

# **NCDC GOVERNMENT-CA CERTIFICATION PRACTICE STATEMENT**

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## Table of Contents

|   |           |
|---|-----------|
| <b>1. INTRODUCTION .....</b>  | <b>8</b>  |
| 1.1 Overview.....   | 8         |
| 1.1.1 <i>CERTIFICATE POLICY</i> .....                                   | 9         |
| 1.1.2 <i>RELATIONSHIP BETWEEN THE CP AND THE CPS</i> .....              | 9         |
| 1.1.3 <i>INTERACTION WITH OTHER PKIS</i> .....                          | 9         |
| 1.1.4 <i>SCOPE</i> .....  | 9         |
| 1.2 Document Name and Identification .....                              | 10        |
| 1.3 PKI Participants .....  | 10        |
| 1.3.1 <i>GOVERNMENT-CA POLICY AUTHORITY (GOVERNMENT-CA PA)</i> .....    | 10        |
| 1.3.2 <i>GOVERNMENT CERTIFICATION AUTHORITY (GOVERNMENT-CA)</i> .....   | 11        |
| 1.3.3 <i>CERTIFICATION SERVICE PROVIDER (CSP)</i> .....                 | 11        |
| 1.3.4 <i>TRUSTED AGENT</i> .....  | 12        |
| 1.3.5 <i>SUBSCRIBERS</i> .....  | 13        |
| 1.3.6 <i>RELYING PARTIES</i> .....                                      | 13        |
| 1.3.7 <i>DEVICE SPONSOR</i> .....                                       | 14        |
| 1.3.8 <i>ONLINE CERTIFICATE STATUS PROTOCOL RESPONDER</i> .....         | 14        |
| 1.4 Certificate Usage .....   | 14        |
| 1.4.1 <i>APPROPRIATE CERTIFICATE USES</i> .....                         | 14        |
| 1.4.2 <i>PROHIBITED CERTIFICATE USES</i> .....                          | 16        |
| 1.5 Policy Administration .....   | 16        |
| 1.5.1 <i>ADMINISTRATION ORGANIZATION</i> .....                          | 16        |
| 1.5.2 <i>CONTACT PERSON</i> .....                                       | 16        |
| 1.5.3 <i>PERSON DETERMINING CPS SUITABILITY FOR THE POLICY</i> .....    | 17        |
| 1.5.4 <i>CPS APPROVAL</i> .....   | 17        |
| 1.6 Definitions and Acronyms .....                                      | 17        |
| <b>2. PUBLICATION AND REPOSITORY RESPONSIBILITIES .....</b>             | <b>18</b> |
| 2.1 Repositories .....  | 18        |
| 2.1.1 <i>REPOSITORY OBLIGATIONS</i> .....                               | 18        |
| 2.2 Publication of Certification Information .....                      | 18        |
| 2.2.1 <i>PUBLICATION OF CERTIFICATES AND CERTIFICATE STATUS</i> .....   | 18        |
| 2.2.2 <i>PUBLICATION OF CA INFORMATION</i> .....                        | 19        |
| 2.2.3 <i>INTEROPERABILITY</i> .....                                     | 19        |
| 2.3 Time or Frequency of Publication .....                              | 19        |
| 2.4 Access Controls on Repositories .....                               | 20        |
| <b>3. IDENTIFICATION AND AUTHENTICATION .....</b>                       | <b>21</b> |
| 3.1 Naming .....  | 21        |
| 3.1.1 <i>TYPES OF NAMES</i> .....                                       | 21        |
| 3.1.2 <i>NEED FOR NAMES TO BE MEANINGFUL</i> .....                      | 21        |
| 3.1.3 <i>ANONYMITY OR PSEUDONYMITY OF SUBSCRIBERS</i> .....             | 21        |
| 3.1.4 <i>RULES FOR INTERPRETING VARIOUS NAME FORMS</i> .....            | 21        |
| 3.1.5 <i>UNIQUENESS OF NAMES</i> .....                                  | 22        |
| 3.1.6 <i>RECOGNITION, AUTHENTICATION AND ROLE OF TRADEMARKS</i> .....   | 22        |
| 3.2 Initial Identity Validation .....                                   | 22        |
| 3.2.1 <i>METHOD TO PROVE POSSESSION OF PRIVATE KEY</i> .....            | 22        |
| 3.2.2 <i>AUTHENTICATION OF ISSUER IDENTITY</i> .....                    | 22        |
| 3.2.3 <i>IDENTITY-PROOFING OF INDIVIDUAL IDENTITY</i> .....             | 23        |
| 3.2.4 <i>NON-VERIFIED SUBSCRIBER INFORMATION</i> .....                  | 25        |
| 3.2.5 <i>CRITERIA OF INTEROPERATION</i> .....                           | 25        |
| 3.3 Identification and Authentication for Re-key Requests .....         | 25        |
| 3.3.1 <i>IDENTIFICATION AND AUTHENTICATION FOR ROUTINE RE-KEY</i> ..... | 25        |

3.3.2 IDENTIFICATION AND AUTHENTICATION FOR RE-KEY AFTER REVOCATION .....25

3.4 Identification and Authentication for Revocation Requests .....26

**4. CERTIFICATE LIFE-CYCLE OPERATIONAL REQUIREMENTS .....27**

4.1 Certificate Application.....27

4.1.1 SUBMISSION OF CERTIFICATE APPLICATION .....27

4.1.2 ENROLLMENT PROCESS AND RESPONSIBILITIES.....27

4.2 Certificate Application Processing.....28

4.2.1 PERFORMING IDENTITY-PROOFING FUNCTIONS.....28

4.2.2 APPROVAL OR REJECTION OF CERTIFICATE APPLICATIONS .....28

4.2.3 TIME TO PROCESS CERTIFICATE APPLICATIONS.....29

4.3 Certificate Issuance.....29

4.3.1 CA ACTIONS DURING CERTIFICATE ISSUANCE.....29

4.3.2 NOTIFICATION TO SUBSCRIBER OF CERTIFICATE ISSUANCE.....29

4.4 Certificate Acceptance.....29

4.4.1 CONDUCT CONSTITUTING CERTIFICATE ACCEPTANCE.....30

4.4.2 PUBLICATION OF THE CERTIFICATE BY THE CA .....30

4.4.3 NOTIFICATION OF CERTIFICATE ISSUANCE BY THE CA TO OTHER ENTITIES .....30

4.5 Key Pair and Certificate Usage.....30

4.5.1 SUBSCRIBER PRIVATE KEY AND CERTIFICATE USAGE .....30

4.5.2 RELYING PARTY PUBLIC KEY AND CERTIFICATE USAGE.....30

4.6 Certificate Renewal .....31

4.7 Certificate Re-Key.....31

4.7.1 CIRCUMSTANCES FOR CERTIFICATE RE-KEY .....31

4.7.2 WHO CAN REQUEST A CERTIFICATE RE-KEY .....31

4.7.3 PROCESSING CERTIFICATE RE-KEYING REQUESTS.....31

4.7.4 NOTIFICATION OF RE-KEYED CERTIFICATE ISSUANCE TO SUBSCRIBER.....32

4.7.5 CONDUCT CONSTITUTING ACCEPTANCE OF A RE-KEYED CERTIFICATE.....32

4.7.6 PUBLICATION OF THE RE-KEYED CERTIFICATE BY THE CA.....32

4.7.7 NOTIFICATION OF CERTIFICATE ISSUANCE BY THE CA TO OTHER ENTITIES .....32

4.8 Certificate Modification .....32

4.9 Certificate Revocation and Suspension .....32

4.9.1 CIRCUMSTANCE FOR REVOCATION OF A CERTIFICATE.....32

4.9.2 WHO CAN REQUEST REVOCATION OF A CERTIFICATE .....35

4.9.3 PROCEDURE FOR REVOCATION REQUEST.....35

4.9.4 REVOCATION REQUEST GRACE PERIOD .....36

4.9.5 TIME WITHIN WHICH CA MUST PROCESS THE REVOCATION REQUEST .....36

4.9.6 REVOCATION CHECKING REQUIREMENTS FOR RELYING PARTIES .....36

4.9.7 CRL ISSUANCE FREQUENCY.....36

4.9.8 MAXIMUM LATENCY OF CRLS.....36

4.9.9 ONLINE REVOCATION CHECKING AVAILABILITY .....36

4.9.10 ONLINE REVOCATION CHECKING REQUIREMENTS .....37

4.9.11 OTHER FORMS OF REVOCATION ADVERTISEMENTS AVAILABLE.....37

4.9.12 SPECIAL REQUIREMENTS RELATED TO KEY COMPROMISE.....37

4.9.13 CIRCUMSTANCES FOR SUBSCRIBER CERTIFICATE SUSPENSION .....37

4.9.14 WHO CAN REQUEST SUSPENSION.....37

4.9.15 PROCEDURE FOR SUSPENSION REQUEST.....37

4.9.16 LIMITS ON SUSPENSION PERIOD .....38

4.9.17 CIRCUMSTANCES FOR TERMINATING SUSPENDED CERTIFICATES .....38

4.9.18 PROCEDURE FOR TERMINATING THE SUSPENSION OF A CERTIFICATE .....38

4.10 Certificate Status Services .....38

4.11 End of Subscription .....38

4.12 Key Escrow and Recovery .....39

4.12.1 KEY ESCROW POLICY AND PRACTICES.....39

4.12.2 SESSION KEY ENCAPSULATION AND RECOVERY POLICY AND PRACTICES .....39

|           |   |           |
|-----------|---|-----------|
| <b>5.</b> | <b>FACILITY MANAGEMENT AND OPERATIONAL CONTROLS</b>             | <b>40</b> |
| 5.1       | Physical Security Controls                                      | 40        |
| 5.1.1     | <i>SITE LOCATION AND CONSTRUCTION</i>                           | 40        |
| 5.1.2     | <i>PHYSICAL ACCESS</i>  | 40        |
| 5.1.3     | <i>POWER AND AIR CONDITIONING</i>                               | 41        |
| 5.1.4     | <i>WATER EXPOSURE</i>   | 41        |
| 5.1.5     | <i>FIRE PREVENTION AND PROTECTION</i>                           | 42        |
| 5.1.6     | <i>MEDIA STORAGE</i>  | 42        |
| 5.1.7     | <i>WASTE DISPOSAL</i>   | 42        |
| 5.1.8     | <i>OFF-SITE BACKUP</i>  | 42        |
| 5.2       | Procedural Controls   | 42        |
| 5.2.1     | <i>TRUSTED ROLES</i>  | 42        |
| 5.2.2     | <i>NUMBER OF PERSONS REQUIRED PER TASK</i>                      | 43        |
| 5.2.3     | <i>IDENTITY-PROOFING FOR EACH ROLE</i>                          | 44        |
| 5.2.4     | <i>SEPARATION OF ROLES</i>                                      | 44        |
| 5.3       | Personnel Controls  | 44        |
| 5.3.1     | <i>BACKGROUND, QUALIFICATIONS AND EXPERIENCE REQUIREMENTS</i>   | 44        |
| 5.3.2     | <i>BACKGROUND CHECK AND CLEARANCE PROCEDURES</i>                | 44        |
| 5.3.3     | <i>TRAINING REQUIREMENTS</i>                                    | 45        |
| 5.3.4     | <i>RETRAINING FREQUENCY AND REQUIREMENTS</i>                    | 45        |
| 5.3.5     | <i>JOB ROTATION FREQUENCY AND SEQUENCE</i>                      | 45        |
| 5.3.6     | <i>SANCTIONS FOR UNAUTHORIZED ACTIONS</i>                       | 45        |
| 5.3.7     | <i>CONTRACTING PERSONNEL REQUIREMENTS</i>                       | 45        |
| 5.3.8     | <i>DOCUMENTATION SUPPLIED TO PERSONNEL</i>                      | 45        |
| 5.4       | Audit Logging Procedures  | 46        |
| 5.4.1     | <i>TYPES OF EVENTS RECORDED</i>                                 | 46        |
| 5.4.2     | <i>FREQUENCY OF PROCESSING DATA</i>                             | 47        |
| 5.4.3     | <i>RETENTION PERIOD FOR SECURITY AUDIT DATA</i>                 | 47        |
| 5.4.4     | <i>PROTECTION OF SECURITY AUDIT DATA</i>                        | 47        |
| 5.4.5     | <i>SECURITY AUDIT DATA BACKUP PROCEDURES</i>                    | 48        |
| 5.4.6     | <i>SECURITY AUDIT COLLECTION SYSTEM (INTERNAL OR EXTERNAL)</i>  | 48        |
| 5.4.7     | <i>NOTIFICATION TO EVENT-CAUSING SUBJECT</i>                    | 48        |
| 5.4.8     | <i>VULNERABILITY ASSESSMENTS</i>                                | 48        |
| 5.5       | Records Archival  | 48        |
| 5.5.1     | <i>TYPES OF EVENTS ARCHIVED</i>                                 | 48        |
| 5.5.2     | <i>RETENTION PERIOD FOR ARCHIVE</i>                             | 49        |
| 5.5.3     | <i>PROTECTION OF ARCHIVE</i>                                    | 49        |
| 5.5.4     | <i>ARCHIVE BACKUP PROCEDURES</i>                                | 49        |
| 5.5.5     | <i>REQUIREMENTS FOR TIME-STAMPING OF RECORDS</i>                | 49        |
| 5.5.6     | <i>ARCHIVE COLLECTION SYSTEM (INTERNAL OR EXTERNAL)</i>         | 50        |
| 5.5.7     | <i>PROCEDURES TO OBTAIN AND VERIFY ARCHIVE INFORMATION</i>      | 50        |
| 5.6       | Key Changeover  | 50        |
| 5.7       | Compromise and Disaster Recovery                                | 50        |
| 5.7.1     | <i>INCIDENT AND COMPROMISE HANDLING PROCEDURES</i>              | 50        |
| 5.7.2     | <i>COMPUTING RESOURCES, SOFTWARE, AND/OR DATA ARE CORRUPTED</i> | 51        |
| 5.7.3     | <i>CA PRIVATE KEY COMPROMISE RECOVERY PROCEDURES</i>            | 51        |
| 5.7.4     | <i>BUSINESS CONTINUITY CAPABILITIES AFTER A DISASTER</i>        | 51        |
| 5.8       | CA or RA Termination  | 52        |
| 5.8.1     | <i>CA TERMINATION</i>   | 52        |
| 5.8.2     | <i>RA TERMINATION</i>   | 52        |
| <b>6.</b> | <b>TECHNICAL SECURITY CONTROLS</b>                              | <b>53</b> |
| 6.1       | Key Pair Generation and Installation                            | 53        |
| 6.1.1     | <i>KEY PAIR GENERATION</i>                                      | 53        |

|           |  |           |
|-----------|--|-----------|
| 6.1.2     | PRIVATE KEY DELIVERY TO SUBSCRIBER.....                                  | 53        |
| 6.1.3     | PUBLIC KEY DELIVERY TO CERTIFICATE ISSUER.....                           | 54        |
| 6.1.4     | CA PUBLIC KEY DELIVERY TO SUBSCRIBERS AND RELYING PARTIES .....          | 54        |
| 6.1.5     | KEY SIZES.....   | 54        |
| 6.1.6     | PUBLIC KEY PARAMETERS GENERATION AND QUALITY CHECKING.....               | 54        |
| 6.1.7     | KEY USAGE PURPOSES.....  | 54        |
| 6.2       | Private Key Protection and Crypto-Module Engineering Controls.....       | 55        |
| 6.2.1     | CRYPTOGRAPHIC MODULE STANDARDS AND CONTROLS.....                         | 55        |
| 6.2.2     | CA PRIVATE KEY MULTI-PERSON CONTROL .....                                | 55        |
| 6.2.3     | PRIVATE KEY ESCROW .....   | 55        |
| 6.2.4     | PRIVATE KEY BACKUP .....   | 55        |
| 6.2.5     | PRIVATE KEY ARCHIVAL .....   | 56        |
| 6.2.6     | PRIVATE KEY TRANSFER INTO OR FROM A CRYPTOGRAPHIC MODULE .....           | 56        |
| 6.2.7     | PRIVATE KEY STORAGE ON CRYPTOGRAPHIC MODULE .....                        | 56        |
| 6.2.8     | METHOD OF ACTIVATING PRIVATE KEYS.....                                   | 56        |
| 6.2.9     | METHODS OF DEACTIVATING PRIVATE KEYS .....                               | 57        |
| 6.2.10    | METHODS OF DESTROYING PRIVATE KEYS .....                                 | 57        |
| 6.2.11    | CRYPTOGRAPHIC MODULE RATING.....   | 57        |
| 6.3       | Other Aspects of Key Pair Management.....                                | 57        |
| 6.3.1     | PUBLIC KEY ARCHIVE .....   | 57        |
| 6.3.2     | CERTIFICATE OPERATIONAL PERIODS AND KEY USAGE PERIODS .....              | 58        |
| 6.4       | Activation Data .....  | 58        |
| 6.4.1     | ACTIVATION DATA GENERATION AND INSTALLATION.....                         | 58        |
| 6.4.2     | ACTIVATION DATA PROTECTION.....  | 58        |
| 6.4.3     | OTHER ASPECTS OF ACTIVATION DATA.....                                    | 58        |
| 6.5       | Computer Security Controls.....  | 59        |
| 6.5.1     | SPECIFIC COMPUTER SECURITY TECHNICAL REQUIREMENTS .....                  | 59        |
| 6.5.2     | COMPUTER SECURITY RATING .....   | 59        |
| 6.6       | Life-Cycle Security Controls.....  | 59        |
| 6.6.1     | SYSTEM DEVELOPMENT CONTROLS .....  | 59        |
| 6.6.2     | SECURITY MANAGEMENT CONTROLS.....  | 60        |
| 6.6.3     | LIFE CYCLE SECURITY RATINGS .....  | 60        |
| 6.7       | Network Security Controls .....  | 60        |
| 6.8       | Time Stamping .....  | 60        |
| <b>7.</b> | <b>CERTIFICATE, CRL AND OCSP PROFILES.....</b>                           | <b>62</b> |
| 7.1       | Certificate Profile .....  | 62        |
| 7.1.1     | VERSION NUMBERS.....   | 62        |
| 7.1.2     | CERTIFICATE EXTENSIONS.....  | 62        |
| 7.1.3     | ALGORITHM OBJECT IDENTIFIERS.....  | 62        |
| 7.1.4     | NAME FORMS.....  | 62        |
| 7.1.5     | NAME CONSTRAINTS .....   | 62        |
| 7.1.6     | CERTIFICATE POLICY OBJECT IDENTIFIER.....                                | 62        |
| 7.1.7     | USAGE OF POLICY CONSTRAINTS EXTENSION .....                              | 62        |
| 7.1.8     | POLICY QUALIFIERS SYNTAX AND SEMANTICS .....                             | 63        |
| 7.1.9     | PROCESSING SEMANTICS FOR THE CRITICAL CERTIFICATE POLICY EXTENSION ..... | 63        |
| 7.2       | CRL Profile.....   | 63        |
| 7.2.1     | VERSION NUMBERS.....   | 63        |
| 7.2.2     | CRL AND CRL ENTRY EXTENSIONS .....                                       | 63        |
| 7.3       | OCSP Profile.....  | 63        |
| 7.3.1     | VERSION NUMBER.....  | 63        |
| 7.3.2     | OCSP EXTENSIONS .....  | 63        |
| <b>8.</b> | <b>COMPLIANCE AUDIT AND OTHER ASSESSMENTS .....</b>                      | <b>64</b> |
| 8.1       | Frequency of Audit or Assessments.....                                   | 64        |

