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Report of Independent Accountants

To the Management of QuoVadis Limited

We have examined the accompanying [assertion](#) made by the management of QuoVadis Limited (QuoVadis) titled **Management's Assertion Regarding the Effectiveness of Its Controls Over the Extended Validation (EV) SSL Certification Authority Services Based on the: WebTrust Principles and Criteria for Certification Authorities - Extended Validation SSL, v1.7.3** that provides its Certification Authority (CA) services at Bermuda, the Netherlands, Switzerland, the United Kingdom, Belgium and Germany, throughout the period 1 January 2022 to 31 December 2022 for CAs as enumerated in [Appendix A](#), QuoVadis has:

- ▶ Disclosed its EV SSL Certificate practices and procedures in the [QuoVadis Root CA 2 Certification Policy/ Certification Practice Statement, v2.19](#) dated 23 September 2022, for the QuoVadis Root CA 2, QuoVadis Root CA 2 G3, and the issuing CAs listed in [Appendix A](#) to Assertion of Management in accordance with the [WebTrust Principles and Criteria for Certification Authorities - Extended Validation SSL, v1.7.3](#)

including its commitment to provide SSL certificates in conformity with the CA/Browser Forum Requirements, and provided such services in accordance with its disclosed practices,

- ▶ Maintained effective controls to provide reasonable assurance that:
 - ▶ The integrity of keys and EV SSL certificates it manages was established and protected throughout their life cycles; and
 - ▶ EV SSL Subscriber information was properly collected and authenticated (for the registration activities performed by the Certification Authority (CA) and Registration Authority (RA)) and verified,
- ▶ 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,

based on the [WebTrust Principles and Criteria for Certification Authorities - Extended Validation SSL, v1.7.3](#)

QuoVadis management is responsible for its assertion and for specifying the aforementioned Criteria. Our responsibility is to express an opinion on management's assertion based on our examination.

Our examination was conducted in accordance with attestation standards established by the AICPA. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether management's assertion is fairly stated, in all material respects. An examination involves performing procedures to obtain evidence about management's assertion. The nature, timing, and extent of the procedures selected depend on our judgment, including an assessment of the risks of material misstatement of management's assertion, whether due to fraud or error. We believe that the evidence we obtained is sufficient and appropriate to provide a reasonable basis for our opinion.



QuoVadis Management has disclosed to us the attached comments ([Appendix B](#)) that have been posted publicly in the online forums of the CA/Browser Forum, as well as the online forums of individual internet browsers that comprise the CA/Browser Forum. We have considered the nature of these comments in determining the nature, timing and extent of our procedures.

The relative effectiveness and significance of specific controls at QuoVadis 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.

Our examination was not conducted for the purpose of evaluating QuoVadis' cybersecurity risk management program. Accordingly, we do not express an opinion or any other form of assurance on its cybersecurity risk management program.

We are required to be independent of QuoVadis and to meet our other ethical responsibilities, as applicable for examination engagements set forth in the Preface: Applicable to All Members and Part 1 - Members in Public Practice of the Code of Professional Conduct established by the AICPA.

There are inherent limitations in the effectiveness of any system of internal control, including the possibility of human error and the circumvention of controls. Because of inherent limitations in its internal control, QuoVadis may achieve reasonable, but not absolute assurance that all security events are prevented and, for those controls may provide reasonable, but not absolute assurance that its commitments and system requirements are achieved. Controls may not prevent or detect and correct, error, fraud, unauthorized access to systems and information, or failure to comply with internal and external policies or requirements.

Examples of inherent limitations of internal controls related to security include (a) vulnerabilities in information technology components as a result of design by their manufacturer or developer; (b) breakdown of internal control at a vendor or business partner; and (c) persistent attackers with the resources to use advanced technical means and sophisticated social engineering techniques specifically targeting the entity. Furthermore, the projection of any evaluations of effectiveness to future periods is subject to the risk that controls may become inadequate because of changes in conditions, that the degree of compliance with such controls may deteriorate, or that changes made to the system or controls, or the failure to make needed changes to the system or controls, may alter the validity of such evaluations.

In our opinion, QuoVadis management's assertion referred to above is fairly stated, in all material respects, based on the aforementioned criteria.

QuoVadis' use of the WebTrust for Certification Authorities - Extended Validation SSL 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.



This report does not include any representation as to the quality of QuoVadis' CA services beyond those covered by the [WebTrust Principles and Criteria for Certification Authorities - Extended Validation SSL, v1.7.3](#) criteria, or the suitability of any of QuoVadis' services for any customer's intended purpose.

Ernst & Young LLP

Ernst & Young LLP

31 March 2023

**Management's Assertion Regarding the Effectiveness of Its Controls
Over the Extended Validation SSL Certification Authority Services
Based on the WebTrust Principles and Criteria for Certification Authorities -
Extended Validation SSL, v1.7.3**

31 March 2023

We, as the management of QuoVadis Limited (QuoVadis), are responsible for operating the Extended Validation (EV) SSL Certification Authority (CA) services at Bermuda, the Netherlands, Switzerland, the United Kingdom, Belgium and Germany, for the Root CA(s) and Subordinate CA (s) in scope for EV SSL Certificates Requirements listed at [Appendix A](#).

