

První certifikační autorita, a.s.



Root Qualified Certification Authority Certification Policy

(RSA Algorithm)

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Version 1.11

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Table 1 – Document Development

Version	Date of Release	Approved by	Comments
1.0	18 May 2015	CEO of První certifikační autorita, a.s.	First release.
1.10	1 February 2017	CEO of První certifikační autorita, a.s.	Modified to match statutory requirements for trust services.
1.11	6 April 2017	CEO of První certifikační autorita, a.s.	Wording made more accurate.

1 INTRODUCTION

This document determines the principles applied by První certifikační autorita, a.s. (also as the I.CA), a qualified provider of trust services, in issuing certificates by the root certification authority (also as the Service or the Certificate). The RSA cryptographic algorithm (also as the RSA) is used for the Service provided under this certification policy (also as the CP).

The statutory requirements in respect of the Service are defined in:

- Regulation (EU) no 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC;
- Act of the Czech Republic No. 297/2016 Coll., on trust services for electronic transactions.

Note: Any reference in this text to standards or laws is always a reference to that standard or law or the replacing standard or law. If this policy is in conflict with any standard or law that replaces the current standard or law, a new policy version will be released.

1.1 Overview

The document the **Root Qualified Certification Authority's Certification Policy (the RSA Algorithm)**, also as the CP, is prepared by První certifikační autorita, a.s. (also as I.CA), deals with the issues related to life cycle processes of the certificates issued by I.CA and strictly follows a structure matching the scheme of valid RFC 3647 standard while taking account of valid standards and rules of the European Union and the laws of the Czech Republic pertinent to this sphere (therefore, each chapter is preserved in this document even if it is irrelevant to this sphere). The document is divided into nine basic chapters and these are briefly introduced in the following list:

- Chapter 1 identifies this document with the allocated unique identifier, generally describes the entities and individuals taking part in the provision of this Service, and defines the acceptable use of the Certificates available to be issued.
- Chapter 2 deals with the responsibility for the publication and information or documents.
- Chapter 3 describes the processes of identification and authentication of an applicant for the issuance or revocation of a Certificate, and defines the types and contents of the names used in Certificates.
- Chapter 4 defines life cycle processes of Certificates, i.e. application, the issuance of the Certificate, Certificate revocation request, the revocation of the Certificate, the services related to the verification of Certification status, termination of the provision of the Service, etc.
- Chapter 5 covers physical, procedural and personal security, including the definition of the set of events subject to logging, the keeping of these records and responses to emergency and compromising situations.
- Chapter 6 focuses on the technical security of the type of generating public and private keys, protection of private keys, including the computer and network protection.
- Chapter 7 defines the profile of issued Certificates and CRL.
- Chapter 8 focuses on assessing the Service delivered.

- Chapter 9 deals with commercial and legal aspects.

More detail on the fulfilment of the items of the certificates issued under this policy and the administration thereof are provided in the relevant certification practice statement (also as the CPS).

1.2 Document name and identification

This document's title: Root Qualified Certification Authority's Certification Policy (the RSA Algorithm), version 1.11

Policy OID: 1.3.6.1.4.1.23624.10.1.10.1.1

1.3 PKI participants

1.3.1 Certification authorities (also as 'CA')

The root certification authority (also as the Authority) issues certificates for the certification authorities subordinate to the Authority and for the Authority's OCSP responder, in a two-tier certification authority structure, in accordance with valid legislation and technical and other standards.

As the Authority is off line, it has no live connection to the external network at any time. Only the Authority's OCSP responder is on line. The Authority's physical information system is comprised of dedicated computers; the HSM module containing the private key is connected to the Authority's information system via a dedicated secured interface.

1.3.2 Registration authorities (also as 'RA')

A special registration authority owned by I.CA participates in the life cycle processes of the Authority-issued certificates.

1.3.3 Subscribers

The subscriber of the Certificate to be issued is První certifikační autorita, a.s., which applied for the Certificate for itself and is identified in the Certificate as subject (holder of the private key connected with the public key specified in this Certificate).

1.3.4 Relying parties

Any entity relying in their operations on the Certificates issued under this CP is a relying party.

1.3.5 Other participants

Other participating parties are investigative, prosecuting and adjudicating bodies, supervisory bodies and other bodies recognised as such by valid legislation.

1.4 Certificate usage

1.4.1 Appropriate certificate uses

Any Certificate issued by the Authority under this CP may solely be used for verifying:

- electronic marks/seals of the Authority-issued Certificates, the Authority's certificate revocation lists (CRLs) and the Authority's responder's OCSP responses;
- electronic marks/seals of the certificates and CRLs issued or released by subordinate certification authorities and the OCSP responses released by the OCSP responders of the subordinate certification authorities.

1.4.2 Prohibited certificate uses

Certificates issued by the Authority under this CP may not be used contrary to the acceptable use described in 1.4.1 or contrary to law.

1.5 Policy administration

1.5.1 Organization administering the document

This CP and its CPS are administered by První certifikační autorita, a.s.

1.5.2 Contact person

The contact person of První certifikační autorita, a.s. in respect of this CP and its CPS is specified on a web page – see 2.2.

1.5.3 Person determining CPS suitability for the policy

CEO of První certifikační autorita, a.s. is the sole person responsible for making decisions about compliance of the procedures of První certifikační autorita, a.s. as set out in CPS with this CP.

1.5.4 CPS approval procedures

If it is necessary to make changes to a CPS to create a new version thereof, the Chief Executive Officer of První certifikační autorita, a.s. appoints a person authorized to perform such changes. No new CPS version may take force unless it has been approved by CEO of První certifikační autorita, a.s.

1.6 Definitions and acronyms

Table 2 – Definitions

Term	Explanation
bit	from English <i>binary digit</i> – the fundamental and the smallest

	unit of information in digital technologies
Classified Information Protection Act	the Czech Republic's Act No. 412/2005 Coll., regulating classified information protection and security competence, as amended
contracting partner	provider of selected trust services contracted by I.CA for providing trust services or parts thereof – usually, it is the contracted RA
Directive	DIRECTIVE 1999/93/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 1999 on a Community framework for electronic signatures
electronic mark	electronic mark under valid trust services legislation
electronic seal	electronic seal or advanced electronic seal or recognised electronic seal or qualified electronic seal under valid trust services legislation
electronic signature	electronic signature or advanced electronic signature or qualified electronic signature or recognised electronic signature under valid trust services legislation
hash function	transformation which receives, as an input, a string of characters of arbitrary length, and the result is a string of characters of fixed length (hash)
issuing, subordinate CA	for this document, the CA issuing certificates to end users
key pair	the private key and the corresponding public key
Labour Code	the Czech Republic's Act No. 262/2006 Coll., Labour Code, as amended
OCSP responder	server using the OCSP protocol to provide data on public key certificate status
private key	unique data to create electronic signature/mark/seal
public key	unique data to verify electronic signature/mark/seal
qualified trust service	trust service that meets the eIDAS requirements
qualified electronic signature certificate	certificate defined by valid trust services legislation
qualified electronic signature creation device	electronic signature creation device that meets the requirements defined in Attachment 2 to eIDAS
relying party	party relying on a certificate in its operations
root CA	certification authority that issues qualified system certificates and electronic seal certificates to subordinate certification authorities
supervisory body	body supervising compliance with trust services legislation
time stamp	electronic time stamp or qualified electronic time stamp as defined by valid trust services legislation
trust services legislation	the Czech Republic's legislation related to electronic transaction trust services and the eIDAS Regulation

two-factor authentication	authentication employing two of three factors – I know something (the password), I have something (a smart card or a hardware token) or I am something (fingerprint, retina or iris reading)
written contract	text of an electronic or printed contract

Table 3 – Acronyms

Acronym	Explanation
ARC	Alarm Receiving Centre
BIH	Bureau International de l'Heure – The International Time Bureau
CA	certification authority
CEN	European Committee for Standardization, an association of national standardisation bodies
CRL	Certificate Revocation List – the list of revoked certificates, which are not held as valid any longer
ČR	the Czech Republic
ČSN	designation of Czech technical standards
DER, PEM	methods of certificate encoding (certificate formats)
eIDAS	REGULATION (EU) no 910/2014 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC
EN	European Standard, a type of ETSI standard
ESI	Electronic Signatures and Infrastructures
ETSI	European Telecommunications Standards Institute, a European standardisation institute for information and communication technologies
EU	European Union
FAS	Fire Alarm System
FIPS	Federal Information Processing Standard, standards for information technologies for U.S. non-military state organisations
html	Hypertext Markup Language, a markup language for creating hypertext documents
http	Hypertext Transfer Protocol, a protocol for exchanging html text documents
https	Hypertext Transfer Protocol, a protocol for secure exchanging of html text documents
I.CA	První certifikační autorita, a.s.

