate issuance by the CA to other entities

No stipulation, please refer to 4.7

4.8 Certificate modification

Modification of certificate data is not included in the service. The general terms and conditions oblige certificate holders to have their certificates revoked if certificate data is no longer correct. They can apply for a new certificate with modified data if desired.

4.8.1 Circumstance for certificate modification

No stipulation, please refer to 4.8

4.8.2 Who may request certification modification

No stipulation, please refer to 4.8

4.8.3 Processing certificate modification requests

No stipulation, please refer to 4.8

4.8.4 Notification of new certificate issuance to subscriber

No stipulation, please refer to 4.8

4.8.5 Conduct constituting acceptance of modified certificate

No stipulation, please refer to 4.8

4.8.6 Publication of the modified certificate by the CA

No stipulation, please refer to 4.8

4.8.7 Notification of certificate issuance by the CA to other entities

No stipulation, please refer to 4.8

4.9 Certificate revocation and suspension

A certificate can be revoked under certain circumstances. The TSP will then put it on a *certificate revocation list* (CRL) and announce through the OCSP (Online Certificate Status Protocol) that it was revoked. This section describes under which circumstances, by whom and in which way a certificate can be revoked.

4.9.1 Circumstances for revocation

A certificate can be revoked under the following circumstances:

(a) The subscriber requests a revocation;

(b) Confidentiality of the private key corresponding to the certificate's public key was presumably compromised. Cases include those in which a mobile phone linked to the Ubiqu token was lost or stolen, or confidentiality of the PIN was compromised;
(c) The certificate holder fails to comply with their obligations based on this CPS or the agreement closed with them;
(d) Information in the certificate is not or no longer correct and up-to-date, or information in the certificate is misleading;
(e) There are indications that the certificate is being misused;
(f) The certificate appears not to have been issued following the proper procedures in retrospect;
(g) The TSP terminates its activities with no other TSP taking over the CRL and OSCP services;
(h) The TSP suspects the CA private key used to issue the certificate to be compromised;
(i) The policy authority of PKIoverheid determines that the certificate does not meet requirements;
(j) Revoking the certificate can help prevent or fight a calamity;
(k) Other circumstances occur which, in the TSP's view, justify revoking the certificate in order to sustain trust in the public key infrastructure;
(l) The subscriber, who is a natural person, has passed away;
(m) The subscriber indicates that the original certificate request was not authorized and does not retroactively grant authorization;
(n) The certificate was issued in violation of the then-current version of these requirements;

4.9.2 Who can request revocation

A certificate may be revoked at the initiative of:

(a) the TSP itself;
(b) the certificate holder;
(c) the subscriber.

As the TSP can itself initiate certificate revocation, anyone who is aware of a circumstance that could lead to revocation may inform the TSP without obligation. Revocation can then proceed if the TSP sees a reason for it.

4.9.3 Procedure for revocation request

Certificate holders can revoke their own certificates through the TSP's web portal at any moment using the revocation code provided to them by email during application.

Each of the parties mentioned in section 4.9.2 can request revocation by contacting the TSP's customer service by phone between 9.00 AM and 5.00 PM, or by email out of office hours. For contact data, please refer to the website, https://cleverbase.com.

In non-urgent situations, revocation requests can also be submitted by mail to the following address:

Cleverbase ID B.V.
Maanweg 174
2516AB
's-Gravenhage

Revocation requests by email or mail must be submitted with a copy of a valid identity document.

If the TSP revokes a certificate on its own initiative, it will explain why it does so.

If the revocation service is disrupted for whatever reason, the TSP ensures the disruption is corrected within four hours.

If the TSP receives information that in itself does not imply a revocation request but contains indications of a problem concerning a certificate, the TSP will set up an investigation that can possibly entail revocation within twenty-four hours, or as fast as possible during business hours.

Certificate holders who themselves revoke certificates by using the web portal or by phone are given feedback as soon as revocation is successful. If a revocation request is submitted by mail, or if someone else than the certificate holder initiates revocation, an email is sent to the certificate holder.

4.9.4 Revocation request grace period

No stipulation

4.9.5 Time within which CA must process the revocation request

Revocation is effectuated within a maximum of four hours after receipt of a request as specified in 4.9.3. The revocation status service is updated after revocation.

