



**NARODOWY  
BANK POLSKI**

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# **Certification Practice Statement of the PKI NBP System**

**OID: 1.3.6.1.4.1.31995.1.1.2  
version 2.6**



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# 1. Introduction

## 1.1 Overview

This Certification Practice Statement (hereinafter referred to as the “Statement”) describes the operation of IT system of the public key infrastructure of the Narodowy Bank Polski (hereinafter referred to as “PKI NBP system”). This Statement is applicable to all PKI NBP system participants, i.e. Key Certification Centres (Certification Authorities), User Registration Points (Registration Authorities), Certificate Applicants, Subscribers and Relying Parties. The Statement lays down the rules of providing certification services, starting from Subscriber registration, public key certification, through certificate renewal, to certificate revocation. The Statement is a kind of “guide” for the relations between the PKI NBP system and its users. Consequently, all PKI NBP system users must be aware of the Statement and act in compliance with its provisions.

In PKI NBP system the two-level structure of certification authorities is functioning. NBP Root CA is the main certification authority, which issues certificates to subsidiary authorities – NBP Enterprise CA and NBP Infrastructure CA. The rules described in the Statement apply to the NBP Enterprise CA, which issues certificates for individuals (employees) in NBP and for employees of external companies cooperating with NBP.

The structure and substantive content of this Statement are compliant with the RFC 3647 Certification Policy and Certificate Practice Statement Framework. The Statement contains all the elements detailed in the RFC 3647 in order to give the document a clear structure and more user-friendly for readers. Where a given element is not present in the PKI NBP system, the phrase “Not applicable” has appeared in a respective chapter of the Statement.

## 1.2 Document Name and Identification

|                         |   |
|-------------------------|---|
| <b>Document name</b>    | Certification Practice Statement of the PKI NBP System                      |
| <b>Document version</b> | 2.6   |
| <b>Document status</b>  | valid   |
| <b>Date of issue</b>    | 01.04.2022  |
| <b>OID</b>              | 1.3.6.1.4.1.31995.1.1.2   |
| <b>Location</b>         | <a href="https://www.nbp.pl/pki/CPS.pdf">https://www.nbp.pl/pki/CPS.pdf</a> |

## 1.3 Certification Practice Statement Participants

### 1.3.1 Narodowy Bank Polski

Narodowy Bank Polski is the owner of the PKI NBP system. All the operational members in the system are NBP employees. Elements of the PKI NBP system are located at centres owned by NBP.

NBP is responsible for the operation of the entire PKI NBP system. Selected elements of the PKI NBP system may be subject to maintenance and support agreements concluded by NBP with external providers, however the trust services within the system are provided exclusively by NBP employees. The scope of duties and responsibilities of external providers is each time set out by a respective agreement.

### **1.3.2 Security Department**

The NBP Security Department is responsible for the preparation, updating and publication of this Statement and for appointing:

- Key Certification Centre Operators,
- HSM Administrators,
- HSM Operators,
- Data Recovery Agents,
- Key Recovery Agents,
- System Auditors,
- User Registration Point Operators at the NBP Head Office.

Additionally, the Security Department is responsible for the administration of access control system to the NBP facilities housing the elements of the PKI NBP system and for providing Subscribers with smartcards for cryptographic keys and certificates.

### **1.3.3 Information Technology and Telecommunications Department**

The Information Technology and Telecommunications Department holds responsibility for securing hardware and system infrastructure for a proper operation of the system, for system administration, appointment of System Administrators and for the maintenance and repair of IT hardware, system software and data bases.

### **1.3.4 Cybersecurity Department**

The Cybersecurity Department holds responsibility for appointment of the System Security Inspectors.

### **1.3.5 NBP Regional Branches**

Regional branches are in charge of designating User Registration Point Operators.

### **1.3.6 Key Certification Centre**

Key Certification Centre Operator is in charge of the issuance, revocation and publication of Subscribers' certificates. The Security Department is responsible for the operation of the Key Certification Centre in the PKI NBP system.

### **1.3.7 User Registration Point**

User Registration Point Operator is responsible for verification of Subscribers as well as sending on Subscribers' behalf the applications to issue, renew or revoke certificates to a Key Certification Centre. In the PKI NBP system, the NBP regional branches are responsible for the operation of User Registration Points at the regional branches.

The Security Department is responsible for the operation of the User Registration Point at the NBP Head Office.

### **1.3.8 Subscribers**

A Subscriber may be an individual on whose behalf a certificate has been issued in the PKI NBP system.

### **1.3.9 Relying parties**

A relying party is a person or an entity other than the Subscriber who accepts and relies on a certificate issued in the PKI NBP system.

## **1.4 Certificate usage**

In accordance with a respective Certification Policy.

## **1.5 Certification Practice Statement Administration**

### **1.5.1 Organisation responsible for document administration**

This Statement is owned by:

**Narodowy Bank Polski**  
**ul. Świętokrzyska 11/21**  
**00-919 Warszawa**

### **1.5.2 Contact data**

This Statement is managed by:

**Security Department**  
**Narodowy Bank Polski**  
**ul. Świętokrzyska 11/21**  
**00-919 Warszawa**  
**telephone. +48221851513      fax: +48221852336**  
**E- mail address : cck@nbp.pl**



### 1.5.3 Document Approval Procedure

The general rules for the provision of trust services in the PKI NBP system are laid down in Resolution No. 53/2016 of the NBP Management Board of 21 October 2016 concerning the introduction of documents determining the rules for the provision of trust services by Narodowy Bank Polski (as amended). The Resolution contains, in particular, information associated with the responsibility of NBP as a provider of trust services, information on the division of tasks between particular departments and NBP Regional Branches as well as information on control and audit. This Statement has been developed based on Appendix 3 to the Resolution and is approved by Director of the Security Department.

Each version of the Statement is in force (has a status of a valid document) until a new version of the Statement has been approved and released. A new version is developed by PKI Management Division staff of the Security Department and is delivered with the status “to be agreed” to the Information Technology and Telecommunications Department. After the document has been agreed with the Information Technology and Telecommunications Department, the new version of the Statement is approved by the Director of the Security Department.

Whenever the provisions of Resolution No. 53/2016 of the NBP Management Board are amended, the resolution has to be amended before a new version of the Statement is developed. The resolution is amended in accordance with the rules in force at NBP.

Security Department staff perform a validity review of the Statement and Certification Policies at least once a year, or whenever a change has been implemented in the PKI NBP system.

## 1.6 Definitions and Acronyms

### 1.6.1 Definitions

For the purpose of this Policy, the following definitions have been adopted:

- **Authentication** – the attribute that enables confirmation of the identity declared by the sender of information,
- **Certification Authority (Key Certification Centre)** – a certificate issuing module of the PKI NBP system that uses an own private key it has generated itself that serves to create an electronic signature and to sign CRLs; the centre also issues, revokes and distributes certificates;
- **Confidentiality** – this attribute means that information is inaccessible to unauthorised persons;
- **CRL** – the list of revoked or suspended certificates whose validity is yet to expire;
- **Cryptographic Key** – the number necessary to perform the data encryption \ decryption or signing \ verification operation;

- **Distinguished Name** – information included in the certificate that enables unambiguous identification of a subscriber within the directory of subscribers operated by the CCK;
- **Integrity** – the attribute that shows that the information has not been altered from the time of signing it to the time of verifying the signature;
- **Non-repudiation** – this attribute means that the sender of information cannot deny that it has been sent;
- **Private Key** – a cryptographic key, to be used exclusively by a subscriber, that serves to create a signature or decipher information;
- **Public Key Certificate** (certificate) – an electronic attestation which links a public key to a subscriber and is capable of unambiguously identifying the subscriber;
- **Public Key** – a publicly known cryptographic key associated with the private key that is used to verify a signature or encipher information;
- **Registration Authority** (User Registration Point) – a module of the PKI NBP system that serves, in particular, to verify, register and generate cryptographic keys of subscribers;
- **Subscriber** – an individual<sup>1</sup> holding a certificate issued in the PKI NBP system.

## 1.6.2 Acronyms

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The table below lists acronyms used in the Statement and their meanings

| Acronym | Meaning  |
|---------|--|
| CCK     | Key Certification Centre \ Certification Authority       |
| CRL     | Certificate Revocation List                              |
| DIT     | Information Technology and Telecommunications Department |
| DN      | Distinguished Name                                       |
| DB      | Security Department                                      |
| HSM     | Hardware Security Module                                 |
| OCSP    | On-line Certificate Status Protocol                      |
| PKI     | Public Key Infrastructure                                |
| PRU     | User Registration Point \ Registration Authority         |
| UPN     | User Principal Name                                      |

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<sup>1</sup> The rules described in this Statement and Certification Policies apply to certificates issued for individuals. Certificates issued for NBP infrastructure components (servers, workstations) are issued according to separate rules.

## 2. Publication and Repository Responsibilities

### 2.1 Repositories

Two separate repositories can be distinguished in the PKI NBP system:

An internal **repository** which is in the Active Directory catalogue service and an external repository at the <http://pki.nbp.pl/pki> website.

As regards an **external repository**:

CCK certificates are available at the following addresses:

- [http://pki.nbp.pl/pki/rca\(1\).crt](http://pki.nbp.pl/pki/rca(1).crt) – the main certification authority (NBP Root CA) – the certificate issued on 2 June 2014 (the SHA-1 hash functions),
- [http://www.nbp.pl/pki/rca\(2\).crt](http://www.nbp.pl/pki/rca(2).crt) – the main certification authority (NBP Root CA) – a certificate issued on 2 June 2014 (the SHA-256 hash functions),
- [http://www.nbp.pl/pki/eca\(3\).crt](http://www.nbp.pl/pki/eca(3).crt) – the subordinate certification authority (NBP Enterprise CA) – a certificate issued on 10 October 2016,
- [https://www.nbp.pl/pki/eca\(4\).crt](https://www.nbp.pl/pki/eca(4).crt) – the subordinate certification authority (NBP Enterprise CA) – the certificate issued on 11 May 2021.

CRLs are available at the following addresses:

- [http://pki.nbp.pl/pki/rca\(1\).crl](http://pki.nbp.pl/pki/rca(1).crl) – CRL of NBP Root CA (corresponding to the certificate issued on 2 June 2014),
- [http://pki.nbp.pl/pki/eca\(2\).crl](http://pki.nbp.pl/pki/eca(2).crl) – CRL of NBP Enterprise CA (corresponding to the certificate issued on 10 October 2016),
- [https://www.nbp.pl/pki/eca\(4\).crl](https://www.nbp.pl/pki/eca(4).crl) – CRL of NBP Enterprise CA (corresponding to the certificate issued on 11 May 2021).

Documents related to the PKI NBP system are available at the following addresses:

- <https://www.nbp.pl/pki/CPS.pdf> – the Certification Practice Statement of the PKI NBP system.
- [https://www.nbp.pl/pki/CP\\_signature.pdf](https://www.nbp.pl/pki/CP_signature.pdf) – the Certification Policy for ESCB Signature certificates.
- [https://www.nbp.pl/pki/CP\\_authentication.pdf](https://www.nbp.pl/pki/CP_authentication.pdf) – the Certification Policy for ESCB authentication certificates.

- [https://www.nbp.pl/pki/CP\\_encryption.pdf](https://www.nbp.pl/pki/CP_encryption.pdf) – the Certification Policy for ESCB encryption certificates.
- <https://www.nbp.pl/pki/information.pdf> – information on the usage terms of a certificate issued in the PKI NBP system.

In addition, an OCSP service is available at the address <http://ocsp.nbp.pl/ocsp>. The above-mentioned address is common for internal users of NBP domains as well as for external users.