IAS	Intrusion Alarm System
IEC	International Electrotechnical Commission, a global organisation publishing standards for electrical and electronic engineering, communication technologies and related industries
IPS	Intrusion Prevention System
ISMS	Information Security Management System
ISO	International Organization for Standardization, an international organisation of national standardisation organisations; designation of standards
ITU	International Telecommunication Union
ITU-T	Telecommunication Standardization Sector of ITU
MPSV	Ministry of Labour and Social Affairs
OCSP	Online Certificate Status Protocol, the protocol to identify public key certificate status
OID	Object Identifier, numerical object identification
PDCA	Plan-Do-Check-Act, Deming cycle, a method of continuous improvement
PDS	PKI Disclosure Statement
PKCS	Public Key Cryptography Standards, designation for a group of standards for public key cryptography
PKI	Public Key Infrastructure
PUB	Publication, FIPS standard designation
QSCD	Qualified Electronic Signature/Seal Creation Device
RA	registration authority
RFC	Request for Comments, designation for a range of standards and other documents describing web protocols, systems, etc.
RSA	signing and encrypting public key cipher (acronym from the names of the original authors: Rivest, Shamir and Adleman)
SHA	type of hash function
TS	Technical Specification, type of ETSI standard
UPS	Uninterruptible Power Supply/Source
URI	Uniform Resource Identifier, defined-structure text string for accurate specification of a source of information
UTC	Universal Co-ordinated Time, standard adopted on 1 January 1972 for the global coordinated time – Bureau International de l'Heure (BIH) plays the role of the 'official keeper' of the atomic time for the whole world
ZOOÚ	the Czech Republic's Act No. 101/2000 Coll., regulating personal data protection and amending some acts (the

	Personal Data Protection Act), as amended
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2 PUBLICATION AND REPOSITORY RESPONSIBILITIES

2.1 Repositories

První certifikační autorita, a.s. sets up and operates repositories of both public and non-public information.

2.2 Publication of certification information

The basic addresses (also as the Information Addresses) for obtaining information about První certifikační autorita, a.s. and the links to find out more information are as follows:

- registered office:
První certifikační autorita, a.s.
Podvinný mlýn 2178/6
190 00 Praha 9
Czech Republic
- website: <http://www.ica.cz>;
- registered offices of the registration authorities.

Electronic address for contact between general public and I.CA: info@ica.cz.

The aforesaid website provides information about:

- public certificates – the following information is published (and more information can be obtained from the certificate):
 - certificate number
 - content of commonName
 - valid from data (specifying the hour, minute and second)
 - link to where the certificate can be obtained in the specified format (DER, PEM, TXT)
- certificate revocation list (CRL) – the following information is published (and more information can be obtained from the CRL):
 - data of CRL release
 - CRL number
 - link to where the CRL can be obtained in the specified format (DER, PEM, TXT)
- certification and other policies and implementing regulations, certificates issued or revoked and other public information.

Http and https are the permitted protocols for access to public information. I.CA may terminate or suspend access to some information without cause.

Any revocation of a certificate employed in issuing certificates to end users, a release of certificate revocation list, and the provision of certificate status information (also as Infrastructure Certificates) because of suspected or actual compromise of a given private key

will be announced by I.CA on its web Information Address and in Hospodářské noviny or Mladá fronta Dnes, daily newspapers with national distribution.

2.3 Time or frequency of publication

I.CA publishes information as follows:

- certification policy – after a new version is approved and issued;
- certification implementing policy – immediately;
- list of the certificates issued – updated every time a new certificate subject to publication is issued;
- certificate revocation list (CRL) – see 4.9.7;
- information about infrastructure certificate revocation with the date of revocation – immediately;
- other public information – no specific time limit, the general rule is that this information must correspond to the current state of the services provided.

2.4 Access controls on repositories

All public information is made available by I.CA free of charge without any restrictions.

Non-public information is available only to authorized employees of I.CA or the parties specified by the applicable legislation. Access to such information is governed by the rules defined in internal documentation.

3 IDENTIFICATION AND AUTHENTICATION

3.1 Naming

3.1.1 Types of names

All names are construed in accordance with valid technical and other standards.

3.1.2 Need for names to be meaningful

For a Certificate to be issued, all verifiable names given in the field Subject must carry a meaning. See chapter 7 for the items supported for this field and the extended field.

3.1.3 Anonymity or pseudonymity of subscribers

The Certificates issued under this CP do not support either pseudonyms or anonymity.

3.1.4 Rules for interpreting various name forms

The data specified during the certificate application procedure are carried over into certificates in the form they are specified in the documents submitted.

3.1.5 Uniqueness of names

The Authority guarantees the uniqueness of a Certificate's fields Subject and Issuer.

3.1.6 Recognition, authentication, and role of trademarks

Any Certificate issued under this CP may only contain trademarks which are property of První certifikační autorita, a.s.

3.2 Initial identity validation

The following chapters specify the rules for the initial verification of the identity of the organisation applying for a Certificate and the verification of the identity of this organisation's representative.

3.2.1 Method to prove possession of private key

The ownership of the private key matching the public key in the Certificate application must be proved by submitting the application in the PKCS#10 format. The application is provided with electronic seal/mark using this private key whereby the private key holder provides evidence that he is the holder of the private key when the electronic seal/mark is created.

3.2.2 Authentication of organization identity

This requires the submission of the original or certified copy of the entry in the Commercial Register or in another register specified by law, of a trade license, of a deed of incorporation, or of another document of the same legal force.

This document must contain full business name, identification number (if any), registered office, the name(s) of the person(s) authorized to act on behalf of the legal entity (authorized representatives).

3.2.3 Authentication of individual identity

This chapter describes the methods of verifying an individual's identity, i.e. the person representing I.CA applying for a Certificate.

The I.CA-representing person identity verification procedure requires two documents, a primary and a secondary document, that show the data specified further in this chapter.

Valid personal identity card or passport must be used as the primary personal document for the citizens of the Czech Republic. Valid passport is the primary personal document for foreigners; citizens of EU member countries may use their valid personal identity card they use in their country as the proof of their identity.

The following data are verified in this document:

- full civil name;
- data and place of birth or the birth identification number if shown in the primary document;
- number of the primary personal document;
- permanent address (if shown in the primary document).

The secondary document must contain a unique identification, such as birth identification number or personal identity card number, matching it to the primary document and must show at least one of these items:

- data of birth (or birth identification number if specified);
- permanent address;
- photograph of the face.

The secondary personal document data must be identical to those in the primary personal document.

3.2.4 Non-verified subscriber information

All information must be duly verified.

3.2.5 Validation of authority

Not applicable to this document.

3.2.6 Criteria for interoperation

Any collaboration between První certifikační autorita, a.s. and other trust service providers is always based on a contract in writing.

3.3 Identification and authentication for re-key requests

3.3.1 Identification and authentication for routine re-key

A new Certificate with a new public key needs to be issued. The same requirements as those in the initial identity verification apply.

3.3.2 Identification and authentication for re-key after revocation

This is irrelevant to this document as the service of public key replacement after Certificate revocation is not supported. A new Certificate with a new public key needs to be issued. The same requirements as those in the initial identity verification apply.

3.4 Identification and authentication for revocation request

The entities authorized to apply for Certificate revocation are listed in 4.9.2.

Every certificate revocation request must be made in writing and signed by CEO of I.CA or a person authorized by CEO of I.CA. Their identity must be duly verified with their primary personal documents. If this authorized person is not defined by law as a person authorized to represent I.CA, this person must also submit an officially authenticated power of attorney, signed by the authorized representative, for representing the company.

The data required for Certificate revocation request are listed in 4.9.3.

4 CERTIFICATE LIFE-CYCLE OPERATIONAL REQUIREMENTS

4.1 Certificate application

4.1.1 Who can submit a certificate application

The organisation may apply for a Certificate via the person representing this organisation, which is solely CEO of První certifikační autorita, a.s.

4.1.2 Enrollment process and responsibilities

The written application for the Certificate is submitted by the management of První certifikační autorita, a.s. by CEO of I.CA and must include the business name and OID of this certification policy and the required CA name (commonName). The application must bear the signature of CEO of I.CA.

The subscriber is required to do the following, among other things:

- get acquainted with this CP and observe it;
- provide true and complete information for the issuance of the Certificate;
- check whether the data specified in the Certificate application and the Certificate issued are correct and correspond to the required data;
- choose a suitable Certificate revocation password (the minimum/maximum password length is 4/32 characters; permitted characters: 0..9, A..Z, a..z).

The Service provider is required to do the following, among other things:

- during the Certificate issuance process, check with RA all the data specified in the application against the documents submitted;
- issue a Certificate that contains materially correct data on the basis of the information available to the Service provider as at the issuance of the Certificate;
- publish public information in accordance with 2.2;
- publish the Certificates issued;
- provide any Service-related activity in accordance with valid trust services legislation, the relevant technical standards, this CP, the relevant CPS, the System Security Policy, and the operating documentation.