- 8.2 Identity and Qualifications of Assessor ..... 64
- 8.3 Assessor’s Relationship to Assessed Entity ..... 64
- 8.4 Topics Covered By Assessment ..... 64
- 8.5 Actions Taken As A Result of Deficiency ..... 65
- 8.6 Communication of Results ..... 65
- 9. OTHER BUSINESS AND LEGAL MATTERS ..... 66**
  - 9.1 Fees ..... 66
    - 9.1.1 *CERTIFICATE ISSUANCE/RENEWAL FEE* ..... 66
    - 9.1.2 *CERTIFICATE ACCESS FEES* ..... 66
    - 9.1.3 *REVOCAION OR STATUS INFORMATION ACCESS FEE* ..... 66
    - 9.1.4 *FEES FOR OTHER SERVICES* ..... 66
    - 9.1.5 *REFUND POLICY* ..... 66
  - 9.2 Financial Responsibility ..... 66
    - 9.2.1 *INSURANCE COVERAGE* ..... 66
    - 9.2.2 *OTHER ASSETS* ..... 66
    - 9.2.3 *INSURANCE/WARRANTY COVERAGE FOR END-ENTITIES* ..... 66
  - 9.3 Confidentiality of Business Information ..... 67
    - 9.3.1 *SCOPE OF CONFIDENTIAL INFORMATION* ..... 67
    - 9.3.2 *INFORMATION NOT WITHIN THE SCOPE OF CONFIDENTIAL INFORMATION* ..... 67
    - 9.3.3 *RESPONSIBILITY TO PROTECT CONFIDENTIAL INFORMATION* ..... 68
  - 9.4 Privacy of Personal Information ..... 68
    - 9.4.1 *PRIVACY PLAN* ..... 68
    - 9.4.2 *INFORMATION TREATED AS PRIVATE* ..... 68
    - 9.4.3 *INFORMATION NOT DEEMED PRIVATE* ..... 68
    - 9.4.4 *RESPONSIBILITY TO PROTECT PRIVATE INFORMATION* ..... 68
    - 9.4.5 *NOTICE AND CONSENT TO USE PRIVATE INFORMATION* ..... 69
    - 9.4.6 *DISCLOSURE PURSUANT TO JUDICIAL/ADMINISTRATIVE PROCESS* ..... 69
    - 9.4.7 *OTHER INFORMATION DISCLOSURE CIRCUMSTANCES* ..... 69
  - 9.5 Intellectual Property Rights ..... 69
  - 9.6 Representations and Warranties ..... 69
    - 9.6.1 *GOVERNMENT-CA’S REPRESENTATIONS AND WARRANTIES* ..... 69
    - 9.6.2 *RA REPRESENTATIONS AND WARRANTIES* ..... 70
    - 9.6.3 *RELYING PARTIES REPRESENTATIONS AND WARRANTIES* ..... 70
    - 9.6.4 *SUBSCRIBER REPRESENTATIONS AND WARRANTIES* ..... 70
  - 9.7 Disclaimers of Warranties ..... 70
  - 9.8 Limitations of Liability ..... 71
  - 9.9 Indemnities ..... 71
  - 9.10 Term and Termination ..... 72
    - 9.10.1 *TERM* ..... 72
    - 9.10.2 *TERMINATION* ..... 72
    - 9.10.3 *EFFECT OF TERMINATION AND SURVIVAL* ..... 72
  - 9.11 Individual Notices and Communications with Participants ..... 72
  - 9.12 Amendments ..... 72
    - 9.12.1 *PROCEDURE FOR AMENDMENT* ..... 72
    - 9.12.2 *NOTIFICATION MECHANISM AND PERIOD* ..... 72
    - 9.12.3 *CIRCUMSTANCES UNDER WHICH OID MUST BE CHANGED* ..... 73
  - 9.13 Dispute Resolution Procedures ..... 73
  - 9.14 Governing Law ..... 73
  - 9.15 Compliance with Applicable Law ..... 73
  - 9.16 Miscellaneous Provisions ..... 73
    - 9.16.1 *ENTIRE AGREEMENT* ..... 73
    - 9.16.2 *ASSIGNMENT* ..... 74
    - 9.16.3 *SEVERABILITY* ..... 74
    - 9.16.4 *ENFORCEMENT (ATTORNEY FEES/WAIVER OF RIGHTS)* ..... 74

|        |                                       |    |
|--------|---------------------------------------|----|
| 9.16.5 | <i>FORCE MAJEURE</i> .....            | 74 |
| 9.17   | Other Provisions .....                | 74 |
| 9.17.1 | <i>FIDUCIARY RELATIONSHIPS</i> .....  | 74 |
| 9.17.2 | <i>ADMINISTRATIVE PROCESSES</i> ..... | 74 |

## 1. INTRODUCTION

This Certification Practice Statement (CPS) establishes the practices for the issuance, acceptance, maintenance, use, reliance upon, and revocation of digital certificates issued by the Government Certification Authority (Government-CA). In particular, this CPS establishes the processes and procedures the Government Certification Authority (Government-CA) follows to:

- Issue NCDC compliant certificates to Subscribers,
- Manage certificate life cycle;
- Operate the Directory; and
- Operate the OCSP Responder.

Government-CA is owned by the Ministry of Communication and Information Technology (MCIT). Government-CA is a Certification Authority under the Saudi National Root-CA. This is achieved by the Saudi National Root-CA issuing a digitally signed CA Certificate that authenticates the Public Key of the Government-CA. The Government-CA is responsible for issuing and managing Digital Certificates to Government employees, entities, non-human subscribers (like Servers and Network Devices) within the Government domain, through Certification Service Providers (CSPs) within the framework.

The Government-CA is hosted in the National Center for Digital Certification - Shared Services Center (NCDC-SSC) which is responsible for managing Government-CA operations as per the agreed service levels.

This CPS complies with the Saudi National PKI Policy and in line with Internet Request for Comment (RFC) 3647 [RFC 3647].

The terms used in this document shall have the meanings as defined in NCDC Glossary section which can be found at <https://www.ncdc.gov.sa>.

The Government-CA conforms to the current version of the Baseline Requirements for the Issuance and Management of Publicly-Trusted Certificates published at <https://www.cabforum.org>. In the event of any inconsistency between this document and those requirements, those requirements take precedence over this document.

### 1.1 OVERVIEW

This Certification Practice Statement (CPS) establishes the practices for the issuance, acceptance, maintenance, use, reliance upon, and revocation of digital certificates issued by the Government-CA as governed by the Government-CA Certificate Policy (Government-CA CP).

More specifically, this CPS describes the practices that the Government-CA employs for:

- Securely managing the core infrastructure that supports the PKI hosted at NCDC-SSC, and
- Issuing, managing, revoking and renewing certificates,

in accordance with the requirements of the Government-CA CP.

The certificate types supported by Government-CA under Saudi National PKI framework are covered in Appendix A of the Government-CA Certificate Policy document. This defines the



requirements and criteria for issuance and management of PKI certificates asserting distinct Levels of Assurance as advice to subscriber and any Relying Party.

Any use of or reference to this CPS outside the context of the Government-CA and Saudi National PKI is completely at the using party's risk. The terms and provisions of Government-CA CP shall be interpreted under and governed by the Government-CPS and NCDC Operations Policies and Procedures.

It is the responsibility of all parties applying for or using a Digital Certificate issued under Government-CA CP, to read this CP and the PKI Disclosure Statement (PDS) to understand the practices established for the lifecycle management of the Certificates issued by the Government-CA.

### **1.1.1 CERTIFICATE POLICY**

X.509 certificates issued by Government-CA to subscribers will contain a registered OID in the certificate policy extension that in turn shall be used by a Relying Party (RP) to decide whether a Certificate is trusted for a particular purpose. Subscriber Certificates issued by the Government-CA will identify the applicable policy in the certificate Policies extension by including applicable OID(s).

### **1.1.2 RELATIONSHIP BETWEEN THE CP AND THE CPS**

This CPS establishes the practices for the issuance, acceptance, maintenance, use, reliance upon, and revocation of digital certificates issued by Government-CA as governed by the Government-CA CP and related documents which describe NCDC requirements and use of Certificates.

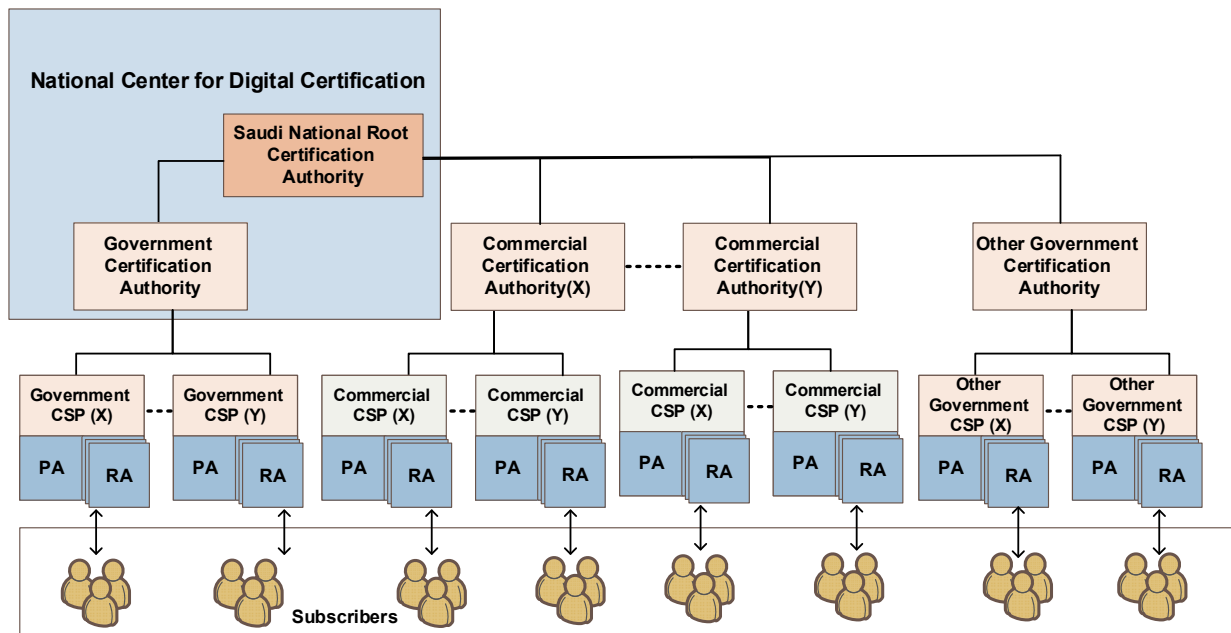
### **1.1.3 INTERACTION WITH OTHER PKIS**

NCDC will decide on issues related to cross-certification with other Certification Authorities.

### **1.1.4 SCOPE**

This CPS applies to all certificates issued by the Government-CA.

The Government-CA is a subordinate CA in the Saudi National PKI hierarchy, maintained and operated by NCDC in an online environment for issuance and management of Subscriber certificates and revocation lists. More specifically the Government-CA issues Subscriber (human, device or entity) certificates and certificates for its CSPs. Following figure shows Government-CA in the Saudi National PKI hierarchy.



## 1.2 DOCUMENT NAME AND IDENTIFICATION

This document is the Government-CA Certification Practice Statement (CPS), and is identified by the object identifier (OID):

OID: 2.16.682.1.101.5000.1.3.1.1.2

Please refer to the latest NCDC OID Allocation document available on <https://www.ncdc.gov.sa>.

## 1.3 PKI PARTICIPANTS

The following are roles relevant to the administration and operation of the Government-CA under the Government-CA-CP.

### 1.3.1 GOVERNMENT-CA POLICY AUTHORITY (GOVERNMENT-CA PA)

Government-CA Policy Authority (Government-CA PA) is responsible for the governance of the Government-CA. Its members are appointed by NCDC and may include members from Government CSPs. Its tasks include:

- Ensuring the operation of the Government-CA comply with the requirements of the Government-CA CP, PDS, CPS and NCDC Operations Policies and Procedures;
- Review and approve the Subscriber Agreement, Relying Party Agreement and other related Agreements based on the Government-CA’s specific business requirements;
- Seeking resolution of disputes between participants operating in its domain;
- Establishing and implementing its own CP, PDS and CPS in conjunction with the Saudi National PKI Policy Document; and
- Act as liaison with NCDC.

### **1.3.2 GOVERNMENT CERTIFICATION AUTHORITY (GOVERNMENT-CA)**

The term CA refers to any entity approved by NCDC to join the Saudi National PKI, directly under the Saudi National Root-CA. On successfully joining the Saudi National PKI ; CA is entitled to issue certificates after mapping to one of the policy OIDs listed in the NCDC OID Allocation document, which can be found at <https://www.ncdc.gov.sa>. CAs will issue subscriber certificates, OCSP responder certificates and other certificates required by PKI components. CAs, acting on behalf of CSPs, will issue certificates to Subscribers in accordance with their CSP Agreement, Subscriber Agreement, Relying party Agreement, their respective CP/CPS, and, the Saudi National PKI Policy. The CA will describe which subscriber types they will support, which certificate types they will issue and determine the level of warranties and liabilities.

Government-CA operating under the Saudi National Root-CA shall perform the following functions:

- Issue certificates in accordance with Government-CA CP , this CPS and the CSP Agreement to:
  - Registration Authorities;
  - Individuals within government agencies as directed by the respective CSP;
  - Government entities as directed by the relevant PA; and
  - Responsible persons within organizations, in connection with the Identification and Authentication of Devices (Computing and Communications equipment).
- Manage certificate life cycle;
- Provide Relying Parties with access to:
  - Certificate information published in a directory; and
  - The public keys associated with certificates that are listed in the directory.
- Government-CA will issue the following:
  - Encryption Certificates;
  - Signature Certificates; and
  - Authentication Certificates.
- Publish issued certificates in a selected LDAP directory;
- Investigate compromises and suspected compromises of private keys at any subordinate level they deem warranted in their chain of trust;
- Publish revocation information in a directory;
- Conduct regular internal security audits;
- Conduct compliance reviews of its CSPs; and
- Assist in audits conducted by or on behalf of NCDC.

### **1.3.3 CERTIFICATION SERVICE PROVIDER (CSP)**

An entity which issues and manages digital certificates, electronic signature tools and methods and any other associated services, which operates with or without its own physical certification authority (CA).

The CSP is owned by an organization which is approved by Government-CA PA and NCDC to be remotely connected to the Government-CA to facilitate certificate life cycle management to its own class of subscribers.

The CSP comprise of Policy Administrator (PA) and Registration Authority (RA) including Local Registration Authority (LRA) if needed.

### **1.3.3.1 POLICY ADMINISTRATOR (PA)**

Policy Administrator (PA) is responsible for the governance of the CSP. These Policy Administrators are located at various Government CSPs. Its tasks include:

- Ensuring CSP operations complying with Government-CA CP requirements;
- Ensuring RA operations complying with Government-CA CP and RA security requirements;
- Conduct compliance reviews of its RAs;
- Assist in audits conducted by or on behalf of NCDC;
- Establishing and implementing policies and procedures as required by Government-CA and NCDC; and
- Act as liaison with Government-CA and NCDC.

### **1.3.3.2 REGISTRATION AUTHORITY (RA)**

Government-CA, subject to the approval of NCDC, shall designate specific CSPs which in turn appoint RAs to perform the Subscriber Identification and Authentication and Certificate request and revocation functions defined in this CPS and related documents.

The CSP RA is obligated to perform certain functions pursuant to an RA Agreement including the following:

- Process Certificate application requests in accordance with the Government-CA CP, CPS and applicable RA Agreement, and other policies and procedures with regard to the Certificates issued;
- Maintain and process all supporting documentation related to the Certificate application process;
- Process Certificate Revocation requests in accordance with Government-CA CP and CPS, applicable RA Agreement, and other relevant operational policies and procedures with respect to the Certificates issued. Without limitation to the generality of the foregoing, the RA shall request the revocation of any Certificate that it has approved for issuance according to the conditions described later in section [4.9.1](#);
- Comply with the provisions of its RA Agreement and the provisions of the Government-CA CP and CPS including, without limitation to the generality of the foregoing, compliance with any compliance audit requirements; and
- Follow NCDC Privacy policy in accordance with Government-CA CP and CPS and applicable RA Agreement.

### **1.3.4 TRUSTED AGENT**

Trusted Agents (TAs) can perform the identity proofing duties of an RA when authorized to do so by a PA. TAs are obligated to operate in accordance with the TA Agreement, Government-

CA CP, CPS and NCDC Operations Policies and Procedures. The primary responsibility of a TA will be to examine and confirm according to the applicable CSP procedures, that a CSP Applicant's identity is authentic.

### **1.3.5 SUBSCRIBERS**

Subscribers are individuals (end users), entities (organizations) or devices to whom certificates are issued. Subscribers are bound by the conditions of use of certificates as contained in the Subscribers Agreement. Subscribers are not automatically Relying Parties unless specified in the Subscriber Agreement. In general, the subscriber asserts that he or she uses the key and certificate in accordance with the Government-CA CP. Under the Government-CA CP and this CPS and depending upon the CSP, Subscribers are defined as either:

- End users (Government employees and associates);
- Entities (Government departments); or
- Devices (Computing and communications equipment).

Subscribers perform the following tasks:

- Provide complete, full and accurate information during the application process for the issuance of a certificate;
- Comply with all procedures required in connection with the Identification and Authentication requirements applicable to the certificate issued;
- Review any certificate issued to them and ensure the correctness of all information set out therein and notify the CSP immediately in the event that the certificate contains any inaccuracies;
- Request the issue, renewal and if appropriate, revocation of their certificates;
- Comply fully with their respective certificate application process including, without limitation, the provision of all required information and documentation;
- Secure their private key(s); and
- Use their keys and certificates in a manner and for a purpose consistent with the requirements of the Government-CA CP, this CPS and the Subscribers Agreement.

### **1.3.6 RELYING PARTIES**

A Relying Party is the entity that relies on the validity of the binding of the subscriber's identity to a public key. The Relying Party is responsible for checking the validity of the certificate by examining the appropriate certificate status information, using validation services provided by the Government-CA as further described in this CPS. A Relying Party's right to rely on a certificate issued under this CPS, requirements for reliance, and limitations thereon, are governed by the terms of the Government-CA CP and the Relying Party Agreement.

Relying Parties shall use the Saudi National PKI, and rely on a certificate that has been issued under the Government-CA CP and this CPS if:

- The certificate has been used for the purpose for which it has been issued, as described in the Government-CA CP and applicable Subscriber Agreement;
- The Relying Party has verified the validity of the digital certificate, using procedures described in the Relying Party Agreement;

- The Relying Party has accepted and agreed to the Relying Party Agreement at the time of relying on the certificate; it shall be deemed to have done so by relying on the certificate; and
- The relying party accepts in totality, the certificate policy applicable to the certificate, which can be identified by reference of the certificate policy OID mentioned in the certificate.