## **2.2 Information Published in Repository**

In accordance with the provisions of Chapter 2.1

## **2.3 Publication Frequency**

CCK certificates are published immediately following their creation. CRLs created by the NBP Root CA are released and published at least once every 3 months and immediately following the revocation of any certificate issued by that CA. In addition, the PRU Operator may at any moment manually generate and publish the CRLs of the NBP Enterprise CA.

CRLs created by the NBP Enterprise CA are released on an hourly basis.

## **2.4 Repository Access Controls**

Access to <http://pki.nbp.pl/pki> is limited to “read only” mode and secured against unauthorised content alteration.

## **3. Identification and Authentication**

Presented below are the general rules for Subscribers' authentication applied by the CCK when issuing certificates. The rules, which are based on specific types of information contained in a certificate, define measures essential for ensuring that the information is precise and reliable at the time the certificate is issued.

The Subscriber authentication procedure is carried out in line with the Certification Policy for individual types of certificates.

### **3.1 Naming**

Certificates issued by the CCK comply with the X.509 v3 standard. This means, in particular, that both the certificate issuer and the PRU acting on CCK behalf accept only such Subscribers' names that conform to the X.509 standard (with reference to the X.500 series recommendations).

#### **3.1.1 Types of names**

In accordance with a respective Certification Policy.

#### **3.1.2 The need for the names to be meaningful**

In the PKI NBP system, all the names contained in Subscriber's distinguished name must be meaningful in Polish or in English.

#### **3.1.3 Rules for interpreting various name formats**

Subscribers' distinguished names are interpreted in line with the ISO/IEC 9595 (X.500) Distinguished Name (DN) standard.

#### **3.1.4 Uniqueness of names**

A certificate identifier that precisely and unambiguously designates a Subscriber is the distinguished name together with a given Subscriber's alternate name placed in that certificate (containing UPN).

NBP ensures that the Distinguished Name placed in a CCK certificate is assigned to one CCK only and that after the cessation of the CCK activities it will not be re-assigned.

### **3.1.5 Recognition, identification and the role of trademarks**

Not applicable.

## **3.2 Initial Identity Validation**

### **3.2.1 Means of proof of possession of the private key**

In accordance with a respective Certification Policy.

### **3.2.2 Identity authentication for an entity**

Not applicable.

### **3.2.3 Identity authentication for an individual**

In accordance with a respective Certification Policy.

### **3.2.4 Non-verified subscriber information**

All Subscriber's data detailed in the certificate are verified by the PRU.

### **3.2.5 Validation of offices and organisations**

Not applicable.

### **3.2.6 Criteria for interoperability**

Not applicable.

## **3.3 Identification and Authentication for Re-key Requests**

In accordance with a respective Certification Policy.

### **3.3.1 Identification and authentication requirements for routine re-key**

In accordance with a respective Certification Policy.

### **3.3.2 Identification and authentication requirements for re-key after the certificate revocation**

In accordance with a respective Certification Policy.

## **4. Certificate Life-Cycle Operational Requirements**

Submission of a respective application by a Subscriber is the basic formal requirement. Based on the application, the CCK takes an appropriate decision, either rendering the required service or refusing to render it. The submitted applications should contain information that is necessary for a proper identification of the Subscriber.

### **4.1 Certificate Application**

Subscriber's applications may be submitted to the CCK directly or via PRU.

The PRU Operator plays a dual role: a Subscriber and a person authorised to represent the CCK. In the former role, the PRU Operator may file applications, just as any other Subscriber. In the latter role, it may confirm applications submitted by other Subscribers and, in justified cases, create applications to revoke certificates of the Subscribers who are in breach of this Statement. Applications are submitted in electronic form.

#### **4.1.1 Who can submit a certificate application?**

In accordance with a respective Certification Policy.

#### **4.1.2 Enrolment process and applicants' responsibilities**

In accordance with a respective Certification Policy.

### **4.2 Certificate Application Processing**

#### **4.2.1 Performance of identification and authentication procedures**

In accordance with a respective Certification Policy.

#### **4.2.2 Approval or rejection of certificate applications**

In accordance with a respective Certification Policy.

#### **4.2.3 Time limit for processing the certificate applications**

Both CCK and PRU do their utmost to process certificate applications submitted by Subscribers as soon as possible. Requests to issue a new certificate are handled during the PRU Operator's office

hours (on business days from 7.30 a.m. to 4.00 p.m.), and the maximum processing time is 2 hours. Rules for applications for revocation of certificate are described in section 4.9.

### **4.3 Certificate Issuance**

#### **4.3.1 Actions performed by the CCK during the issuance of the certificate**

In accordance with a respective Certification Policy.

#### **4.3.2 Notification of the subscriber of certificate issuance**

In accordance with a respective Certification Policy.

### **4.4 Certificate Acceptance**

#### **4.4.1 Confirmation of certificate acceptance**

In accordance with a respective Certification Policy.

#### **4.4.2 Publication of the certificate by the CCK**

In accordance with a respective Certification Policy.

#### **4.4.3 Notification of certificate issuance to other entities**

Not applicable.

### **4.5 Key and Certificate Usage**

#### **4.5.1 Subscriber's use of keys and certificates**

In accordance with a respective Certification Policy.

#### **4.5.2 Relying party's use of the keys and certificate**

In accordance with a respective Certification Policy.



## **4.6 Certificate Renewal**

Not applicable, as each time a certificate is generated a new key pair of a Subscriber is generated as well.

## **4.7 Certificate Rekey**

Certificate renewal with key changeover is made each time a Subscriber (already registered) creates a new key pair (or solicits key pair creation to the CCK) and claims issuance of a new certificate that confirms the newly created public key belongs to him/her.

Certificate renewal each time concerns a specific certificate clearly referred to in the application. Therefore, a new certificate has exactly the same content as the certificate to which it relates. It only differs in respect of: a new key pair, a new certificate serial number, a new validity period and a new CCK signature.

CCK certificates are also subject to certificate renewal with key changeover procedure. New cryptographic keys and the CCK certificate are generated not later than:

- two years before expiry date of the currently used certificate (in the case of NBP Enterprise CA),
- ten years before expiry date of the currently used certificate (in the case of NBP Root CA).

The procedure is performed by CCK Operators and HSM Operators under the supervision of an System Security Inspector of the PKI NBP system.

### **4.7.1 Circumstances for certificate renewal with key changeover**

A certificate renewal may be requested may for the following reasons:

- expiry of the previous certificate,
- revocation of the previous certificate,
- change of format (e.g. change of private key carrier).

### **4.7.2 Who may request certificate renewal?**

In accordance with a respective Certification Policy.

### **4.7.3 Procedures for processing certificate renewal request**

In accordance with a respective Certification Policy.

#### **4.7.4 Notification of new certificate issuance**

In accordance with a respective Certification Policy.

#### **4.7.5 Confirmation of acceptance of a new certificate**

In accordance with a respective Certification Policy.

#### **4.7.6 Publication of a new certificate**

In accordance with a respective Certification Policy.

#### **4.7.7 Notification of issuance of certificates to other entities**

Not applicable.

### **4.8 Certificate Modification**

Any modification of a certificate requires issuing new certificate, and so the provisions of Chapter 4.7 shall apply.

### **4.9 Certificate Revocation and Suspension**

This chapter sets out the conditions that must be met or occur, for the CCK to have the grounds for certificate revocation or suspension. Although certificate suspension is a special form of revocation, in the chapters to follow we shall distinguish these two terms to emphasize a significant difference between the two: certificate suspension may be cancelled, whereas certificate revocation is final.

Certificate revocation or suspension has a special impact on certificates and the obligations of the subscriber using them. In the course of certificate suspension, or immediately following certificate revocation, the certificate is deemed to be invalid. Certificate revocation or suspension has no impact onto previously incurred liabilities or obligations arising from the observance of the Certification Practice Statement.

Certificate suspension is temporary (it usually continues until the doubts which gave grounds to suspension are clarified). For instance, if a Subscriber has lost control over a private key carrier, s/he should immediately notify the PRU or CCK of this fact, requesting suspension of the certificate related to the key. In case the carrier is found and certainty that the private key has not been compromised, the certificate may be unsuspending (on Subscriber's request), which means its reactivation.

In the case of certificate revocation or suspension, the related private key, if still under control of the Subscriber, should continue to be protected in a manner which secures its credibility for the entire period of certificate suspension and, after it has been revoked, should be stored safely until its physical destruction.

#### **4.9.1 Circumstances of revocation**

The basic reasons for certificate revocation include:

- loss of control over a private key associated to the certificate,
- a breach by a Subscriber of the provisions of the Certification Practice Statement or a Certification Policy,
- replacement of a certificate (e.g. data contained in it have changed),
- private key disclosure ,
- termination of the agreement between the NBP and the Subscriber,
- any request for certificate revocation submitted by the person referred to in 4.9.2,
- discontinuity of CCK activities (in such a case, all the certificates issued by the CCK, as well as the certificate of the CCK, are revoked prior to the declared date the discontinuity of CCK activities),
- CCK private key compromise.
- compromise of a cryptographic algorithm (or the associated parameters) related to a given certificate.

#### **4.9.2 Who can request revocation?**

Revocation of a Subscriber's certificate can be only requested by:

- the Subscriber indicated in the certificate,
- the director of a department or NBP Regional Branch, in which Subscriber is employed (if the Subscriber is an NBP employee),
- the director of a department or NBP Regional Branch which concluded an agreement with the Subscriber-employing company - in the case of Subscribers who are not NBP employees,
- the PRU Operator who can request in the name of the Subscriber or on its own initiative, if s/he has information justifying certificate revocation,
- the System Security Inspector (IBS) if s/he has information justifying certificate revocation,
- the CCK Operator – if CCK ceases its activities or CCK key has been compromised or if s/he has information justifying certificate revocation.

The Subscriber indicated in the certificate to be revoked must be notified without delay of the fact that his/her certificate has been revoked.

### 4.9.3 Procedure for certificate revocation

In the PKI NBP system, there are two procedures enabling certificate revocation:

- **Standard procedure** – used for all certificate templates only during the PRU working hours (7.30-16.00 on week days). Under the standard procedure, an authorised person (referred to in 4.9.2) notifies a PRU of the need to revoke a certificate via an adequate request. The PRU Operator revokes the certificate on the date indicated in the delivered request or, where no date has been set in the request, on the first business day following the receipt of the request.
- **ESCB procedure** – used 24 hours a day, 7 days a week. The procedure can be resorted to only as regards specified certificates issued for the purposes of the IT systems of the European System of Central Banks. As part of the procedure authorized person notifies of the need to revoke a certificate via e-mail on [cck@nbp.pl](mailto:cck@nbp.pl) or in person to the CCK Operator at the NBP Head Office. The revocation request should contain:
  - Subscriber data,
  - name of the certificate template to be revoked,
  - reason for revocation,
  - password set out at the PRU at the time of certificate issuance (which allows to confirm the permission of the reporting person filling the request).

Having verified data contained in the certificate revocation request (the password in particular), the CCK Operator suspends the specified certificate and publishes a new CRL list.

After the certificate has been suspended or revoked, the Subscriber is automatically advised to that effect via e-mail.

If the Subscriber or the authorised person defined in Chapter 4.9.2 fails to submit a request to revoke the suspended certificate within 3 business days of starting the ESCB procedure, the CCK Operator revokes the certificate.

For a given certificate template the maximum period of time between the receipt of a certificate revocation request and the publication of an updated CRL list is contained in a respective Certification Policy.

### 4.9.4 Revocation request grace period

Revocation shall be carried out immediately following the processing of the revocation request.

#### **4.9.5 Time limit for the processing of the revocation request**

Under the standard procedure, revocation requests are processed not later than on the first business day following the receipt of such a request unless the request specifies a later date.