4.9.6 Revocation checking requirement for relying parties

The CRL and OCSP are publicly available at the repository (please refer to section 2.1)

4.9.7 CRL issuance frequency (if applicable)

The certificate status service is updated immediately after a successful revocation. Please refer to section 2.3

4.9.8 Maximum latency for CRLs (if applicable)

No stipulation

4.9.9 Online revocation/status checking availability

Please refer to section 2.1

4.9.10 Online revocation checking requirements

Please refer to section 2.1

4.9.11 Other forms of revocation advertisements available

No stipulation

4.9.12 Special requirements re key compromise

The TSP does not support re-key.

4.9.13 Circumstances for suspension

The TSP does not support certificate suspension. Certificates cannot be revoked or deactivated temporarily or reinstated after revocation.

4.9.14 Who can request suspension

No stipulation, the TSP does not support certificate suspension

4.9.15 Procedure for suspension request

No stipulation, the TSP does not support certificate suspension

4.9.16 Limits on suspension period

No stipulation, the TSP does not support certificate suspension

4.10 Certificate status service

4.10.1 Operational characteristics

The TSP offers a certificate status service allowing to check the validity of certificates. The addresses for consulting this service are shown in the certificate and follow here:

CRL: http://pki.cleverbase.com/cleverbase3c.crl

OCSP: http://pki.cleverbase.com/ocsp/3c

The TSP uses both a certificate revocation list (CRL) and the OCSP protocol.

The CRL is updated at least once every seven days. Certificates are included in the CRL until their initial validity has expired. Under normal circumstances, response time is ten seconds or less.

The OCSP protocol is supported using the POST method. Under normal circumstances, response time is ten seconds or less. As a minimum, the OCSP response is always as up-to-date as the CRL, because it is updated real-time. The OCSP response is positive only if the TSP's administration confirms that the certificate was issued by the TSP and is still valid. The OCSP service supplies information on the certificate until at least six months after its expiration.

4.10.2 Service availability

The electronic repository is available 24 hours a day and 7 days a week.

4.10.3 Optional features

No stipulation

4.11 End of subscription

After expiration of a certificate's validity the TSP invites the subscriber to renew the certificate. If the certificate is not renewed (timely), the agreement between the TSP and the subscriber ends as of right. The certificate's validity expires automatically. The TSP retains the data regarding the certificate for another seven years.

If a certificate is revoked based on section 4.9, and the subscriber does not apply for a new certificate, the agreement between the TSP and the subscriber ends as of right. The certificate's validity expires because the certificate is put on the *certificate revocation list* as described in section 4.9. The TSP retains the data regarding the certificate for another seven years.

4.12 Key escrow

The TSP does not support key escrow.

4.12.1 Key escrow and recovery policy and practices

The TSP does not support key escrow.

4.12.2 Session key encapsulation and recovery policy and practices

The TSP does not support key escrow.

5 Facility, management and operational controls

5.1 Physical security controls

5.1.1 Site location and construction

Cleverbase has multiple physical sites:

The Hague site
The TSP is based in a shared office building in The Hague. This office has a lockable door, the keys of which are kept by Cleverbase.

Delft and Rotterdam sites
The TSP's datacenters are based in Rotterdam and Delft and are administered by one and the same external party and are secured in the same way.

The datacenters are guarded 24/7. All rooms in the datacenter have cctv observation. Visitors must identify themselves and are escorted to their destinations. All visits are logged. The cabinet containing the equipment owned by the TSP is used exclusively by the TSP and is lockable.

Within the datacenter, controls are in place to ensure security in emergencies. For use during power outings, an emergency power unit is available, which is tested at least once every three months. A climate control system ensures stable air supply, temperature, and air humidity. The rooms are equipped with moisture detection sensors. A sophisticated fire extinction system is installed.

Storage is redundant by default with copies distributed over two different datacenters as a minimum. Storage media that are no longer in use will be destroyed.

5.1.2 Physical access

Please refer to 5.1.1

5.1.3 Power and air conditioning

Please refer to 5.1.1

5.1.4 Water exposures

Please refer to 5.1.1

5.1.5 Fire prevention and protection

Please refer to 5.1.1

5.1.6 Media storage

Media is stored in on-site safes.

5.1.7 Waste disposal

Adequate measures are taken to dispose sensitive information.

5.1.8 Off-site backup

No stipulation

5.2 Procedural controls

5.2.1 Trusted roles

The TSP's staff members are assigned various trusted roles with corresponding responsibilities. Their authorizations correspond to their roles. Roles include:

(a) Security officers: overseeing that established security guidelines are implemented and observed.