4.2 Certificate application processing

4.2.1 Performing identification and authentication functions

Certificate issuance identification and authentication are carried out pursuant to 3.2.2 and 3.2.3.

4.2.2 Approval or rejection of certificate applications

The management of První certifikační autorita, a.s. considers the application and approves or dismisses the issuance of the Certificate with the pertinent content of the Subject and Issuer fields. The result is documented.

4.2.3 Time to process certificate applications

The written Certificate application must be handled within five business days of the date the application is submitted to the company management.

I.CA must issue the Certificate when Certificate issuance is granted. The Certificate is issued within units of minutes.

4.3 Certificate issuance

4.3.1 CA actions during certificate issuance

RA employees (also as the Employees) do the following in the procedure leading to the decision accepting or dismissing the issuance of the Certificate:

- make a visual check as to conformity of the data in the Certificate application (the PKCS#10 structure) with the data in the documents submitted;
- make a visual check as to the formal correctness of data.

Private key ownership verification and formal data correctness check are also carried out using the RA system software.

If any of these checks gives a fail result, the Certificate issuance procedure is terminated; otherwise the CA operators (also as the Operators) continue with the procedure and:

- make a visual check as to conformity of the data in the Certificate application (the PKCS#10 structure) and the data entered by an RA employee;
- make a visual check as to the formal correctness of data.

The verification of private key ownership and the supported hash function in the Certificate application (no weaker than sha-256) and the formal data correctness check are carried out with both the software on CA operators' work stations and that on the CA system core. If any of these checks gives a fail result, the Certificate issuance procedure is terminated.

4.3.2 Notification to subscriber by the CA of issuance of certificate

During the Certificate issuance process, the subscriber, or the representative of the organisation applying for the Certificate, receives information from the RA (or CA) employee and the Certificate is sent to the contact email provided during enrolment as mandatory data.

4.4 Certificate acceptance

4.4.1 Conduct constituting certificate acceptance

If the Certificate issuance requirements are met, the subscriber must accept the Certificate. The only way to refuse to take over the Certificate is request for the Certificate's revocation in accordance with this CP.

4.4.2 Publication of the certificate by the CA

Certificates issued under this CP are published in the manner pursuant to 2.2.

The root certification authority's certificate and the subordinate certification authorities' certificates related to trust services are handed over to the supervisory body.

4.4.3 Notification of certificate issuance by the CA to other entities

Chapter 4.4.2 and/or the requirements set out in valid trust services legislation apply.

4.5 Key pair and certificate usage

4.5.1 Subscriber private key and certificate usage

The subscriber must, among other things:

- use the private key and its corresponding public key in the issued Certificate in accordance with this CP;
- handle the private key corresponding to the public key in the Certificate issued under this CP in a manner as to prevent any unauthorized use of the private key;
- report any actual or suspected compromise of the private key corresponding to the public key in the Certificate issued under this CP, immediately and in accordance with the valid trust services legislation, and stop using such a private key.

4.5.2 Relying party public key and certificate usage

Relying parties must, among other things:

- obtain the certificates of certification authorities from a secure source (the web page specified in 2.2, an RA office or the supervisory body's website or journal) and make a checksum of these certificates;
- carry out any operation necessary for them to verify that the Certificates have not been revoked.

4.6 Certificate renewal

Certificate renewal under this CP means the issuance of a new Certificate for a still valid Certificate without changing the public key, or the issuance of other information in the Certificate, or for a revoked Certificate, or for an expired Certificate.

Certificate renewal is not provided.

In respect of this CP, it is always the issuance of a new Certificate with a new public key, with all the information having to be duly verified. The same requirements as those in the initial identity verification apply – see 3.2.

4.6.1 Circumstance for certificate renewal

See 4.6.

4.6.2 Who may request renewal

See 4.6.

4.6.3 Processing certificate renewal requests

See 4.6.

4.6.4 Notification of new certificate issuance to subscriber

See 4.6.

4.6.5 Conduct constituting acceptance of a renewal certificate

See 4.6.

4.6.6 Publication of the renewal certificate by the CA

See 4.6.

4.6.7 Notification of certificate issuance by the CA to other entities

See 4.6.

4.7 Certificate re-key

Certificate public key replacement under this CP means the issuance of a new Certificate with a different public key but identical content of the items under the Subject field of the Certificate the public key of which is requested to be replaced.

The replacement of the public keys of certification authorities' certificates is not provided – it is always the issuance of a new certification authority certificate with a new public key, and all information must be duly verified in this issuance procedure. The same requirements as those in the initial identity verification apply – see 3.2.

4.7.1 Circumstance for certificate re-key

See 4.7.

4.7.2 Who may request certification of a new public key

See 4.7.

4.7.3 Processing certificate re-keying requests

See 4.7.

4.7.4 Notification of new certificate issuance to subscriber

See 4.7.

4.7.5 Conduct constituting acceptance of a re-keyed certificate

See 4.7.

4.7.6 Publication of the re-keyed certificate by the CA

See 4.7.

4.7.7 Notification of certificate issuance by the CA to other entities

See 4.7.

4.8 Certificate modification

Changing Certificate data under this CP means the issuance of a new Certificate in which a minimum of one change made to the content of the items, concerning the subscriber, under the Subject field or the SubjectAlternativeName extension or in which one field which requires content verification is deleted or added. The public key must be different from that in the Certificate which is to be replaced.

The service of changing Certificate data is not provided.

In respect of this CP, it is always the issuance of a new Certificate with a new public key, with all the information having to be duly verified. The same requirements as those in the initial identity verification apply – see 3.2.

4.8.1 Circumstance for certificate modification

See 4.8.

4.8.2 Who may request certificate modification

See 4.8.

4.8.3 Processing certificate modification requests

See 4.8.

4.8.4 Notification of new certificate issuance to subscriber

See 4.8.

4.8.5 Conduct constituting acceptance of modified certificate

See 4.8.

4.8.6 Publication of the modified certificate by the CA

See 4.8.

4.8.7 Notification of certificate issuance by the CA to other entities

See 4.8.

4.9 Certificate revocation and suspension

4.9.1 Circumstances for revocation

A Certificate must be revoked as a result of the following, among other things:

- if the private key corresponding to the Certificate's public key is compromised or reasonably suspected to have been compromised;
- a Certificate's technical content or format is a non-acceptable risk, such as the given cryptographic/signing algorithm or the key length;
- in any event specified in valid trust services legislation or the relevant technical and other standards, such as invalid Certificate data.

4.9.2 Who can request revocation

Certificate revocation request may be filed by:

- subscriber (in this case, CEO of I.CA) or an employee authorized by CEO of I.CA is authorized to request for the Certificate's revocation);
- or the supervisory body or other entities specified in valid trust services legislation, as may be the case.

4.9.3 Procedure for revocation request

The Certificate is revoked under personal participation of CEO of I.CA or the employee authorized by CEO of I.CA.

Any written Certificate revocation request must include the Certificate's serial number in the decimal or hexadecimal format (introduced by the string '0x'), the name of the Authority which issued the Certificate, the full name of the natural person authorized to apply for the Certificate's revocation, and the Certificate revocation password. If the natural person authorized to request for revocation does not know the Certificate revocation password, s/he must explicitly state this in the written application, along with the number of the primary

personal document submitted in the Certificate application procedure or the number of the new primary personal document if the original document has been replaced. The person must use this primary personal document to prove their identity.

4.9.4 Revocation request grace period

Certificate revocation request must be made immediately.

4.9.5 Time within which CA must process the revocation request

If the application meets the requirements, the employee in charge immediately revokes the Certificate in the CA's system, and the date and time the request is processed are the date and time of the Certificate's revocation. The CRL containing the serial number of the revoked Certificate must be issued immediately after that Certificate's revocation.

4.9.6 Revocation checking requirement for relying parties

Relying parties must take the course of action pursuant to 4.5.2.

4.9.7 CRL issuance frequency

The list of the revoked certificates issued under this CP is released after every Certificate revocation, and also in regular intervals no longer than one year of the release of the previous CRL.

4.9.8 Maximum latency for CRLs

The CRL is always released no longer than one year of the release of the previous CRL.

4.9.9 On-line revocation/status checking availability

Checking the status of a certification authority certificate using the OCSP protocol is a service available to the general public. Every certification authority certificate issued under this CP includes a link to the pertinent OCSP responder.

OCSP responses satisfy the RFC 2560 and RFC 5019 standards. The OCSP responder's certificate includes an id-pkix-ocsp-nocheck extension as defined in RFC 2560.

4.9.10 On-line revocation checking requirements

See 4.9.9.

4.9.11 Other forms of revocation advertisements available

Not applicable to this document; no other certificate revocation notification service is provided.

4.9.12 Special requirements for key compromise

The Certificate revocation procedure in the event of private key compromise is not different from the certificate revocation procedure described above.

4.9.13 Circumstances for suspension

Not applicable to this document; Certificate suspension is not provided.