**1.3.7 DEVICE SPONSOR**

The Device Sponsor shall serve as the representative of a Device to a CSP in order to register the device as a Subscriber with the Government-CA. The requirements for device Sponsors in the Government-CA are set forth under [3.2.3.2](#).

**1.3.8 ONLINE CERTIFICATE STATUS PROTOCOL RESPONDER**

Online Certificate Status Protocol (OCSP) Responders and Simple Certificate Validation Protocol (SCVP) status providers may provide revocation status information or full certification path validation services respectively. The Government-CA may make their Certificate status information available through an OCSP responder in addition to any other mechanisms they wish to employ. The Government-CA shall publish status information for the certificates it issues in a Certificate Revocation List (CRL).

**1.4 CERTIFICATE USAGE**

**1.4.1 APPROPRIATE CERTIFICATE USES**

Government-CA may issue some or all of the following types of certificates:

- Confidentiality certificates, where the certificate is used for encryption to ensure the confidentiality and secrecy of data;
- Signatures certificates, where the certificate is used to assure the message integrity, bind the signer to the document or transaction and provide Non-repudiation (the elimination of deniability); and
- Authentication certificates, where certificates are used to identify/authenticate the subscriber to services and applications.

Government-CA issues certificates under this CPS only to those Government end entities who have signed their acceptance of a Subscriber Agreement in the appropriate form and whose application for certificates has been approved by CSP.

The following certificate assurance levels are supported for end-entity certificates issued by the Government-CA. The Government-CA will assess the risk and apply appropriate rating.

| Assurance Level | Description and Assurance Level   |
|-----------------|---|
| Low             | This level provides little confidence in the accuracy or legitimacy of the claimed identity as it requires no or low assurance of the binding between the identity of the entity named in the certificate and the Subscriber. It is intended for Subscribers handling information of little or no value within minimally secured environments. Identity |

|               |  |
|---------------|--|
|               | <p>assertions at this level are appropriate for transactions with minimal consequences to Relying Parties from the registration of a fraudulent identity.</p> <p>Digital certificates at this level require no or low assurance of the binding between the identity of the entity named in the certificate and the Subscriber. The keys and certificates can only be generated in a software security module and be stored in a software form factor. Given the limited assurance provided, a Key Usage of non-repudiation is not permitted, nor are Extended Key Usages of smartcard logon or code signing.</p>   |
| <p>Medium</p> | <p>This level provides medium confidence in the accuracy or legitimacy of the claimed identity. It is intended for Subscribers handling information of medium value within substantially secured environments. Identity assertions at this level are appropriate for transactions with serious (substantial) consequences to Relying Parties from the registration of a fraudulent identity.</p> <p>The keys and certificates at this level can be generated in either a software or hardware security module and can be stored in either a software or hardware form factor. User consent is required each time the private key is activated.</p>   |
| <p>High</p>   | <p>This level provides a high confidence in the accuracy or legitimacy of the claimed identity. It is intended for Subscribers handling information of high value within highly secured environments. Identity assertions at this level are appropriate for transactions with catastrophic consequences to Relying Parties from the registration of a fraudulent identity.</p> <p>Digital certificates at this level require very high assurance of the binding between the identity of the entity named in the certificate and the certificate holder. The keys and certificates can only be generated in a hardware security module and can only be stored in a hardware form factor. Authenticated-user's consent or PIN unlocks are required each time the private key is activated.</p> |

**1.4.1.1 CERTIFICATE ISSUED TO EMPLOYEES**

Certificates issued from Government-CA to the Government employees are normally used by individuals to sign and encrypt e-mail, data and to authenticate to applications (client authentication).

Following are some of the common usage of the certificate:

- Inter-Government Correspondence;
- Information Publication;

- Forms Submission;
- Application work-flow; and
- e-Tendering.

The individual certificate may also be used for other general or specific Government purposes which are not covered explicitly above, provided that a Relying Party is able to reasonably rely on that certificate and the usage is not otherwise prohibited by (1) law of Saudi Arabia, (2) the Government-CA CP and the CPS under which the certificate has been issued and (3) Subscriber's agreement.

#### **1.4.1.2 CERTIFICATE ISSUED TO ORGANIZATIONAL ENTITY**

Certificates issued to Organizational entities assure the identity of the Subscriber based on a confirmation that the Subscriber organization does in fact exist, that the organization has authorized the Certificate Application, and that the person submitting the Certificate Application on behalf of the Subscriber was authorized to do so. These certificates can be used for the purposes covered under employee certificate in the previous paragraph.

#### **1.4.1.3 CERTIFICATE ISSUED TO DEVICE**

A Server certificate is issued to a Government organization whose existence is recognized by the laws of Saudi Arabia (the "Subscriber Organization"); and that wishes to have a certificate issued in a server name owned by that organization.

If the Certificate subject is a device, then the device shall have a sponsor authorized by the device sponsor to apply for a certificate as mentioned in section [3.2.3.2](#).

These certificates are generally used for secure SSL/TLS sessions.

#### **1.4.2 PROHIBITED CERTIFICATE USES**

Certificates issued under this CPS are not authorized for use in any circumstances or in any application which could lead to death, personal injury or damage to property, or in conjunction with on-line control equipment in hazardous environments such as in the operation of nuclear facilities, aircraft navigation or communications systems, air traffic control or direct life support machines, and the Government-CA shall not be liable for any claims arising from such use.

### **1.5 POLICY ADMINISTRATION**

#### **1.5.1 ADMINISTRATION ORGANIZATION**

This CPS is administered by the Government-CA PA and is based on policies established under the Government-CA CP (see section [1.3.1](#)).

#### **1.5.2 CONTACT PERSON**

Queries regarding Government-CA CPS shall be directed at:

Email: [info@ncdc.gov.sa](mailto:info@ncdc.gov.sa)

Telephone: +966 11 4522197



Any formal notices required by this CPS shall be sent in accordance with the notification procedures specified in section [9.12.2](#) of this CPS.

### **1.5.3 PERSON DETERMINING CPS SUITABILITY FOR THE POLICY**

The Government-CA PA is responsible for approving this CPS and establishing that the Government-CA conforms to the requirements of Government-CA CP in accordance with policies and procedures specified by NCDC.

### **1.5.4 CPS APPROVAL**

The CPS shall be effective upon approval by the Government-CA Policy Authority. Procedure for approval and amendments are covered under section [9.12.1](#) of this CPS.

## **1.6 DEFINITIONS AND ACRONYMS**

The terms used in this document shall have the meanings as defined in NCDC Glossary section which can be found at <https://www.ncdc.gov.sa>.

## **2. PUBLICATION AND REPOSITORY RESPONSIBILITIES**

### **2.1 REPOSITORIES**

Government-CA issued certificates and certificate revocation lists (CRLs) will be published in repositories. NCDC shall operate Repositories to support the Government-CA's operations. The repositories shall be directories that provide access through the Lightweight Directory Access Protocol (LDAP) and through HTTP. Repositories may reside on dedicated directories, or may be part of a separate directory that serves broader purposes than just supporting the PKI.

NCDC operates repositories to support operations on a 24x7 basis and replicates Government-CA issued certificates, CRLs and Authority Revocation List's (ARLs) to additional repositories in order to enhance the overall performance and provide high availability for its validation services.

#### **2.1.1 REPOSITORY OBLIGATIONS**

The repository capabilities that NCDC will deploy shall include:

- LDAP Directory Server System that is also accessible through the Lightweight Directory Access Protocol (LDAP, version 3) or Hypertext Transfer Protocol (HTTP);
- Availability of the information as required by the certificate information posting and retrieval stipulations of this CPS and Government-CA CP; and
- Access control mechanisms when needed to protect repository availability and information.

The Government-CA shall post Subscriber certificates and CRLs to an LDAP directory and an HTTP-based web server. NCDC-SSC has instituted access controls, including strong authentication of authorized Relying Parties, to promote consistent access to Government-CA issued certificates and CRLs and to prevent modification or deletion of information.

### **2.2 PUBLICATION OF CERTIFICATION INFORMATION**

#### **2.2.1 PUBLICATION OF CERTIFICATES AND CERTIFICATE STATUS**

The Government-CA maintains repositories that allow Relying Parties to make on-line enquiries regarding revocation and other certificate status information. Government-CA shall be providing Relying Parties with information on how to find the appropriate repository to check certificate status and, if OCSP (Online Certificate Status Protocol) is available, how to find the appropriate OCSP responder.

Government-CA repositories shall contain several PKI-related elements:

- Subscriber's certificates: Government-CA will decide on directory access restrictions to prevent misuse and unauthorized harvesting of information;
- CA certificates: CA certificates shall be made publicly available; and
- CRLs: CRLs shall be made publicly available to allow relying parties to verify the status of certificates.

Government-CA PA will decide on directory access restrictions to prevent misuse and unauthorized harvesting of information.

### **2.2.2 PUBLICATION OF CA INFORMATION**

The CPS shall be made available to all Government-CA PKI Participants at NCDC website <https://www.ncdc.gov.sa>. This web site is the only source for up-to-date documentation and Government-CA reserves the right to publish newer versions of the documentation without prior notice.

Additionally, Government-CA will publish an approved, current and digitally signed version of its CP and PDS.

NCDC Public LDAP directory and the website <https://www.ncdc.gov.sa> are the only authoritative sources for:

- All publicly accessible certificates issued by Government-CA; and
- The certificate revocation list (CRL) for Government-CA.

### **2.2.3 INTEROPERABILITY**

Repository information is stored using technology that supports the following industry standards and schema:

- LDAP v3 operations;
- LDAP search filters;
- LDAP v3 intelligent referral;
- Relevant LDAP v3 RFCs, including RFC 1274, 1558, 1777, 1778, 1959, 2195, 2222, 2247, 2251, 2252, 2253, 2254, 2255, 2256, 2279, 2307, 2377, 2829, 2830, and 3377;
- DSML (Directory Service Markup Language) v2;
- X.509 digital certificates;
- HTTP.

## **2.3 TIME OR FREQUENCY OF PUBLICATION**

Certificates are published promptly following their generation and issuance. CRL publication is in accordance with section [4.9.7](#) of the Government-CA CP. Other certificate status information is published in accordance with the provisions of this CPS.

The OCSP responder will immediately report a certificate that has been revoked as set in section [4.9.9](#).

Updates to this CPS are published in accordance with section [9.12.2](#) of this CPS.

This CPS and any subsequent changes should be made available to the participants as set forth in section [2.2.2](#) within two weeks of approval by the Government-CA PA and NCDC.

## **2.4 ACCESS CONTROLS ON REPOSITORIES**

Certificates and certificate status information in the repository shall be made available to Saudi National PKI participants and other parties on a 24X7 basis as determined by the applicable agreements and NCDC Privacy Policy, and subject to routine maintenance.

The Government-CA will protect repository information not intended for public dissemination or modification through the use of strong authentication, access controls, and an overall Information Security Management System that prevents unauthorized access to information.

The controls employed by NCDC-SSC shall prevent unauthorized persons from adding, deleting or modifying repository entries. Access restrictions shall be implemented on directory search to prevent misuse and unauthorized harvesting of information.

### 3. IDENTIFICATION AND AUTHENTICATION

#### 3.1 NAMING

##### 3.1.1 TYPES OF NAMES

Each Certificate must have a unique identifiable Distinguished Name (DN) according to the X.500 standard. Naming conventions for Government-CA is approved by the Saudi National Root-CA, while Government-CA approves RAs and CSPs. The subscriber's name is approved by CSPs.

Details of these are found in the Certificate Types in Appendix- A of the Government-CA CP document.

##### 3.1.2 NEED FOR NAMES TO BE MEANINGFUL

The Subscriber's certificates issued pursuant to this CPS are meaningful only if the names that appear in the certificates are understood and used by Relying Parties.

The subject name contained in Government-CA certificate must be meaningful in the sense that the Saudi National Root-CA is provided with proper evidence of the association existing between the name and the entity to which it belongs.

The Government-CA DN (LDAP Notation) in the Issuer field of all certificates and CRLs that are issued will be:

OU=Government CA, O=National Center for Digital Certification, C=SA

The common name in the Subscriber DN will represent the Subscriber in a way that is easily understandable for humans. The certificate types supported by Government-CA are covered in Appendix-A of the Government-CA CP document.

Pilot/Test CSPs are identified by including the word "TEST" in the CSP name which is included in the subject DN as an Organizational Unit. Thus Certificates issued by Pilot/Test CSPs are not subject to follow all verification/identification policies and procedures, and thus should not be relied upon.

##### 3.1.3 ANONYMITY OR PSEUDONYMITY OF SUBSCRIBERS

Government-CA may issue anonymous or pseudonymous certificates pursuant to the approval of NCDC.

##### 3.1.4 RULES FOR INTERPRETING VARIOUS NAME FORMS

Government-CA shall only use Uniform Resource Indicators (URIs) in accordance with the applicable Internet Engineering Task Force (IETF) standards. Subject Alternative Name forms are interpreted in accordance with applicable ISO and IETF Standards. The following table provides the rules for interpreting the various name forms.

| Name Form | Standard |
|-----------|----------|
|-----------|----------|

|                         |          |
|-------------------------|----------|
| DN                      | X.500    |
| URL                     | RFC-1738 |
| Internet e-mail address | RFC-822  |
| DNS                     | RFC-1034 |

### **3.1.5 UNIQUNESS OF NAMES**

All distinguished names shall be unique across the Government-CA. Names shall not be re-used for another end-entity. After an end-entities certificate expires or is revoked, the name can be re-used to re-issue a certificate to the same end-entity.

Each CA will be configured in such a manner to enforce name uniqueness for certificates that it issues. The Government-CA is responsible for ensuring name uniqueness in Subscriber certificates issued by it. Additional naming attributes for uniquely identifying the subject include serial number, etc.

### **3.1.6 RECOGNITION, AUTHENTICATION AND ROLE OF TRADEMARKS**

Certificate applicants are prohibited from using names in their certificate application that infringe upon the Intellectual Property Rights of others. The Government-CA, CSPs, however, does not verify whether a certificate applicant has Intellectual Property Rights in the name appearing in a certificate application.

Government-CA is responsible for ensuring name uniqueness through its CSPs.

The Government-CA shall have the right to revoke a Certificate upon receipt of a properly authenticated order from NCDC, a CSP, an arbitrator or court of competent jurisdiction requiring the revocation of a Certificate or Certificates containing a Subject name in dispute.

## **3.2 INITIAL IDENTITY VALIDATION**

### **3.2.1 METHOD TO PROVE POSSESSION OF PRIVATE KEY**

The certificate applicant must demonstrate that it rightfully holds the private key corresponding to the public key to be listed in the Certificate. The method to prove possession of a private key shall be PKCS #10 or another cryptographically equivalent demonstration. Where a key pair is generated by a CA on behalf of a Subscriber, for example where pre-generated keys are placed on smart card or token before giving it the CSP has to ensure that the private key is in possession of the right subject.

For Subscribers using centralized signing platform , Signing keys are generated using FIPS 140-2 Level 3 or higher certified hardware security module and stored in an encrypted database on the central storage. Key wrapping is accepted for the centralized signing platform Subscribers. Keys are protected to ensure only the relevant subject has access.

### **3.2.2 AUTHENTICATION OF ISSUER IDENTITY**

Entities wishing to join Saudi National PKI hierarchy or cross certify with the Saudi National Root-CA shall be authenticated in accordance with NCDC specifications and requirements. In all cases, NCDC personnel will verify the information in the application, the authenticity of the requesting representative and the representative's authorization to act in the name of the requesting CA.

### **3.2.3 IDENTITY-PROOFING OF INDIVIDUAL IDENTITY**

#### **3.2.3.1 IDENTITY-PROOFING OF END USER SUBSCRIBERS**

Government-CA is responsible for the identification and authentication of Subscribers. This process is performed by the CSPs. The CSPs will ensure that the applicant's identity information is verified in accordance with Government-CA requirements and standards.

The CSPs shall act in accordance with this CPS and all Government-CA collateral documentation. In doing so, it will comply with the corresponding practices, procedures and policies described therein.

For collection and verification of information provided by the certificate subscriber applicant CSPs define process based on the certificate type requirements. The typical verification process could be:

1. Subscriber shall be required to attend to the RA for face-to-face identity validation and submission of supporting documents;
2. The following will be considered valid identity documents:
  - National ID / passport for citizens;
  - Residence permit / passport for residents.
3. Letter from an authorized party (as prescribed by the CSP PA) that the Subscriber has been permitted to obtain the Certificate, apart from the face-to-face verification process; and
4. During the request submission, the identity of the subscriber will be validated by ensuring the authenticity of the subscriber's identity documentation and matching it with his / her characteristics.

Where a Subscriber/approver have already undergone face-to-face identity and authentication process by an RA to receive a certificate, the Subscriber/approver may use a digital signature performed using the existing certificate to waive another face-to-face verification, and for verifying the attribute/identifier to which such certificate was issued. Such digital signature shall be accepted only if performed by one of NCDC-approved signing certificate types.

This section provides the generally applicable verification process for government-CA issued certificates. Respective verification process applicable to specific certificate types is provided in Appendix-A of the Government-CA CP document, which is mandated.

#### **3.2.3.2 IDENTITY-PROOFING OF DEVICE SUBSCRIBERS**

When computing and communication devices (routers, firewalls, servers, etc) are named as certificate subjects the device will have a human sponsor. The Government-CA, through the CSPs, will authenticate the identity of the sponsor applying for the device certificate.

The sponsor is responsible for providing the CSP with the following registration information;

- Equipment identification (e.g. serial number) or service name (e.g. DNS name);
- Equipment authorizations and attributes (if such information is to be included in the certificate); and
- Contact information to enable the CSP or the RA to communicate with the sponsor when required.

The CSP will authenticate the identity of the device sponsor by:

- Performing face-to-face registration of the sponsor, with their identity confirmed in accordance with the requirements of their respective Subscriber Agreement

Where a device sponsor/Subscriber/approver have already undergone face-to-face identity and authentication process by an RA to receive a certificate, the Subscriber/approver may use a digital signature performed using the existing certificate to waive another face-to-face verification, and for verifying the attribute/identifier to which such certificate was issued. Such digital signature shall be accepted only if performed by one of NCDC-approved signing certificate types. The Government-CA may have additional requirements including proof that the device sponsor applying for the device certificate is authorized to apply for a device certificate for that particular device apart from the standard process mentioned above and covered in the respective agreement.

This section provides the generally applicable verification process for government-CA issued certificates. Respective verification process applicable to specific certificate types is provided in Appendix -A of the Government-CA CP document, which is mandated.

### **3.2.3.3 IDENTITY-PROOFING OF ORGANIZATIONAL ENTITIES**

Whenever a certificate contains an organization name, the identity of the organization and other enrollment information provided by the Certificate applicant is confirmed in accordance with the Government-CA's operational policies and procedures.