Under the ESCB procedure, revocation requests are processed at a time specified in the relevant certification policy.

#### **4.9.6 Requirement to check CRL by the Relying Party**

Prior to the use of a certificate issued in the PKI NBP system, a relying party must verify the status of the certificate. It can be made by checking the CRL or via an OCSP service.

Should it be unable to use the OCSP service, the relying party should check the certificate status using the latest valid CRL.

#### **4.9.7 CRL issuance frequency**

Each CCK within the PKI NBP system issues a separate CRL. The CRL of the NBP Root CA is updated at least once in 3 months (or without delay following the revocation of a certificate issued by this CA) and is published manually. The CRL of the NBP Enterprise CA is updated every hour and is published automatically. Additionally, in case of certificate revocation related to private key disclosure, a CRL is generated and published by the CCK Operator immediately following the certificate revocation.

#### **4.9.8 Maximum delay in the publication of CRLs**

CRLs are published in repositories without undue delay following their generation.

#### **4.9.9 OCSP accessibility**

The OCSP service of the PKI NBP system is accessible via <http://ocsp.nbp.pl/ocsp>.

The website address is accessible both from the NBP intranet and via Internet.

#### **4.9.10 On-line revocation checking requirements**

Prior to the use of a certificate issued in the PKI NBP system, a relying party is required to verify the certificate status. It may be done through checking a CRL or using the OCSP service.

#### **4.9.11 Other forms of revocation alerts available**

Not applicable.

#### **4.9.12 Special requirements for the revocation of compromised keys**

In case private key owned by any CCK has been compromised or is suspected to have been compromised, all measures available are put into action to immediately advise the fact to relying parties referring to the information kept in the PKI NBP-managed repository.

#### **4.9.13 Causes for suspension**

A Subscriber's certificate can be suspended in the following cases:

- suspected disclosure of a private key,
- a request by the Subscriber indicated in a certificate or by some other person listed in 4.9.14.
- when the PRU Operator receives a request to revoke a certificate but is unable to verify the authorisation of the person submitting the request (e.g. under the ESCB procedure).

#### **4.9.14 Who can request certificate suspension?**

Suspension of a Subscriber's certificate can be requested solely by:

- the Subscriber indicated in the certificate,
- the director of a department or NBP Regional Branch employing the Subscriber (if the Subscriber is an NBP employee),
- in the case of Subscribers who are not NBP employees – the director of a department or NBP Regional Branch which concluded an agreement with the Subscriber-employing company, the PRU Operator, submitting the request in the name of the Subscriber, or on its own initiative, if s/he has information justifying certificate,
- the PRU Operator who can request certificate suspension in the name of the Subscriber or on its own initiative, if s/he has information justifying,
- the System Security Inspector (IBS) or CCK Operator if s/he has information justifying certificate suspension.

#### **4.9.15 Procedure for requesting certificate suspension and unsuspension**

An authorised person (listed in point 4.9.14) notifies the PRU of the need to suspend a certificate via an adequate request. Having received the information on this need, the PRU Operator delivers to the CCK a respective request, confirmed with his/her signature, and then notifies the certificate owner of the change in his/her certificate status.

PKI NBP system certificates are also suspended in case of the ESCB procedure referred to in 4.9.3. As ESCB procedure does not allow for a complete identity verification of the notifying person, a CCK Operator suspends a certificate, which will be revoked after 3 days, unless the Subscriber provides a request to revoke the suspension of the certificate.

#### **4.9.16 Suspension period limits**

Subject to the provision of chapter 4.9.3 the certificate suspension period is not limited.

### **4.10 Certificate Status Verification Services**

#### **4.10.1 Operational characteristics**

Information on the status of certificates issued in the PKI NBP system can be obtained based on CRLs published in a repository (see Chapter 2.1), or the OCSP service accessible at <http://ocsp.nbp.pl/ocsp>.

Information on certificate revocation is provided on each list published within the validity period of this certificate and on the first list published after that period lapses.

#### **4.10.2 Service availability**

Certificate status validation services are available 24 hours a day.

#### **4.10.3 Additional features**

Not applicable.

### **4.11 End of Subscription**

A Subscriber is deemed to have ceased using trust services in the following cases:

- the Subscriber's certificate validity has expired and the Subscriber has not undertaken actions aimed at renewing the key or modifying the certificate,
- the Subscriber's certificate has been revoked and has not been replaced by another certificate.

### **4.12 Key Escrow and Recovery**

In the PKI NBP system, only private keys used by Subscribers for encryption may be put in escrow (and recovered). CCK private keys and Subscribers' private keys used for creating electronic signatures or authentication are not put in escrow.

Additional information is detailed in respective Certification Policies.

# 5. Facility, Management and Operational Controls

This Chapter contains the most important information regarding physical, organisational and operational security measures used in the PKI NBP system, among others, during cryptographic key creation, Subscribers' authentication, certificates' publication and revocation, in the course of an audit and creation of backup copies.

## 5.1 Physical Security Controls

### 5.1.1 Site location and construction

Elements of the PKI NBP system are located at three centres that are significantly distant from each other.

### 5.1.2 Physical access

Facilities in which PKI NBP system is located are subject to access control system and are monitored 24 hours a day. Only authorised persons have access to the PKI NBP system infrastructure.

Persons, who are not NBP employees, are allowed to work in the system in the discharge of tasks, specified in agreements concluded by the NBP. The agreements contain provisions that ensure an appropriate level of security of maintenance and repair work, carried out strictly under the supervision of the NBP staff having access to the PKI NBP system.

### 5.1.3 Power and air-conditioning

To prevent disruptions in business activity caused by black-outs (or power cuts) the PKI NBP system is equipped with a back-up power supply system of power generators.

Adequate air temperature and humidity required in the facilities of the main and back-up centres are provided by air-conditioning systems.

### 5.1.4 Water exposure

The PKI NBP system's critical elements are located in the facilities with low exposure to flooding risk, also as a result of a damage of the water and central heating system in the building. Should a risk of flooding occur, actions are taken in accordance with the procedures in force in NBP.



### **5.1.5 Fire prevention and protection**

Facilities housing the PKI NBP system components are protected by an automatic fire prevention system. In case of fire hazard, actions are taken in line with the procedures in force in NBP.

### **5.1.6 Storage system**

All devices enabling recording and transmitting information are subject to special control measures, including restricted movement between security zones, in computer centres. Access to data carriers is restricted, and the carriers are stored in facilities under surveillance. Data entered to the system from outside electronic data carriers are, prior to data entry, are scanned for computer viruses and other malicious software.

Procedures have been put in place for creating back-up copies of system's critical data.

### **5.1.7 Waste disposal**

Redundant paper documents, electronic documents and other data carriers used in the PKI NBP system are destroyed safely, in accordance with regulations in force at NBP.

### **5.1.8 Back-up copy and archived copy storage**

Back-up copies and archived copies are stored in two separate locations. The back-up centre, which secures a complete reconstruction of functionalities of the system, located in the main centre, as well as storage of archived copies is accessible to authorized persons 365 days a year. The back-up centre is protected by the same security measures as the main centre.

## **5.2 Procedural Controls**

### **5.2.1 Trusted roles**

The following roles are defined in the PKI NBP system:

- System Administrators – responsible for the administration of the operation system of servers and workstations within the PKI NBP system, creation of back-up copies and hardware management,
- CCK Operators – responsible for the operation of the Certification Authority,
- HSM Administrators – responsible for the administration of hardware security modules,
- HSM Operators – responsible for the operation of hardware security modules,
- PRU Operators – responsible for Subscriber registration, generation, suspension and revocation of certificates,

- Data Recovery Agents – responsible for the recovery of data encrypted by Subscribers in case of a loss of their private keys,
- Key Recovery Agents – responsible for the recovery of lost private keys used for encryption of Subscriber's mail,
- System Auditors – responsible for reviewing event logs related to CCK activities,
- System Security Inspectors – responsible for system security level oversight.

NOTE: The System Auditor's tasks are performed by the System Security Inspector.

### **5.2.2 Number of individuals required to perform each task**

All tasks related to the operation and administration of hardware security modules require the presence of at least two persons with appropriate smart cards.

### **5.2.3 Identification and authentication of each role**

Identification and authentication of the functional persons in the PKI NBP system are carried out using a login/password procedure or with the use of cryptographic keys and a certificate.

### **5.2.4 Roles that require separation of duties**

The role of System Administrator must not be combined with any other role.

The role of System Security Inspector must not be combined with any other role except the role of the System Auditor.

## **5.3 Personnel Controls**

### **5.3.1 Requirements concerning professional qualification, knowledge and experience**

Persons playing trusted roles in the PKI NBP system are selected according to their professional qualifications and employed in accordance with the rules of employment in force at NBP. They have knowledge and skills necessary to render services related to electronic signature, hardware and software used for electronic data processing, automatic data processing in telecommunications networks and systems. The persons are appointed by the Director of the Information Technology and Telecommunications Department, the Director of the Security Department, the Director of the Cybersecurity Department or the Director of the NBP Regional Branch, respectively.

### **5.3.2 Background checks and clearing procedures**

In accordance with the rules of employment in force at NBP.

### **5.3.3 Training requirements**

In accordance with the rules of training of NBP staff, the persons playing trusted roles in the PKI NBP system receive training related to the system operation, and, in particular, they:

- become acquainted with the Certification Practice Statement, Certification Policies and the system documentation and procedures;
- attend training courses on the administration of the operational systems installed on PKI NBP servers and workstations;
- participate in training courses on cryptography and the Public Key Infrastructure.

### **5.3.4 Retaining requirements and frequency**

In accordance with the rules of training NBP employees.

### **5.3.5 Frequency and sequence for job rotation**

Not applicable.

### **5.3.6 Sanctions for unauthorized actions**

All actions performed in the PKI NBP system are documented and controlled, which enables, in particular, to detect possible unauthorized actions by persons who play trusted roles in the PKI NBP system.

Any breach of security rules, applicable regulations and policies is subject to disciplinary or criminal responsibility set out in separate laws.

### **5.3.7 Requirements for third party contracting**

Not applicable as all persons playing trusted roles in the PKI NBP system are NBP staff.

### **5.3.8 Documentation supplied to personnel**

Personnel performing tasks in the PKI NBP system must have access to the following documents:

- Certification Practice Statement,
- Certification Policies,
- System documentation (in the scope required by the employee's role),
- Procedures relating to the role,
- Scope of duties and authorizations assigned to the performed function.

## 5.4 Audit Logging Procedures

All significant events that may have an impact on the system security and operation, individual PKI NBP system applications or security systems are logged in the PKI NBP system. Recorded events are archived.

### 5.4.1 Types of events recorded

The following types of events are identified in the PKI NBP system:

- **Error:** A serious problem, e.g. loss of data or functionality. Error may be instantiated by a failure to load a service at autostart,
- **Warning:** An event which although of minor importance as such may indicate a problem that may arise in the future. Warning may be exemplified by information that there is little space left on the system drive.
- **Information:** Any event which indicates correct operation of an application, driver or service. Correct loading of network interface card is an example of the information event.
- **Audit Success:** Any event subject to audit which was successful. An example of Audit Success is a successful logging-in by a user in the system.
- **Audit Failure:** Any event subject to audit which ended in failure. An example of Audit Failure is a failed attempt to access network drive.

In addition, information on events directly related to CCK activity is sent to the mailboxes of System Security Inspectors:

- Subscriber certificate generation,
- Subscriber certificate revocation/suspension,
- Initiation of CCK operation,
- Termination of CCK operation.

### 5.4.2 Frequency with which audit logs are processed

Monitoring software has been installed on PKI NBP servers which monitors on an on-going basis the status of the operational system and services related to CCK operations and generates reports for System Administrators. System Administrators analyse the reports as they receive them and, if need be, browse logs directly in the server.