4.9.14 Who can request suspension

Not applicable to this document; Certificate suspension is not provided.

4.9.15 Procedure for suspension request

Not applicable to this document; Certificate suspension is not provided.

4.9.16 Limits on suspension period

Not applicable to this document; Certificate suspension is not provided.

4.10 Certificate status services

4.10.1 Operational characteristics

Lists of the public Certificates issued by the Authority are provided as published information; revocation certificate lists are provided as published information and by specifying the CRL distribution points in the certificates issued.

The fact that the Authority provides Certificate status information as OCSP (the OCSP service) is specified in the Certificates issued.

4.10.2 Service availability

The Authority guarantees round-the-clock (24/7) availability and integrity of the list of the Certificates it has issued and the list of revoked certificates (valid CRLs), plus the availability of the OCSP service.

4.10.3 Optional features

Not applicable to this document; no other Certificate status check characteristics are provided.

4.11 End of subscription

The obligations of I.CA out of the certificates issuance contract survive the expiration of that contract until the expiration of the last certificate issued under that contract.

4.12 Key escrow and recovery

Not applicable to this document; the private key escrow is not provided.

4.12.1 Key escrow and recovery policy and practices

See 4.12.

4.12.2 Session key encapsulation and recovery policy and practices

See 4.12.

5 FACILITY, MANAGEMENT, AND OPERATIONAL CONTROLS

The management, control and operating procedures primarily deal with:

- trustworthy systems designed to support the Service;
- all processes supporting the provision of the Service.

The management, control and operating procedures are addressed in the fundamental documents Corporate Security Policy, System Security Policy, Certification Practice Statement, Business Continuity Plan and Recovery Plan as well as the more detailed internal documents. These documents take account of the results of periodic risk analyses.

5.1 Physical controls

5.1.1 Site location and construction

The operating site buildings are situated in geographically different locations, which are also different from the site of the company headquarters, the business and development sites, the registration authority sites and the points of sale.

The trustworthy systems designed to support the Service are situated on reserved premises of operating sites. These premises are secured in a manner similar to that required by the Classified Information Protection Act for the 'Confidential' category secure areas.

5.1.2 Physical access

See the company's internal documentation for the respective requirements as to physical access to the reserved premises (protected with mechanical and electronic features) of operating sites. Buildings are protected with intrusion alarm system (IAS), alarm receiving centre (ARC) and, as may be the case, a special system to monitor movement of persons and vehicles.

5.1.3 Power and air-conditioning

The premises housing the trustworthy systems supporting the Service have active air-conditioning of adequate capacity, which keeps the temperature at $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ all year round. The supply of electricity is backed up with a UPS (Uninterruptible Power Supply) and a diesel unit.

5.1.4 Water exposures

The trustworthy systems supporting the Service are so located as to ensure they cannot be flooded by a 100-year flood. Where relevant, operating sites have water ingress sensors to detect heating water leakage or rainfall leakage through the roof (as a result of heavy rains).

5.1.5 Fire prevention and protection

The buildings of the operating sites and the information storage sites have electronic fire alarm system (FAS). Fireproof insulation is installed in the entrance doors to the restricted areas in which the trustworthy systems designed to support trust services are situated, and fire extinguishers are fitted in these areas.

5.1.6 Media storage

Storage media containing operational backups and electronic records are stored in metal boxes or safes. Copies are kept at a site geographically different from the site of the operating office.

Any paper media required by valid trust services legislation to be kept are stored at a site geographically different from the site of the operating office.

5.1.7 Waste disposal

Any paper office waste is shredded before it leaves I.CA operating sites.

5.1.8 Off-site backup

The copies of operating and working backups are stored at a place designated by the Chief Executive Officer of I.CA and described in internal documentation.

5.2 Procedural controls

5.2.1 Trusted roles

Trusted roles are defined for selected activities carried out at I.CA. The trusted role employee appointment procedure, the trusted roles and their responsibilities are defined in internal documents.

No I.CA employee appointed to a trusted role may be in a conflict of interests that could compromise the impartiality of I.CA's operations.

5.2.2 Number of persons required per task

Jobs are defined for the processes related to the key pairs of certification authorities and OCSP responders and these jobs must be performed with more than a single person attending. These jobs include:

- initializing cryptographic module;
- generating key pair of any certification authority and the OCSP responder of the root certification authority;
- destroying the private keys of any certification authority and the OCSP responder of the root certification authority;
- making backups of the private keys of certification authorities (including the root certification authority), which issue qualified certificates to end users;

- recovering the private keys of all certification authorities and their OCSP responders;
- activating and deactivating the private keys of any certification authority and the OCSP responder of the root certification authority.

The number of attending persons is not defined for other jobs, but all persons must be authorized persons.

5.2.3 Identification and authentication for each role

Each role's employees are assigned identification (name and certificate) and authentication (password and private key) data for those components which are necessary for their jobs.

Selected jobs require two-factor authentication by trusted role employees.

5.2.4 Roles requiring separation of duties

The roles requiring separation of duties (and the roles' job descriptions) are described in internal documentation.

5.3 Personnel controls

5.3.1 Qualification, experience, and clearance requirements

I.CA's trusted role employees are selected accepted using the following criteria:

- clean criminal record – statement of criminal conviction records or affirmation is required;
- bachelor's or master's degree in an accredited university program and ICT job experience of three years or longer, or secondary education and ICT job experience of five years or longer, of which at least one-year job experience in the provision of trust services;
- knowledge in public key infrastructure and information security.

Any other I.CA employee taking part in providing trust services is accepted using the following criteria:

- bachelor's or master's degree in an accredited university program, or secondary education;
- basic orientation in public key infrastructure and information security;
- managers must have job experience or technical training in respect of the trustworthiness of the Service, the knowledge of security procedures with security responsibility, and experience in information security and risk assessment.

5.3.2 Background check procedures

The sources of information about all I.CA's employees are:

- the employees themselves;
- any persons familiar with a particular employee;
- public sources of information.

Initial information is provided by employees at job interviews, and this information is updated at periodic appraisal interviews with the manager during employment.

5.3.3 Training requirements

I.CA employees receive technical training in the use of specific software and specialised devices. The training takes the form of self-study combined with guidance from a trained employee. The training covers information security, personal protection data and other relevant topics.

5.3.4 Retraining frequency and requirements

I.CA employees are provided with the current developments in their spheres of interest two times every 12 months.

Training in the processes related to RA operations is held for RA employees at least once in every three years.

5.3.5 Job rotation frequency and sequence

I.CA employees are encouraged to acquire knowledge necessary for working in other roles at I.CA, in order to ensure substitutability for cases of emergency.

5.3.6 Sanctions for unauthorized actions

If an employee is detected to have been performing unauthorized activity, the employee is subject to the procedure described in the company's internal documentation and governed by the Labour Code (this process does not prevent criminal prosecution if the unauthorized activity exhibits that degree of gravity).

5.3.7 Independent contractor requirements

I.CA may or must procure some activities from independent contractors. These business relations are regulated in bilateral business contracts with parties such as contracted registration authorities, application software developers, hardware suppliers, system software suppliers and other parties. These parties are required to observe the pertinent certification policies, the relevant parts of I.CA's internal documentation provided for them, and the required normative documents. Contractual penalties are demanded for a breach of the obligations or duties specified in the said documents, or the contract with the contractor in breach is terminated immediately.

5.3.8 Documentation supplied to personnel

In addition to the certification policy, the certification practice statement and the security and operating documentation, I.CA employees have available any other relevant standard, policy, manual and guidance they may need for their job.

5.4 Audit logging procedures

5.4.1 Types of events recorded

Subject to logging are all the events required by valid trust services legislation or the relevant technical and other standards to be logged, that is, for example, the life cycle events of Certificates.

The Authority's key pair generation event is a special case of event logging. All the process is carried out in accordance with the trust services legislation and the relevant technical and other standards, and the following minimum requirements are complied with at all times:

- the generation takes place according to a pre-determined scenario in a physically secure environment;
- plus:
 - the generation is attended in person by an auditor qualified in accordance with valid technical standards, or
 - a video recording is made and, where practicable, the generation is attended by a notary, who takes down a certification report to document the course of the event;
- relying on his personal attendance, or on the video recording and the certificate if any, the auditor, qualified in accordance with valid technical standards, makes a report to document that the Authority followed the pre-determined scenario in key pair generation and documents the measures to ensure integrity and trust.

All audit records are made, kept and processed to the extent as necessary, while preserving the proof of origin and maintaining integrity, availability, confidentiality and time authenticity.

The auditing system is designed and run in a manner ensuring audit data integrity, sufficient space for audit data, automatic non-rewriting of the audit file, user-friendly presentation of audit records, and audit file access limited to the defined users only.

5.4.2 Frequency of processing log

Audit records are checked and assessed at the intervals defined in internal documentation, or immediately when a security incident occurs.

