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To the management of Telia Company AB (Telia)

29 January 2019

Independent Assurance Report

Scope

We have been engaged, in a reasonable assurance engagement, to report on Telia management's statement that in generating and protecting its Telia Root CA v2 on 29 November 2018 at Helsinki, Finland with the following identifying information:

Root Name	Subject Key Identifier	Certificate Serial Number
Telia Root CA v2	72 ac e4 33 79 aa 45 87 f6 fd ac 1d 9e d6 c7 2f 86 d8 24 39	01 67 5f 27 d6 fe 7a e3 e4 ac be 09 5b 05 9e

Telia has:

- followed the CA key generation and protection requirements in its:
  - Telia Root Certificate Policy and Certification Practice Statement v2.4; and
  - Telia Production Certification Practice Statement v2.6
- included appropriate, detailed procedures and controls in its Root Key Generation Script:
  - Telia Root CA v2 Key Generation Script, v1.0, 2018-11-19
- maintained effective controls to provide reasonable assurance that Telia Root CA v2 was generated and protected in conformity with the procedures described in its CP/CPS and its Root Key Generation Script
- performed, during the root key generation process, all procedures required by the Root Key Generation Script
- generated the CA keys in a physically secured environment as described in its CP/CPS
- generated the CA keys using personnel in trusted roles under multiple person control and split knowledge
- generated the CA keys within cryptographic modules meeting the applicable technical and business requirements as disclosed in its CP/CPS

in accordance with CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1.

Certification Authority's responsibilities

Telia's management is responsible for its statement, including the fairness of its presentation, and for generating and protecting its CA keys in accordance with CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1.

Our independence and quality control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Ernst & Young Godkendt Revisionspartnerselskab applies International Standard on Quality Control 1[1] and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Auditor's responsibilities

Our responsibility is to express an opinion on management's statement based on our procedures. We conducted our procedures in accordance with International Standards on Assurance Engagements 3000 Assurance Engagements Other than Audits or Reviews of Historical Financial Information, issued by the International Auditing and Assurance Standards Board. This standard requires that we plan and perform our procedures to obtain reasonable assurance about whether, in all material respects, management's statement is fairly stated, and, accordingly, included:

(1) obtaining an understanding of Telia's documented plan of procedures to be performed for the generation of the certification authority key pairs for Telia Root CA v2;

(2) reviewing the detailed CA key generation script for conformance with industry standard practices;

(3) testing and evaluating, during the CA key generation process, the effectiveness of controls over the integrity, confidentiality, and availability of all private keys, including backup copies, and access keys (including physical keys, tokens and passwords), used in the establishment of the service;

(4) physical observation of all procedures performed during the root key generation process to ensure that the procedures actually performed on 29 November 2018 were in accordance with the Root Key Generation Script for Telia Root CA v2; and

(5) performing such other procedures as we considered necessary in the circumstances.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Opinion

In our opinion, throughout the root CA key generation process on 29 November 2018, Telia management's statement, as referred to above, is fairly stated, in all material respects, in accordance with CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1.

This report does not include any representation as to the quality of Telia's services beyond those covered by CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1, nor the suitability of any of Telia's services for any customer's intended purpose.

Copenhagen, 29 January 2019

ERNST & YOUNG P/S
Godkendt Revisionspartnerselskab
CVR no. 30 70 02 28

Claus Thaudahl Hansen
State Authorised Public Accountant
mne19675

Juha Sunila
Senior Manager, CISA, CISSP

[1] ISQC 1, Quality Control for Firms that Perform Audits and Reviews of Financial Statements, and Other Assurance and Related Services Engagements

TELIA'S MANAGEMENT STATEMENT

Telia Company AB (Telia) has deployed a public key infrastructure. As part of this deployment, it was necessary to create a hierarchy consisting of self-signed Root CA known as Telia Root CA v2. This CA will serve as Root CAs for Telia's certificate services. In order to allow the CA to be installed in a final production configuration, a Root Key Generation Ceremony was conducted, the purpose of which was to formally witness and document the creation of the CA private signing key. This helps assure the non-refutability of the integrity of Telia Root CA v2's key pair, and in particular, the private signing key.

Telia management has securely generated a key pair, consisting of a public and private key, in support of its CA operations. The key pair was generated in accordance with procedures described in Telia's Certificate Policy (CP) and Certification Practice Statement (CPS), and its Root Key Generation Script, which are in accordance with CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1.

Telia management established and maintained effective controls over the generation of these keys. These controls were designed to provide reasonable assurance of adherence to the above-mentioned practices throughout the root key generation process.

Telia management is responsible for establishing and maintaining procedures over its CA root key generations, and over the integrity and confidentiality of all private keys and access keys (including physical keys, tokens, and passwords) used in the establishment of the Telia Root CA v2, and for the CA environment controls relevant to the generation and protection of its CA keys.

Telia management has assessed the procedures and controls for the generation of the CA keys. Based on that assessment, in management's opinion, in generation and protecting its CA keys for the Telia Root CA v2 on 29 November 2018 at Helsinki, Finland, with the following identifying information:

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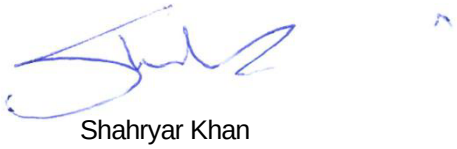
- generated the CA keys in a physically secured environment as described in its CP/CPS
- generated the CA keys using personnel in trusted roles under multiple person control and split knowledge
- generated the CA keys within cryptographic modules meeting the applicable technical and business requirements as disclosed in its CP/CPS

in accordance with CA Key Generation Criteria 2.1 and 4.1 of the WebTrust Principles and Criteria for Certification Authorities v2.1.

Stockholm, 29 January 2019

Telia Company AB



Shahryar Khan
Head of GSO NW Transport Automation and Systems