(b) System auditors: having a supervising role and assessing independently how business processes are arranged/organized and to what extent reliability requirements are met.

(c) System administrators: administering the TSP systems, including installation, configuration, and maintenance of the systems.

(d) System operators: responsible for the daily management of the TSP-systems.

(e) Registration officers: responsible for performing the registration process and for manually processing revocation requests.

5.2.2 Number of persons required per task

At least two people are needed for the registration officer and system administrator task.

5.2.3 Identification and authentication for each role

No stipulation

5.2.4 Roles requiring separation of duties

Registration Officers. For each certificate application, duties are separated between a handling registration officer and an approving registration officer.

System administrators. For each operation on Cleverbase TSP systems two system administrators are required to execute these operations.

5.3 Personnel security controls

5.3.1 Qualifications, experience, and clearance requirements

Organisation members are screened before entering into service with the TSP, involving, as a minimum, a request for a Certificate of Conduct. Each employee's resume and compulsory identity document are verified. Screening intensity is adjusted to the confidentiality level linked to the employee's role. All organisation members sign a nondisclosure agreement as part of their employment contract.

5.3.2 Background check procedures

Please refer to 5.3.1

5.3.3 Training requirements

Organisation members have sufficient knowledge and expertise to fulfill their tasks within the TSP. In particular, the TSP ensures that they are trained in TSP-specific procedures.

5.3.4 Retraining frequency and requirements

Regular retraining is performed for the TSP roles.

5.3.5 Job rotation frequency and sequence

No stipulation

5.3.6 Sanctions for unauthorized actions

Unpermitted actions by organisation members may entail disciplinary measures by the TSP's management

5.3.7 Independent contractor requirements

The reliability of externals performing tasks for the TSP is investigated in the same way as new employees (please refer to 5.3.1). All hired third persons sign a nondisclosure agreement as part of their commission contract.

5.3.8 Documentation supplied to personnel

The TSP provides the personnel with the documentation required in order to perform the TSP roles.

5.4 Audit logging procedures

5.4.1 Types of events recorded

The TSP records various events for periodic audit purposes:

- CA key life-cycle events:
  - Generation, backup, storage, recovery, archiving and destruction of the CA key
- Certificate life-cycle events:
  - Preparation of the Ubiqu token
  - Registration of the certificate holder, subscriber, certificate manager, and certificate coordinator
  - Certificate generation
  - Certificate revocation
  - Certificate acceptance and rejection

    - Generation of the CRL and OCSP entries
- System events:
    - Software installations, updates or removal
    - Installation or removal of storage media
    - Access to the physically secured room housing the systems
    - Hardware security module (HSM) installation, updates, or removal
- Events involving:
    - Routers, firewalls, and network system components
    - Database activities and events
    - Transactions
    - Operating systems
    - Access control systems
    - Mail servers
    - Successful and unsuccessful attacks on PKI systems
    - Activities of staff in PKI systems
    - System failure, hardware failure and other irregularities
    - Firewall and router activities
    - Physical entry to and exit from the CA room
    - Reading, writing and deleting data
    - Profile modifications

The following data are included in the audit log, if applicable:

- Source IP address
- Target IP address
- Date and time
- User ID
- Name and description of the event

5.4.2 Frequency of processing log

Audit logs are processed following previously mentioned events. Logs are provided with a timestamp using a clock that is synchronized at least once a day with a trusted time source.

5.4.3 Retention period for audit log

Audit logs are stored and accessible for ten years

5.4.4 Protection of audit log

Any interested party (including, as a minimum, the auditor) can request the logs with the TSP. The management supplies the logs, unless this is against third parties' interests, or unless disproportionate technical effort is required.

Logs are stored in more than one location, in such a way that they are accessible for ten years. During this period their integrity is ensured, so that any deletion or modification of records will be noticed. This includes extensive backup and recovery procedures.

5.4.5 Audit log backup procedures

Please refer to section 5.4.4

5.4.6 Audit collection system (internal vs. external)

Please refer to section 5.4.4

5.4.7 Notification to event-causing subject

No stipulation

5.4.8 Vulnerability assessments

The audit log and components supporting the audit log are in scope of the TSP's vulnerability management policy and procedures.