5.4.3 Retention period for audit log

Unless the relevant legislation provides otherwise, audit records are kept for a minimum of 10 years of the day they are made.

5.4.4 Protection of audit log

Both electronic and printed audit records are stored in a manner ensuring they are protected against change, theft and destruction (wilful or accidental).

Electronic audit records are stored in two copies, with each copy kept in a different room of the operating site. These audit records are saved on a medium each month or more frequently and this medium is kept outside the operating premises of I.CA.

Printed audit records are kept outside the operating premises of I.CA.

The protection of the aforesaid types of audit records is described in internal documentation.

5.4.5 Audit log backup procedures

Electronic audit records are backed up similarly to how other electronic information is backed up. No backup of printed audit records takes place.

5.4.6 Audit collection system (internal or external)

The audit record collection system is an internal one relative to the CA information systems.

5.4.7 Notification to event-causing subject

Parties are not notified of that an event is registered in an audit record.

5.4.8 Vulnerability assessments

První certifikační autorita, a.s. carries out periodic vulnerability assessments as part of risk assessments. Vulnerability monitoring of the hardware and software related to trust services is described in internal documentation.

5.5 Records archival

The storage of records, i.e. information and documentation, at První certifikační autorita, a.s. is regulated in internal documentation.

5.5.1 Types of records archived

I.CA stores the following electronic or printed records pertaining to the trust services provided, such as:

- auditor's report on the generation of the Authority's key pair;
- video recording and notary's certification report of the generation of the Authority's key pair, if any;
- records related to the life cycle of Certificates;
- other records that may be necessary for issuing Certificates;
- information handling records, such as takeover, handover, saving, check, conversion from printed to electronic, etc.;
- application software, operating and security documentation.

5.5.2 Retention period for archive

All records pertaining to the certificates of all I.CA certification authorities and their respective OCSP responders, except for the pertinent private keys, are stored throughout the existence of I.CA. Other records are stored in accordance with 5.4.3.

The record storage procedures are regulated in the I.CA internal documentation.

5.5.3 Protection of archive

The premises where records are stored are secured in a manner based on risk analysis results and the Classified Information Protection Act.

The procedures to protect the stored records are regulated in the I.CA internal documentation.

5.5.4 Archive backup procedures

The record backup procedures are regulated in the I.CA internal documentation.

5.5.5 Requirements for time-stamping of records

If time stamps are used, they are electronic time stamps issued by I.CA.

5.5.6 Archive collection system (internal or external)

Records are stored at a place designated by CEO of I.CA.

Internal documentation regulates how both electronic and printed records are prepared for storage and stored. Records are kept of collecting the records subject to storage.

5.5.7 Procedures to obtain and verify archive information

Stored information and records are placed at sites designated therefore and are accessible to:

- I.CA employees if they need to have such an access for their job;
- authorized inspection entities, the investigative, prosecuting and adjudicating bodies and courts of justice if required by legislation.

A written record is made of any such permitted access.

5.6 Key changeover

In standard situations (expiration of a certificate authority's certificate), the key is replaced by issuing a new certificate a good time in advance (no later than one year prior to the expiration). In non-standard situations, for instance such developments in cryptanalytic methods that could compromise the security of certificate issuance (e.g. changes to cryptanalytic algorithms or key length), the key is replaced as soon as possible.

In both standard and non-standard situations, the replacement of the public key in certificate authority certificates is suitably notified to the public a good time in advance (if practicable).

5.7 Compromise and disaster recovery

5.7.1 Incident and compromise handling procedures

In the event of incident or compromise, I.CA takes a course of action in accordance with its internal business continuity plan and recovery plan, plus any other relevant internal documentation.

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

See 5.7.1.

5.7.3 Entity private key compromise procedures

In the case of reasonable concern that a private key of certification authorities has been compromised, I.CA does the following:

- stops using the private key;
- revokes immediately and permanently the pertinent certificate and destroys the corresponding private key;
- revokes all valid certificates issued by the relevant certification authority;
- notifies this and the reason immediately on its web Information Address, and also the list of revoked certificates is used for disclosing this information;
- and, where appropriate, notifies the supervisory body of that the pertinent certificate has been revoked and why it has been revoked.

A similar course of action will be taken in the event of such developments in cryptanalytic methods, such as changes to cryptanalytic algorithms or key length that could immediately compromise the security of the Service.

5.7.4 Business continuity capabilities after a disaster

In the event of accident, I.CA takes a course of action in accordance with its internal business continuity plan and recovery plan, plus any other relevant internal documentation.

5.8 CA or RA termination

The following rules apply to the termination of the Authority's operations:

- the termination of the Authority's operations must be notified in writing to the supervisory body and the parties having a contract with I.CA that directly concerns the provision of services;
- the termination of the Authority's operations must be published on the web page pursuant to 2.2;
- if the Authority's certificate's expiration is part of the discontinuance of operations, this information plus the reason for expiration must be included in that notice;
- the termination of operations is a controlled process following a pre-defined plan, which includes the description of the procedure to preserve and disclose information for

judicial or administrative proceedings discovery and for arranging the continuity of services;

- the Authority or its successor must be able to revoke Certificates and publish CRLs as long as any certificate issued by the Authority is valid;
- after that the Authority must demonstrably destroy its private key, make a record of this destruction and keep this record in accordance with this CP.

In the event of withdrawal of the qualified Service provider status:

- the information must be notified in writing or electronically to all parties having a contract with I.CA that directly concerns the provision of the relevant services;
- the information must be published in accordance with 2.2. at all offices of registration authorities and must also communicate that certification authorities' certificates cannot be used in accordance with the purpose of their issuance any longer;
- the subsequent course of action will be decided by CEO of I.CA while taking account of the decision of the supervisory body.

The termination of RA operations is not relevant to this document.

6 TECHNICAL SECURITY CONTROLS

6.1 Key pair generation and installation

6.1.1 Key pair generation

The generation of the Authority's key pair is effected in a reserved area of the operating site, is documented in a written report, and is carried out in a cryptographic module assessed under FIPS 140-2, level 3. The generation process:

- is attended by an auditor;
- or may be recorded on video and attended by a notary, who makes a certification report on the process.

For details see 5.4.1.

The generation of the Authority's OCSP responder's key pair is effected in a reserved area of the operating site and carried out in a cryptographic module assessed under FIPS 140-2, level 3.

All the requirements on the generation of these key pair are described in internal documentation.

6.1.2 Private key delivery to subscriber

Not applicable to this document; the private key of the Authority and that of the Authority's OCSP responder are saved in the cryptographic module.

6.1.3 Public key delivery to certificate issuer

The public key is delivered to the Authority in the Certificate application (the PKCS#10 format).

6.1.4 CA public key delivery to relying parties

The following are the options guaranteed for obtaining the Authority's public key in the Authority's certificate:

- receiving the key at RA;
- receiving the key via the web Information Addresses of I.CA and the relevant supervisory body, or through the supervisory body's journal;
- each certificate applicant receives the Authority's root certificate when obtaining the applicant's first certificate.

6.1.5 Key sizes

The Authority uses the RSA asymmetric algorithm. The size of the keys (or the given algorithm's parameters) of the Authority is 4096 bits; the minimum size of the keys (or the given algorithm's parameters) in the certificates issued by the Authority is 2048 bits.

6.1.6 Public key parameters generation and quality checking

The parameters of the algorithms used in generating the Authority's public key and OCSP responders meet the requirements listed in valid trust services legislation and the technical and other standards referred to therein.

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

The key usage options are specified in the Certificate's extension.

6.2 Private key protection and cryptographic module engineering controls

6.2.1 Cryptographic module standards and controls

The key pairs of the Authority and those of the Authority's OCSP responder are generated, and the corresponding private key saved, in cryptographic modules which meet the requirements of the valid trust services legislation, that is, the FIPS PUB 140-2 standard, level 3.

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

If cryptographic module related operations require the presence of two I.CA management members, then each member only has knowledge of some of the code required for these operations.

6.2.3 Private key escrow

Not applicable to this document; the private key escrow service is not provided.

6.2.4 Private key backup

The cryptographic module used for the administration of the key pairs of the Authority and those of its OCSP responders facilitates private key backup. Private keys are backed up using the native features of the cryptographic module in the encrypted form.

6.2.5 Private key archival

When the Authority's or OCSP responder's private key expires, the private key and its backup copies are destroyed.

6.2.6 Private key transfer into or from a cryptographic module

The Authority's private key is transferred from and into the cryptographic module under direct personal participation of no fewer than two I.CA management members.

The Authority's OCSP responder's private key is transferred from the cryptographic module under direct personal participation of one or more I.CA management members.

The Authority's OCSP responder's private key is transferred into the cryptographic module under direct personal participation of no fewer than two I.CA management members.

Every actual transfer is documented in a written record.