At a minimum, the Government-CA shall:

- Determine that the organization exists by using at least one third party identity proofing service or database, or alternatively, organizational documentation issued by or filed with the applicable Saudi government agency or competent authority that confirms the existence of the organization.
- Confirm by telephone, confirmatory postal mail, or comparable procedure to the Certificate applicant certain information about the organization, that the organization has authorized the Certificate application and that the person submitting the Certificate Application on behalf of the Certificate Applicant is authorized to do so. When a certificate includes the name of an individual as an authorized representative of the Organization, the employment of that individual and his authority to act on behalf of the Organization shall also be confirmed.

Where an Entity certificate has been issued by a Government-CA using the Identity and Authentication process described in this section, the certificate can be used to obtain further NCDC-issued certificates without having to undertake another face-to-face registration.

For RA certificate under CSP the request will contain the following information as a minimum:

- RA Details (Full Name, ID details, email address, phone);
- Requester Organization Information and address;
- Subject of RA (DN) (optional); and
- CSP Approval;

The request will be supported with an Identity Proof.

NCDC Representative will strongly validate the identity of the requestor by ensuring the authenticity of the RA through validating his identity.



This section provides the generally applicable verification process for government-CA issued certificates. Respective verification process applicable to specific Certificate Types is provided in Appendix-A of the Government-CA CP document, which is mandated.

**3.2.4 NON-VERIFIED SUBSCRIBER INFORMATION**

Non-verified information shall not be included in strong assurance certificates issued under Government-CA, unless specifically mentioned in the Certificate Types under Appendix-A of the Government-CA CP document.

**3.2.5 CRITERIA OF INTEROPERATION**

No stipulation.

**3.3 IDENTIFICATION AND AUTHENTICATION FOR RE-KEY REQUESTS**

**3.3.1 IDENTIFICATION AND AUTHENTICATION FOR ROUTINE RE-KEY**

Subscribers are required to obtain new key pairs at least once every three years. (The usage periods for CA and Subscriber private keys are described in section 6.3.2.) During the Re-keying process the Government-CA will create a new certificate with the same characteristics as the old certificate but with a new and different key pair and serial number. This new certificate may be given a new validity period or use the validity period that appeared in the old certificate.

When it has been less than three (3) years since the time the Subscriber was identified by the RA, the Government-CA will authenticate an electronic request for a new certificate using the currently valid certificate issued to the Subscriber by the Government-CA.

Where it has been longer than three (3) years from the time that the Subscriber’s identity has been authenticated, then the Subscriber certificate re-key will follow the same procedures as the initial certificate issuance process.

For routine re-key of RA Certificate refer to NCDC Level-One CA Operations Policies and Associated Procedures section 8.

For re-key of a CA key pair, an authorized representative of the CA shall request re-key prior to the expiration of the CA key pair. Details of the procedure covered in Saudi National Root-CA Operations Policy section 11.

**3.3.2 IDENTIFICATION AND AUTHENTICATION FOR RE-KEY AFTER REVOCATION**

Where the information contained in a certificate has changed or there is a known or suspected compromise of the private key, the CA must authenticate a re-key in the same manner as for initial registration as described in Appendix-A of Government-CA CP. Any change in the information contained in a certificate must be verified by the CSP before that certificate is issued.

If Government-CA certificate is revoked, an authorized representative of the CA shall provide sufficient information as specified in Saudi National Root CA Operations Policy before NCDC initiates re-keying of the Government-CA certificate.

### **3.4 IDENTIFICATION AND AUTHENTICATION FOR REVOCATION REQUESTS**

Prior to the revocation of a Certificate, a Government-CA shall verify that the revocation has been requested by an entity authorized to request revocation.

Acceptable procedures for authenticating the revocation requests include:

- Having the Subscriber submit a Challenge Phrase (or the equivalent thereof), and revoking the Certificate automatically if it matches the Challenge Phrase (or the equivalent thereof) on record;
- Receiving a message from an Subscriber that requests revocation and contains a digital signature verifiable with reference to the Certificate to be revoked; or
- Communication with the requesting entity to provide reasonable assurances that the person or organization requesting revocation is who they claim to be. Such communication, depending on the circumstances, may include one or more of the following: telephone, facsimile, e-mail, postal mail, or courier service.

If a secure request for revocation is received, the certificate status should be put in Suspend mode, until further verification is carried out.

## **4. CERTIFICATE LIFE-CYCLE OPERATIONAL REQUIREMENTS**

### **4.1 CERTIFICATE APPLICATION**

The CSP will perform the following steps when an applicant applies for a certificate:

- Establish the applicant's authorization to obtain a certificate;
- Establish and record the identity of the applicant; and
- Transmit to the Government-CA a confirmation that the Applicant has met the authentication requirements and the information which is to appear in the Certificate.

The Government-CA will perform the following steps when it receives the confirmation and certificate information from the CSP:

- Verify that the transmission is from an authorized CSP;
- Generate the Certificate relating to that Applicant; and
- Transmits the Certificate to the Applicant and/or to the requesting CSP.

Communication between the Government-CA and the CSP are authenticated and protected from modification through the use of digitally signed messages and by requiring the CA and RA to validate the integrity and authenticity of the messages. These communications are transmitted via a secure protocol. Where shared secrets are transmitted electronically, these transmissions are conducted over encrypted channels using cryptographic mechanisms that are commensurate with the strength of the public/private key pair being used. Any out-of-band communications will protect the confidentiality and integrity of the data.

#### **4.1.1 SUBMISSION OF CERTIFICATE APPLICATION**

Subscriber certificate applicants, including those applying for a device or entity certificate, will follow the application process specified in section [3.2.3](#) and the Subscriber Agreement.

#### **4.1.2 ENROLLMENT PROCESS AND RESPONSIBILITIES**

##### **4.1.2.1 SUBSCRIBERS**

Subscriber certificate applicants shall agree to the terms of the Subscriber Agreement and undergo an enrollment process consisting of:

- Completing a Certificate Application and providing true and correct information;
- Generating, or arranging to have generated, a key pair;
- Delivering his/her public key to a Government-CA; and
- Demonstrating possession of the private key corresponding to the public key delivered to the Government-CA, as specified in section [3.2.1](#) of this CPS.

##### **4.1.2.2 CSP CERTIFICATES**

An entity wishing to become CSP under the Government-CA shall agree to the terms of the CSP Agreement as part of the application process. The CSP applicants shall provide their credentials to demonstrate their identity and contact information during the application process.

All applicants shall agree to the terms and conditions of the applicable Agreement, such as: Subscriber Agreement, Relying Party or RA/LRA/TA Agreement. Identification and Authentication process is described in the CPS under section [3.2.3](#).

## **4.2 CERTIFICATE APPLICATION PROCESSING**

### **4.2.1 PERFORMING IDENTITY-PROOFING FUNCTIONS**

CSPs shall perform identification and authentication of all required Subscriber information as described in section [3.2.3](#) of this CPS.

Government-CA validates each server FQDN in publicly trusted SSL certificates against the domain's CAA records. If a CAA record exists that does not list Government CA as an authorized CA, certificate will not be issued.

### **4.2.2 APPROVAL OR REJECTION OF CERTIFICATE APPLICATIONS**

The CSP will approve an application for a subscriber certificate if the following criteria are met;

- Successful identification and authentication of all required Subscriber information as described in the Subscribers Agreement and outlined in section [3.2](#) of this CPS.

The CSP will reject a certificate application if:

- Identification and authentication of all required Subscriber information as described in the Subscribers Agreement cannot be completed;
- The Subscriber fails to furnish supporting documentation upon request;
- The Subscriber fails to respond to notices within a specified time; or
- The CSP believes that issuing a certificate to the Subscriber may bring the Government-CA into disrepute.

Policies specific to each certificate type have been detailed in the Certificate Types section in Appendix-A of the Government-CA CP document. It is mandatory to comply with all policies specific to the respective certificate type.

For RA certificate under CSP, the CSP shall ensure that its RA which is applying for certification meets the entitlement requirements for RA certification. Detailed procedure is described in NCDC Level-One CA Operations Policy section 7.

The application process for CSPs under Government-CA would be as per the Government CSP Joining Process and NCDC shall decide on the acceptance or rejection of the CSP application request based on fulfillment of requirements.

NCDC shall reject a certificate if the requested Public Key does not meet the requirements of the CAB Forum BR or if it has a weak Private Key.

### **4.2.3 TIME TO PROCESS CERTIFICATE APPLICATIONS**

The time to process certificate applications is specified in the relevant Agreement between the PKI participants.

### **4.3 CERTIFICATE ISSUANCE**

When the CSP receives a request for certificate from a Subscriber, the CSP will:

- Verify the identity of the Subscriber;
- Verify the authority of the requestor and the integrity of the information in the certificate request; and
- Submit the certificate request to the Government-CA.

Upon receiving a validated certificate request from CSP, the Government-CA will create and sign the Subscriber certificate and deliver it to the Subscriber using a secure method.

All authorization and other attribute information received from an applicant are verified before inclusion in the certificate, unless such verification is not required for specific attributes, identifiers, and/or Certificate Types in Appendix-A of the Government-CA CP document. The Government-CA, through its CSP, is responsible for verifying the data to be included in the Certificate. At a minimum the CSP will follow the steps described in section [3.2](#) of the Government-CA CP and this CPS.

#### **4.3.1 CA ACTIONS DURING CERTIFICATE ISSUANCE**

When CSPs receive a request for a Certificate, Certificate is not issued before the applicant accepts the terms of a Subscriber Agreement, successfully completes the application form and gets approval from the Government-CA.

Following successfully completion of the registration process, the Government-CA will create and sign the certificate if all certificate requirements have been met, and make the certificate available to the subscriber.

#### **4.3.2 NOTIFICATION TO SUBSCRIBER OF CERTIFICATE ISSUANCE**

The Government-CA shall notify Subscribers, either directly or through the CSP that they have created the Subscribers Certificate and provide Subscribers with access to the Certificates by notifying them, using a secure method, that their Certificates are available as defined in Appendix-A of the Government-CA CP and Registration Authority Operations Policy.

### **4.4 CERTIFICATE ACCEPTANCE**

Prior to a Subscriber being able to use their Certificate, the registration process deployed by the Government-CA provides the Subscriber with appropriate disclosure and acknowledgement of the Subscriber’s responsibilities defined in the Subscribers Agreement and notifies the Subscriber of the creation and contents of the Certificate.

#### **4.4.1 CONDUCT CONSTITUTING CERTIFICATE ACCEPTANCE**

Certificate acceptance is governed by the agreements set out between the CSP and Applicants, any requirements imposed by Government-CA CP and CPS and the relevant agreements under which the certificate is being issued.

The use of a Certificate or the reliance upon a Certificate signifies acceptance by that person of the terms and conditions of the CP and applicable agreements by which they irrevocably agree to be bound.

#### **4.4.2 PUBLICATION OF THE CERTIFICATE BY THE CA**

Certificates will be published, once accepted, in the appropriate repository as described in section [2.1](#) of this CPS.

#### **4.4.3 NOTIFICATION OF CERTIFICATE ISSUANCE BY THE CA TO OTHER ENTITIES**

NCDC shall be notified upon the issuance of Government-CA Certificate by the Saudi National Root-CA.

### **4.5 KEY PAIR AND CERTIFICATE USAGE**

#### **4.5.1 SUBSCRIBER PRIVATE KEY AND CERTIFICATE USAGE**

Use of the private key corresponding to the public key in the certificate shall only be permitted once the Subscriber has agreed to and signed the Subscriber agreement and accepted the certificate. The certificate shall be used lawfully in accordance with the Subscriber Agreement, the terms of the Government-CA CP and this CPS. Certificate use must be consistent with the KeyUsage field extensions included in the certificate (e.g. if Digital Signature is not enabled then the certificate must not be used for signing).

Subscribers shall protect their private keys from unauthorized use and shall discontinue use of private key(s) following expiration or revocation of the associated certificate except for decryption private key(s).

#### **4.5.2 RELYING PARTY PUBLIC KEY AND CERTIFICATE USAGE**

Relying parties shall accept the terms of the Relying Party agreement as a condition for relying on a certificate. Reliance on a certificate must be reasonable under the circumstances. If the circumstances indicate a need for additional assurances, the Relying Party must obtain such assurances for such reliance to be deemed reasonable. Before any act of reliance, Relying Parties shall independently assess:

- The appropriateness of the use of a Certificate for any given purpose and determine that the Certificate will, in fact, be used for an appropriate purpose that is not prohibited or otherwise restricted by the Government-CA CP. The Relying Party is solely responsible for assessing the appropriateness of the use of a Certificate;
- That the certificate is being used in accordance with the KeyUsage field extensions included in the certificate; and
- The status of the certificate and all the CA's in the chain that issued the certificate. If any of the Certificates in the Certificate Chain have been revoked, the Relying Party is solely responsible to investigate whether reliance on a digital signature performed by a Subscriber Certificate prior to revocation of a Certificate in the Certificate chain is reasonable. Any such reliance is made solely at the risk of the Relying party.

If the Relying Party deems that the use of the Certificate is appropriate, it shall utilize the appropriate software and/or hardware to perform digital signature verification or other cryptographic operations they wish to perform, as a condition of relying on Certificates in connection with each such operation. Such operations include identifying the Certificate Chain and verifying the digital signatures on all Certificates in the Certificate Chain.

## **4.6 CERTIFICATE RENEWAL**

Certificate renewal is the issuance of a new certificate without changing the public key or any other information in the certificate. Certificate renewal is not supported for Government-CA - issued certificates.

## **4.7 CERTIFICATE RE-KEY**

Re-keying a certificate (key update) refers to the issuance of new certificate with a different key pair and serial number while retaining other subject information from old certificate.

The new Certificate may be assigned a different validity period and/or signed using a different issuing CA private key.

### **4.7.1 CIRCUMSTANCES FOR CERTIFICATE RE-KEY**

Prior to the expiration of an existing Subscriber's Certificate, it is necessary for the Subscriber to update the certificate to maintain continuity of Certificate usage.

Manual Certificate re-key may take place after a certificate is revoked and the subscriber information is still accountable. Manual Certificate re-key may also be performed within one-month of certificate expiry, or after certificate expiry.

Automatic updates of managed digital IDs and any or all the certificates constituting the digital ID may be performed on or after reaching 70% of the certificate lifetime.

### **4.7.2 WHO CAN REQUEST A CERTIFICATE RE-KEY**

Certificate re-key may be requested by:

- The Government-CA for its CA certificate;
- A subscriber for his individual certificate;
- A sponsor for a device certificate; or
- An authorized representative for an Organizational Certificate.

### **4.7.3 PROCESSING CERTIFICATE RE-KEYING REQUESTS**

Update procedures ensure that the person or organization seeking to update an end-user Subscriber Certificate is in fact the Subscriber, a sponsor of a device or a representative of an entity. Acceptable procedures are through the use of a Challenge Phrase (or the equivalent thereof), or proof of possession of the private key.

Other than the above mentioned procedures, an RA shall reconfirm the identity of the Subscriber in accordance with the requirements specified in section [3.3.1](#) of this CPS for the authentication of an original Certificate Application.

### **4.7.4 NOTIFICATION OF RE-KEYED CERTIFICATE ISSUANCE TO SUBSCRIBER**

Notification of issuance of a re-keyed certificate to the Subscriber shall be using secure mechanisms as defined in Appendix-A and Registration Authority Operations Policy.

#### **4.7.5 CONDUCT CONSTITUTING ACCEPTANCE OF A RE-KEYED CERTIFICATE**

Conduct constituting acceptance of a re-keyed certificate is in accordance with section [4.4.1](#) of this CPS.

#### **4.7.6 PUBLICATION OF THE RE-KEYED CERTIFICATE BY THE CA**

The re-keyed certificate is published in the appropriate repository.

#### **4.7.7 NOTIFICATION OF CERTIFICATE ISSUANCE BY THE CA TO OTHER ENTITIES**

Generally, Government-CA does not notify other entities of a re-keyed certificate apart from requesting CSP.

### **4.8 CERTIFICATE MODIFICATION**

Certificate modification for all applicants will be accomplished through Certificate re-key as specified in section [4.7](#).

The Government-CA CP does not support other forms of Certificate modification.

### **4.9 CERTIFICATE REVOCATION AND SUSPENSION**

A Certificate shall be revoked/ suspended when the binding between the Subject and the Subject's Public Key defined within a Certificate is no longer considered valid.

The CA and/or CSP will notify subscribers of certificate revocation or suspension using any of the below methods:

- Access to the CRL in the CA repository
- Email notification to subscriber (Such notification is deemed complete, once the email is sent by NCDC to the subscriber's registered email address.)
- Telephonic notification to subscriber

The CA will notify other participants of certificate revocation or suspension through access to the CRL in the CA repository.

#### **4.9.1 CIRCUMSTANCE FOR REVOCATION OF A CERTIFICATE**

A Certificate Authority shall revoke Certificates of the Subscriber for the following reasons:

- Contravened any provisions of the Saudi e-Transactions Act and Bylaws made there under;
- The Subject has failed to meet its obligations under this CP or any other applicable Agreements, regulations, or laws;
- NCDC suspects or determines that revocation of a Certificate is in the best interest of the integrity of NCDC;
- The Government-CA determines that a Certificate was not issued correctly in accordance with this CP;
- There has been an improper or faulty issuance of a certificate due to:



- A material prerequisite to the issuance of the Certificate not being satisfied;
- A material fact in the Certificate is known, or reasonably believed, to be false.
- The CA is made aware of a material change in the information contained in the Certificate;
- The subscriber of the Certificate asks for his Certificate to be revoked due to:
  - The Subscriber's private key is suspected to be compromised;
  - The cryptographic storage device of the Subscriber is lost or stolen;
  - If he no longer wishes to use the certificate.

The Government CA maintains controls to provide reasonable assurance that Secure Site Certificates are revoked within 24 hours if any of the following events occurs:

- The Subscriber requests in writing that the CA revoke the Certificate;
- The Subscriber notifies the CA that the original certificate request was not authorized and does not retroactively grant authorization;
- The CA obtains evidence that the Subscriber's Private Key corresponding to the Public Key in the Certificate suffered a Key Compromise; or
- The CA obtains evidence that the validation of domain authorization or control for any Fully-Qualified Domain Name or IP address in the Certificate should not be relied upon.