5.5 Records archival

5.5.1 Types of records archived

All data that can be relevant for the compliance audit is archived. As a minimum, this data includes: data collected during identification, the certificate life-cycle, and private key usage. Data subject to archiving may be collected from audit logs, databases or in physical documents. These are all archived appropriately. Private keys are not archived.

5.5.2 Retention period for archive

Archives are retained for ten years.

5.5.3 Protection of archive

Archives are secured against unauthorized access and are, as a rule, accessible only for management and internal and external auditors. These may, however, grant access to (part) of the archives to others, if, and only if, those others need this for their tasks.

Archives are secured against modification and deletion. To this end, both organizational and technical controls are in place. Archives are also protected against storage media deterioration. The archives are stored on monitored, redundant hard disks (at least N+1).

5.5.4 Archive backup procedures

The entire archive is backed up off-site.

5.5.5 Requirements for time-stamping of records

Records are provided with a timestamp using a clock that is synchronized at least once a day.

5.5.6 Archive collection system (internal or external)

Please refer to section 5.5.3 and 5.5.4

5.5.7 Procedures to obtain and verify archive information

No stipulation

5.6 CA key changeover

The CA key has a validity term established by the policy authority of PKIoverheid. As soon as the expiration date is less than three years away, a new CA key is installed. From that moment onwards, the old key is no longer used for signing certificates, but only for signing CRLs and OCSP responses. As soon as all certificates that were signed with the old key have expired, it will be destroyed.

5.7 Compromise and disaster recovery

The TSP has processes in place for handling calamities. A calamity is a situation in which the integrity of certificates is impaired by a cause within the TSP's sphere of influence. Such situations include, among others:

- Unauthorized access to the CA key
- Both datacenters are inaccessible
- The Ubiqu token provider is inaccessible

5.7.1 Incident and compromise handling procedures

The TSP has processes in place for handling (security) incidents.

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

No stipulation

5.7.3 Entity private key compromise procedures

No stipulation

5.7.4 Business continuity capabilities after a disaster

The TSP has a Business Continuity Plan in place describing the measures to prevent a disruptive incident or disaster from occurring. Would such an event take place the measures and services to return to the default situation are described.

5.8 CA or RA termination

Should the TSP decide to terminate its activities, the termination plan becomes effective, ensuring that termination proceeds in a controlled way. As a minimum, the plan provides measures to inform the supervisors (*Agentschap Telecom and Logius*), subjects, suppliers and other parties involved, to sustain the certificate status service, and to keep certificate revocation possible as long as unrevoked certificates are in use. All data collected by the TSP for registration purposes will be archived in such a way that both its confidentiality and its accessibility for required consult are ensured.

At termination the TSP will try to transfer the service provision to another TSP, in order to minimize inconveniences for end users.

The termination plan is revised annually.

6 Technical security controls

6.1 Key pair generation and installation

6.1.1 Key pair generation

The CA key pair
The key pair of the CA is generated in a cryptographic module (HSM) belonging to the CA. The public part of the CA key is physically transferred to the root CA in the form of a certificate signing request (PKCS#10), on the basis of which the root CA generates the certificate. The HSM is configured in such a way that the CA key pair can be used exclusively by someone who can prove to be in control of the personal key pair of a registration officer.

The personal certificate key pair
The key pair of personal certificates is generated in a cryptographic module (HSM) in the TSP's datacenter. Certificate holders can exert remote control of their key pair by using an app on their phone. During certificate application the app will be linked to the phone by way of an identifying number of the phone; the certificate holder must also determine a PIN.

The public part of the key of a personal certificate is presented to the CA in the form of a certificate signing request, on the basis of which the HSM signs the certificate. This procedure is executed in the secured environment of the TSP's datacenter.

Key usage is in accordance with the certificate profile, as described in Chapter 7.

6.1.2 Private key delivery to subscriber

Please refer to section 6.1.1

6.1.3 Public key delivery to certificate issuer

Please refer to section 6.1.1

6.1.4 CA public key delivery to relying parties

The Cleverbase CA public key is published through the TSP Dissemination Service

6.1.5 Key sizes

The TSP CA uses a key length of 2048 or 4096 and cryptographic algorithm SHA256 with RSA encryption.

6.1.6 Public key parameters generation and quality checking

No stipulation

6.1.7 Key usage purposes (as per X.509 v3 key usage field)

Please refer to section 1.4.1

6.2 Private key protection and Cryptographic Module Engineering Controls

6.2.1 Cryptographic module standards and controls

The CA private key and subject private keys are generated within a Cryptographic Module that meets the requirements identified in FIPS PUB 140-2 [12] level 3.