6.2.7 Private key storage on cryptographic module

The private keys of the Authority and those of the Authority's OCSP responder are saved in the cryptographic module, which meets the requirements of valid trust services legislation, that is, the FIPS PUB 140-2 standard, level 3.

6.2.8 Method of activating private key

The private keys of the Authority and those of the Authority's OCSP responder saved in the cryptographic module are activated under direct personal participation of no fewer than two I.CA management members with the use of an activation smart card and pursuant to a strictly defined procedure described in internal documentation. Activation is documented in a written record.

6.2.9 Method of deactivating private key

The private keys of the Authority and those of the Authority's OCSP responder saved in the cryptographic module are deactivated under direct personal participation of no fewer than two I.CA management members with the use of an activation smart card and pursuant to a strictly defined procedure described in internal documentation. Deactivation is documented in a written record.

6.2.10 Method of destroying private key

The private keys of the Authority and those of the Authority's OCSP responder are saved in the cryptographic module. The destruction of these keys is effected by the cryptographic module's native features. Every private key backup copy on an external medium is also destroyed. The destruction is effected as physical destruction of those carriers. The private key destruction procedure is defined and described in detail in internal documentation.

6.2.11 Cryptographic module rating

The cryptographic modules in which key pair is generated and the private keys of certification authorities and their OCSP responders are saved meet the requirements of the trust services legislation, that is, the FIPS PUB 140-2 standard, level 3. The security of the modules is under monitoring as long as they are in use.

6.3 Other aspects of key pair management

6.3.1 Public key archival

The public keys of the Authority and those of the Authority's OCSP responder are stored throughout the existence of I.CA.

6.3.2 Certificate operational periods and key pair usage periods

The maximum period of validity of each Certificate issued is specified in the body of that Certificate.

6.4 Activation data

6.4.1 Activation data generation and installation

The activation data of the Authority and those of the Authority's OCSP responder are created during the generation of the corresponding key pair.

6.4.2 Activation data protection

The activation data of the Authority and those of the Authority's OCSP responder are protected by a method described in internal documentation.

6.4.3 Other aspects of activation data

The activation data of the Authority's private keys and those of the Authority's OCSP responder are solely meant for the processes of providing trust services and must not be used for any other purpose and transferred or kept in a clear form. All aspects are described in internal documentation.

6.5 Computer security controls

6.5.1 Specific computer security technical requirements

The security level of the components used in the trustworthy systems destined for Service support is defined in technical standards.

6.5.2 Computer security rating

I.CA security assessment is based on international and national standards:

- CEN/TS 419261 Security Requirements for Trustworthy Systems Managing Certificates and Time-stamps;
- ČSN ETSI EN 319 401 Electronic Signatures and Infrastructures (ESI) – General Policy Requirements for Trust Service Providers;
- ETSI EN 319 401 Electronic Signatures and Infrastructures (ESI); General Policy Requirements for Trust Service Providers;
- ČSN ETSI EN 319 403 Electronic Signatures and Infrastructures (ESI) – Trust Service Provider Conformity Assessment – Requirements for Conformity Assessment Bodies Assessing Trust Service Providers;
- ETSI EN 319 403 Electronic Signatures and Infrastructures (ESI); Trust Service Provider Conformity Assessment – Requirements for Conformity Assessment Bodies Assessing Trust Service Providers;

- ČSN ETSI EN 319 411-1 Electronic Signatures and Infrastructures (ESI) – Policy and Security Requirements for Trust Service Providers Issuing Certificates – Part 1: General Requirements;
- ETSI EN 319 411-1 Electronic Signatures and Infrastructures (ESI); Policy and Security Requirements for Trust Service Providers Issuing Certificates; Part 1: General Requirements;
- ČSN ETSI EN 319 411-2 Electronic Signatures and Infrastructures (ESI) – Policy and Security Requirements for Trust Service Providers Issuing Certificates – Part 2: Requirements for Trust Service Providers Issuing EU Qualified Certificates;
- ETSI EN 319 411-2 Electronic Signatures and Infrastructures (ESI); Policy and Security Requirements for Trust Service Providers Issuing Certificates; Part 2: Requirements for Trust Service Providers Issuing EU Qualified Certificates;
- ETSI TS 119 312 Electronic Signatures and Infrastructures (ESI); Cryptographic Suites;
- ISO/IEC 17021 Conformity Assessment -- Requirements for Bodies Providing Audit and Certification Of Management Systems;
- ISO/IEC 17065 Conformity Assessment -- Requirements for Bodies Certifying Products, Processes and Services.

The Authority's operations are also governed by the following technical standards:

- FIPS PUB 140-2 Requirements for Cryptographic Modules;
- ISO 3166-1 Codes for the Representation of Names of Countries and Their Subdivisions – Part 1: Country Codes;
- ITU-T - X.501 Information Technology – Open Systems Interconnection – The Directory: Models;
- ITU-T - X.509 Information Technology – Open Systems Interconnection – The Directory: Public-key and Attribute Certificate Frameworks;
- ITU-T - X.520 Information Technology – Open Systems Interconnection – The Directory: Selected Attribute Types;
- RSA Laboratories - PKCS#10: Certification Request Syntax Standard;
- RFC 2560 X.509 Internet Public Key Infrastructure Online Certificate Status Protocol – OCSP;
- RFC 3647 Internet X.509 Public Key Infrastructure Certificate Policy and Certification Practices Framework;
- RFC 5019 The Lightweight Online Certificate Status Protocol (OCSP) Profile for High-Volume Environments;
- RFC 5280 Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile;
- ČSN ETSI EN 319 412-1 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 1: Overview and Common Data Structures;
- ETSI EN 319 412-1 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 1: Overview and Common Data Structures;
- ČSN ETSI EN 319 412-2 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate Profile for Certificates Issued to Natural Persons;

- ETSI EN 319 412-2 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate Profile for Certificates Issued to Natural Persons;
- ČSN ETSI EN 319 412-3 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 3: Certificate Profile for Certificates Issued to Legal Persons;
- ETSI EN 319 412-3 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 2: Certificate Profile for Certificates Issued to Legal Persons;
- ETSI EN 319 412-5 Electronic Signatures and Infrastructures (ESI); Certificate Profiles; Part 5: QC Statements.

6.6 Life cycle technical controls

6.6.1 System development controls

System development is carried out in accordance with internal documentation.

6.6.2 Security management controls

Information security management and compliance with technical standards are inspected as part of the periodic trust services audits and conformity assessments and also in information security management system (ISMS) audits.

Information security at I.CA is managed by the following standards:

- ČSN ISO/IEC 27000 Information Technology – Security Techniques – Information Security Management Systems – Overview and Vocabulary;
- ČSN ISO/IEC 27001 Information Technology – Security Techniques – Information Security Management Systems – Requirements;
- ČSN ISO/IEC 27002 Information Technology – Security Techniques – Information Security Management Systems – Code of Practice for Information Security Controls;
- ČSN ISO/IEC 27006 Information Technology – Security Techniques – Requirements for Bodies Providing Audit and Certification of Information Security Management Systems.

6.6.3 Life cycle security controls

I.CA takes the Plan-Do-Check-Act (PDCA) procedural approach to life cycle security management; the PDCA approach consists of the following consecutive processes:

- establishing – defining the scope and the boundaries for information security management, determining a security policy and plans, and choosing security controls depending on the risks identified, all this in accordance with the corporate security policy;
- implementing and operating – effective and systematic enforcement of the selected security controls;
- monitoring and reviewing – providing feedback, regular monitoring and evaluation of the successful and the poor aspects of information security management, providing the knowledge gained for the company management for assessment;

- maintenance and improvement – implementing corrective and improvement measures as decided by the company management.

6.7 Network security controls

As the Authority's information system runs off line, it connects to no external network; only the Authority's OCSP responder runs on line. The responder as well as the other network infrastructure of the operating site is protected with a firewall-type commercial product with an integrated intrusion prevention system. The detailed network security management solution is described in internal documentation.

6.8 Time-stamping

See 5.5.5 for the time-stamping solution.