And, Secure Site Certificates are revoked within 5 days if any of the following events occurs

- The Certificate no longer complies with the requirements of Sections 6.1.5 and 6.1.6;
- The CA obtains evidence that the Certificate was misused;
- The CA is made aware that a Subscriber has violated one or more of its material obligations under the Subscriber Agreement or Terms of Use;
- The CA is made aware of any circumstance indicating that use of a Fully- Qualified Domain Name or IP address in the Certificate is no longer legally permitted (e.g. a court or arbitrator has revoked a Domain Name Registrant's right to use the Domain Name, a relevant licensing or services agreement between the Domain Name Registrant and the Applicant has terminated, or the Domain Name Registrant has failed to renew the Domain Name);
- The CA is made aware that a Wildcard Certificate has been used to authenticate a fraudulently misleading subordinate Fully-Qualified Domain Name;
- The CA is made aware of a material change in the information contained in the Certificate;
- The CA is made aware that the Certificate was not issued in accordance with these Requirements or the CA's Certificate Policy or Certification Practice Statement;
- The CA determines that any of the information appearing in the Certificate is inaccurate;
- The CA's right to issue Certificates under these Requirements expires or is revoked or terminated, unless the CA has made arrangements to continue maintaining the CRL/OCSP Repository;
- Revocation is required by the CA's Certificate Policy and/or Certification Practice Statement; or
- The CA is made aware of a demonstrated or proven method that exposes the Subscriber's Private Key to compromise, methods have been developed that can easily calculate it based on the Public Key (such as a Debian weak key, see <http://wiki.debian.org/SSLkeys>), or if there is clear evidence;

- The technical content or format of the Certificate presents an unacceptable risk to Application Software Suppliers or Relying Parties;
- If Subscribers, Relying Parties and other third parties suspect Secure Site Certificate misuse, or other types of fraud, compromise, misuse, inappropriate conduct, or any other matter related to Certificates. The CA shall do the appropriate investigation before taking any action on the request through respective CSP;
- CSP to revoke the certificate of the subscriber, if he/she is no longer part of the organisation;
- Revocation is required by the CA's Certificate Policy and/or Certification Practice Statement;
- The CA ceases operations for any reason and has not made arrangements for another CA to provide revocation support for the Certificate; and
- The CSP's Agreement or the Registration Authority's Agreement has been terminated.

Whenever any of the above circumstances occur, the associated certificate shall be revoked and placed on a CRL and/or specified as revoked by an OCSP Responder.

Government-CA shall publicly disclose the instructions through a readily accessible online means regarding Secure Site Certificate problem reporting.

The Government-CA maintains controls to provide reasonable assurance that:

- The Subordinate CA requests revocation in writing;
- The Issuing CA or Subordinate CA ceases operations for any reason and has not made arrangements for another CA to provide revocation support for the Certificate;
- The Issuing CA's or Subordinate CA's right to issue Certificates under these requirements expires or is revoked or terminated, unless the Issuing CA has made arrangements to continue maintaining the CRL/OCSP Repository;
- The technical content or format of the Certificate presents an unacceptable risk to Application Software Suppliers or Relying Parties (e.g. the CA/Browser Forum might determine that a deprecated cryptographic/signature algorithm or key size presents an unacceptable risk.

#### **4.9.2 WHO CAN REQUEST REVOCATION OF A CERTIFICATE**

The following entities can request revocation of a certificate:

- NCDC can request the revocation of any certificates issued by any CA participating in the Saudi National PKI;
- The Government-CA PA can request the revocation of any certificates issued under its authority;
- The Government-CA can request the revocation of any RA or LRA certificates;
- A CSP, RA, or LRA can request the revocation of any of their Subscribers Certificate;

- The RA for their own certificate, if any suspected misuse has been attributed to their given Certificates;
- Subscribers, if any suspected misuse has been attributed to their given Certificates, can request a revocation; and
- A legal, judicial or regulatory agency in Saudi Arabia, can request certificate revocation, within applicable laws and in coordination with NCDC.

The Government-CA maintains controls to provide reasonable assurance that it has the capability to accept and acknowledge Certificate Problem Reports on a 24x7 basis; and identifies high priority Certificate Problem Reports;

Government-CA shall begin investigation of a Secure Site Certificate Problem Report within twenty-four hours of receipt, and provide a preliminary report on its findings to both the Subscriber and the entity who filed the Certificate Problem Report;

Government-CA shall decide whether revocation or other appropriate action is warranted based on the nature of the problem reported;

If revocation is deemed the appropriate action, the elapsed time from receipt of the Certificate Problem Report or revocation request and revocation status information does not exceed the timelines in SSL Baseline Requirements 4.9.1.1 (as covered under section [4.9.1](#)); and

Government-CA shall maintain a continuous 24x7 ability to respond internally to a high-priority Secure Site Certificate Problem Report; and

Where appropriate, forward such a complaint to law enforcement authorities, and/or revoke a Certificate that is the subject of such a complaint.

If any request for revocation cannot be resolved, the request is subject to the Dispute Resolution process described in NCDC Dispute Resolution Policy.

### **4.9.3 PROCEDURE FOR REVOCATION REQUEST**

#### **1. Procedure for Requesting the Revocation of a Subscriber Certificate**

The procedure for a revocation request is defined in section [3.4](#).

Upon revocation, the certificate shall be revoked and placed on a CRL. An up-to-date CRL will be issued in accordance with the stipulations detailed in section [4.9.7](#) of the Government-CA CPS. Where OCSP services are provided by a CA, the OCSP Responder will be updated within 30 minutes with the status of the revoked certificate.

The CSPs issuing Secure Site Certificate shall maintain a continuous 24x7 ability to accept and respond to revocation requests and related inquiries and provide a process for Subscribers to request revocation of their own Certificates.

#### **2. Procedure for Requesting the Revocation of a CA or RA Certificate**

A CA or CSP requesting revocation of its CA or RA Certificate is required to communicate the request to the appropriate Policy Authority. The PA or NCDC will then authorize the revocation of the Certificate. NCDC or a PA may also initiate CA or RA Certificate revocation if it deems necessary. An ARL will be published on the revocation of a CA certificate. For Revocation of RA Certificates refer to NCDC Level-One CA Operations Policy section 9.

**4.9.4 REVOCATION REQUEST GRACE PERIOD**

Revocation request grace period is not permitted once a revocation request has been verified.

**4.9.5 TIME WITHIN WHICH CA MUST PROCESS THE REVOCATION REQUEST**

Government-CA shall process authorized revocation requests within 24 hours.

**4.9.6 REVOCATION CHECKING REQUIREMENTS FOR RELYING PARTIES**

Relying Parties are required to comply with the Relying Party Agreement requirements for signature validation, which prescribe how certificate status information is to be obtained and used. Relying Parties may check Certificate status by consulting the most recent CRL from the CA that issued the Certificate on which the Relying Party wishes to rely. Alternatively, Relying Parties may meet this requirement either by checking Certificate status using the applicable repository or by using OCSP (if available). The CA shall provide Relying Parties with information on how to find the appropriate CRL, repository, or OCSP responder (where available) to check for revocation status.

**4.9.7 CRL ISSUANCE FREQUENCY**

The Government-CA will publish its CRLs at least once every 24 hours, and at the time of any Certificate revocation of its subscribers.

**4.9.8 MAXIMUM LATENCY OF CRLS**

CRLs shall be published in the Repositories within 10 minutes of Certificate revocation. Certificate status information is updated within 30 minutes of certificate revocation.

**4.9.9 ONLINE REVOCATION CHECKING AVAILABILITY**

Government-CA may provide access to an OCSP Responder covering the certificates they issue.

The OCSP Responder will be configured with certificates with a sufficient validity period to mitigate risks associated with OCSP Responder key compromise.

**4.9.10 ONLINE REVOCATION CHECKING REQUIREMENTS**

Where a CA provides an OCSP service, the timeliness of certificate status information supplied by the OCSP Responder shall be specified in the signed OCSP response.

**4.9.11 OTHER FORMS OF REVOCATION ADVERTISEMENTS AVAILABLE**

Government-CA will not provide other forms of revocation advertisements.

**4.9.12 SPECIAL REQUIREMENTS RELATED TO KEY COMPROMISE**

If NCDC discovers, or has a reason to believe, that there has been a compromise of the private key of the Government-CA, NCDC will immediately declare a disaster and invoke NCDC business continuity plan. NCDC will (1) determine the scope of certificates that must be

revoked, (2) publish a new CRL at the earliest feasible time, (3) use reasonable efforts to notify CSPs, subscribers and potential relying parties that there has been a key compromise, and (4) generate new CA key pair as per NCDC Level-One CA operations policies and procedures.

#### **4.9.13 CIRCUMSTANCES FOR SUBSCRIBER CERTIFICATE SUSPENSION**

If the Government-CA suspects that a certificate should be revoked for one of the circumstances described in section [4.9.1](#), the Government-CA may suspend the suspected certificate.

#### **4.9.14 WHO CAN REQUEST SUSPENSION**

The following entities can request suspension:

- NCDC can request the suspension of any certificates issued by any CA participating in the Saudi National PKI;
- The PA can request the suspension of any certificates issued under its authority;
- The Government-CA can request the suspension of any RA or LRA certificates;
- A CA, RA, or LRA can request the suspension of one of their Subscribers Certificate;
- The RA for their own certificate, if any suspected misuse has been attributed to their given Certificates;
- Subscribers, if any suspected misuse has been attributed to their given Certificates, can request a suspension; and
- A legal, judicial or regulatory agency, can request a suspension.

If any request for suspension cannot be resolved, the request is subject to the Dispute Resolution process described in the Dispute Resolution Policy.

#### **4.9.15 PROCEDURE FOR SUSPENSION REQUEST**

When the request comes from a subscriber, a sponsor of a device or a representative of an entity, it must be submitted to an RA via a digitally signed e-mail message. The RA will forward the request to the CA in a similar fashion. When the request comes from an RA, it must be submitted directly to the CA via a digitally signed e-mail message.

The procedure for processing suspension requests is as follows:

- The request is submitted to the CA as described above;
- The digital signature on the request is verified;
- The entity's certificates are suspended;
- The CA may notify the entity once their certificates have been suspended;
- Certificates are suspended upon receipt of the request by the CA without notification.

Once a suspension request has been received and authenticated, the certificate will be suspended and the suspended certificate shall be published in the relevant CRL or ARL.

Subscribers must present themselves in person to an RA to request re-activation of their suspended certificates. For suspension of RA Certificates refer to NCDC Level-One CA Operations Policy section 10.

#### **4.9.16 LIMITS ON SUSPENSION PERIOD**

The maximum period for which a Certificate can be suspended shall not exceed ninety (90) days.

#### **4.9.17 CIRCUMSTANCES FOR TERMINATING SUSPENDED CERTIFICATES**

When the entity which requested the suspension of the certificate is satisfied that the circumstances for suspension are no longer valid, the suspension shall be terminated. Once reactivated, the certificate validity period will be subject to the initial validity period.

If the entity which requested the suspension of the certificate is satisfied that the circumstances for suspension are valid, the certificate will be revoked.

When the period for suspension has reached its maximum duration without resolution, the certificate will be revoked.

#### **4.9.18 PROCEDURE FOR TERMINATING THE SUSPENSION OF A CERTIFICATE**

A request to unsuspend a certificate shall identify the relevant certificate, the reason for unsuspension and a method to allow the request to be authenticated (e.g., digitally or manually signed). The Government-CA shall authenticate the request as well as the authorization of the requester before a certificate is unsuspended.

#### **4.10 CERTIFICATE STATUS SERVICES**

The status of public certificates is available from CRL's in the repositories and via an OCSP responder (where available).

#### **4.11 END OF SUBSCRIPTION**

No stipulation.

#### **4.12 KEY ESCROW AND RECOVERY**

When data-encryption is supported, the Government-CA must maintain a backup of the private decryption keys to support accessing data encrypted with an unavailable Key.

The Subscriber's Decryption Private Key can be recovered for the Subscriber or for a third party under following conditions:

- The Subscriber can request recovery at any time;
- An authorized individual belonging to the Subscriber organization (if the Subscriber has left the company or some other reason); and
- Compliance or Legal office can request recovery with consent of the NCDC.

#### **4.12.1 KEY ESCROW POLICY AND PRACTICES**

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Government-CA does not offer key escrow services to Subscribers.

#### **4.12.2 SESSION KEY ENCAPSULATION AND RECOVERY POLICY AND PRACTICES**

## **5. NO STIPULATION.FACILITY MANAGEMENT AND OPERATIONAL CONTROLS**

### **5.1 PHYSICAL SECURITY CONTROLS**

NCDC operates the Saudi National Root-CA and other approved CAs, Repositories and OCSP Responder at NCDC-SSC, with appropriate physical and procedural access controls for all hardware and software sub-systems used in the issuance and revocation of certificates. NCDC limits access to functions critical to registration and certificate to personnel in Trusted Roles (see section 5.2.1 of this CPS).

The Government-CA is collocated in NCDC-SSC and follows the physical security requirements specified as below:

- Permit no unauthorized access to the hardware;
- Store all removable media and paper containing sensitive plain-text information in secure containers;
- Monitor, either manually or electronically, for unauthorized intrusion at all times; and
- Maintain and periodically inspect access logs.

RA equipment shall be protected from unauthorized access by the CSPs. The security mechanisms shall be commensurate with the level of threat in the CA environment.

A security check of the facility housing the CAs equipment shall occur on a regular basis. NCDC-SSC facility shall never leave unattended.

#### **5.1.1 SITE LOCATION AND CONSTRUCTION**

The location and construction of the facility housing the Saudi National Root-CA and other approved CAs, NCDC-SSC equipment is consistent with facilities used to house high value, sensitive information. The site location and construction, when combined with other physical security protection mechanisms such as guards and intrusion sensors, provides robust protection against unauthorized access to the CA equipment and records.

#### **5.1.2 PHYSICAL ACCESS**

NCDC-SSC systems are protected by seven tiers of physical security, with access to the lower tier required before gaining access to the higher tier. Progressively restrictive physical access privileges control access to each tier. Sensitive CA operational activity, any activity related to the lifecycle of the certification process such as authentication, verification, and issuance, occur within very restrictive physical tiers. Physical access is automatically logged and video recorded. Additional tiers enforce individual access control through the use of two factor biometric authentication. Unescorted personnel, including un-trusted employees or visitors, are not allowed into such secured areas.

NCDC has implemented policies and procedures to ensure that the physical environments in which the Government-CA systems are installed maintain a high level of security:

- NCDC-SSC systems are installed in a secure facility that is isolated from outside networks, with all access controlled;
- NCDC-SSC is separated into a series of progressively secure areas; and



- The entrances and exits from the secure areas are under constant video surveillance and all systems that provide authentication, as well as those that record entry, exit and network activity, are in secured areas.

The security techniques employed are designed to resist a large number and combination of different forms of attack. The mechanisms NCDC-SSC uses include:

- Perimeter alarms;
- Closed circuit television;
- Two-factor authentication using Biometrics and dual mechanical rotary locks;
- Mantraps;
- Radio frequency attenuation shielding and reinforced walls;
- Motion detectors;
- Human guards; and
- All the Networking and systems components including the certification components are installed in secure Data cabinets with pin locks from both sides.

To prevent tampering, cryptographic hardware is stored in a most secure area of NCDC-SSC, with access limited to authorized personnel.

NCDC uses human guards to continually monitor the facility housing the CA equipment on a 7x24x365 basis. NCDC-SSC facility is never left unattended.

The security mechanisms employed are commensurate with the level of threat in the equipment environment.

### **5.1.3 POWER AND AIR CONDITIONING**

NCDC-SSC has a UPS and back-up electrical generators and sufficient back-up capability to lock out input, finish any pending actions, and record the state of the equipment automatically before lack of power or air conditioning causes a shutdown.

The design of NCDC-SSC ensures that no single point of failure is supported by providing the following measures:

- Two independent power supplies feeding NCDC-SSC;
- Uninterruptible Power Supply units and stand-by generators for the entire building; and
- Switchover of the services to a backup facility in the case of an emergency or disaster as per NCDC Business Continuity Plan.

A fully redundant air-conditioning system is installed in the PKI areas.

### **5.1.4 WATER EXPOSURE**

NCDC-SSC has taken reasonable precautions to minimize the impact of water exposure. These include installing the PKI equipment on elevated floors with moisture detectors in a facility that is located above ground level.

### **5.1.5 FIRE PREVENTION AND PROTECTION**

NCDC-SSC follows best practices and industry standard for fire prevention and protection. Some of the measures deployed include:

- Fire-resistant walls and pillars;
- Fire, smoke and gas detectors installed throughout the facility which are interconnected with the facilities alarm system;
- An adequate number of fire extinguishers have been provided with a suitable fire extinguishing agent. Mobile fire extinguishers are also provided in sufficient numbers within the facility; and
- The controls implemented comply with applicable safety regulations of the Kingdom of Saudi Arabia.

### **5.1.6 MEDIA STORAGE**

Media storage under the control of NCDC-SSC is subject to multiple-layer security storage requirements. NCDC-SSC procedures include full back-up of the Government-CA repositories and OCSP Responder data, offsite storage in two physically separate locations with security similar to that of the facility in which the CA activities are performed. Media is stored so as to protect them from accidental damage (e.g., water, fire, or electromagnetic). Media that contain audit, archive, or backup information are duplicated and stored in locations separate from the CA's.

### **5.1.7 WASTE DISPOSAL**

NCDC-SSC security procedures provide that sensitive media and documentation that are no longer needed for operations are destroyed using secure disposal processes. For example, sensitive paper documentation is shredded, burned, or otherwise rendered unrecoverable. Electronic media is physically destroyed prior to disposal.

### **5.1.8 OFF-SITE BACKUP**

Full system backups of CAs, sufficient to recover from system failure, are made on a periodic schedule as described in NCDC Operations Policies and Procedures.

The backup site has physical and procedural controls commensurate to that of NCDC-SSC.

## **5.2 PROCEDURAL CONTROLS**

### **5.2.1 TRUSTED ROLES**

A trusted role is one whose incumbent performs functions that can introduce security problems if not carried out properly, whether accidentally or maliciously. The people selected by NCDC to fill these roles will be extraordinarily responsible. The functions performed in these roles form the basis of trust for the entire NCDC. Two approaches are taken to increase the likelihood that these roles can be successfully carried out. The first ensures that the person filling the role is trustworthy and properly trained. The second distributes the functions among more than one person, so that any malicious activity would require collusion.

At a minimum, the following roles are established:

## 1. CA Master

The CA Master role is responsible for:

- Installation, configuration, and maintenance of the CA hardware and software;
- Starting and stopping CA services;
- Generating and backing up CA keys;
- Backing up and restoring the database; and
- Establishing and maintaining CA system accounts (Security Officer).

Master users do not issue certificates to Subscribers.

## 2. CA Officer

The CA Officer role is responsible for:

- Verifying the accuracy of information included in certificates;
- Executing the issuance of certificates; and
- Executing the revocation of certificates.

## 3. CA Administrator

The CA Administrator role is responsible for:

- Installation, configuration, and maintenance of the CA hardware and software;
- Establishing and maintaining CA system accounts;
- Configuring certificate profiles or templates and audit parameters; and
- Generating and backing up CA keys.

Administrators do not issue certificates to Subscribers.

## 4. CA Auditor

The CA Auditor role is responsible for:

- Reviewing, maintaining, and archiving audit logs; and
- Performing or overseeing internal compliance audits to ensure that the CA is operating in accordance with this CPS.

## 5. CA Operator

The CA Operator role is responsible for:

- Daily operation and maintenance of the system equipment;
- System backup and recovery operations; and
- Storage media renewal.

### 5.2.2 NUMBER OF PERSONS REQUIRED PER TASK

NCDC shall ensure separation of duties for critical CA functions to prevent one person from maliciously using the PKI systems without detection. Each user's system access is limited to those actions for which they are required to perform in fulfilling their responsibilities. Separate individuals shall fill each of the roles specified in previous section and NCDC Trusted Roles document. This provides the maximum security and affords the opportunity for the greatest degree of checks and balances over the system operation.