6.2.2 Private key (n out of m) multi-person control

All operations performed on the cryptographic module are under dual control, where two out of three designated persons are required.

6.2.3 Private key escrow

The TSP does not support key escrow.

6.2.4 Private key backup

The CA private key is backed up by authorised personnel within strict procedures onto multiple smart cards which are stored in a safe.

6.2.5 Private key archival

The TSP does not support private key archival

6.2.6 Private key transfer into or from a cryptographic module

Please refer to section 6.2.4

6.2.7 Private key storage on cryptographic module

Please refer to section 6.2.8

6.2.8 Method of activating private key

As private keys are stored in a trustworthy system supporting server signing (TW4S), their protection is ensured. The end user keys can be used in the HSM, which is configured in such a way that usage is only possible after users enter their PIN in the Authenticate app provided by Ubiqu. An IT audit statement was issued to this effect.

6.2.9 Method of deactivating private key

No stipulation

6.2.10 Method of destroying private key

No stipulation

6.2.11 Cryptographic Module Rating

Please refer to section 6.2.1

6.3 Other aspects of key pair management

6.3.1 Public key archival

Public keys are available to the subject via the TSP´s user portal and archived ten years.

6.3.2 Certificate operational periods and key pair usage periods

Certificates can never be valid for a longer time period than their parent root certificate. However, it is Cleverbase's policy to renew root certificates as soon as their expiration date is less than three years away, ensuring a minimum validity of three years for end user certificates.

6.4 Activation data

6.4.1 Activation data generation and installation

As private keys are stored in a trustworthy system supporting server signing (TW4S), their protection is ensured. The end user keys can be used in the HSM, which is configured in such a way that usage is only possible after users enter their PIN in the Authenticate app provided by Ubiqu. An IT audit statement was issued to this effect.

6.4.2 Activation data protection

Please refer to section 6.4.1

6.4.3 Other aspects of activation data

No stipulation

6.5 Computer security Controls

6.5.1 Specific computer security technical requirements

The TSP has a great number of security controls in place

- Two-factor authentication for systems,
- Cryptographically secured connections,
- Cryptographically secured audit logs
- Separation in development, acceptance and production environments
- Network zoning, physical and logical access control, hardening of systems
- Risk based logging, monitoring and alerting implemented
- Trusted roles assigned and training for operating these systems
- Security assessments; including vulnerability scanning and penetration testing

Taken together, these security controls ensure that the systems used by TSP can be considered 'trustworthy systems' as meant in ETSI EN 419 261. An IT audit statement was issued to this effect. Furthermore the security processes comply to the specific requirements in ETSI 319-411-1, ETSI 319-411-2 and ISO27001. Cleverbase is certified against these standards by BSI Group The Netherlands B.V.

6.5.2 Computer security rating

Please refer to section 6.5.1

6.6 Life cycle technical controls

6.6.1 System development controls

Please refer to section 6.5.1

6.6.2 Security management controls

Please refer to section 6.5.1

6.6.3 Life cycle security controls

Please refer to section 6.5.1

6.7 Network security controls

Please refer to section 6.5.1

6.8 Time-Stamping

Please refer to section 5.4.2

7 Certificate, CRL, and OCSP profiles

7.1 Certificate profiles

The ‘persoon burger’ certificate has the following profile:

field		critical	‘persoon burger’ (3c)
Version			2
SerialNumber			[number unique to the CA, including at least 64 bits of unpredictable random data created by a Cryptographically Secure Pseudo Random Number Generator]
Signature			Sha-256WithRSAEncryption (1.2.840.113549.1.1.11)
Issuer*	commonName (2.5.4.3)		Cleverbase ID PKIoverheid Burger CA - G3
	organizationIdentifier (2.5.4.97)		NTRNL-67419925
	organizationName (2.5.4.10)		Cleverbase ID B.V.
	countryName (2.5.4.6)		NL