As their daily procedure, System Administrators look through the events a notification of which has been sent to their mailboxes. If necessary, a detailed description of registered events is made.

### **5.4.3 Period for which audit logs are kept**

Event logs are stored for at least 1 month. Additionally, they are archived and archived copies are stored for at least 5 years.

### **5.4.4 Audit log protection**

Only system administrators and System Security Inspectors have access to event logs.

### **5.4.5 Audit log backup procedures**

Full back-up copies are made once a week, incremental backup copies are created on all business days. Back-up copies and archived copies are stored in the main centre and back-up centre.

### **5.4.6 Audit data collection system (internal vs. external)**

An internal register of audit data stores information on current events for a period of at least 1 month. An external back-up system makes back-up copies of audit data on a daily basis, and generates an archive copy once a month. This enables quick access to audit data from the past 5 years.

### **5.4.7 Notification to the subject who caused the event**

The external monitoring system notifies system administrators of the events taking place. An administrator takes further steps aimed at clarifying the incident and minimizing losses. Moreover, information on the events related to CCK activity (issuance, revocation and suspension of certificates, initiation or termination of CCK operation) is sent to System Security Inspector's mailboxes.

### **5.4.8 Vulnerability assessment**

The PKI NBP system is subject to periodic internal safety audit. All irregularities detected are corrected. The System Security Inspector is responsible for the system security.

## **5.5 Records Archival**

### **5.5.1 Types of records archived**

The PKI NBP system archives CCK data bases and event logs as well as potential paper and electronic documentation related to PRU activity.

### **5.5.2 Archive retention period**

Back-up copies are stored for a period of at least 5 years.

### **5.5.3 Archive protection**

Back-up copies are stored in facilities protected by the access control system.

### **5.5.4 Archive backup procedures**

Archival copies are created once a month.

### **5.5.5 Requirements for time-stamping records**

The PKI NBP system guarantee logging of the time at which the log entries were made. This applies both to the operating system events and to actions like backup copy or archive copy creation. The moment in time in the system comes from an external secure source that establishes the date and time.

### **5.5.6 Audit data archive system (internal vs. external)**

Archived copies are created by an external back-up system.

### **5.5.7 Procedures to obtain and verify archived information**

Only back-up system administrators have access to archived data. Periodic tests are performed to recover selected archived data.

## **5.6 Key Changeover**

Change of the CA keys requires publication of a new public key in the repositories, and notification of Subscribers and relying parties.

To secure the proper operation of PKI NBP system, a new key pair of NBP Enterprise CA is generated not later than 2 years before the expiry date of the currently used CA certificate.

CA's private key is destroyed not later than 3 months after the expiry of a given CA certificate.

## **5.7 Compromise and Disaster Recovery**

### **5.7.1 Incident and compromise handling procedures**

In NBP, there are procedures in place that govern incident handling, inclusive the recovery of the whole system from back-up copies. In the event of a suspected incident, a System Security Inspector is notified. In agreement with a System Administrator, s/he takes appropriate preventive and

corrective actions in line with procedures. Actions taken by the Inspector and the Administrator aim to identify the original cause of the incident and, if possible, to prevent their recurrence.

### **5.7.2 Corruption of computing resources, software and/or data**

Individual elements of the PKI NBP system are located in an environment that ensures high accessibility and are deployed at two computing centres distant from each other. If one of the machines fails, its tasks are automatically taken over by the remaining machines. In case of data damage, the data are recovered from back-up copies.

### **5.7.3 Action procedures in the event of compromise to Authority's private key (CCK or PRU)**

In the event a PRU Operator's private key is compromised, it is immediately revoked and a new CRL is published. Additionally, CCK log analysis is carried out in order to determine whether the compromised key has been used from the time it is thought to have been compromised to its revocation. In the event over that period the key was illegally used for the issue of certificates – the certificates are revoked as well.

The compromise of a CCK private key entails the inevitable revocation of all certificates signed by the CCK with this compromised private key and publication of a new CRL. Next, new cryptographic keys and a new of CCK certificate are generated (distinguished name may remain the same, though not necessarily), and cryptographic keys and Subscribers' certificates are subsequently changed. All Subscribers and relying parties should be notified of CCK private key compromise.

### **5.7.4 Ensuring business continuity following disasters**

In order to prevent the impact of a disaster, individual elements of the PKI NBP system are located in an environment that ensures high accessibility and are deployed in two computing centres that are distant from each other. In case of a failure of one of the centres, the other one takes over its role. A business continuity plan has been developed for the system, which contains emergency procedures specifying actions that need to be taken to secure system continuity (in particular, to restore the ability to revoke certificates as soon as possible).

## **5.8 CCK or PRU Termination**

### **5.8.1 CCK**

Prior to terminating its activities, the CCK is required to:

- notify (at least 90 days in advance) all the Subscribers who have valid certificates issued by this CCK and relying parties that use certificates issued by this CCK of its intention to cease activities
- do its utmost for the termination of its activity to cause least possible damage to the Subscribers and relying parties.

Upon the termination of its activities, the CCK is obliged to:

- revoke all certificates that remain valid, irrespective of whether the Subscriber has submitted a revocation request or not,
- notify all Subscribers, PRU and relying parties of the termination of its activities.

A CCK is obliged to destroy its private keys not later than 3 months after the termination of its activities.

#### **5.8.2 PRU**

At least 90 days prior to the scheduled termination of its activities, the PRU is required to notify the CCK to that effect. Immediately following the termination of its activities, the PRU is obliged to transfer all documentation concerning the Subscribers to the CCK (or to some other PRU designated by the CCK).



# 6 Technical Security Controls

## 6.1 Key Pair Generation and Installation

### 6.1.1 Key pair generation

Cryptographic keys of NBP Root CA and NBP Enterprise CA are generated in hardware security modules with the FIPS 140-2 Level 3 certification.

Rules governing the generation of Subscribers' cryptographic keys are detailed in respective Certification Policies.

### 6.1.2 Delivery of private keys to subscribers

In accordance with a respective Certification Policy.

### 6.1.3 Delivery of the public key to the certificate issuer

In accordance with a respective Certification Policy.

### 6.1.4 Delivery of the public key to the CKK

Public keys of NBP Root CA and NBP Enterprise CA are available in the repository (see Chapter 2.1). In special cases, they may be delivered to a Subscriber or a relying party via e-mail or on a carrier.

### 6.1.5 Key sizes

Cryptographic keys of NBP Root CA are 4096 bits and NBP Enterprise CA keys are not shorter than 2048 bits and if the CCK certificate is valid for more than 2030, the minimum length of cryptographic keys is 4096 bits. The size of Subscribers' cryptographic keys is detailed in a respective Certification Policy.

### 6.1.6 Public key generation parameters and quality checks

Public keys are encoded pursuant to RFC 5280 and PKCS#1.

The algorithm of all generated cryptographic keys is the RSA.

### **6.1.7 Key usage purposes (KeyUsage field in X.509 v3)**

In accordance with a respective Certification Policy.

Cryptographic keys of NBP Root CA and NBP Enterprise CA may be used exclusively to:

- Certificate Signing,
- CRL Signing,
- Off-line CRL Signing.

## **6.2 Private Key Protection and Cryptographic Module Engineering Controls**

### **6.2.1 Cryptographic module standards**

NBP Root CA and NBP Enterprise CA use separate hardware security modules certified with FIPS 140-2 Level 3 certificate.

All operations related to management of security modules, including those involving cryptographic keys contained in the modules, require the use of smart cards assigned to HSM Administrator or HSM Operators.

### **6.2.2 Private key multi-person (k of n) control**

The private keys of the NBP Root CA and NBP Enterprise CA are exclusively protected by the so-called indirect secret sharing scheme. Under the scheme, a symmetric key used for encrypting the CA private key is shared. A symmetric key is divided into parts saved on PIN-secured smart cards delivered to HSM Operators. It is necessary to use at least two such cards to reconstitute the key, and is possible to do so only inside the HSM device. Only after loading the symmetric key into the HSM device, recreating the CCK private key is possible. For this purpose, using two smart cards of HSM Operators is required.

### **6.2.3 Escrow of private keys**

See Chapter 4.12.

### **6.2.4 Private key back-up copies**

Copies of the CCK private keys are created by means of the mechanisms built in hardware security modules used by the PKI NBP system and are protected in a similar way as private keys protected by cryptographic modules.

### **6.2.5 Private key archive**

The CCK private keys are not archived.

The rules of archiving Subscribers' private keys are laid down in respective Certification Policies.

### **6.2.6 Private key transfer into or from a cryptographic module.**

Outside the cryptographic module, the private keys of the NBP Root CA and NBP Enterprise CA are only in an encrypted form, and their decryption requires the use of two cards of CCK Operators and is possible only inside the cryptographic module. The transfer of the CCK private key into a cryptographic module consists in its encrypted version being downloaded into the cryptographic module, re-constitution of a symmetric key (from the CCK Operators' cards) used to encrypt the private key and decryption of the private key. Transferring of a private key from the cryptographic module also requires the use of two cards of CCK Operators and consists in exporting the encrypted form of a CCK private key to a file.

### **6.2.7 Private key storage in a cryptographic module**

The private keys of the NBP Root CA and NBP Enterprise CA are generated directly in the hardware security module and occur in an unencrypted form only inside the module. When the CCK private key is transferred from a cryptographic module, it is encrypted and its decryption requires the use of two CCK Operators' cards and is only possible inside the cryptographic module.

### **6.2.8 Private key activation method**

The CCK private key is activated by its being transferred into a cryptographic module and next decrypted inside the module. This operation involves at least two HSM Operators who have smart cards. The deciphered CCK private key is active until the end of CA's work session (e.g. server restart or shutdown, stopping the service).

### **6.2.9 Private key deactivation method**

Deactivation of the NBP Enterprise CA key is possible only by ending the CA work session (e.g. server restart or shutdown, stopping the service). It can be done only by the System Administrator or CCK Operator.

### 6.2.10 Private key destruction method

A CCK private key is destroyed by its secure deletion from the cryptographic module and by deletion of files with encrypted key backup. This can be done via software attached to the module or by a “suicide button” which is in the module’s front panel.

In accordance with the procedures, CCK cryptographic keys are destroyed not later than 3 months after the related certificate has expired (or has been revoked). The “suicide button” serves to immediately clear the module memory and is used in case of direct threat to the security of the CCK private key.

In addition, all data stored in the cryptographic module memory are deleted when the module is in transport, delivered to an external business (e.g. due to necessary repair work) or it is withdrawn from use.

### 6.2.11 Cryptographic module classification

See 6.2.1.

## 6.3 Other Aspects of Key Management

### 6.3.1 Public key archive

Public keys are archived (as certificates), and archive copies are stored for at least 5 years.

### 6.3.2 Usage periods for public and private keys

The lifetime of the public key is specified in the Validity field of each public key certificate (see 7.1). The validity period of the private key is the same as that of the public key.

The table below presents the CCK usage periods:

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#### CCK keys usage periods:

| Name of CCK       | Type of key    | Usage period  |
|-------------------|----------------|---------------|
| NBP Root CA       | Public/private | 20 - 22 years |
| NBP Enterprise CA | Public/private | 10 years      |

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The usage periods of Subscribers' keys are set out in Certification Policies.

## **6.4 Activation Data**

Activation data are used for the activation of private keys of the PRU, CCK and Subscribers. They are mostly used for subject authentication and private key access control.

In the PKI NBP system, there are two types of activation data:

- passwords and PIN codes that secure Subscribers' private keys,
- smart cards with components of shared secret, which after installation in the system enable the reconstitution of the CCK private key.