The Government-CA will ensure that no single individual may gain access to CA private keys. At a minimum two individuals, must perform any CA system start-up, CA system shutdown, key backup or key recovery operation.

### **5.2.3 IDENTITY-PROOFING FOR EACH ROLE**

Persons filling trusted roles shall undergo an appropriate security screening procedure before they can start their duties.

### **5.2.4 SEPARATION OF ROLES**

Role separation, when required as set forth below, may be enforced either by the CA equipment, or procedurally, or by both means.

Individual CA personnel are specifically designated to the five roles defined in section [5.2.1](#) and NCDC Trusted Roles document. Individuals who assume a CA Officer role may not assume a CA Administrator or CA Auditor role. An individual assigned a CA Auditor role shall not perform any other trusted role. No individual shall be assigned more than one trusted identity.

## **5.3 PERSONNEL CONTROLS**

### **5.3.1 BACKGROUND, QUALIFICATIONS AND EXPERIENCE REQUIREMENTS**

All persons filling trusted roles are selected on the basis of skills, experience, loyalty, trustworthiness, and integrity. CA Master trusted roles must be held by citizens of the Kingdom of Saudi Arabia. The requirements governing the qualifications, selection and oversight of individuals who operate, manage, oversee, and audit the CA are set forth in the NCDC Trusted Roles document and NCDC Organization Structure document. While performing any critical operation one of the trusted roles should be held by the Saudi citizen.

### **5.3.2 BACKGROUND CHECK AND CLEARANCE PROCEDURES**

NCDC conducts background investigations for all NCDC personnel including trusted roles and management positions. Background check shall take into account the following:

- Availability of satisfactory character reference, i.e. one business and one personal;
- A check (for completeness and accuracy) of the applicant's CV;
- Confirmation of claimed academic and professional qualifications;
- Independent identity check (National ID card, Passport or similar document);
- Interviews with references shall be done as required; and
- More detailed checks, such as security clearance.

Security clearance shall be repeated every 3 years for personnel holding trusted roles.

### **5.3.3 TRAINING REQUIREMENTS**

NCDC-SSC will provide proper training to all personnel performing duties with respect to the operation of the Government-CA, Repositories and OCSP Responder. Training shall cover the following aspects:

- PKI and Information Security concepts;

- All PKI software versions in use on the Government-CA, Repositories and OCSP Responder systems;
- All NCDC-SSC PKI duties that the personnel are expected to perform on Government-CA;
- Disaster recovery and business continuity procedures; and
- The meaning and effect of the Government-CA CP and this CPS.

The RA Administrator(s) engaged in Certificate issuance shall be given detailed training to perform their tasks. Government-CA shall design examination based on the training which is to be qualified by each RA Administrator.

Documentation of all personnel who received training and the level of training completed shall be maintained by NCDC-SSC.

#### **5.3.4 RETRAINING FREQUENCY AND REQUIREMENTS**

Individuals performing PKI roles are made aware of changes in the Government-CA, Repository and OCSP Responder operation. Any significant change to the operations will necessitate a training awareness plan, and the execution of such plan is documented. Examples of such changes are Government-CA software or hardware upgrade, changes in automated security systems, and relocation of equipment.

#### **5.3.5 JOB ROTATION FREQUENCY AND SEQUENCE**

No stipulation.

#### **5.3.6 SANCTIONS FOR UNAUTHORIZED ACTIONS**

NCDC will take appropriate administrative and disciplinary actions against personnel who have performed actions involving the CA, Repositories and OCSP Responder that are not authorized in the Government-CA CP, this CPS and/or other procedures.

#### **5.3.7 CONTRACTING PERSONNEL REQUIREMENTS**

When NCDC uses a contractor to perform services, there will be adequate procedures with explicitly stated objectives and supervision will be in place to ensure that any tasks performed in accordance with the Government-CACP, this CPS, NCDC Policies as well as the requirements stipulated in the contractor's contract of employment. Contractor personnel shall be subject to the same sanctions as other personnel as set forth in Section [5.3.6](#).

#### **5.3.8 DOCUMENTATION SUPPLIED TO PERSONNEL**

NCDC-SSC provides sufficient documentation to its personnel in order for them to perform their job responsibilities competently and satisfactorily.

### **5.4 AUDIT LOGGING PROCEDURES**

NCDC-SSC will implement and maintain Trustworthy Systems to preserve an audit trail for material events and for key life cycle management, including key generation, backup, storage,

recovery, destruction and management of cryptographic devices of the Government-CA and other associated components.

NCDC-SSC systems shall generate audit log files for all events relating to the security of the Government-CA and other associated components. All security audit logs are retained and made available for review during compliance audits. The security audit logs for each auditable event defined in this section are maintained in accordance with section [5.5.2](#) which governs the archive retention period for security audit data.

#### **5.4.1 TYPES OF EVENTS RECORDED**

NCDC-SSC enables all security auditing capabilities of the Government-CA and other associated components, operating system and PKI applications during installation. At a minimum, each audit record includes the following:

- The type of event;
- The date and time the event occurred;
- A success or failure indicator of the event (e.g. CA signing event, revocation event, certificate validation event);
- The identity of the entity and/or operator that caused the event; and
- Description of the event.

The minimum audit records to be kept are detailed in NCDC Audit and Compliance Policy. All security audit capabilities of the Government-CA operating system and CA applications shall be enabled.

Such events include, but are not limited to:

1. CA key lifecycle management events, including:
  - a. Key generation, backup, storage, recovery, archival, and destruction; and
  - b. Cryptographic device lifecycle management events.
2. CA and Subscriber Certificate lifecycle management events, including:
  - a. Certificate requests, renewal, and re-key requests, and revocation;
  - b. All verification activities stipulated in these Requirements and the CA's Certification Practice Statement;
  - c. Date, time, phone number used, persons spoken to, and end results of verification telephone calls;
  - d. Acceptance and rejection of certificate requests;
  - e. Issuance of Certificates; and
  - f. Generation of Certificate Revocation Lists and OCSP entries.
3. Security events, including:
  - a. Successful and unsuccessful PKI system access attempts;
  - b. PKI and security system actions performed;
  - c. Security profile changes;
  - d. System crashes, hardware failures, and other anomalies;

- e. Firewall and router activities; and
- f. Entries to and exits from the CA facility.

Log entries MUST include the following elements:

- Date and time of entry;
- Identity of the person making the journal entry; and
- Description of the entry.

All logs, whether electronic or manual, must contain the date and time of the event and the identity of the Entity which caused the event. The CA shall also collect, either electronically or manually, security information not generated by the CA system such as:

- Physical access logs;
- System configuration changes and maintenance;
- CA personnel changes;
- documentation relating to certificate requests and the verification;
- documentation relating to certificate revocation;
- Discrepancy and No compromise reports;
- Information concerning the destruction of sensitive information;
- Current and past versions of all Certificate Policies;
- Current and past versions of Certification Practice Statements;
- Vulnerability Assessment Reports;
- Threat and Risk Assessment Reports;
- Compliance Inspection Reports; and
- Current and past versions of Agreements.

#### **5.4.2 FREQUENCY OF PROCESSING DATA**

Audit logs are required to be processed in accordance with NCDC Audit and Compliance Policy.

#### **5.4.3 RETENTION PERIOD FOR SECURITY AUDIT DATA**

The Government-CA shall retain all system generated (electronic) and manual audit records onsite for a period not less than six months from the date of creation.

#### **5.4.4 PROTECTION OF SECURITY AUDIT DATA**

Read access to the journal information is granted to personnel requiring this access as part of their duties. Only authorized roles can obtain access:

The journal is stored in the text files and access to this is protected against unauthorized access by the CA application and through special security measures on the operating system level.

#### **5.4.5 SECURITY AUDIT DATA BACKUP PROCEDURES**

The journal is an integral part of the CA database and is therefore part of the daily backup. The entire database is encrypted on the disk as well as on the backup media.

Audit log backup procedures are in accordance with NCDC Audit and Compliance Policy.

#### **5.4.6 SECURITY AUDIT COLLECTION SYSTEM (INTERNAL OR EXTERNAL)**

The audit log or journal is an integral part of the CA software. NCDC audit collection system is detailed in NCDC Audit and Compliance Policy.

#### **5.4.7 NOTIFICATION TO EVENT-CAUSING SUBJECT**

Event-causing subject are not notified.

#### **5.4.8 VULNERABILITY ASSESSMENTS**

NCDC performs routine assessments of security controls. This self-assessment includes periodic review of error logs on systems, storage of assets and records, security audit data for alerts or irregularities, alarm logs, access logs, incident reports, and audit log analysis.

Apart from this, NCDC-SSC is constantly (24x7) monitored, and all attempts to gain unauthorized access to any of the services are logged and analyzed.

NCDC performs third party penetration testing for NCDC-SSC infrastructure at least, once a year and doing regular vulnerability assessment internally. Also Risk Assessment is performed at least once a year as per NCDC Risk Assessment Methodology. NCDC Risk Assessment exercise includes identification of foreseeable internal and external threats, assess the likelihood and potential damage of these threats and assess the sufficiency of the policies, procedures, information systems, technology.

Based on the Risk Assessment exercise, the Government-CA shall develop, implement, and maintain a security plan to control the risks identified during the Risk Assessment, commensurate with the sensitivity of the Certificate Data and Certificate Management Processes.

### **5.5 RECORDS ARCHIVAL**

#### **5.5.1 TYPES OF EVENTS ARCHIVED**

CA archive records shall be sufficiently detailed to establish the proper operation of the CA, or the validity of any certificate (including those revoked or expired) issued by the CA. The CA shall make these audit logs available to its Qualified Auditor upon request.

- Audit logs generated by the PKI CA software;
- CSP and other agreements;
- Records pertaining to identification and authentication information;
- Physical access logs;
- System configuration changes and maintenance;



- CA personnel changes;
- Discrepancy and No compromise reports;
- Information concerning the destruction of sensitive information;
- Current and past versions of all Certificate Policies;
- Current and past versions of Certification Practice Statements;
- Vulnerability Assessment Reports;
- Threat and Risk Assessment Reports;
- Compliance Inspection Reports;
- Documents identifying all personnel who received CA related training and the level of training completed; and
- The Government-CA shall archive any necessary keys and passwords for a period of time sufficient to support the functionalities.

### **5.5.2     *RETENTION PERIOD FOR ARCHIVE***

NCDC's minimum retention period for archive data is established at ten years.

The Government-CA shall ensure that CSPs shall retain all documentation relating to certificate requests and the verification thereof, and all Certificates and revocation thereof, for at least ten years after any Certificate based on that documentation ceases to be valid.

Applications needed to process the archive data shall also be maintained for the archival retention period.

Prior to the end of the archive retention period, the Government-CA shall provide archived data and the applications necessary to read the archives to a NCDC approved archival facility, which shall retain the applications necessary to read this archived data.

### **5.5.3     *PROTECTION OF ARCHIVE***

The archive is protected using a combination of physical security and procedural security means. Only authorized personnel are permitted to review the archive data. Archive data and media are physically protected during transit and at the archive storage site using physical security means.

### **5.5.4     *ARCHIVE BACKUP PROCEDURES***

Only one copy of the archive is maintained. In other words, archive itself is not backed up.

### **5.5.5     *REQUIREMENTS FOR TIME-STAMPING OF RECORDS***

Certificates, CRLs, and other revocation database entries shall contain time and date information obtained from the Time Server.

System logs are automatically time stamped and systems use a dedicated time server to maintain synchronized time.

### **5.5.6 ARCHIVE COLLECTION SYSTEM (INTERNAL OR EXTERNAL)**

The type of Archive Collection System, whether internal or external, is specified in NCDC Archival Policy.

### **5.5.7 PROCEDURES TO OBTAIN AND VERIFY ARCHIVE INFORMATION**

Information on how the archive information is created, verified, packaged, transmitted and stored is detailed in NCDC Archival Policy. These policies and procedures are updated and augmented to reflect the legal and best practice requirements for managing and protecting electronic records.

## **5.6 KEY CHANGEOVER**

To minimize risk from compromise of a CA's private signing key, the key will be changed often. Once changed, only the new key will be used for certificate signing purposes. The older, but still valid, certificate will be available to verify old signatures until all of the certificates signed using the associated Private Key have also expired. If the old Private Key is used to sign CRLs that contain certificates signed with that key, only then the old key may be retained. If the old key is retained, it shall be protected just as the new key.

## **5.7 COMPROMISE AND DISASTER RECOVERY**

### **5.7.1 INCIDENT AND COMPROMISE HANDLING PROCEDURES**

In the event that a potential hacking attempt or other form of compromise to a CA occurs, it shall perform an investigation to determine the degree of potential damage. Government-CA-PA shall notify NCDC if any of the following occur;

- Suspected or detected compromise of the CA system;
- Physical or electronic attempts to penetrate the CA system;
- Denial of Service attacks on a CA system component; and
- Any incident preventing a CA from issuing a CRL within 24 hours of the time specified in the next update field of its currently valid CRL.

Government-CA-PA shall be notified by NCDC if any of the following cases occur;

- A CA certificate revocation is planned;
- Any incident preventing a CA from issuing a CRL within 24 hours of the time specified in the next update field of its currently valid CRL; and
- The above measures will allow participants to protect their interests as Relying Parties.

CA shall re-establish operational capabilities as quickly as possible in accordance with the procedures set forth in Saudi National Root-CA Operations Policy and NCDC Business Continuity Plan.

### **5.7.2 COMPUTING RESOURCES, SOFTWARE, AND/OR DATA ARE CORRUPTED**

In the event of the corruption of computing resources, software, and/or data, such an occurrence is reported to NCDC management and NCDC's incident handling procedures are enacted. Such procedures require appropriate escalation, incident investigation, and incident

response. If necessary, Saudi National Root-CA Operations Policy section 12-13 or related Business Continuity procedures will be enacted.

### **5.7.3 CA PRIVATE KEY COMPROMISE RECOVERY PROCEDURES**

CA private key compromise recovery procedures are detailed in Saudi National Root-CA Operations Policy section 14.

### **5.7.4 BUSINESS CONTINUITY CAPABILITIES AFTER A DISASTER**

NCDC has developed robust Business Continuity Management System for critical PKI services to provide the minimum acceptable level of assurance to its subscriber for service availability.

All NCDC critical infrastructure equipment at the primary site (NCDC-SSC) have built-in hardware fault-tolerance, and configured to be highly available with auto-failover switching. NCDC currently maintains copies of backup media and infrastructure system software, which include but are not limited to: PKI services related critical data; database records for all certificates issued and audit related data, at its offsite business continuity and disaster recovery storage facilities.

NCDC Business Continuity Management System (BCMS) demonstrates the capability to restore or recover critical PKI services at the primary site within twenty four (24) hours in the event of service(s) non-availability.

Business Continuity Management components at NCDC are being regularly tested, verified, and updated to be operational to address crisis situation in the event of a disruption. For security reasons details of these plans are not publicly available.

NCDC business continuity plan includes:

- Conditions for activating the plan;
- Emergency procedures;
- Fall-back procedures;
- Resumption procedures;
- A maintenance schedule for the plan;
- Awareness and education requirements;
- The responsibilities of the individuals;
- Recovery time objective (RTO);
- Regular testing of contingency plans;
- The CA's plan to maintain or restore the CA's business operations in a timely manner following interruption to or failure of critical business processes;
- A requirement to store critical cryptographic materials (i.e., secure cryptographic device and activation materials) at an alternate location;
- Creating backups of systems, data, and configuration information at regular intervals and storage of these backups at an alternate location;
- Acceptable system outage and recovery time;

- Procedure/frequently of backup copies for essential business information and software are taken; and
- Procedures for securing its facility to the extent possible during the period of time following a disaster and prior to restoring a secure environment either at the original or a remote site.

NCDC has developed recovery plans to mitigate the effects of any kind of natural, man-made or equipment failure related disaster.

NCDC has implemented an alternate recovery site as per industry standards to provide full recovery of critical PKI services within five days following a disaster at the primary site. NCDC Business Continuity Policy contains further details.

## **5.8 CA OR RA TERMINATION**

### **5.8.1 CA TERMINATION**

No stipulation.

### **5.8.2 RA TERMINATION**

If CSP terminates operation for convenience, contract expiration, re-organization, or other non-security related reason, the Agreement between NCDC and the CSP shall set forth what actions are to be taken to ensure continued support for certificates previously issued by the Government-CA.

Upon termination of the RA Agreement, the RA certificate shall be revoked.

NCDC will be the custodian of CA/RA archival records in case of termination.

## **6. TECHNICAL SECURITY CONTROLS**

### **6.1 KEY PAIR GENERATION AND INSTALLATION**

#### **6.1.1 KEY PAIR GENERATION**

Government-CA key pair generation is performed by multiple trusted Government-CA personnel using trustworthy systems and processes that provide for the security and required cryptographic strength for the generated keys. For the Government-CA's, the Hardware Security Modules (HSM's) used for key generation meet the requirements of FIPS 140-2 Level 3.

The Government-CA key pair is generated in pre-planned Key Generation Ceremonies in accordance with the requirements of NCDC as mentioned in the NCDC Level-One CA Key Generation Ceremony Policy. The activities performed in key generation ceremony are video recorded, dated and signed by all individuals involved. These records are kept for audit and tracking purposes for a length of time deemed appropriate by Government-CA management.

RA key pairs will be generated in cryptographic modules at least compliant to FIPS 140-2 Level 2 or higher.

Subscriber key pairs are generated based on the Assurance Level. If subscriber key pairs are generated using cryptographic modules then the cryptographic modules shall be at least compliant to FIPS 140-2 Level 2 or higher.

#### **6.1.2 PRIVATE KEY DELIVERY TO SUBSCRIBER**

Where a Subscriber's private key is generated in the presence and control of the Subscriber, private key delivery to the Subscriber is not applicable.

Where private keys are not created in the presence of the Subscriber, they will be delivered electronically using industry standard based PKCS messages over secure protocols which provide equivalent or higher encryption strength than the key being transported or may be delivered on a hardware cryptographic module. In all cases, the following requirements are met:

- Anyone who generates a private signing key for a Subscriber does not retain any copy of the key after delivery of the private key to the Subscriber;
- The private key is protected from activation, compromise, or modification during the delivery process;
- The Subscriber acknowledges receipt of the private key;
- Delivery is accomplished in a way that ensures that the correct token and activation data are provided to the correct Subscriber.
  - For cryptographic modules, accountability by the RA for the location and state of the module is maintained until the Subscriber accepts possession of it.
  - For electronic delivery of private keys, the key material is encrypted using a cryptographic algorithm and key size at least as strong as the private key. Activation data is delivered using a separate secure channel.

For Subscribers using centralized signing platform, Signing keys are generated using FIPS 140-2 Level 3 or higher certified hardware security module and stored in an encrypted database on the central storage. Key wrapping is accepted for the centralized signing platform

subscribers. The signing keys are under the control of Subscriber and used through key activation data provided by Subscriber during every transaction.

