

RICHTER

INDEPENDENT ASSURANCE REPORT

To the management of Echoworx Corporation ("Echoworx"):

Scope

We have been engaged, in a reasonable assurance engagement, to report on [Echoworx management's assertion](#) that for its Certification Authority (CA) operations at Toronto, Ontario, throughout the period April 1, 2022 to March 31, 2023 for its CAs as enumerated in Attachment A, Echoworx has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in its:
 - [Echoworx Root CA2 Certificate Practice Statement \("CPS"\) version 1.14 dated September 14, 2022](#)
- maintained effective controls to provide reasonable assurance that Echoworx provides its services in accordance with its Certification Practice Statement
- maintained effective controls to provide reasonable assurance that:
 - the integrity of keys and certificates it manages is established and protected throughout their lifecycles;
 - the integrity of subscriber keys and certificates it manages is established and protected throughout their lifecycles;
 - subscriber information is properly authenticated (for the registration activities performed by Echoworx); and
 - subordinate CA certificate requests are accurate, authenticated, and approved
- maintained effective controls to provide reasonable assurance that:
 - logical and physical access to CA systems and data is restricted to authorised individuals;
 - the continuity of key and certificate management operations is maintained; and
 - CA systems development, maintenance, and operations are properly authorised and performed to maintain CA systems integrity

in accordance with the [WebTrust Principles and Criteria for Certification Authorities v2.2.2](#).

Certification authority's responsibilities

Echoworx's management is responsible for its assertion, including the fairness of its presentation, and the provision of its described services in accordance with the WebTrust Principles and Criteria for Certification Authorities v2.2.2.

Our independence and quality control

We have complied with the relevant rules of professional conduct/code of ethics applicable to the practice of public accounting and related to assurance engagements, issued by various professional accounting bodies, which are founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Richter LLP applies Canadian Standard on Quality Management 1, Quality Management for Firms that Perform Audits or Reviews of Financial Statements, or Other Assurance or Related Services Engagements, which requires the firm to design, implement and operate a system of quality management, including policies or 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 assertion based on our procedures. We conducted our procedures in accordance with Canadian Standard on Assurance Engagements 3000, Attestation Engagements Other than Audits or Reviews of Historical Financial Information, set out in the CPA Canada Handbook – Assurance. This standard requires that we plan and perform our procedures to obtain reasonable assurance about whether, in all material respects, management's assertion is fairly stated, and accordingly, included:

- (1) obtaining an understanding of Echoworx's key and certificate life cycle management business practices and its controls over key and certificate integrity, over the authenticity and confidentiality of subscriber and relying party information, over the continuity of key and certificate life cycle management operations and over development, maintenance and operation of systems integrity;
- (2) selectively testing transactions executed in accordance with disclosed key and certificate life cycle management business practices;
- (3) testing and evaluating the operating effectiveness of the controls; and
- (4) performing such other procedures as we considered necessary in the circumstances.

We believe that our audit provides a reasonable basis for our opinion.

Relative effectiveness of controls

The relative effectiveness and significance of specific controls at Echoworx and their effect on assessments of control risk for subscribers and relying parties are dependent on their interaction with the controls, and other factors present at individual subscriber and relying party locations. We have performed no procedures to evaluate the effectiveness of controls at individual subscriber and relying party locations.

Inherent limitations

Because of the nature and inherent limitations of controls, Echoworx's ability to meet the aforementioned criteria may be affected. For example, controls may not prevent, or detect and correct, error, fraud, unauthorised access to systems and information, or failure to comply with internal and external policies or requirements. Also, the projection of any conclusions based on our findings to future periods is subject to the risk that changes may alter the validity of such conclusions.

Opinion

In our opinion, throughout the period April 1, 2022, to March 31, 2023, Echoworx management's assertion, as referred to above, is fairly stated, in all material respects, in accordance with the WebTrust Principles and Criteria for Certification Authorities v2.2.2.

This report does not include any representation as to the quality of Echoworx's services beyond those covered by the WebTrust Principles and Criteria for Certification Authorities v2.2.2, nor the suitability of any of Echoworx's services for any customer's intended purpose.

Use of the WebTrust seal

Echoworx's use of the WebTrust for Certification Authorities Seal constitutes a symbolic representation of the contents of this report and it is not intended, nor should it be construed, to update this report or provide any additional assurance.