7 CERTIFICATE, CRL AND OCSP PROFILES

7.1 Certificate profile

Table 4 – Authority’s certificate

Field	Content	Comments
Version	v3 (0x2)	
SerialNumber	unique serial number of the certificate to be issued	
SignatureAlgorithm	Sha512WithRSAEncryption	
Issuer		
commonName	I.CA Root CA/RSA MM/YYYY	MM/YYYY: the month and the year the root CA’s certificate is issued; specified in the certificate issued after the effective date of policy version 1.10
organizationName	První certifikační autorita, a.s.	
Country	CZ	
serialNumber	NTRCZ-26439395	item included in the certificate issued before the effective date of policy version 1.10
organizationIdentifier	NTRCZ-26439395	item included in the certificate issued after the effective date of policy version 1.10
Validity		
NotBefore	date of issue	UTC
NotAfter	date of issue + 25 years	UTC
Subject		
commonName	I.CA Root CA/RSA MM/YYYY	MM/YYYY: the month and the year the root CA’s certificate is

		issued; specified in the certificate issued after the effective date of policy version 1.10
organizationName	První certifikační autorita, a.s.	
Country	CZ	
serialNumber	NTRCZ-26439395	item included in the certificate issued before the effective date of policy version 1.10
organizationIdentifier	NTRCZ-26439395	item included in the certificate issued after the effective date of policy version 1.10
SubjectPublicKeyInfo		
Algorithm	rsaEncryption	
subjectPublicKey	public key (4096 bits)	
Extensions	certificate extensions	see Table 7
Signature	electronic mark or electronic seal of the Authority; self-signed certificate	

Table 5 – Subordinate certification authority’s certificate

Field	Content	Comments
Version	v3 (0x2)	
SerialNumber	unique serial number of the certificate to be issued	
SignatureAlgorithm	Sha256WithRSAEncryption	
Issuer	certificate issuer	see Table 4
Validity		
NotBefore	date of issue	UTC
NotAfter	date of issue + 10 years	UTC
Subject		
commonName	name of the subordinate certification authority	includes the string MM/YYYY: the month and the year the

		subordinate certification authority's certificate is issued
organizationName	První certifikační autorita, a.s.	
Country	CZ	
serialNumber	NTRCZ-26439395	item included in the certificate issued before the effective date of policy version 1.10
organizationIdentifier	NTRCZ-26439395	item included in the certificate issued after the effective date of policy version 1.10
SubjectPublicKeyInfo		
Algorithm	rsaEncryption	
subjectPublicKey	public key (2048 bits at minimum)	
Extensions	certificate extensions	see Table 8
Signature	electronic mark or electronic seal of the Authority	

Table 6 – Authority's OCSP responder's certificate

Field	Content	Comments
Version	v3 (0x2)	
SerialNumber	unique serial number of the certificate to be issued	
SignatureAlgorithm	Sha256WithRSAEncryption	
Issuer	certificate issuer	see Table 4
Validity		
NotBefore	date of issue	UTC
NotAfter	date of issue + maximum of 365 days (or 366 in leap year)	UTC
Subject		
commonName	name of OCSP responder*	
organizationName	První certifikační autorita, a.s.	
countryName	CZ	

serialNumber	NTRCZ-26439395	item included in the certificate issued pursuant to policy version 1.0
organizationIdentifier	NTRCZ-26439395	item included in the certificate issued pursuant to policy version 1.10 or higher
SubjectPublicKeyInfo		
Algorithm	rsaEncryption	
subjectPublicKey	public key (2048 bits at minimum)	
Extensions	certificate extensions	see Table 9
Signature	electronic mark or electronic seal of the Authority	

* includes the Authority's name (commonName) followed by the 'OCSP responder' string

7.1.1 Version number(s)

Any certificate issued complies with standard X.509, version 3.

7.1.2 Certificate extensions

Table 7 – Authority's certificate's extensions

Extension	Content	Comments
CertificatePolicies		non-critical
policyIdentifier	2.5.29.32.0 (anyPolicy)	
userNotice	Tento kvalifikovaný systémový certifikát byl vydán podle zákona 227/2000 Sb. v platném znění/This qualified system certificate was issued according to Act No. 227/2000 Coll.	item included in the certificate issued before the effective date of policy version 1.10
BasicConstraints		critical
cA	True	
KeyUsage	keyCertSign, cRLSign	critical
SubjectKeyIdentifier		non-critical
KeyIdentifier	hash of the Authority's public key	

Table 8 – Subordinate certification authority’s certificate’s extensions

Extension	Content	Comments
CertificatePolicies		non-critical
policyIdentifier	2.5.29.32.0 (anyPolicy)	
userNotice	Tento kvalifikovaný systémový certifikát byl vydán podle zákona 227/2000 Sb. v platném znění/This qualified system certificate was issued according to Act No. 227/2000 Coll.	item included in the certificate issued before the effective date of policy version 1.10
BasicConstraints		critical
cA	True	
pathLenConstraint	0	
KeyUsage	keyCertSign, cRLSign	critical
SubjectKeyIdentifier		non-critical
KeyIdentifier	hash of this subordinate certification authority’s public key	
AuthorityKeyIdentifier		non-critical
KeyIdentifier	hash of the Authority’s public key	
CRLDistributionPoints*	http://qcrlp1.ica.cz/rcaRR_rsa.crl http://qcrlp2.ica.cz/rcaRR_rsa.crl http://qcrlp3.ica.cz/rcaRR_rsa.crl	non-critical
AuthorityInformationAccess		non-critical
id-ad-ocsp*	http://ocsp.ica.cz/rcaRR_rsa	URI (http) to root CA’s OCSP responder
id-ad-caIssuers*	http://r.ica.cz/rcaRR_rsa.cer	URI (http) to root CA’s certificate

* YY – the last two digits of the year the Authority’s certificate is issued

Table 9 – Extensions of the certificate of the authority’s OCSP responder

Extension	Content	Comments
CertificatePolicies		non-critical
policyIdentifier	see 1.2.	
userNotice	Tento kvalifikovaný systémový certifikát byl vydán podle zákona 227/2000 Sb. v platném znění/This qualified system certificate was issued according to Act No. 227/2000 Coll.	item included in the certificate issued pursuant to policy version 1.0

AuthorityInformationAccess		non-critical
id-ad-calssuers*	http://r.ica.cz/rcaRR_rsa.cer	URI (http) to root CA's certificate
BasicConstraints		non-critical
cA	False	
KeyUsage	digitalSignature	critical
ExtendedKeyUsage	id-kp-OCSPSigning	critical
id-pkix-ocsp-nocheck	NULL	non-critical
SubjectKeyIdentifier		non-critical
KeyIdentifier	hash of the public key of Authority's OCSP responder	
AuthorityKeyIdentifier		non-critical
KeyIdentifier	hash of the Authority's public key	

* YY – the last two digits of the year the Authority's certificate is issued

7.1.3 Algorithm object identifiers

The algorithms used in providing trust services are in compliance with the relevant technical standards.

7.1.4 Name forms

The morphology of the names included in the Authority-issued certificates complies with RFC 5280. The provisions of 3.1 also apply.

7.1.5 Name constraints

Not applicable to the certificates issued under this CP.

7.1.6 Certificate policy object identifier

This document's/policy's OID is specified in 1.2. Certification authorities' certificates include a special anyPolicy policy identification, the OID of which is 2.5.29.32.0. See 1.2 for the OID of the policy of the Authority's OCSP responder.

7.1.7 Usage of Policy Constrains extension

Not applicable to Certificates issued under this CP.

7.1.8 Policy qualifiers syntax and semantics

See Certificate extensions in 7.1.2 above.

7.1.9 Processing semantics for the critical Certificate Policies extension

Not applicable to this document – not classified as critical.

7.2 CRL profile

Table 10 – CRL profile¹

Item	Content
Version	v2(0x1)
Signature Algorithm	Sha512WithRSAEncryption
Issuer	CRL issuer
thisUpdate	date of issue
nextUpdate	date of issue + maximum of 365 days
revokedCertificates	list of revoked certificates
userCertificate	revoked certificate's serial number
revocationDate	certificate revocation date and time
crlEntryExtensions	list item extension – see Table 4
crlExtensions	CRL extensions – see Table 4
SignatureAlgorithm	Sha512WithRSAEncryption
Signature	CRL issuer's (Authority's) electronic mark or electronic seal

7.2.1 Version number(s)

Certificate revocation lists are issued pursuant to X509, version 2.

7.2.2 CRL and CRL entry extensions

Table 4 – CRL extension²

Item	Content	Comments
crlEntryExtensions		
CRLReason	certificate revocation reason; the <i>certificateHold</i> reason is not admissible as it is out of use.	non-critical
crlExtensions		
AuthorityKeyIdentifier		

¹ I.CA reserves the right to modify the set and the content of the CRL fields as may be required by updated ETSI standards or third parties (Microsoft, for example).

² I.CA reserves the right to modify the set and the content of the CRL extensions as may be required by updated ETSI standards or third parties (Microsoft, for example).

KeyIdentifier	hash of the CRL issuer's (Authority's) public key	non-critical
CRLNumber	unique number of the CRL to be released	non-critical

7.3 OCSP profile

Both the OCSP request profile and the OCSP response profile are in accordance with RFC 6960 and RFC 5019.

OCSP responses are of the BasicOCSPResponse type and contain all mandatory fields. An optional revocationReason field is included for revoked certificates. The unAuthorized response is given for any certificate not issued by the relevant CA. Http only is used as the transmission protocol.

See the relevant certification implementing policy for more detail.

7.3.1 Version number(s)

Version 1 is specified in a certificate status request and response using the OCSP protocol.

7.3.2 OCSP extensions

The concrete extensions for OCSP protocol certificate status requests and responses are given in the relevant certification implementing policy.