### **6.1.3 PUBLIC KEY DELIVERY TO CERTIFICATE ISSUER**

In respect of Server certificate, the Applicant's Public Key which will be generated by the Applicant must be transferred to Government-CA using a method designed to ensure that:

- The Public Key is not changed during transit; and
- The sender possesses the Private Key that corresponds to the transferred Public Key.

Delivery of public keys shall be achieved with a certificate request using a recognized secure protocol such as PKCS#10.

### **6.1.4 CA PUBLIC KEY DELIVERY TO SUBSCRIBERS AND RELYING PARTIES**

Acceptable methods are specified in section 6.1.4 of the Government-CA CP.

### **6.1.5 KEY SIZES**

Key pairs shall be of sufficient length to prevent others from determining the key pair's private key using cryptanalysis during the period of expected utilization of such key pairs. All FIPS-approved signature algorithms shall be considered acceptable.

All certificates issued shall use at least 2048 bit RSA, with Secure Hash Algorithm version (SHA-256) in accordance with FIPS 186-2 or equivalent. TLS or another protocol providing similar security to accomplish any of the requirements of this CPS shall use triple-DES or AES (minimum 128 bit key strength) for symmetric keys, and at least 2048 bit RSA or equivalent for asymmetric keys.

The current Government-CA key lengths as per NCDC standard for minimum key sizes are:

- Government-CA Key Pair: 2048 bits
- Subscriber Key Pairs: 2048 bits
- OCSP Key Pair: 2048 bits

### **6.1.6 PUBLIC KEY PARAMETERS GENERATION AND QUALITY CHECKING**

The HSM pseudo-random number generator is validated by NIST. Public key parameters prescribed are generated in accordance with industry best practices.

### **6.1.7 KEY USAGE PURPOSES**

Keys may be used for the purposes and in the manner described in same section of the Government-CA CP.

## **6.2 PRIVATE KEY PROTECTION AND CRYPTO-MODULE ENGINEERING CONTROLS**

### **6.2.1 CRYPTOGRAPHIC MODULE STANDARDS AND CONTROLS**

See section [6.1.1](#) of this CPS for the description of the cryptographic modules.

### **6.2.2 CA PRIVATE KEY MULTI-PERSON CONTROL**

Multi-person control of CA private key is achieved using an “m-of-n” split key knowledge scheme. Government-CA keys can only be accessed on the physical and logical level by adhering to '2 out of 4' control, meaning that 2 of the 4 persons are present.

### **6.2.3 PRIVATE KEY ESCROW**

CA Private Keys are never escrowed. Government CA does not escrow end-user Subscriber private keys with any third party.

### **6.2.4 PRIVATE KEY BACKUP**

#### **6.2.4.1 BACKUP OF CA SIGNING PRIVATE KEY**

NCDC-SSC uses the mechanisms provided by the HSM's to backup the Government-CA CA signing key. A second copy may be kept at the CA backup location identified as business continuity location. A third copy may be kept at the CA backup location identified as disaster recovery location. Procedures for Government-CA signing Private Key backup are detailed in NCDC Level-One CA Backup and Restore Policy. The CA signing key is backed up under the same multi-person control as the original signature keys.

Government-CA private keys that are physically transported from one facility to another follows NCDC Cryptographic Devices Lifecycle Management Policy and Procedure.

Government-CA hardware containing CA private keys, and associated activation materials, are transported in a physically secure environment by authorized personnel as per the NCDC Trusted Roles, using multiple person controls, and using sealed tamper evident packaging.

Government-CA keys and associated activation materials are transported in a manner that prevents the key from being activated or accessed during the transportation event; and CA key transportation events from one facility to another are logged.

#### **6.2.4.2 BACKUP OF SUBSCRIBER PRIVATE KEYS**

The Government-CA which issues certificates supporting data-encryption must offer the following services to Subscribers and authorized parties:

- The securely storage of issued private decryption keys; and
- A mechanism to securely retrieve the necessary key pairs and certificates when required

Except for the centralized signing platform Subscribers, private signing keys and authentication private keys will not be backed up.

### **6.2.5 PRIVATE KEY ARCHIVAL**

The Government-CA which issues certificates supporting data-encryption must provide the capability to archive issued private keys once the certificate has expired or once the backup period has ended. A complete history of all private keys and certificates issued must be maintained. The archive recovery service will enable a certificate holder or authorized authority access to the certificate and key upon the completion of NCDC and Government-CA key recovery processes.

Government-CA maintains controls to provide reasonable assurance that archived CA keys remain confidential, secured, and shall never be put back into production.

### **6.2.6 PRIVATE KEY TRANSFER INTO OR FROM A CRYPTOGRAPHIC MODULE**

The cryptographic modules implemented by NCDC are validated to FIPS 140-2 Level 3 ensuring that the CA keys cannot be exported to less secure media.

The Government-CA keys can be cloned for secure backup from the master hardware cryptographic module to other hardware cryptographic module(s) using secure mechanisms so that they can be recovered if a major catastrophe destroys the productive set of keys.

RA, LRA and Subscriber private keys shall not be transferred from the module they are generated in.

Government-CA keys migrated from one secure cryptographic device to another, other than for the purposes of routine backup and restoration are completed in a physically secure environment by those in NCDC Trusted Roles under multi-person control (m of n).

The hardware and software tools used during the Government-CA key migration process are tested by the CA prior to the migration event. The Saudi National Root-CA keys migration event follows change management process as per the documented script and complete process is logged.

### **6.2.7 PRIVATE KEY STORAGE ON CRYPTOGRAPHIC MODULE**

The CA private keys are stored on FIPS 140-2 Level 3 validated modules in encrypted form.

Subscriber/RAs private keys shall be stored in cryptographic modules at least compliant to FIPS 140-2 level 2 or higher.

### **6.2.8 METHOD OF ACTIVATING PRIVATE KEYS**

A CA's private key shall be activated by a threshold number of Shareholders, as defined in NCDC Level-One CA Operations Policy section 5, supplying their activation data. Such activation data shall be held on secure media and shall require the successful completion of a multi-person authentication process. A deactivated key shall be kept encrypted or otherwise secured within the cryptographic module, to prevent unauthorized access.

Subscribers must be authenticated to the cryptographic module before the activation of any private key(s). Acceptable means of authentication includes but is not limited to passwords and PINs.

### **6.2.9 METHODS OF DEACTIVATING PRIVATE KEYS**

A CA's private keys shall be deactivated by a threshold number of shareholders, as defined in NCDC Level-One CA Operations Policy section 6, by removing their secure media.

Subscriber private keys may be deactivated after each operation upon logging out of the application or upon removal of a hardware token from the reader depending upon the



authentication mechanism employed. In all cases, Subscribers have an obligation to adequately protect their private key(s).

**6.2.10 METHODS OF DESTROYING PRIVATE KEYS**

The copies of Government-CA keys that no longer serve a valid business purposes or copies of CA keys that are at the end of the key pair life cycle are destroyed as per NCDC Cryptographic Devices Lifecycle Management Policy and Procedure.

NCDC Government CA makes no expiry for end entity decryption key, thus doesn't destroy it. In addition, the means of destroying subscriber's private key are not defined as currently there's no business need for it.

**6.2.11 CRYPTOGRAPHIC MODULE RATING**

The CA private keys are stored on FIPS 140-2 Level 3 validated modules. Cryptographic hardware issued to Subscribers is FIPS 140-2 Level 2 or higher compliant.

**6.3 OTHER ASPECTS OF KEY PAIR MANAGEMENT**

**6.3.1 PUBLIC KEY ARCHIVE**

The CA and Subscriber certificates are backed up and archived as part of the Government-CA and NCDC-SSC routine backup procedures.

**6.3.2 CERTIFICATE OPERATIONAL PERIODS AND KEY USAGE PERIODS**

The table below details key usage, length and certificate lifetime for the corresponding keys:

| Key/Certificate  | Key Length in Bits | Maximum Validity Period                                    |
|--|--------------------|--|
| Government-CA signing key and certificate                  | 2048               | 120 months or valid not beyond 2030, whichever is earlier. |
| End Entity signing and non-repudiation key and Certificate | 2048               | Up to 36 months  |
| End Entity Encryption Certificate                          | 2048               | Up to 36 months  |
| End Entity Decryption Key                                  | 2048               | No Expiry  |

At the end of a certificates lifecycle, if the certificate has not been updated, it will expire and the Subscriber will have to reinitiate the registration process. The processes for disabling the Subscribers account are defined in NCDC Operations Policies and Procedures.

Government CA complies with the Baseline requirements with respect to the maximum Validity Period.

## **6.4 ACTIVATION DATA**

### **6.4.1 ACTIVATION DATA GENERATION AND INSTALLATION**

The CA cryptographic module activation data will be generated locally at the time of key generation by personnel in the trusted role and responsible for controlling the activation data.

A shared secret may be generated by an RA upon successful completion of subscriber registration process.

Subscriber will use the shared secret / Activation data to successfully identify himself and prove possession of associated private key at the time of certificate generation. Such activation data may also be used to protect the transport of a subscriber's keys and certificates to the subscriber.

### **6.4.2 ACTIVATION DATA PROTECTION**

If written down CA cryptographic module activation data is placed into secure packages which are then stored within secure containers in a highly secured environment inside NCDC-SSC.

Activation data shall be supplied to Subscribers using secure delivery methods.

### **6.4.3 OTHER ASPECTS OF ACTIVATION DATA**

No stipulation.

## **6.5 COMPUTER SECURITY CONTROLS**

### **6.5.1 SPECIFIC COMPUTER SECURITY TECHNICAL REQUIREMENTS**

The Government-CA servers hosted in NCDC-SSC are protected by external firewalls that filter out all unwanted traffic. Additionally, the CA systems are hardened and equipped with a high-security operating system. SA access to the system is granted only over secure and restricted protocols using strong public-key authentication.

NCDC-SSC has implemented layered security approach to ensure the security and integrity of the computers used to run the Government-CA software. The following controls ensure the security of NCDC-SSC operated computer systems:

- Hardened operating system;
- Software packages are only installed from a trusted software repository;
- Minimal network connectivity;
- Authentication and authorization for all functions;
- Strong authentication and role-based access control for all vital functions;
- Disk and file encryption for all relevant data; and
- Proactive patch management.

## **6.5.2 COMPUTER SECURITY RATING**

The CA software shall be certified under the Common Criteria or ITSEC to a level equivalent to Common Criteria EAL 4.

## **6.6 LIFE-CYCLE SECURITY CONTROLS**

### **6.6.1 SYSTEM DEVELOPMENT CONTROLS**

Government-CA maintains controls to provide reasonable assurance that CA systems development, maintenance activities, patching, and changes to CA systems are documented, tested, authorized, and properly implemented to maintain CA system integrity.

NCDC employs the following System Development controls:

- NCDC may use standard software from product vendors for version control. Where NCDC uses its own software products, these have been developed using documented software development processes;
- Hardware and software procured to operate the CA is purchased in a fashion to reduce the likelihood that any particular component was tampered with (e.g., by ensuring the vendor cannot identify the PKI component that will be installed on a particular device);
- CA hardware and software configurations are dedicated to performing one task: the CA. No other applications, hardware devices, network connections, or component software that is not part of the CA operation will be installed;
- NCDC undertakes all reasonable precautions to prevent malicious software from being loaded onto the CA equipment. Only applications required to perform the operation of the CA are procured. The CA hardware and software is scanned for malicious code on first use and periodically thereafter; and
- Hardware and software updates are purchased in the same manner as original equipment, and are installed by trusted and trained personnel according to policies and procedures established in NCDC's Operations Policies and Procedures.

### **6.6.2 SECURITY MANAGEMENT CONTROLS**

Government-CA maintains controls to provide reasonable assurance that changes to CA systems operating systems, databases, applications, network devices, and hardware are documented, tested, authorized, and properly implemented to maintain CA system integrity.

System security management shall be controlled by the privileges assigned to system accounts and by the trusted roles described in section [5.2.1](#), according to appropriate standards (e.g. BS ISO/IEC 27001:2013 or similar).

The configuration of the CA system as well as any modifications and upgrades must be documented and controlled in accordance with NCDC Change Management Policy. A formal configuration management methodology must be used for installation, ongoing maintenance and evolution of the CA system. No upgrades shall be permitted without prior offline testing and assessment, and regular backups must be taken.

### **6.6.3 LIFE CYCLE SECURITY RATINGS**

No stipulation.

## 6.7 NETWORK SECURITY CONTROLS

The Repository and OCSP Responder infrastructure will be connected to the internet in such a way so as to provide continuous service to Relying Parties. Redundancy is provided through the Repository and network infrastructure to prevent loss of service even during maintenance and backup procedures.

NCDC-SSC uses network design of multiple security layers making use of several security technologies including firewalls, intrusion prevention systems, anti-virus, anti-spyware software to protect network access to on-line Government-CA's, Repository and OCSP Responder equipment. These technologies may limit the services allowed to and from the on-line CA's, Repository and OCSP Responder equipment to those authorized to have such access.

NCDC-SSC's network security controls are designed to protect NCDC infrastructure against network attacks. All unused network ports and services are turned off. These network security controls include effective firewall management, including port restrictions and IP address filtering.

Any boundary control devices used to protect the network on which PKI equipment is hosted shall deny all but the necessary services to the PKI equipment.

## 6.8 TIME STAMPING

Certificates, CRLs, and other revocation database entries contain time and date information. System logs are automatically time stamped and systems use a dedicated time server to maintain synchronized time.

Time derived from the time service shall be used for establishing the time of:

- Initial validity time of a Subscriber's Certificate;
- Revocation of a Subscriber's Certificate;
- Posting of CRL updates;
- OCSP or other CA response.

## **7. CERTIFICATE, CRL AND OCSP PROFILES**

### **7.1 CERTIFICATE PROFILE**

This section contains the rules and guidelines followed by this CA in populating X.509 certificates and CRL extensions. The Certificate profile for the Government-CA is described in the Saudi National Root-CA CP.

#### **7.1.1 VERSION NUMBERS**

The Government-CA shall issue X.509 v3 certificates (populate version field with integer "2").

#### **7.1.2 CERTIFICATE EXTENSIONS**

NCDC critical private extensions shall be interoperable in their intended community of use.

Subordinate and Subscriber certificates may include any extensions as specified by RFC 5280 in a certificate, but must include those extensions required by Government-CA CP. Any optional or additional extensions shall be non-critical and shall not conflict with the certificate and CRL profiles defined in this CPS.

#### **7.1.3 ALGORITHM OBJECT IDENTIFIERS**

Government-CA shall sign Certificates using:

sha256WithRSAEncryption algorithm (1.2.840.113549.1.1.11).

The algorithm identifier of the subject Public Key shall be:

rsaEncryption (OID: = 1.2.840.113549.1.1.1).

#### **7.1.4 NAME FORMS**

Certificates issued by Government-CA contain the full X.500 distinguished name of the certificate issuer and certificate subject in the issuer name and subject name fields. Distinguished names are in the form of an X.501 printable string.

#### **7.1.5 NAME CONSTRAINTS**

No Stipulation.

#### **7.1.6 CERTIFICATE POLICY OBJECT IDENTIFIER**

Subscriber Certificates issued under this CPS shall assert a certificate policy OID.

#### **7.1.7 USAGE OF POLICY CONSTRAINTS EXTENSION**

It is expected that all members of the Government-CA apply to this policy.

### 7.1.8 **POLICY QUALIFIERS SYNTAX AND SEMANTICS**

No stipulation.

### 7.1.9 **PROCESSING SEMANTICS FOR THE CRITICAL CERTIFICATE POLICY EXTENSION**

Processing semantics for the critical certificate policy extension shall conform to X.509 certification path processing rules.

## 7.2 **CRL PROFILE**

The Government-CA CRL Profile is as below:

| Field                  | Content   | Comment |
|------------------------|---|---------|
| Version                | 1   |         |
| Algorithm              | SHA256withRSA   |         |
| Issuer                 | OU=Government CA<br>O=National Center for Digital Certification<br>C=SA |         |
| This update            | <issue date>  |         |
| Next update            | <issue date + 24 hours>   |         |
| AuthorityKeyIdentifier | Issuing CA's Subject Key Identifier                                     |         |
| CRL number             | <number>  |         |

### 7.2.1 **VERSION NUMBERS**

The Government-CA shall issue X.509 version two (v2) CRLs (populate version field with integer "1").

### 7.2.2 **CRL AND CRL ENTRY EXTENSIONS**

Critical private extensions shall be interoperable in their intended community of use.

## 7.3 **OCSP PROFILE**

OCSP requests and responses shall be in accordance with RFC 6960.

### 7.3.1 **VERSION NUMBER**

The version number for request and responses shall be v1.

### 7.3.2 **OCSP EXTENSIONS**

No stipulation.

## **8. COMPLIANCE AUDIT AND OTHER ASSESSMENTS**

The Government-CA PA shall be responsible for overseeing compliance of the Government-CA, CSPs, Government-CA CP and CPS. NCDC-SSC and Government-CA PA shall ensure that the requirements of the Government-CA CP and CPS and the provisions of applicable Agreements with NCDC are implemented and enforced.

### **8.1 FREQUENCY OF AUDIT OR ASSESSMENTS**

The Government-CA shall be subjected to periodic compliance audits which are no less frequent than once a year and after each significant change to the deployed procedures and techniques. NCDC also performing internal audit at least a quarterly basis against a randomly selected sample for monitor adherence and service quality. Moreover, NCDC may require ad-hoc compliance audits of any CSP's operation to validate that it is operating in accordance with the applicable CP, PDS, CPS, Audit and Compliance Policy and NCDC Operations Policies and Procedures. Similarly, the Government-CA PA has the right to require periodic inspections of its CSPs to validate that the CSPs are operating in accordance with the Government-CA CP and/or CSP agreement. The Government-CA shall internally audit each delegated third party's (CSP, RA & TA) compliance against defined requirements on an annual basis.

### **8.2 IDENTITY AND QUALIFICATIONS OF ASSESSOR**

The audit under Saudi National PKI shall be performed by a Qualified Auditor. A Qualified Auditor means a natural person, Legal Entity, or group of natural persons or Legal Entities that collectively possess the following qualifications and skills:

- Independence from the subject of the audit;
- The ability to conduct an audit that addresses the criteria specified in an Eligible Audit Scheme;
- Employs individuals who have proficiency in examining Public Key Infrastructure technology, information security tools and techniques, information technology and security auditing, and the third-party attestation function;
- Certified, accredited, licensed, or otherwise assessed as meeting the qualification requirements of auditors under the audit scheme; and
- Bound by law, government regulation, or professional code of ethics.

NCDC will appoint Qualified Auditor who shall be Licensed WebTrust Practitioner to perform such compliance audits as a primary responsibility.

### **8.3 ASSESSOR'S RELATIONSHIP TO ASSESSED ENTITY**

To provide an unbiased and independent evaluation, the auditor and audited party shall not have any current or planned financial, legal or other relationship that could result in a conflict of interest.

### **8.4 TOPICS COVERED BY ASSESSMENT**

The compliance audits will verify whether the CA PKI operations environment is in compliance with the applicable CP, CPS and supporting operational policies and procedures. The term CA PKI Operations environment defines the total environment and includes:

- All documentation, records;
- Contracts/agreements;
- Compliance with applicable Law;
- Physical and logical controls;
- Personnel and approved roles/tasks;
- Hardware (e.g. servers, desktops, hardware security modules, network devices and security devices); and
- Software and information.