### **6.4.1 Generation and installation of activation data**

Data activating Subscriber's private key (password or PIN) are set by the PRU Operator at the time of generating a cryptographic key. When cryptographic keys are delivered to a Subscriber, s/he is informed by the PRU Operator that they should change the data and set them themselves.

Shared secrets used for the protection of the CCK private keys are generated in accordance with the requirements specified in Chapter 6.2, and are saved on smart cards assigned to HSM Operators. Smart cards are PIN protected.

### **6.4.2 Activation data protection**

Activation data in the form of passwords and PINs should be remembered (and not saved) by a Subscriber. If the need arises to save the data, this data carrier should not be stored together with the private key to which the data pertain. Smart cards used in the PKI NBP system are blocked after a PIN is entered erroneously 5 times. The card must be unblocked through the PRU.

Smart cards with components of a shared secret are stored by HSM Operators in facilities protected by an access control system. PIN codes protecting the cards are not stored at the same place as the cards.

Additionally, CCK private key activation requires the use of at least two cards assigned to HSM Operators, and in order to perform the activation the cryptographic module needs to be configured accordingly.

### **6.4.3 Other activation data aspects**

Not applicable.

## **6.5 Computer System Security Controls**

Information related to control of computer systems security at NBP is subject to secrecy and can only be revealed to authorised persons. All elements of the PKI NBP system are protected in line with NBP internal regulations, including the provisions of the Security Policy at NBP. All components of the PKI NBP system, in particular, are subject to antivirus protection.

### **6.5.1 Specific security technical requirements**

Information related to the technical requirements for computer systems' specific security at NBP is subject to secrecy and can only be revealed to authorised persons.

### **6.5.2 Computer security evaluation**

Information related to evaluation of computer systems' security at NBP is subject to secrecy and can only be revealed to authorised persons.

## **6.6 Life Cycle Security Controls**

Information related to the life cycle of computer systems technical security at NBP is subject to secrecy and can only be revealed to authorised persons.

### **6.6.1 System development controls**

The PKI NBP system is monitored on an on-going basis by the System Security Inspector (IBS). Prior to implementation of any changes into the system, they are consulted with the IBS, and tests (including security tests) are carried out. After the changes are implemented, the system documentation is updated.

### **6.6.2 Security management controls**

In accordance with the NBP internal regulations.

### **6.6.3 Life cycle security controls**

This Statement does not stipulate any requirements in this respect.

## **6.7 Network Security Controls**

Information related to computer network security controls at NBP is subject to secrecy and can only be revealed to authorised persons.

## **6.8 Time stamping**

Not applicable.

# 7. Certificate and CRL Profiles

Profiles of certificates and CRLs comply with the formats laid down by ITU-T X.509 v3 standard.

## 7.1 Certificate Profile

In compliance with X.509 v.3 standard, a certificate is a sequence of three fields, of which the first one contains certificate content (tbsCertificate), the second one – information on the type of algorithm used for signing the certificate (signatureAlgorithm), and the third one – a digital signature, entered on the certificate by the CCK (signatureValue).

The content of the certificate contains values of main fields and extensions (standardized, specified by the norm, and private ones, specified by a certification authority).

- In the PKI NBP system, certificates contain the following main fields:
- Version: the third version (X.509 v3) of certificate format,
- Serial Number: certificate serial number,
- Signature Algorithm: identifier of the algorithm used by the CCK,
- Issuer: CCK distinguished name,
- Validity Period: the certificate validity date specified by the commencement (not before) and end (not after) dates,
- Subject: subscriber's distinguished name,
- Public Key: value of the public key and algorithm identifier,
- Signature: s signature generated and encoded pursuant to the RFC 5280 standard.

---

Field values of certificates issued in the PKI NBP system are assigned in accordance with the table below:

| Name of Field              | Field Content                                |                                    |
|----------------------------|--|------------------------------------|
| <b>Version</b>             | V3   |                                    |
| <b>Serial Number</b>       | Unique certificate serial number within CCK  |                                    |
| <b>Signature Algorithm</b> | SHA1RSA <sup>2</sup> /Sha256RSA <sup>3</sup> |                                    |
| <b>Issuer</b>              | Common name (CN)                             | NBP Root CA /<br>NBP Enterprise CA |
|                            | Organisational Unit (OU)                     | Centrum Certyfikacji Kluczy NBP    |
|                            | Organisation (O)                             | Narodowy Bank Polski               |

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<sup>2</sup> For certificates issued before 10.10.2016.

<sup>3</sup> For certificates issued after 10.10.2016.



|                   |   |          |
|-------------------|---|----------|
|                   | Locality (L)  | Warszawa |
|                   | Country (C)   | PL       |
| <b>Not before</b> | Universal Time Coordinated based  |          |
| <b>Not after</b>  | Universal Time Coordinated based  |          |
| <b>Subject</b>    | Subscriber's distinguished name compliant with X.501 requirements. Detailed information regarding the content of this field is contained in a respective Certification Policy |          |
| <b>Public Key</b> | Field is encoded in compliance with RFC 5280 and contains information on the RSA public key (key identifier, size and value)  |          |
| <b>Signature</b>  | A certificate signature generated and encoded in compliance with RFC 5280 requirements  |          |

### 7.1.1 Version number

All certificates issued in the PKI NBP system comply with X.509 v3.

### 7.1.2 Certificate extensions

An extension in a certificate may be classified as critical or non-critical. If an extension is defined as critical, the application supporting certificate usage must reject every certificate containing an unrecognized critical extension. On the other hand, extensions defined as non-critical may be omitted.

Certificates issued in the PKI NBP system have the following extensions:

- KeyUsage,
- Extended Key Usage,
- Subject Key Identifier,
- Authority Key Identifier,
- Certificate Template Information (or "Certificate Template"),
- CRL Distribution Points,
- Authority Information Access,
- Application Policies,
- Subject Alternative Name,
- Basic Constraints (selected certificates only),

Depending on a certificate template, extensions may be critical. Detailed information is presented in respective Certification Policies.

### **7.1.3 Algorithm Object Identifiers**

The field contains a cryptographic algorithm identifier which describes the algorithm used by a certification authority to place a digital signature on a certificate.

In the certificates issued in the PKI NBP system, the field has the following value:

**sha256RSA OBJECT IDENTIFIER ::= {iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) 11}**

### **7.1.4 Name formats**

In accordance with a respective Certification Policy.

### **7.1.5 Name constraints**

In accordance with a respective Certification Policy.

### **7.1.6 Certification Policy Object Identifiers**

In accordance with a respective Certification Policy.

Certification Policies in the PKI NBP system have identifiers that start with 1.3.6.1.4.1.31995.1.

### **7.1.7 Use of the "PolicyConstraints" extension**

Not applicable.

### **7.1.8 Syntax and semantics of the "PolicyQualifier"**

"Application rules" extension contained in a certificate includes the URL address indicating the Certification Practice Statement and Certification Policy that governs the certificate.

### **7.1.9 Processing semantics for the critical "CertificatePolicy" extension**

To secure the highest compatibility, the "Application rules" extension is non-critical.

## **7.2 CRL Profile**

CRL consists of three fields. The first field (tbsCertList) contains information on revoked certificates, the second one (signatureAlgorithm) – information on the type of algorithm used for signing the list, and the third one (signatureValue) – a digital signature placed on a CRL by the CCK.

Text field tbsCertList is a sequence of mandatory and optional fields. Mandatory fields denote a CRL issuer, whereas optional ones contain information on revoked certificates and CRL extensions.

The table below presents principal fields with a description and CRL extensions:

| Name of field               |            | Contents  |  |
|-----------------------------|------------|---|--|
| <b>Version</b>              |            | V2  |  |
| <b>Issuer</b>               |            | Common name (CN)  | NBP Root CA /<br>NBP Enterprise CA                                     |
|                             |            | Organisational Unit (OU)  | Centrum Certyfikacji Kluczy NBP  |
|                             |            | Organisation (O)  | Narodowy Bank Polski   |
|                             |            | Locality (L)  | Warszawa   |
|                             |            | Country (C)   | PL   |
| <b>Effective date</b>       |            | Universal Time Coordinated based  |  |
| <b>Next Update</b>          |            | Universal Time Coordinated based  |  |
| <b>Revoked Certificates</b> |            | Serial number   | Unique certificate serial number within CCK                            |
|                             |            | Revocation date   | Primary time in UTC (Universal Coordinate Time)                        |
|                             |            | CRL Reason Code   | Additional information on the cause of revocation (*) – optional field |
| <b>Signature Algorithm</b>  |            | Sha256RSA   |  |
| <b>Authority Identifier</b> | <b>Key</b> | Field encoded pursuant to RFC 5280, containing RSA key identifier used for authorising a signature under the list |  |
| <b>CA Version</b>           |            | Numerical field. Its value is increased any time a private key of the CCK issuing the list is changed.            |  |
| <b>CRL Number</b>           |            | Subsequent number of the CRL  |  |
| <b>Next CRL Publish</b>     |            | Primary time in UTC (Universal Coordinate Time)   |  |
| <b>Signature</b>            |            | Signature under CRL generated and encoded in compliance with RFC 5280 requirements                                |  |

(\*) – The “Reason Code” field may contain the following entries:

- Key compromise (1)
- CA compromise (2)
- Affiliation changed (3)
- Superseded (4)

- Cessation of operation (5)
- Certificate hold (6)

# **8. Compliance Audit and Other Assessment**

## **8.1 Frequency or Circumstances of Assessment**

The PKI NBP system is subject to periodical internal or external audit, carried out at least every 3 years. Additionally, a risk analysis of the PKI NBP system is performed with a frequency defined in separate regulations. The risk analysis aims to assess the level of risk of system security. The risk analysis is carried out in compliance with the methodology in force at NBP.

## **8.2 Identity/Qualifications of the Auditor**

Auditors must have knowledge and qualifications in the PKI.

## **8.3 Relationship between the Assessor and the Entity Being Assessed**

An Internal Audit Department Auditor is an NBP employee and s/he audits a system managed at another department. An external auditor is by no means associated with the PKI NBP system.

## **8.4 Aspects Covered by Controls**

The aim and scope of the audit work are specified in accordance with the laws in force at NBP and may, in particular, include: the operation of the system, compliance of the services provided with the Certification Practice Statement and Certification Policies, and compliance of actions with the laws in force.

## **8.5 Actions Taken as a Result of Deficiencies Found during an Audit**

In accordance with the laws in force at NBP.

## **8.6 Notification of the Results**

In accordance with the laws in force at NBP.

# 9. Other Business and Legal Matters

## 9.1 Fees

NBP charges no fees for the issue of cryptographic keys or certificates, granting access to the repository on the [www.pki.nbp.pl/pki](http://www.pki.nbp.pl/pki) website, or for providing an OCSP service.

## 9.2 Financial Responsibility

The provision by NBP of trust services under the PKI NBP system does not require NBP to conclude a liability insurance contract against damage to the users of trust services incurred during the provision of trust services, unless the parties agree otherwise or such an obligation arises from generally applicable laws.

In the event of a damage, the NBP is liable for damages caused to subscribers, including financial damages, arising during the period of providing trust services on the terms resulting from generally applicable regulations, unless the parties agree otherwise.

## 9.3 Confidentiality of Business Information

NBP guarantees that all information compiled for the purposes of the PKI NBP system is stored and processed pursuant to the applicable legal regulations.

Information restricted as business secrets of entities with which NBP has concluded a contract under the PKI NBP system is also protected.

### 9.3.1 Scope of confidential information

Any information related to trust services rendered by NBP in the PKI NBP system that has not been marked Public is treated as a business secret.

Information pertaining directly to the activities of CCK and PRU (including private keys, technical documentation, systemic and emergency procedures), is protected under the Act on Trust Services.