Validity	notBefore		[date of issue][5]
	notAfter		[date of issue + 1095 days]5[,6]
Subject*	serialNumber		See section 3.1
	commonName		
	countryName		
	givenName		
	surName		
subjectPublicKeyInfo	algorithm		rsaEncryption (1.2.840.113549.1.1.1)
	subjectPublicKey		[certificate holder's public key]
authorityKeyIdentifier (2.5.29.35)	keyIdentifier	No	[sha1 hash of CA's public key]
subjectKeyIdentifier (2.5.29.14)	keyIdentifier	No	[sha1 hash of the public key in the certificate]
keyUsage (2.5.29.15)		Yes	*Authenticity certificate:* digitalSignature (1000 0000 0) *Encryption certificate:* keyEncipherment dataEncipherment (0011 0000 0) *Non-repudiation certificate:* nonRepudiation (0100 0000 0)
certificatePolicies (2.5.29.32)	policyIdentifier	No	*Authenticity certificate:* 2.16.528.1.1003.1.2.3.1 *Encryption certificate:* 2.16.528.1.1003.1.2.3.3 *Non-repudiation certificate:* 2.16.528.1.1003.1.2.3.2

[5] Time stamps mentioned here may deviate a few minutes, cf. RFC 4270, section 5.1.

[6] Certificates can never be valid for a longer time period than their parent root certificate. However, it is Cleverbase's policy to renew root certificates as soon as their expiration date is less than three years away, ensuring a minimum validity of three years for end user certificates.

	cPSuri (1.3.6.1.5.5.7.2.1)		https://pki.cleverbase.com/cps.pdf
	userNotice (1.3.6.1.5.5.7.2.2)		Reliance on this certificate by any party assumes acceptance of the relevant Cleverbase Certification Practice Statement and other documents in the Cleverbase repository.
subjectAltName (2.5.29.17)	otherName	No	MS UPN: [Subject.serialNumber]@2.16.528.1.1003.1.3.3.4.1
CRLDistributionPoints (2.5.29.31)	FullName	No	http://pki.cleverbase.com/cleverbase3c.crl
ExtKeyUsage (2.5.29.37)		No	*Authenticity certificate:* clientAuthentication (1.3.6.1.5.5.7.3.2) documentSigning (1.3.6.1.4.1.311.10.3.12) emailProtection (1.3.6.1.5.5.7.3.4) *Encryption certificate:* emailProtection (1.3.6.1.5.5.7.3.4) encryptingFileSystem (1.3.6.1.4.1.311.10.3.4) *Non-repudiation certificate:* documentSigning (1.3.6.1.4.1.311.10.3.12) emailProtection (1.3.6.1.5.5.7.3.4)
authorityInfoAccess (1.3.6.1.5.5.7.1)		No	AccessMethod: id-ad-ocsp (1.3.6.1.5.5.7.48.1) AccessLocation: http://pki.cleverbase.com/ocsp/3c AccessMethod: id-ad-caIssuers (1.3.6.1.5.5.7.48.2) AccessLocation: http://pki.cleverbase.com/CleverbaseBurgerG3.cer
QcStatement (1.3.6.1.5.5.7.1.3)		No	*Only for the non-repudiation certificate:* id-etsi-qcs-QcCompliance (0.4.0.1862.1.1)

		id-etsi-qct-esign (0.4.0.1862.1.6.1) id-etsi-qcs-QcSSCD (0.4.0.1862.1.4) id-etsi-qcs-QcPDS (0.4.0.1862.1.5) PDS URL = https://pki.cleverbase.com/pki-disclosure-statement.pdf PDS Lang = en

7.2 CRL profiles

The Cleverbase CRL has the following profile:

field		critical	contents
Version			1 (version 2)
Signature			sha-256WithRSAEncryption
Issuer*	commonName (2.5.4.3)		Cleverbase ID PKIoverheid Burger CA - G3
	organizationIdentifier (2.5.4.97)		NTRNL-67419925
	organizationName (2.5.4.10)		Cleverbase ID B.V.
	countryName (2.5.4.6)		NL
ThisUpdate			[time of issue of the CRL]
NextUpdate			[time of issue of the CRL + 7 days]
revokedCertificates			[revoked certificates]
CRLNumber		No	[subsequent number]

7.3 OCSP profile

The Cleverbase OSCP has the following profile:

field	critical	'persoon burger' (3c)
Version		2
SerialNumber		[number unique to the CA, including at least 8 bytes of unique data]
Signature		Sha-256WithRSAEncryption (1.2.840.113549.1.1.11)