The auditor shall provide the Government-CA PA and/or NCDC with a compliance report highlighting any discrepancies.

### **8.5 ACTIONS TAKEN AS A RESULT OF DEFICIENCY**

If irregularities are found by the auditor, the audited party shall be informed in writing of the findings. The audited party must submit a report to the auditor or directly to NCDC or Government-CA PA, as determined by NCDC, as to any remedial action the audited party will take in response to the identified deficiencies. This report shall include a time for completion to be approved by the auditor, or by NCDC as appropriate.

Where an audited party fails to take remedial action in response to the identified deficiencies, NCDC shall be informed by the auditor and shall take the appropriate action, according to the severity of the deficiencies.

- Noting the deficiencies but allowing the CA to continue operations until the next planned, or newly scheduled, inspection;
- Suspending the CA's certificate; or
- Revoking the CA's certificate.

### **8.6 COMMUNICATION OF RESULTS**

An Audit Compliance Report, including identification of corrective measures taken or being taken by the audited party, shall be provided to the Government-CA PA and/or NCDC as applicable.

The Government-CA shall make the Audit Report publicly available no later than three months after the end of the audit period. In the event of a delay greater than three months, an explanatory letter is to be signed by the Qualified Auditor.



## **9. OTHER BUSINESS AND LEGAL MATTERS**

### **9.1 FEES**

#### **9.1.1 CERTIFICATE ISSUANCE/RENEWAL FEE**

Currently, no fees are charged by Government-CA for Certificate issuance and renew, although Government-CA PA reserves the right to change this in the future. In addition a Government CSP may charge fees for its services.

#### **9.1.2 CERTIFICATE ACCESS FEES**

Government-CA may not charge for access to any certificates.

#### **9.1.3 REVOCATION OR STATUS INFORMATION ACCESS FEE**

No fee is charged for Digital Certificate revocation or status information access.

#### **9.1.4 FEES FOR OTHER SERVICES**

Government-CA may charge for other services depending on business needs and subject to NCDC approval.

#### **9.1.5 REFUND POLICY**

Refunds are not possible for the Digital Certificates for which no fees are charged.

### **9.2 FINANCIAL RESPONSIBILITY**

#### **9.2.1 INSURANCE COVERAGE**

Non-governmental CSP's shall be maintaining a commercially reasonable level of insurance coverage for errors and omissions, either through an errors and omissions insurance program with an insurance carrier or a self-insured retention. This insurance requirement does not apply to governmental entities.

The Government-CA acts within the bounds of laws in Saudi Arabia, under the administration of the National Center for Digital Certification.

#### **9.2.2 OTHER ASSETS**

Governmental-CA shall have sufficient financial resources to maintain their operations and perform their duties.

#### **9.2.3 INSURANCE/WARRANTY COVERAGE FOR END-ENTITIES**

As specified in the relevant agreements.

### **9.3 CONFIDENTIALITY OF BUSINESS INFORMATION**

Information pertaining to the Government-CA may be made publicly available at the discretion of NCDC and/or a Government-CA Policy Authority. Specific confidentiality requirements for business information are defined in NCDC Privacy Policy and the associated Subscriber, Relying Party and CSP agreements.

#### **9.3.1 SCOPE OF CONFIDENTIAL INFORMATION**

##### **9.3.1.1 REGISTRATION INFORMATION**

All registration records are considered to be confidential information, including:

- Certificate applications, whether approved or not;
- Certificate information collected as part of the registration process;
- Completed Subscriber Agreements;
- Any information requested by NCDC when it receives an application from a third party to operate as a CSP CA or a Cross-Certified CA;
- Any corporate or personal information held by NCDC, CAs, RAs, or LRAs related to the application and issuance of Certificates is considered confidential and will not be released without the prior consent of the relevant holder, unless required otherwise by law or to fulfil the requirements of Government-CA CP, and in accordance with NCDC Privacy policy.

##### **9.3.1.2 CERTIFICATE INFORMATION**

The reasons for a certificate being suspended or revoked is considered confidential information, with the sole exception of the revocation of the Saudi National Root-CA, a CSP CA, a Cross-Certified CA, an RA or a LRA due to:

- The compromise of their private key, in which case a disclosure may be made that the private key has been compromised; or
- The termination of the Saudi National Root-CA, a CSP CA, a Cross-Certified CA, an RA or a LRA, in which case prior disclosure of the termination may be given.

##### **9.3.1.3 PKI DOCUMENTATION**

NCDC Document Control Policy specifies which documents are considered to be confidential.

#### **9.3.2 INFORMATION NOT WITHIN THE SCOPE OF CONFIDENTIAL INFORMATION**

##### **9.3.2.1 CERTIFICATE INFORMATION**

Certificates published in the public repositories are not considered to be confidential information.

##### **9.3.2.2 PKI DOCUMENTATION**

The following documents are public documents and are not considered to be confidential information:

- The Government-CA CP;
- The Government-CA CPS;
- PKI Disclosure Statements;
- NCDC Dispute Resolution Policy;
- NCDC Privacy Policy; and
- Any other policy documents which are classified public.

### **9.3.2.3 DISCLOSURE OF CERTIFICATE REVOCATION INFORMATION**

Certificate revocation information is provided via the CRL in the repositories and may be via OCSP Responders.

### **9.3.3 RESPONSIBILITY TO PROTECT CONFIDENTIAL INFORMATION**

All Saudi National PKI participants shall be responsible for protecting the confidential information they possess in accordance with NCDC Privacy Policy and applicable laws and Agreements.

## **9.4 PRIVACY OF PERSONAL INFORMATION**

Any personal identifying information collected by a Government CSPs shall be protected in accordance with NCDC Privacy Policy. The CSPs shall use reasonable measures to protect personal identifying information from disclosure to any third party.

### **9.4.1 PRIVACY PLAN**

The Government-CA and the CSPs shall protect the confidential information it possesses in accordance with NCDC Privacy Policy.

### **9.4.2 INFORMATION TREATED AS PRIVATE**

Any information about Subscribers that is not publicly available through the content of the issued certificate, repository and online CRL's is treated as private.

### **9.4.3 INFORMATION NOT DEEMED PRIVATE**

Information appearing in Subscriber Certificates such as the name, organization affiliation and public key will not be deemed private. NCDC Privacy Policy identifies the personally identifiable information that can be collected to enable issuance of a certificate.

### **9.4.4 RESPONSIBILITY TO PROTECT PRIVATE INFORMATION**

Access to Government-CA held private information shall be restricted to those with an official need-to-know basis in order to perform their official duties.

#### **9.4.5 NOTICE AND CONSENT TO USE PRIVATE INFORMATION**

Unless otherwise stated in this CPS, NCDC Privacy Policy or by agreement, private information will not be used without the consent of the party to whom that information applies.

#### **9.4.6 DISCLOSURE PURSUANT TO JUDICIAL/ADMINISTRATIVE PROCESS**

Any disclosure shall be handled in accordance with NCDC Privacy Policy.

#### **9.4.7 OTHER INFORMATION DISCLOSURE CIRCUMSTANCES**

Any disclosure shall be handled in accordance with NCDC Privacy Policy.

### **9.5 INTELLECTUAL PROPERTY RIGHTS**

The allocation of Intellectual Property Rights among NCDC participants are governed by the applicable agreements.

The Government-CA PA retains exclusive rights to any products or information developed under or pursuant to Government-CA CP.

### **9.6 REPRESENTATIONS AND WARRANTIES**

#### **9.6.1 GOVERNMENT-CA'S REPRESENTATIONS AND WARRANTIES**

Government-CA provides representations and warranties in accordance with this CPS, respective agreements and applicable laws and regulations.

- Providing the operational infrastructure and certification services;
- Making reasonable efforts to ensure it conducts an efficient and trustworthy operation. "Reasonable efforts" include but are not limited to operating in compliance with:
  - Documented CP, PDS and CPS;
  - Documented NCDC Operations Policies and Procedures;
  - Within applicable agreements, Saudi Law and regulations.
- At the time of Certificate issuance; Government-CA implemented procedure for verifying accuracy of the information contained within it before installation and first use;
- Implemented a procedure for reducing the likelihood that the information contained in the Certificate is not misleading;
- Implemented procedures for verifying Device Sponsor requesting the Secure Site Certificate on behalf of the Device as authorized representative and to verify that the applicant either had the right to use, or had control of, the Domain Name(s) and IP address(es) listed in the Certificate's subject field and subjectAltName extension;
- Maintaining 24 x 7 publicly-accessible repositories with current information and replicates Government-CA issued certificates and CRLs;
- For the CA's, the Hardware Security Modules (HSM's) used for key generation meet the requirements of FIPS 140-2 Level 3 to store the CA keys and take reasonable precautions to prevent any loss, disclosure, or unauthorized use of the private key CA

private key is generated using multi-person control “m-of-n” split key knowledge scheme;

- Backing up of the CA signing Private Key is under the same multi-person control as the original Signing Key;
- Keep confidential, any passwords, PINs or other personal secrets used in obtaining authenticated access to PKI facilities and maintain proper control procedures for all such personal secrets;
- Use its private signing key only to sign certificates and CRLs and for no other purpose;
- Perform authentication and identification procedures in accordance with applicable Agreement and NCDC Operations Policies and Procedures;
- Provide certificate and key management services in accordance with the CP and CPS; and
- Ensure that CA personnel use private keys issued for the purpose of conducting CA duties only for such purposes.

### **9.6.2 RA REPRESENTATIONS AND WARRANTIES**

An RA who performs registration functions represents and warrants that it shall comply with the stipulations of this CPS, Government-CA CP and RA Agreement. An RA who is found to have acted in a manner inconsistent with these obligations is subject to revocation of RA responsibilities.

LRAs and TAs shall be bound to the RA obligations.

### **9.6.3 RELYING PARTIES REPRESENTATIONS AND WARRANTIES**

Relying parties are required to act in accordance with the Government-CA CP and the applicable Relying Party Agreement.

### **9.6.4 SUBSCRIBER REPRESENTATIONS AND WARRANTIES**

Subscribers are required to act in accordance with the Government-CA CP and the Subscriber Agreement.

## **9.7 DISCLAIMERS OF WARRANTIES**

NCDC, through its associated components, seeks to provide digital certification services according to international standards and best practices, using the most secure physical and electronic installations.

The Government-CA provides no warranty, express, or implied, statutory or otherwise and disclaims any and all liability for the success or failure of the deployment of the Government-CA or for the legal validity, acceptance or any other type of recognition of its own certificates, those issued by it through other Subordinate entity, any digital signature backed by such certificates, and any products provided by NCDC. The Government-CA further disclaims any warranty of merchantability or fitness for a particular purpose of the above-mentioned certificates, digital signatures and products.

## 9.8 LIMITATIONS OF LIABILITY

Limitations on Liability:

- The Government-CA will not incur any liability to Subscribers or any person to the extent that such liability results from their negligence, fraud or willful misconduct;
- The Government-CA assumes no liability whatsoever in relation to the use of Certificates or associated Public-Key/Private-Key pairs issued under Certificate Policy for any use other than in accordance with Certificate Policy. Subscribers will immediately indemnify the Government-CA from and against any such liability and costs and claims arising there from;
- The Government-CA will not be liable to any party whatsoever for any damages suffered whether directly or indirectly as a result of an uncontrollable disruption of its services;
- End-Users and CSPs are liable for any form of misrepresentation of information contained in the certificate to relying parties even though the information has been accepted by CSPs or Government-CA;
- Subscribers to compensate a Relying Party which incurs a loss as a result of the Subscribers breach of Subscriber's agreement;
- Relying Parties shall bear the consequences of their failure to perform the Relying Party obligations described in the Relying Party agreement;
- Certificate Service Providers (CSPs) shall bear the consequences of their failure to perform the Registration Authorities obligations described in the CSP agreement; and
- Government-CA denies any financial or any other kind of responsibility for damages or impairments resulting from its CA operation.

## 9.9 INDEMNITIES

Notwithstanding any limitations on its liability to Subscribers and Relying Parties, the CA understands and acknowledges that the Application Software Suppliers who have a Root Certificate distribution agreement in place with the Root CA do not assume any obligation or potential liability of the CA under these Requirements or that otherwise might exist because of the issuance or maintenance of Certificates or reliance thereon by Relying Parties or others. Thus, except in the case where the CA is a government entity, the CA SHALL defend, indemnify, and hold harmless each Application Software Supplier for any and all claims, damages, and losses suffered by such Application Software Supplier related to a Certificate issued by the CA, regardless of the cause of action or legal theory involved. This does not apply, however, to any claim, damages, or loss suffered by such Application Software Supplier related to a Certificate issued by the CA where such claim, damage, or loss was directly caused by such Application Software Supplier's software displaying as not trustworthy a Certificate that is still valid, or displaying as trustworthy: (1) a Certificate that has expired, or (2) a Certificate that has been revoked (but only in cases where the revocation status is currently available from the CA online, and the application software either failed to check such status or ignored an indication of revoked status).

The CSPs shall indemnify, defend and hold harmless the following parties:

- NCDC, its CEO, officers, employees, agents, consultants, and subsidiaries from any and all claims, damages, costs (including, without limitation, attorney's fees), judgments, awards or liability;

- The CSP's own employees, arising from any of the CSP's operations and activities as a CSP, of any entity or services subordinated or outsourced by the CSP; and
- Any parties relying on the CSP's Certificates, or arising as a result of an infringement or violation of any patents, copyrights, trade secrets, licenses, or other property rights of any third party.

## **9.10 TERM AND TERMINATION**

### **9.10.1 TERM**

This CPS shall be effective upon approval by NCDC.

### **9.10.2 TERMINATION**

This CPS, as amended from time to time, shall remain in force until it is replaced by a new version.

### **9.10.3 EFFECT OF TERMINATION AND SURVIVAL**

Upon termination of this CPS, all Government-CA participants are nevertheless bound by its terms for all certificates issued for the remainder of the validity periods of such certificates.

## **9.11 INDIVIDUAL NOTICES AND COMMUNICATIONS WITH PARTICIPANTS**

All communication between NCDC, PA, Saudi National Root-CA, CSPs, shall be in writing or via digitally signed communication. If in writing, the communication shall be signed on the appropriate organization letterhead. If electronic, a Digital Signature shall be made using a private key whose corresponding public key is in compliance with the Government-CA CP.

## **9.12 AMENDMENTS**

### **9.12.1 PROCEDURE FOR AMENDMENT**

The Government-CA PA shall review this CPS at least once per year. Errors, updates, or suggested changes to this CPS shall be communicated to the Government-CA PA and/or NCDC. Such communication shall include a description of the change, a change justification, and contact information for the person requesting the change. Any technical changes in the Government-CA shall be managed as per the NCDC Change Management Policy.

Subject to the approval of NCDC, the Government-CA PA reserves the right to change this CPS from time to time. The Government-CA PA will incorporate any such change into a new version of this CPS and, upon approval, publish the new version. The new CPS will carry a new version number.

### **9.12.2 NOTIFICATION MECHANISM AND PERIOD**

The Government-CA PA reserves the right to amend this CPS without notification for amendments that are not material, including without limitation corrections of typographical errors, changes to URL's, and changes to contact information. All the Saudi PKI participants

and other parties designated by the Government-CA PA shall provide their comments to the Government-CA PA in accordance with NCDC rules.

The Government-CA PA's decision to designate amendments as material or non-material shall be at the PA's sole discretion.

Any changes to this CPS shall be made available within two weeks of approval by NCDC.

### **9.12.3 CIRCUMSTANCES UNDER WHICH OID MUST BE CHANGED**

The policy OID shall only change pursuant to a decision from NCDC.

## **9.13 DISPUTE RESOLUTION PROCEDURES**

Any dispute arising out of or related to the digital certificates issued by the Government-CA shall initially be submitted to voluntary mediation. If mediation is not successful, then the dispute will be resolved by binding arbitration, in accordance with NCDC Dispute Resolution Policy.

### **9.13.1.1 DISPUTE RESOLUTION COMMITTEE**

NCDC Dispute Resolution Committee which will arbitrate on all claims or disputes arising out of or related to the operation of NCDC.

### **9.13.1.2 DISPUTE RESOLUTION POLICY**

NCDC Dispute Resolution Policy is applicable to all participants of NCDC.

All CSPs will ensure that any agreements they enter into with Relying Parties, Subscribers or other Certificate Authorities will include details of NCDC Dispute Resolution Policy.

## **9.14 GOVERNING LAW**

This CPS will be governed and construed in accordance with the laws of the Kingdom of Saudi Arabia.

## **9.15 COMPLIANCE WITH APPLICABLE LAW**

This CPS is subject to national, state, local and foreign laws, rules and regulation, ordinances, decrees and orders including but not limited to, restrictions on exporting or importing software, hardware or technical information.

## **9.16 MISCELLANEOUS PROVISIONS**

### **9.16.1 ENTIRE AGREEMENT**

No stipulation.



### **9.16.2 ASSIGNMENT**

Except where specified by other contracts, no party may assign or delegate any of its rights or duties under Government-CA CP, without the prior written consent of the Government-CA PA.

### **9.16.3 SEVERABILITY**

Should it be determined that one section of this CPS is incorrect or invalid, the other sections of this CPS shall remain in effect until the CPS is updated. The process for updating this CPS is described in section [9.12](#).

### **9.16.4 ENFORCEMENT (ATTORNEY FEES/WAIVER OF RIGHTS)**

This document shall be treated according to laws of Kingdom of Saudi Arabia. Legal disputes arising from the operation of the Government-CA will be treated according to laws of Kingdom of Saudi Arabia.

### **9.16.5 FORCE MAJEURE**

The Government-CA shall not be in default or liable for any losses, costs, expenses, liabilities, damages, claims, or settlement amounts arising out of or related to delays in performance or from failure to perform or comply with the terms of this CPS or the Government-CA CP or any other related agreement due to any causes beyond its reasonable control, which causes include, without limitation, acts of God, riots and insurrections, terrorist activities, war, accidents, fire, strikes and other labour difficulties, embargoes, judicial action specifically preventing the operation of the Government-CA, lack of or inability to obtain energy, or utilities, or acts of civil or military authorities.

## **9.17 OTHER PROVISIONS**

### **9.17.1 FIDUCIARY RELATIONSHIPS**

Nothing contained in this CPS shall be deemed to constitute either the Government-CA, or any of its subcontractors, agents, officers, suppliers, employees, partners, principals, or CEO to be a partner, Affiliate, trustee, of any Relying Party or any third party, or to create any fiduciary relationship between the Government-CA and any Relying party, or any third party, for any purpose whatsoever.

Nothing in this CPS or any Agreement between a third party and a Relying Party shall confer on any Subscriber, Customer, Relying Party, Registration Authority, Applicant or any third party, any authority to act for, bind, or create or assume any obligation or responsibility, or make any representation on behalf of the Government-CA.

### **9.17.2 ADMINISTRATIVE PROCESSES**

As specified in NCDC Operations Policies and applicable Agreements.