### 9.3.2 Non-confidential information

Information related to the trust services rendered by NBP under the PKI NBP system includes:

- Certification Practice Statement,
- Certification Policies,

- CCK Certificates,
- PRU and CCK contact data,
- CRL published in a repository.

### **9.3.3 Duty to maintain professional secrecy**

All NBP employees performing tasks related to the provision of certification services are obliged to keep secret the information referred to in Chapter 9.3.1. As regards external entity staff performing tasks commissioned by NBP, the obligation to keep the information secret is governed by the agreements concluded by those entities with NBP.

## **9.4 Representations and Warranties**

The Chapter presents all obligations the parties to this Certification Practice Statement, i.e. CCK, PRU, Subscribers and Relying Parties are subject to.

### **9.4.1 Obligations of CCK**

Within the framework of services it renders in the PKI NBP system, the CCK Operator is obliged to:

- observe the provisions of this Certification Practice Statement and of Certification Policies,
- protect CCK private keys and ensure security of the generation of Subscribers' cryptographic keys,
- generate and manage certificates pursuant to x.509 v3 standard,
- publish, without undue delay, generated CCK certificates in the repository referred to in Chapter 2.1,
- revoke certificates in accordance with the provisions of Chapter 4.9,
- publish, without undue delay, CRLs in the repository referred to in Chapter 2.1,
- Ensure accessibility of most recent CRLs, CCK certificates, Certification Practice Statement and Certification Policies in the repository referred to in Chapter 2.1,
- provide trust services in conformity with the provisions of law and in line with the approved PKI NBP procedures,
- ensure that any action related to trust services provided in the PKN NBP system is conducted by authorised persons only,
- electronically store and archive documents and data directly related to the provision of trust services in a manner that ensures security of the data and documents.

### **9.4.2 Obligations of PRU**

As part of the services provided within the PKI NBP system, the PRU Operator is obliged to:

- observe the provisions of this Certification Practice Statement and Certification Policies,
- ensure that requests submitted to the CCK contain true data of a Subscriber and are free from error,
- notify CCK on an on-going basis of any problems found in the PKI NBP,
- electronically store and archive documents and data directly related to the provision of trust services in a manner that ensures security of the data and documents,
- carry out Subscriber verification in line with the provisions of a Certification Policy and the PKI NBP system procedures,
- cooperate with a Subscriber in the process of cryptographic key generation only after a correct verification of the Subscriber.

#### **9.4.3 Obligations of Subscribers**

A Subscriber is obliged to:

- provide all data required for the issue of a certificate in the PKI NBP system and confirm their veracity,
- immediately notify the PRU on any change to the above mentioned data,
- abide by the provisions of this Certification Practice Statement and respective Certification Policies,
- ensure due protection of his/her private key and key activation data,
- use the cryptographic keys and certificates of the PKI NBP system only in the scope defined in the certificate (KeyUsage and ExtKeyUsage fields),
- immediately request revocation of a certificate in case of compromise of its corresponding key.

#### **9.4.4 Obligations of the Relying Party**

A Relying Party which uses PKI NBP system certificates is obliged to:

- rely on the certificates only in the scope delineated in the certificate (KeyUsage and ExtKeyUsage fields),
- carry out a full verification of a Subscriber certificate before using it,
- notify the PRU or a CCK of any instance of the certificate being used by an unauthorised person or in an unintended manner.

### **9.5 NBP Liability Exemption**

Issuance of a certificate in the PKI NBP system does not make NBP an agent, trustee or representative of the Subscriber for whom the certificate was issued.



## **9.6 Limitations of Liability**

NBP shall bear no responsibility for the performance by a Relying Party of a correct and diligent verification of each signature and/or certificate which the Relying Party intends to rely on.

The Relying Party shall be held exclusively liable for relying on a signature or a certificate the verification of which has been incomplete or negative.

NBP shall bear no responsibility for the Subscriber's use of cryptographic keys and certificates not in accordance with their intended purpose laid down in this Statement or respective Certification Policies.

In its capacity as the PKI NBP system owner, NBP shall bear no liability or responsibility for the content of documents (or other data) signed or encrypted with the use of cryptographic keys and certificates generated in this system.

## **9.7 Intellectual property rights**

NBP holds exclusive proprietary copyrights to this Certification Practice Statement (CPS). NBP permits the use (including copying and printing) solely by Subscribers and the relying Parties and only in relation with the activities performed by these entities on behalf of or in co-operation with NBP.

## **9.8 Indemnities**

Not applicable.

## **9.9 Transitional provisions and the period of validity of the Certification Practice Statement**

See Chapter 1.5.3.

## **9.11 Specification of the mode and addresses for written correspondence**

All written correspondence related to the functioning of the PKI NBP system should be delivered to the address indicated in Chapter 1.5.2.

## **9.12 Changes to the Certification Practice Statement**

See Chapter 1.5.3.

### **9.13 Settlement of disputes**

All claims and complaints regarding the functioning of the PKI NBP system should be sent to the address indicated in Chapter 1.5.2.

### **9.14 Interpretation and enforcement of laws**

The functioning of the PKI NBP system is in compliance with the law in force in the Republic of Poland as well as the internal provisions of NBP.

Should any provision of this CPS be deemed invalid or unenforceable, the validity and enforceability of the remaining provisions should not in any way be affected thereby. Each provision of this CPS concerning limitation of liability is binding and shall be interpreted as separate from other provisions.

### **9.15 Legal basis**

See Chapter 9.14 and Chapter 1.5.3.

### **9.16 Miscellaneous**

Not applicable.

# 10. Personal Data Protection

In the PKI NBP system, personal data are processed both on paper and in an electronic form and are protected in accordance with the applicable law. Personal data incorporated into a Subscriber's distinguished name are imported from the Active Directory catalogue service or are manually entered into the system by the PRU Operator, based on the submitted request.

Under the PKI NBP system, the Subscriber's data processed in paper form are the following:

- Subscriber's name and surname,
- ID series and number,
- place of employment,
- e-mail address,
- office phone number,
- signature.

Paper and electronic documents containing personal data to be used in the PKI NBP system are subject to safeguards to prevent abuse or unlawful access or transfer, as provided for in the applicable law.

Personal data related to PKI NBP are stored throughout the period of validity of the certificate and for up to 7 years after the expiry of the certificate of the person whom the data concerns. After this period, the certificates are removed from the PKI NBP system and archive copies containing these certificates are destroyed.

# Attachment A – CCK Self-signed certificates

| NBP Root CA self-signed certificate |  |
|-------------------------------------|--|
| Date of issue                       | 02.06.2014   |
| Date of expiry                      | 02.06.2034   |
| Subject key identifier              | 7a 84 99 54 a5 27 11 4b 19 51 d5 a6 09 c2 e0 b4 0f 7e dc 7f  |
| Certificate in base64 format        | <pre> -----BEGIN CERTIFICATE----- MIIGyDCCBLCgAwIBAgIQH0b7yZ28J49K1aOLMcDvmjANBgkqhkiG9w0BAQUFADB/ MQswCQYDVQQGEwJQTDERMA8GA1UEBxMIV2Fyc3phd2ExHTAbBgNVBAoTFE5hcm9k b3d5IEJhbmsgUG9sc2tpMSgwJgYDVQQLEx9DZW50cnVtIENlcnR5ZmlrYWwSb290 bHVjenkgTkQMRQwEgYDVQQDEwTQlAgUm9vdCBDQTAeFw0xNDA2MDIwODAwMjFa Fw0zNDA2MDIwODEwMjFaMH8xCzAJBgNVBAYTAlBMMREwDwYDVQQHEWhXYXJzemF3 YTEdMBSGA1UEChMUTmFyb2Rvd3kgQmFuayBQb2xza2kxKDAmBgNVBAsTH0NlbnRy dW0gQ2VydHlmaWthY2ppIETsdWN6eSBOQlAxFDASBgNVBAMTC05CUCBSb290IENB MIICiANBgkqhkiG9w0BAQEFAAOCAg8AMIICCgKCAgEAtYa0OpGqVgcOb2hYI3Ur 8X8odx414U/oWjAT0sXxt+LC0dyX9yLzq7ukpyOrpeVuy9PBBj0+t6iS2EYeCcl eK0+9EM4Y1wEhAVs78SzaQZ9anIwgyr9JMzJ0m4RFyI09pbNea/FWMIso8wf0T URDc1YLyjPGOEQHa7FnLsflmCqdJ+1podMkKZ1B5XWus9J3xXS70c6u4kiBauI8h 4r9lOazLHBw3x0o0+zpsylXcHCORgIZsGzBJHImo3FHkYRS/hWF5koittfZQNf9I vNVWoKwUpRb2JweBHqG5hGT52jAlhDNRn0OxStqdLgynLmgo3tMtGR32Yy8WXXaR /k0/1foSaC0F+NBVjn+vZMsCqfi61Ze2VpzacNQJyEl6w0WCSJcBixWm2f5/jojr bamXTBtJa4ROquzGCybtctVnIKRHVoSRyVSlfIw6bZmlh+/3jIoWGzGtoZMBC9I4 qt1EH6rP+691zZuUeaORFpVIKs02j2mlaoCe5BK01XqW6YQYFDY55XPALBKAYYJT RPx3yGJ11d+fBetVdIXVpipfZLW18sZobJ/8zPNwKZ+kr9zeo9e3Baqwnc034YuP OhZeGPJfKRSjecarJyvJCNMB3H7VxTeSYcuAoEOG/qkuM4ydN3NDUSrwxGbwJSSPP e9UKUt4Hec9pEwzZWodossCAwEAaOCAT4wggE6MAsGA1UdDwQEAwIBhjAPBgNV HRMBAf8EBTADAQH/MB0GA1UdDgQWBRR6hJlUpScRSx1Rl1aYJwuC0D37cfzASBgkr BgEeAYI3FQEEBQIDAQABMIHBBgNVHSAEgbkwgbyWgasGCysGAQQBgfl7AQEBMIGb MHQGCCsGAQUFBwICMGgeZgBOAEEAUgBPAAEQATwBxAFkAIABCAEEATgBLACAAUABP AEwAUwBLAEkAIABDAGUAcgB0AGkAZgBpAGMAYQB0AGUAIABQAHIAIYQBjAHQAaQBj AGUAIABTAHQAYQB0AGUAbQB1AG4AdDAjBggrBgEFBQcCARYXaHR0cDovL3BraS5u YnAucGwvcGtpLwAwBgYEVR0gADAjBgkrBgEeAYI3FQIEFgQUFuKyXpPCWrx4hM8 SvJyEbAY9m0wDQYJKoZIhvcNAQEFBQADggIBAGGymMtnADGmZJ1y8qsRwilQabbY B5HP+r04LaIpuZH+/vB/2BJJ3y8ZMWdiYXKYJ9wXk/PxdYFiLi/zyBnthu094ryg bAs6Q3/J4tHXFxnZyaj0rwQff8CqozTVz0h6d90hnTKz28D63Tdg1QNPJpgjmMEk NlnU8pRr3G9xocArqIO/qzyxZpdn0PCxI9mAuYC0oinV1QMhZK3HQGMsv9k26uBx x2zzRuhhXENP0pAvUw1UL9ZHKLOhssF+BV1v2oVfMFXc2BaYazL4GpSa8s13BqPZ dYSKIDVm502IelQjeft2BP0d/10v0S3w5wBoq9La9P8LPUGC7GWKr56PdfuNJDoC ELmC4ZIAvCo+M7Y2ejsCLUhTsU8XBkMwzphCNotnyGtP16o06GDTz+KIKji47dGA g3G0fM/OrJNP7ETsDvjZqtSJK8WFj4oJE8MqmfVfSh9bieNJ2Mi7GpNCiDHu/1J nI81nv2YlmLOBlcud6G40vP0e1oHiFTdElser3rgVdhVcgwH28YIQLmWpaW1bb6 sN+fN62+uzNCdvt+Ff3P/ni5w7MidPVKmlZFMJmXGDQSMKUajvc+qYpKOPJeaI8y 7RccQ0wZjZNRJ4wY0c0OZHypvNeU18xWEZvICpWtpg9dgY9W13wu/0F5wbSfWr92 emAWBhkJQqf/p1Ak -----END CERTIFICATE----- </pre> |