Issuer*	commonName (2.5.4.3)		Cleverbase ID PKIoverheid Burger CA - G3
	organizationIdentifier (2.5.4.97)		NTRNL-67419925
	organizationName (2.5.4.10)		Cleverbase ID B.V.
	countryName (2.5.4.6)		NL
Validity	notBefore		[date of issue]
	notAfter		[date of issue + 1095 days]
Subject*	commonName (2.5.4.3)		OCSP Signing Cleverbase ID Burger CA - G3
	organizationIdentifier (2.5.4.97)		NTRNL-67419925
	organizationName (2.5.4.10)		Cleverbase ID B.V.
	countryName (2.5.4.6)		NL
subjectPublicKeyInfo	algorithm	No	rsaEncryption (1.2.840.113549.1.1.1)
	subjectPublicKey		Contains the public key
authorityKeyIdentifier (2.5.29.35)	keyIdentifier	No	[sha1 hash of the CA's public key]
SubjectKeyIdentifier (2.5.29.14)	keyIdentifier	No	[sha1 hash of the public key in the certificate]
KeyUsage (2.5.29.15)		Yes	digitalSignature (1000 0000 0)
CertificatePolicies (2.5.29.32)	policyIdentifier	No	2.16.528.1.1003.1.2.3.1
	cPSuri (1.3.6.1.5.5.7.2.1)		https://pki.cleverbase.com/cps.pdf
	userNotice (1.3.6.1.5.5.7.2.2)		Reliance on this certificate by any party assumes acceptance of the relevant Cleverbase Certification Practice Statement and other documents in the Cleverbase repository.
subjectAltName (2.5.29.17)	otherName	No	Microsoft UPN: 42@2.16.528.1.1003.1.3.3.4.1
CRLDistributionPoints (2.5.29.31)	FullName	No	http://pki.cleverbase.com/cleverbase3c.crl
ExtKeyUsage (2.5.29.37)		No	id-kp-OCSPSigning (1.3.6.1.5.5.7.3.9)
OCSPNoCheck (1.3.6.1.5.5.7.48.1.5)		No	
authorityInfoAccess (1.3.6.1.5.5.7.1)		No	AccessMethod: id-ad-ocsp (1.3.6.1.5.5.7.48.1)

		AccessLocation: http://pki.cleverbase.com/ocsp/3c

* In accordance with RFC 4514, the order in which distinguished names in this CPS are represented is an inversion of their occurrence in the underlying ASN.1 structure.

8 Compliance audit and other assessments

8.1 Frequency or circumstances of assessment

Cleverbase is a trust service provider as meant in the eidas regulation (EU 910/2014). For this reason, it is subject to supervision by the Radiocommunications Agency Netherlands (Agentschap Telecom). Compliance certificates have a validity of two years, with annual interim audits. Moreover, internal audits are performed regularly.

8.2 Identity/qualifications of assessor

Cleverbase is certified against the ETSI EN 319 411-1 and ETSI EN 319 411-2 standards by BSI Group The Netherlands B.V., which in turn is certified by RvA. At certification a statement was delivered implying that Cleverbase issues certificates in accordance with part 3c of the Statement of Requirement PKIoverheid and the eIDAS regulation.

8.3 Assessor's relationship to assessed entity

The auditor performing the compliance audit has no relationship whatsoever with Cleverbase.

8.4 Topics covered by assessment

The scope of the compliance audit comprises the following services:

- Registration service
- Certificate generation service
- Revocation management service
- Revocation status service
- Dissemination service
- Subject device provision service

8.5 Actions taken as a result of deficiency

If, unexpectedly, deviations are found, a Corrective Action Plan is drafted to correct the deviations. The Corrective Action Plan is agreed upon with the external auditor and are given to the disposal of the Radiocommunications Agency Netherlands (Agentschap Telecom) and the Policy Authority Logius.

8.6 Communication of results

Compliance audit certificates can be consulted on Cleverbase's website: https://cleverbase.com/en/certification/. The underlying audit reports are confidential, and are given to the disposal of the Radiocommunications Agency Netherlands (Agentschap Telecom) and the Policy Authority Logius.

9 Other business and legal matters

9.1 Fees

9.1.1 Certificate issuance or renewal fees

Certificate issuance may be either charged or free of charge. The TSP enters into detailed agreements with subscribers for single or periodic payments.

9.1.2 Certificate access fees

No compensation is required for the provision of certificate status information or other information on certificates. Only if exceptional efforts are required to answer an information request, reasonable costs can be charged. In such a case, the requester of this information is informed about the costs before committing to any expenditures.