8 COMPLIANCE AUDIT AND OTHER ASSESMENTS

8.1 Frequency or circumstances of assessment

The assessment interval and circumstances are defined in the valid trust services legislation and the technical standards referred to therein regulating the assessment procedure.

The Microsoft Trusted Root Certificate Program assessment interval and circumstances are strictly defined by Microsoft, and the audit period is not longer than one year.

The intervals for other assessments are specified in the relevant technical standards.

8.2 Identity/qualifications of assessor

The identity (accredited conformity assessment entity) and the qualification of the assessor carrying out the assessment pursuant to the valid trust services legislation are defined in this legislation and the technical standards referred to therein.

The identity (accredited conformity assessment entity) and the qualification of the assessor carrying out assessment defined by Microsoft Trusted Root Certificate Program are described in ETSI EN 319 403.

The identity of the assessor carrying out other assessments is specified in the relevant technical standards.

8.3 Assessor's relationship to assessed entity

Internal assessor is not subordinate to the organisational unit which provides the operation of trust services.

External assessor is an assessor without any ties to I.CA through property or organisation.

8.4 Topics covered by assessment

The areas to be assessed in an assessment required under the valid trust services legislation are those as specified in that legislation; the areas to be assessed in any other assessment are those as specified in the technical standards under which the assessment is made.

8.5 Actions taken as a result of deficiency

The findings in any type of assessment are communicated to the I.CA security manager, who makes sure that any defect identified is remedied. If defects are identified that critically prevent the provision of a specific trust service, I.CA must suspend that service until the defects are remedied.

8.6 Communication of results

Assessment result notification is subject to the requirements of the trust services legislation and the relevant technical standards; the notification of Microsoft Trusted Root Certificate Program assessment results is subject to Microsoft requirements.

Assessments results are notified as a written report handed over by the assessor to CEO and the security manager of I.CA.

The I.CA security manager calls a security committee meeting as soon as possible and communicates the final report at the meeting; company management members must attend the meeting.

9 OTHER BUSINESS AND LEGAL MATTERS

9.1 Fees

9.1.1 Certificate issuance or renewal fees

První certifikační autorita, a.s. is the operator of all the certification authorities and the OCSP responder the certificates of which have been issued under this CP. No fee is charged for the issuance of certificates by the root certification authority.

9.1.2 Certificate access fees

No fee is charged by I.CA for electronic access to the certificates issued under this CP.

9.1.3 Revocation or status information access fees

No fee is charged by I.CA for electronic access to revocation information (CRL) and status information (OCSP) about the certificates issued under this CP.

9.1.4 Fees for other services

Not applicable to this document.

9.1.5 Refund policy

Not applicable to this document.

9.2 Financial responsibility

9.2.1 Insurance coverage

První certifikační autorita, a.s. represents it holds a business risk insurance policy that covers financial damage.

První certifikační autorita, a.s. has drawn an employee liability insurance policy for each employee, with a scope of coverage as determined by the company's board of directors.

9.2.2 Other assets

První certifikační autorita, a.s. represents it has available financial resources and other financial assurances sufficient for providing trust services given the risk of a liability-for-damage claim.

See the Annual Report of První certifikační autorita, a.s. for detailed information on the company's assets.

9.2.3 Insurance or warranty coverage for end-entities

Not applicable to this document.

9.3 Confidentiality of business information

9.3.1 Scope of confidential information

I.CA's confidential information covers any information other than public information and other than that published in the manner pursuant to 2.2, including:

- all private keys, which are employed in providing trust services;
- I.CA's business information;
- any internal information and documentation;
- any personal data.

9.3.2 Information not within the scope of confidential information

Public information is only the information designated as public and that published in the manner pursuant to 2.2.

9.3.3 Responsibility to protect confidential information

No I.CA employee who comes in contact with confidential information may disclose the same to a third party without consent of CEO of I.CA.

9.4 Privacy of personal information

9.4.1 Privacy plan

I.CA protects personal data and other non-public information in accordance with the relevant legislation, that is, ZOOÚ.

9.4.2 Information treated as private

Any personal data subject to protection under ZOOÚ are personal information.

I.CA employees or the entities defined by valid legislation that come into contact with personal data must maintain confidentiality of these data and the security controls the disclosure of which would put the security of these data at risk. The confidentiality duty survives the termination of employment or other similar relationship, or the completion of pertinent work.

9.4.3 Information not deemed private

Any information outside the scope of relevant legislation, that is, ZOOÚ, is not considered personal data.

9.4.4 Responsibility to protect private information

CEO of I.CA is responsible for the protection of personal data.

9.4.5 Notice and consent to use private information

I.CA deals with the notifying of personal data use and consents to personal data processing in accordance with the relevant legislation, that is, ZOOÚ.

9.4.6 Disclosure pursuant to judicial or administrative process

I.CA discloses personal data for judicial or administrative purpose in accordance with the relevant legislation, that is, ZOOÚ.

9.4.7 Other information disclosure circumstances

I.CA provides access to personal strictly as regulated in relevant legislation, that is, ZOOÚ.

9.5 Intellectual property rights

This CP, all related documents, the website content and the procedures facilitating the operation of the systems providing services for end users are copyrighted by První certifikační autorita, a.s. and are important know-how thereof.

9.6 Representations and warranties

9.6.1 CA representations and warranties

I.CA warrants that:

- it will only use the private keys pertinent to the Authority's certificates for creating the electronic seal/mark in the Certificates issued and the lists of revoked Authority's certificates released;
- the Authority-issued Certificates meets the requirements of the relevant technical standards and the valid trust services legislation;
- it will revoke the Authority-issued certificates if the revocation request is filed in the manner defined in this CP.

9.6.2 RA representations and warranties

Not applicable to this document; see 1.3.2.

9.6.3 Subscriber representations and warranties

The subscriber acts in accordance with the relevant technical standards and the valid trust services legislation and warrants that the information given by him are correct throughout the life cycle of the usage of the service.

9.6.4 Relying parties representations and warranties

Relying parties observe this CP.

9.6.5 Representations and warranties of other participants

Not applicable to this document.

9.7 Disclaimers of warranties

První certifikační autorita, a.s. only provides those warranties in respect of the Service as given in 9.6.

9.8 Limitations of liability

První certifikační autorita, a.s. may not be held liable for any damage suffered by relying parties where the relying party fails to meet the duties required under the certification policy under which the pertinent certificate is issued. První certifikační autorita, a.s. may also not be held liable for any damage resulting from breach of obligations of I.CA as a result of force majeure.

9.9 Indemnities

Not applicable to this document; see policies of the authorities which issue certificates to end users.

9.10 Term and termination

9.10.1 Term

This CP takes force on the date specified in chapter 10 and remains in force no shorter than the expiration of the last Certificate issued under this CP.

9.10.2 Termination

CEO of První certifikační autorita, a.s. is the sole person authorized to approve the termination of this CP.

9.10.3 Effect of termination and survival

The duties of I.CA out of this CP survive the expiration thereof until the expiration of the last Certificate issued under this CP.

9.11 Individual notices and communications with participants

All the participating parties are organisational components of I.CA and their mutual communication is governed by I.CA's internal rules.

9.12 Amendments

9.12.1 Procedure for amendment

This procedure is a controlled process described in an internal document.

9.12.2 Notification mechanism and period

The release of a new CP version is always notified as published information.

9.12.3 Circumstances under which OID must be changed

The policy's OID must be changed following any major change in how this Service is provided.

Any change to this document results in a new version of the document.

9.13 Disputes resolution provisions

All the participating parties are organisational components of I.CA and the resolution of their disputes is governed by I.CA's internal rules.

9.14 Governing law

The business of První certifikační autorita, a.s. is governed by the laws of the Czech Republic.

9.15 Compliance with applicable law

The system of providing trust services is in compliance with the statutory requirements of the Czech Republic and all relevant international standards.

9.16 Miscellaneous provisions

9.16.1 Entire agreement

Not applicable to this document.

9.16.2 Assignment

Should První certifikační autorita, a.s. wish to discontinue its operations as a qualified service provider, it will do so in compliance with the valid trust services legislation.

9.16.3 Severability

If a court or a public authority with jurisdiction over the activities covered by this CP establishes that the implementation of a mandatory requirement is illegal, the scope of that requirement will be so limited as to ensure the requirement is applicable and lawful.

9.16.4 Enforcement (attorneys' fees and waiver of rights)

Not applicable to this document.

9.16.5 Force majeure

První certifikační autorita, a.s. may not be held liable for breaching its obligations if it is a result of force majeure, such as major natural disaster, major disaster caused by human activity, strike or civil unrest always followed by the declaration of a situation of emergency, or the declaration of a situation of national threat or a state of war, or communication failure.

9.17 Other provisions

Not applicable to this document.

10 FINAL PROVISIONS

This certification policy issued by První certifikační autorita, a.s. takes force and effect on 6 April 2017.