NBP Root CA self-signed certificate

|                                     |  |
|-------------------------------------|--|
| <b>Date of issue</b>                | 02.06.2014   |
| <b>Date of expiry</b>               | 16.09.2036   |
| <b>Subject key identifier</b>       | 7a 84 99 54 a5 27 11 4b 19 51 d5 a6 09 c2 e0 b4 0f 7e dc 7f  |
| <b>Certificate in base64 format</b> | <pre> -----BEGIN CERTIFICATE----- MIIGyDCCBLCgAwIBAgIQRbh02uAa7rBAz/K54enudzANBqkqhkiG9w0BAQsFADB/ MQswCQYDVQQGEwJQTERMA8GA1UEBxMIV2Fyc3phd2ExHTAbBgNVBAoTFE5hcm9k b3d5IEJhbmsgUG9sc2tpMSgwJgYDVQQLEx9DZW50cnVtIENlcnR5ZmlrYWwqSBL bHVjenkgTkJQMRQwEgYDVQQDEWtOQlAgUm9vdCBDQTAeFw0xNDA2MDIwODAwMjFa Fw0zNjA5MTYxMzQ5MjhaMH8xCzAJBgNVBAYTA1BMMREwDwYDVQQHEWhXYXJzemF3 YTEdMBSGA1UEChMUTmFyb2Rvd3kgQmFuayBQb2xza2kxKDAmBgNVBAsTH0NlbnRy dW0gQ2VydHlmaWthY2ppIETsdWN6eSBOQ1AxFDASBgNVBAMTC05UCUBSb290IENB MIICiANBgkqhkiG9w0BAQEFAAOCAg8AMIICCgKCAgEAtYa0OpGqVgcOb2hYI3Ur 8X8odx414U/oWjAT0sXxt+LC0dyX9yLzq7ukpyOrpeVuya9PBBj0+t6iS2EYeCcl eK0+9EM4Y1wEhAVs78SzaQZ9anIwgyr9JMzJ0m4RFyI09pbNea/FWMIso8wf0T URDc1YLyjPGOEQHa7FnLsflmCqdJ+1podMkKZ1B5XWus9J3xXS70c6u4kiBau18h 4r9l0azLHBw3x0o0+zpsylXcHCORgIZsGzBJHImo3FHkYRS/hWF5koittfZQNf9I vNVwKwUpRb2JweBHqG5hGT52jAlhDNRn0OxStqLgynLmgo3tMtGR32Yy8WXXaR /k0/1foSaC0F+NBVjn+vZMsCqfi61Ze2VpzacNQJyEl6w0WCSJcBixWm2f5/jojr bamXTBtJa4ROquzGCybtctVnIKRHVoSRyVSlfIw6bZmlh+/3jIoWgzGtoZMBC9I4 qt1EH6rP+691zZuUeaORFpVIKs02j2m1aoCe5BK01XqW6YQYFDY55XPALBKAYYJT RPx3yGJ11d+fbetVdIXVpipfZLW18sZobJ/8zPNwKZ+kr9zeo9e3Baqwnc034YuP OhZeGPJfKRSjecarJyvJCNMB3H7VxTeSYcuAoEOG/qkuM4ydN3NDUSrwxGbwJSPp e9UKUt4Hec9pEwzZW0dossCAwEAAaOCAT4wggE6MAsGA1UdDwQEAwIBhjAPBgNV HRMBAf8EBTADAQH/MB0GA1UdDgQWBRR6hJ1UpScRSx1R1aYJwuC0D37cfzASBgkr BgEAAyI3FQEEBQIDAQACMIHBBgNVHSAEgbkwgByWgasGCysGAQQBgfl7AQEBMIGb MHQGCCsGAQUFBwIcMGgeZgBOAEEAUgBPAAEQATwBxAFkAIABCAEEATgBLACAAUABP AEwAUwBLAEkAIABDAGUAacgB0AGkAZgBpAGMAYQB0AGUAIAABQAHIAYQBJAHQAaQBJ AGUAIABTAHQAYQB0AGUAbQBlAG4AdDAjBggrBgEFBQcCARYXaHR0cDovL3BraS5u YnAucGwvcGtpLwAwBgYEVR0GADAjBgkrBgEAAyI3FQIEFgQUm6GXuIy6CD4n5xgP vRi218fNGPQwDQYJKoZIhvcNAQELBQADggIBAK2E1QvrTetbKTeliMEnY0j1W4N0 g5mrDv0ZbQZ7iYiSWbSJAeiPW7YUYcjJJgY6Vd6rhu2uiv8iOaxXOMhBgRtcFoIn qf3/U1Vj2Xlm8sILvkQ4UxBOyGEk3Qt69QnNtTKpjCm+mlyv92Dr6c5BnKrr0Hdi rxHSXfa53N3Ubl+nnUOQBxwKqrgS8VG1OuHkxx/yfDSF+mhMDryhWTQW7P/S2kSN 2+rWiTW3bwzqw6tNEVjItq1So+pDgFX4XJT2gchfmdTwlrNPN7U2UURh1MubtEvx N38cCouOKuF+XWdy3lvKnnbpxrB2UdH1kei1A9+12E0EaV8iIWPnfahTESSZThWA A0GQBxjalckN/z6UdirfuqdoGI5mVAUPuzy0tjl5fk0R1e+Rk4pSPgP4Lm2Q7k3r rOy5w/cIGg6nOZ0EQJR0DxwyUw+xFvaEb/m/pfjaLhKpeq/FrE++Nkc8AdeoPy9b Ih2pPIKfLDnOZ9ib9KCq6hIgaDmWoo22q1Oc/gjalqEIKU6EJYx25RgpdUOBdEOs i1mLKpa8wlaHM8GXIBz2BDTPxQb6M1S5Y5JG5+YqeCsoGEzcUbbM1327J1+RR5NG SkPDV4Mf0B77Zd7jyqv3djf7//fZgzPbxrfjRpvddjgeJGGIGQUhbJroSjLhz6MJ suTlq0Z5uL6rw/a9 -----END CERTIFICATE----- </pre> |

NBP Enterprise CA Certificate

|                                     |   |
|-------------------------------------|---|
| <b>Date of issue</b>                | 10.10.2016  |
| <b>Date of expiry</b>               | 10.10.2026  |
| <b>Subject key identifier</b>       | d4 36 f2 2d d0 46 2c 20 33 13 84 6d 15 d7 4e 95 21 0b 0f 11   |
| <b>Certificate in base64 format</b> | <pre> -----BEGIN CERTIFICATE----- MIIGejCCBGKgAwIBAgIOGTrdrAf3vUkAAgAAAEswDQYJKoZIhvcNAQELBQAwfzEL MAkGA1UEBhMCUEwxEtAPBgNVBACtCFdhdnN6YXdhMR0wGwYDVQQKEXR0YXJvZG93 eSBCYW5rIFBvbHNraTEoMcyGA1UECXMfQ2VudHJ1bSBDZXJ0eWZpa2FjamkgS2x1 Y3p5IE5CUDEUMBIGA1UEAxMLTkQIFjVvb3QgQ0EwHhcNMTYxMDEwMTAzMjQyWhcN MjYxMDEwMTAzMjQyWjCBTELMAkGA1UEBhMCUEwxEtAPBgNVBACtCFdhdnN6YXdh MR0wGwYDVQQKEXR0YXJvZG93eSBCYW5rIFBvbHNraTEoMcyGA1UECXMfQ2VudHJ1 bSBDZXJ0eWZpa2FjamkgS2x1Y3p5IE5CUDEUmBgGA1UEAxMRTkQIEVudGVycHJp c2UgQ0EwggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQCvtswNzmpf7sVa a9JYQfekM7ifDcQZxOzhshw+0VEGD4+r7iMnVVcaRlSd2rfajM2IRnuw9fTli3vI EfxZazNZSkTXiUVvpj9cpr7SkPtK8MuTthnS+tbuClootFsTZ9k5G2T3rfixjY/o 9nxH0lUuzzVw96iYHHKYSnXEBArx0p0bPqSwPhPh4503hwZwI4gz1uIhnl34gzk OGkrUt3sPjHkHnIbZXMQ3xf25w3wXqgTrH4+XFTf2eQjD00QzcybaE+cCt14f EaN+R5cCmJ7sKQvIi+R8pJPJ6t0j6KLIzE3eqSFA4cLSojlmTmJsOeIm1EhKLPg DTdhK7XNagMBAAGjggHrMIIB5zASBgkrBgEEAYI3FQEEBQIDAQADMCMGCSsGAQQB gjcvAgQWBBSYoPTCfyavsRvV/i8DGfbOobJYuDAdBgNVHQ4EFgQU1DbyLdBGCAZ E4RtFdd01SELDxEwgCEGA1UdIASBuTCBtjCBqYlKwYBBAGB+XsBAQIwZSwdAYI KwYBBQUHAgiIwA5mAE4AQQBSAE8ARABPAFCAWQAgaEIAQQBOAEsAIABQAE8ATABT AESASQAgaEMAZQByAHQAaQBmAGkAYwBhAHQAQAgAFAAcgBhAGMAdABpAGMAZQAg AFMAdABhAHQAQZQBtAGUAbgB0MCMGCCsGAQUFBwIBFhdodHRwOi8vcGtpLm5icC5w bc9wa2kvADAGBgRVHSAAMBkGCCsGAQQBgjcuUAgQMhgoAUwB1AGIAQwBBMAsGA1Ud DwQEAwIBhjAPBgNVHRMBAf8EBTADAQH/MB8GA1UdIwQYMBaAFHqEmVslJxFLGVHV pgnC4LQPftx/MDEGA1UdHwQqMCgwJqAkoCKGIgh0dHA6Ly9wa2kubmJwLnBsL3Br aS9yY2EoMSkuY3JsMDwGCCsGAQUFBwEBBDAwLjAsBggrBgEFBQcwAoYgaHR0cDov L3BraS5uYnAucGwvcGtpL3JjYSgyKS5jcnQwDQYJKoZIhvcNAQELBQADggIBALTx MmAvXYP0gzlnAlonc6KpD/bXH03s7bwly56Jli6S5cEEkSBW8wLlrJ2Fhc3YSUwK rhTLiyrSUWP+ddGNJXXqZyV8sGj15Ou98CCWUNf/aofbVplfrm9sCz/mS60TU6fg ZpPyF65yq8RppwLKVsqJQWGPwonV1EArvSufqr8Iz1ptQKmpL5Dfq5JY/nKhU0Uh TZh6JcQ4gErFFR1lpi+FR7IXRDzn8ZaE8/nuNkgNI427R3txib4zENEoobLYEwz 74MaBss0ANChspAXCzRZ5b8A6mZQyaJeRp5WpQfylFiBsLgMA0oxrFjI74KfEB47 /dyOhsYwqE+KPDzo/KUUDBINK1wDOzrGN/Kx+hZvZvVEnfUgmIQU7ENXknAvNK7b kGR1ciOm7ft0tvYKqQgzbMHJlfiCcmd7ruoQcUUGVIt+5KUu0B4/bDJzLC1swwwT INI5x7f7hlnECLexu4FbbTCJ1kJwqWTyNXkDqKZnEHYUbTIden5WDCkWCwieXRcm dJirCX4EzPzNjTF6G2f9LY9kSNYj0RwKuFImFk5Coh96gk+e7FYvGMP2Y19eUnYZ rj4AHi+3cgBWAy4DMYLINLyYBOidNZ6/gJzIlQUHN4XxCOyyeOiv5gxKoil93emJ ws6XJAF0FdmxYYIGvE7yM0WJDBYQp/c8WJiWXITR -----END CERTIFICATE----- </pre> |