9.1.3 Revocation or status information access fees

Please refer to 9.1.2

9.1.4 Fees for other services

No stipulation

9.1.5 Refund policy

No stipulation

9.2 Financial responsibilities

9.2.1 Insurance coverage

The TSP shall not be liable for any damage caused by the TSP, unless in cases and insofar as described in art. 13 of the eidas regulation. The TSP's general terms and conditions contain the same limitation of liability. In order to cover this liability, the TSP has arranged a liability insurance covering up to at least 1,000,000.- euro.

The TSP is not liable if certificates are not used as described in the certificates themselves.

9.2.2 Other assets

No stipulation

9.2.3 Insurance or warranty coverage for end-entities

No stipulation

9.3 Confidentiality of business information

9.3.1 Scope of confidential information

The TSP considers all data provided within the framework of the certification service as confidential

9.3.2 Information not within the scope of confidential information

All data not mentioned in 9.3.1

9.3.3 Responsibility to protect confidential information

Any party having confidential information at its disposal is responsible for ensuring its confidentiality

.

9.4 Protection of personal data

The TSP has an Information Security Management System (ISMS) in place, ensuring confidentiality of personal data processed by the TSP. Furthermore the TSP's Privacy Statement is applicable to all the provided services.

9.4.1 Privacy plan

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.2 Information treated as private

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.3 Information not deemed private

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.4 Responsibility to protect private information

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.5 Notice and consent to use private information

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.6 Disclosure pursuant to judicial or administrative process

Please refer to the Cleverbase Privacy Statement available on the public website

9.4.7 Other information disclosure circumstances

No stipulation

9.5 Intellectual property rights

All documents, products and services made public by the TSP are subject to the TSP's copyright and/or it's suppliers/licensees. It must be stressed here that this does not apply to documents that are signed by

certificate holders using a TSP-issued certificate. The TSP indemnifies clients against claims by third parties regarding possible violations of intellectual property rights by the TSP.

9.6 Statements and warranties

The TSP hereby warrants that it:

A. observes the procedures described in this TPS;
B. has performed all reasonable actions in order to ensure that information included in the issued certificates is correct at the time of issuance;
C. will revoke certificates if it presumes that data in the certificates is not or no longer accurate, or that the private key correlating to the certificate was compromised.

9.6.1 CA representations and warranties

No stipulation, please refer to section 9.6

9.6.2 RA representations and warranties

No stipulation, please refer to section 9.6

9.6.3 Subscriber representations and warranties

No stipulation, please refer to section 9.6

9.6.4 Relying party representations and warranties

No stipulation, please refer to section 9.6

9.6.5 Representations and warranties of other participants

No stipulation, please refer to section 9.6

9.7 Disclaimers of warranties

No limitations of warranties apply other than those mentioned in section 9.6.

9.8 Limitations of liability

No limitations of liability apply other than those mentioned in section 9.2.

9.9 Indemnities

No stipulation

9.10 Term and Termination

9.10.1 Term

The TSP's CPS is effective immediately after publication in the public repository and remains effective until a new version is published.

9.10.2 Termination

By publishing a new version of the CPS, the previous version of the CPS is terminated.

9.10.3 Effect of termination and survival

No stipulation

9.11 Individual notices and communications with participants

The TSP can be contacted via mail, electronic mail and telephone. The TSP publishes information on its public website and contacts individual subjects via electronic mail or telephone.

9.12 Amendments

9.12.1 Procedure for amendment

Amendments to this CPS are made using the pre-defined, regular procedures for changing components of the TSP services.

9.12.2 Notification mechanism and period

Please refer to section 9.10.1

9.12.3 Circumstances under which OID must be changed

No stipulation

9.13 Dispute resolution provisions

If a dispute arises between the TSP and a customer, or between the TSP and a third party, the TSP's management, having heard all involved and considered all interests at stake, decides. Such a decision is written down and delivered within a reasonable period of time. This procedure does not limit the possibility to submit disputes to the civil court in The Hague.

9.14 Governing law

All the TSP's activities are subject to Dutch law.

9.15 Compliance with applicable law

The TSP complies with the applicable laws and regulations.

9.16 Miscellaneous Provisions

9.16.1 Entire agreement

No stipulation

9.16.2 Assignment

No stipulation

9.16.3 Severability

No stipulation

9.16.4 Enforcement (attorneys' fees and waiver of rights)

No stipulation

9.16.5 Force Majeure

No stipulation

9.17 Other Provisions

No stipulation