Richter LLP

Toronto, Ontario, Canada
May 5, 2023

Attachment A: List of CAs In Scope

CA Name	Subject	Issuer	Serial	Key Algorithm	Key Size	Digest Algorithm	Not Before	Not After	SKI	SHA256 Thumbprint
Echoworx Root CA2	CN = Echoworx Root CA2 OU = Certification Services O = Echoworx Corporation L = Toronto S = Ontario C = CA	CN = Echoworx Root CA2 OU = Certification Services O = Echoworx Corporation L = Toronto S = Ontario C = CA	00	rsaEncryption	(2048 Bits)	sha256WithRSAEncryption	October 06, 2005 6:49:13 AM	October 07, 2030 6:49:13 AM	3b e1 81 1b a0 ab 3f 3b 21 82 d5 e2 12 ae ae 50 ab 14 a5 13	66:39:D1:3C:AB:85:DF: 1A:D9:A2:3C:44:3B:3A: 60:90:1E:2B:13:8D:45: 6F:A7:11:83:57:81:08: 88:4E:C6:BF



**Assertions of Management as to
its Disclosure of its Business Practices and its Controls
over its Certification Authority Operations
during the period from 1 April 2022 through 31 March 2023**

Our Commitment to Security, Controls and Integrity:

Echoworx Corporation (Echoworx) is committed to providing the highest level of security, controls and integrity to support our certification authority service. To that end, we have subjected our certification authority business practices to the highest level of audit in the form of the [WebTrust Criteria for Certification Authorities v2.2.2](#). Below are our assertions, which have been audited by Richter LLP in conformity with the WebTrust Criteria for Certification Authorities.

Our Assertion With Respect to WebTrust for Certification Authorities Criteria:

Echoworx operates the Certification Authority (CA) service known as Echoworx Root CA2 and provides the following certification authority services:

- Subscriber registration
- Certificate rekey
- Certificate issuance
- Certificate distribution
- Certificate revocation
- Certificate validation
- Subscriber key escrow

The management of Echoworx is responsible for establishing and maintaining effective controls over its CA operations, including its CA business practices disclosure at <http://www.echoworx.com/ca-repository/>, CA business practices management, CA environmental controls, CA key lifecycle management controls, subscriber key lifecycle management controls, certificate lifecycle management controls, and subordinate CA certificate lifecycle management controls. These controls contain monitoring mechanisms, and actions are taken to correct deficiencies identified.

There are inherent limitations in any controls, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective controls can provide only reasonable assurance with respect to Echoworx's Certification Authority operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

Management has assessed the controls over its CA operations. Based on that assessment, in Echoworx Management's opinion, in providing its Certification Authority (CA) services in Toronto, Ontario during the period from 1 April 2022 through 31 March 2023, Echoworx has:

- Disclosed its Business, Key Life Cycle Management, Certificate Life Cycle Management, and CA Environmental Control practices in its [Echoworx Root CA2 CPS v1.14 dated 14 September 2022](#).
- Maintained effective controls to provide reasonable assurance that:
 - The integrity of keys and certificates it manages is established and protected throughout their life cycles;
 - The integrity of subscriber keys and certificates it manages is established and protected throughout their life cycles;
 - Subscriber information is properly authenticated (for the registration activities performed by Echoworx); and
 - Subordinate CA certificate requests were accurate, authenticated, and approved.
- Maintained effective controls to provide reasonable assurance that:
 - Logical and physical access to CA systems and data is restricted to authorized individuals;



- The continuity of key and certificate management operations is maintained; and
- CA systems development, maintenance and operations are properly authorized and performed to maintain CA systems integrity.

in accordance with the [WebTrust Criteria for Certification Authorities v2.2.2](#) including the following:

CA Business Practice Disclosure

- **CA Business Practice Management**
 - CP Management
 - CPS Management

Service Integrity

- **CA Key Life Cycle Management Controls**
 - CA Key Generation
 - CA Key Storage, Backup, and Recovery
 - CA Public Key Distribution
 - CA Key Usage
 - CA Key Archival and Destruction
 - CA Key Compromise
 - CA Cryptographic Hardware Life Cycle Management
- **Subscriber Key Life Cycle Management Controls**
 - CA-Provided Subscriber Key Storage and Recovery Services
 - Requirements for Subscriber Key Management
- **Certificate Life Cycle Management Controls**
 - Subscriber Registration
 - Certificate Rekey
 - Certificate Issuance
 - Certificate Distribution
 - Certificate Revocation
 - Certificate Validation

CA Environmental Controls

- Security Management
- Asset Classification and Management
- Personnel Security
- Physical & Environmental Security
- Operations Management
- System Access Management
- System Development and Maintenance
- Business Continuity Management
- Monitoring and Compliance
- Audit Logging

Our commitment to these principles and criteria is on-going. Every twelve months, Richter LLP may verify our continuing compliance with the WebTrust Criteria for Certification Authorities, subject to re-engagement by Echoworx.

Alex Loo

Alex Loo, Chief Security Officer
Echoworx Corporation

May 5, 2023

Date