NBP Enterprise CA Certificate

|                                     |  |
|-------------------------------------|--|
| <b>Date of issue</b>                | 11.05.2021   |
| <b>Date of expiry</b>               | 11.05.2031   |
| <b>Subject key identifier</b>       | 5030fa37b6d5424dd7bbc26130450f3354ba9a8e   |
| <b>Certificate in base64 format</b> | <pre> -----BEGIN CERTIFICATE----- MIIEHTCCBGGgAwIBAgIIOGTTrdrAf3vUkAAgAAAHAAwDQYJKoZIhvcNAQELBQAwfzEL MAkGA1UEBhMCUEwxEtAPBgNVBACtCFdhdnN6YXdhMR0wGwYDVQQKEXR0YXJvZG93 eSBCYW5rIFBvbHNraTEoMCIYGA1UECXMfQ2VudHJ1bSBDZXJ0eWZpa2FjamkgS2x1 Y3p5IE5CUDEUMBIGA1UEAAMLTKJQIFJvb3QgQ0EwHhcNMjEwMTEwMTEwMTEwMTEw MzEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEwMTEw MR0wGwYDVQQKEXR0YXJvZG93eSBCYW5rIFBvbHNraTEoMCIYGA1UECXMfQ2VudHJ1 bSBDZXJ0eWZpa2FjamkgS2x1Y3p5IE5CUDEUmBgGA1UEAAMRTkQIEVudGVycHJp c2UgQ0EwggIiMA0GCSqGSIb3DQEBAQUAA4ICDwAwggIKAoICAQDLuUHtFizZXQzI ishYvKw+WfI2oTW58ed51puWVTH824MdoFjdK3gj6soaJAVsQXJ7WwTAgksC77xf H3iKxpRvnV7f3XCKeVDtWr3Wq62ALC14z5QDx9+Lrrc+MX85HUCHoEouJ9zsk6J7 kUp4G8Hjg2K4Gx5vbnkBGqN63QBpMRdgp2ICxApu73hh9sqGI/kC9sm7cq9I+iy/ JHytxLCQ+MA3hzzQIfvuWx1MFSu+7dza5TRMdPQYF70iHsGmzRrg/bcammi2Qa2/ 417GgroxL5ELYXm8Bq4m9cUC/Y7gfxELu3Ba+hQFdqMidmdMn0NHFDfSQRJMMVNj Oxy4ZIMtRa2VT2ROekAkde6y87ciTgQz49uvXK2oGHTUPFWgHpAaAsNY9PLXyBJ6 7rfgoDlIs9srS/E5HFjIzkOpq/1eVEA92HMPauJoamhAb1xx8bYqH011lj3iIR97 9PumMvfbJsn51QtfyO5A9nS19iqPBXc419A4a+kCLR+bV40H0IV3Nh4W53hLrGI1 4wTm6EIV680+z7kLFE+HH5KNH8xt+9nnbMldENGpOuJ9M6nmtQKyndziQKyv0Bvn /8BCPVvXyzn51IWjJHV17orNJQN4djxqut89tqWvk2I77ObYDPPtYTP8LE6q+WWIA hV1mSnNAHEjyWAnR7ojhJK0DD44gpwIDAQABo4IB6jCCAEYwEgYJKwYBAGCNxUB BAUCAwQABDAjBgkrBgEEAYI3FQIEFgQUYL2l+KJpkQmyneigj4Ps5DGOV9EwHQYD VR0OBBYEFFAw+je21UJN17vCYTBFdZNUupqOMIHABGNVHSAEggbgwgUwGaoGCysG AQEBgf17AQECMIGAMHQGCCsGAQUFBwICMGeZgBOAEEAUgBPAEQATwBXAFkAIABC AEEATgBLACAAUABPAEwAUwBLAEkAIABDAGUAcgB0AGkAZgBpAGMAYQB0AGUAIABQ AHIAYQBjAHQAaQBjAGUAIABTAHQAYQB0AGUAbQBlAG4AdDAiBggrBgEFBQcCARYW aHR0cDovL3BraS5uYnAucGwvcGtpLzAGBgRVHSAAMBkGCCsGAQQBgcjUAQMhGoA UwB1AGIAQwBBMAsGA1UdDwQEAwIBhJAAPBgNVHRMBAf8EBTADAQH/MB8GA1UdIwQY MBAAFHqEmVslJxFLGVHVpgnC4LQPftx/MDEGA1UdHwQqMCgwJqAkoCKGIgh0dHA6 Ly9wa2kubmJwLnBsL3BraS9yY2EoMSkuY3JSMdWGCCsGAQUFBwEBBDALjAsBggr BgEFBQcwAoYgaHR0cDovL3BraS5uYnAucGwvcGtpL3JjYSgyKS5jcnQwDQYJKoZI hvcNAQELBQADggIBAGhl92x9pCi+Yi6qh+yWQYkxNwRf050TjCDJHulMiFUmYYQ eYH+9xc8H8Gb74xAEJlOHqxirK+6uT/DkVNmwsiiWVnOtcM1fh9A9zcyjTnZmQT7 DhBuAWjKSrxrhydGi2i/T8+zq4Hrd//kqW24/z1qnzEXirq3CSJjSDDTgFd3glpt K6ZzpYUGUf45MMZjnFAO01+J0Yar5KJo0/wNDHI3z2hXJTBmuerEPSz70aQORLML5 HjZbTF8rCvWFQxWR53Vgzd2+k1N176iVyeu2W3h+FgOog8EYv6WvQeYSzE7fdtT5 Evgk/8L4ygZhr8QLdnmwa2tUr0TypjkzS1OXvPGZc/zRtTtuon0asDwtK1n7eMog qHuDyNPKMqerYm2P7HV9zKAa/l+5ZidThtSyW5fwMcl8uf7/nyYFg2g+FFklZ5iD FS+KYivaMmWtV4ZJynmnpidvZEzL+7mDNsGyNFP97jiXvCMWubJm/mE8XE+tby1J N0jQ/wS5x7pBor/IYrn2sjfEXRV9NDE6nOKHnaKlbX7nvbRNMhIFRQRJJ45Moto o+XZQcd4nLQDSC3Nwt61U56+5Y6F1WcuHPenu7y8NQjcn9NzXNHOLzjTnIcQQicp0 5vet83RQRHxLNgNkrAac8hpJvsHXuxNOZj3zVnimAEIOavblCfGSpU95MLzU -----END CERTIFICATE----- </pre> |

## Attachment B – Document Change Log

| No. | Date              | version    | Person Responsible | Description of actions performed   |
|-----|-------------------|------------|--------------------|--|
| 1.  | 02.09.2011        | 0.1        |                    | Document creation  |
| 2.  | 20.09.2011        | 0.2        |                    | Amended chapters<br>2, 5.4, 5.5, 5.6, 5.7  |
| 3.  | 13.10.2011        | 0.3        |                    | Document review  |
| 4.  | 04.11.2011        | 0.4        |                    | Amended chapters<br>4.9.3, 4.9.15, 6.3.2, 6.4  |
| 5.  | 11.05.2012        | 0.5        |                    | Amended Chapters 8, 9, 10  |
| 6.  | 24.05.2012        | 0.6        |                    | Document review and proofreading   |
| 7.  | 22.08.2012        | 0.7        |                    | Document review and completion   |
| 8.  | 10.09.2012        | 0.8        |                    | Document review  |
| 9.  | 12.09.2012        | 0.9        |                    | Document review  |
| 10. | <b>18.09.2012</b> | <b>1.0</b> |                    | <b>Document approval</b>   |
| 11. | 11.10.2012        | 1.01       |                    | Document completion – comments by Internal<br>Audit Department   |
| 12. | 29.10.2012        | 1.02       |                    | Document review and completion   |
| 13. | 30.10.2012        | 1.03       |                    | Document review  |
| 14. | 30.10.2012        | 1.04       |                    | Document review  |
| 15. | 05.11.2012        | 1.05       |                    | Document review  |
| 16. | <b>08.11.2012</b> | <b>1.1</b> |                    | <b>Document approval</b>   |
| 17. | 23.01.2013        | 1.11       |                    | Document completion – comments by ESCB au-<br>ditors   |
| 18. | 31.01.2013        | 1.12       |                    | Document review  |
| 19. | 31.01.2013        | 1.13       |                    | Document review  |
| 20. | 31.01.2013        | 1.14       |                    | Document review  |
| 21. | <b>19.02.2013</b> | <b>1.2</b> |                    | <b>Document approval</b>   |
| 22. | 05.09.2013        | 1.21       |                    | Adaptation to the new visual template  |
| 23. | 13.09.2013        | 1.22       |                    | Document review  |
| 24. | 20.09.2013        | 1.23       |                    | Document review  |
| 25. | 20.09.2013        | 1.24       |                    | Document review  |
| 26. | <b>02.10.2013</b> | <b>1.3</b> |                    | <b>Document approval</b>   |
| 27. | 03.06.2014        | 1.31       |                    | Amended chapters 2, 6.1.5, 6.3.2 and Attach-<br>ment 2 due to CCK certificate renewal with key<br>changeover |
| 28. | 03.06.2014        | 1.31       |                    | Document review  |
| 29. | 03.06.2014        | 1.31       |                    | Document review  |
| 30. | 06.06.2014        | 1.31       |                    | Document review  |
| 31. | <b>10.06.2014</b> | <b>1.4</b> |                    | <b>Document approval</b>   |



|     |                   |            |  |   |
|-----|-------------------|------------|--|---|
| 32. | 05.02.2015        | 1.41       |  | Alignment of the document to the provisions of Resolution No. 1 /2015 of the NBP Management Board   |
| 33. | 06.02.2015        | 1.42       |  | Document review   |
| 34. | 20.10.2016        | 1.51       |  | Amendments due to changeover of the hash function used in the system and alignment to Resolution No. 53/2016 of the NBP Management Board  |
| 35. | <b>16.12.2016</b> | <b>1.6</b> |  | <b>Document approval</b>  |
| 36. | 20.02.2017        | 1.61       |  | Amendments due to comments by ESCB auditors   |
| 37. | 03.02.2017        | 1.62       |  | Document review   |
| 38. | 23.05.2018        | 2.01       |  | Amendments related to amendments of Resolution No. 53/2016 of the NBP Management Board<br>Modification of information on the publication of the CRLs and certificates (chapter 2) |
| 39. | 03.09.2020        | 2.11       |  | Amendments related to the amendments of Resolution No. 53/2016 of the NBP Management Board concerning the data retention period   |
| 40. | 17.05.2021        | 2.21       |  | Added information on the NBP Enterprise CA certificate generated in May 2021.   |
| 41. | 23.07.2021        | 2.31       |  | Amendments due to comments by ESCB auditors   |
| 42. | 28.07.2021        | 2.32       |  | Document review   |
| 43. | 05.01.2022        | 2.41       |  | Amendments related to the amendments of Resolution No. 53/2016 of the NBP Management Board  |

**Document agreed by:**

| Version | Person responsible   | Signature |
|---------|--|-----------|
| 2.6     | Director of Information Technology and Telecommunications Department |           |

**Document approved by:**

| Version | Person responsible              | Signature |
|---------|---------------------------------|-----------|
| 2.6     | Director of Security Department |           |



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