Controls have inherent limitations, 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 QuoVadis' CA operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

Management of QuoVadis has assessed the disclosures of its certificate practices and controls over its EV SSL CA services. Based on that assessment, in providing its SSL Certification Authority (CA) services at Bermuda, the Netherlands, Switzerland, the United Kingdom, Belgium and Germany throughout the period from 1 January 2022 through 31 December 2022, QuoVadis has:

- Disclosed its EV SSL Certificate practices and procedures, and its commitment to provide EV SSL Certificates in conformity with the applicable CA/Browser Forum Guidelines for the QuoVadis Root CA 2, QuoVadis Root CA 2 G3, in the [QuoVadis Root CA 2 Certification Policy/ Certification Practice Statement, v2.19](#) dated 23 September 2022, including its commitment to provide EV SSL certificates in conformity with the applicable CA/Browser Forum Requirements on the QuoVadis website, and provided such services in accordance with its disclosed practices,
- Maintained effective controls to provide reasonable assurance that:
 - The integrity of keys and EV SSL certificates it manages was established and protected throughout their life cycles; and
 - EV SSL Subscriber information was properly collected, authenticated for the registration activities performed by QuoVadis and Registration Authorities,
- Maintained effective controls to provide reasonable assurance that:
 - Logical and physical access to CA systems and data was restricted to authorized individuals;
 - The continuity of key and certificate management operations was maintained; and
 - CA systems development, maintenance, and operations are properly authorized and performed to maintain CA systems integrity,



for the QuoVadis Root CA 2, QuoVadis Root CA 2 G3, and the issuing CAs listed in [Appendix A](#) in accordance with the [WebTrust Principles and Criteria for Certification Authorities - Extended Validation SSL, v1.7.3.](#)

Very truly yours,

Eric Porter

Eric Porter
~~Senior Vice President of Finance and IT Director~~
QuoVadis Limited

Appendix A to Assertion of Management

| Distinguished name | Certificate Serial Number | SHA-256 Fingerprint |
|--|--|--|
| CN = QuoVadis Root CA 2 O = QuoVadis Limited C = BM | 509 | 85A0DD7DD720ADB7FF05F83D542B209DC7FF4528F7D677B18389FEA5E5C49E86 |
| CN = QuoVadis Root CA 2 G3 O = QuoVadis Limited C = BM | 445734245b8189 9b35f2ceb82b3b5b a726f07528 | 8FE4FB0AF93A4D0D67DB0BEBB23E37C71BF325DCBCDD240EA04DAF58B47E1840 |
| CN = HydrantID EV SSL CA G2 O = HydrantID (Avalanche Cloud Corporation) C = US | 3c1e96137ee4205 7973ce498cb50da ae4c1e3c48 | 60388B773D33E9141648613F36B9149F015A114378BACF3E3694864FFDA426EC |
| CN = QuoVadis Grid ICA G2 O = QuoVadis Limited C = BM | 2bafc5f0a8d21340 9da42e761f619ac 91984bcd4 | 278ECF211E2518E9DD9913AFC583EEB3127C8184BCBEEDAAD7BD64E89E8C4310 |
| CN = QuoVadis Qualified Web ICA G2 O = QuoVadis Trustlink B.V. C = NL | 53bd8dc20d4a46b d962f5d685ada0f0 659207ffd | 7FEB9374EAB08D392717C647436DAE06176A24C010607FDA1CCE5E5F0106B472 |
| CN = QuoVadis Global SSL ICA G2 O = QuoVadis Limited C = BM | 1a6ee893c374973 8e12acc77a8c0ac b167eaf14 | F67C23EF7BF7412809DB6B1DD3D44A08D3754D99CABA6A13F7A05C7249089C89 |
| CN = VR IDENT EV SSL CA 2020 O = Fiducia & GAD IT AG C = DE | 754151cc11ec89b 64649b230ad8090 20bb1e66a5 | D33A847F640377BE0AE1A429153A07E87C8827FA4840B5158BCDCB85E10A453A |
| CN = DigiCert QV EV TLS ICA G1 O = DigiCert, Inc. C = US | 65e9bcd53e791df 22dffeb5ecc2bc7a 5588d0883 | 6A7B2AA3414039A663D5D8BBAB8256A3979A84C332BF5E1EE8F6D0E0ADA84668 |

| Distinguished name | Certificate Serial Number | SHA-256 Fingerprint |
|--|--|--|
| CN = QuoVadis Europe SSL CA G2 O = QuoVadis Trustlink B.V. C = NL | 71aaaa628484114 c591fd74b9fe9ffde 5b29fa7e | B1AAE1BCD555E8A3D1E3DDA8EC84E757C552655344CE3FEEBBAF98E895DBEDAC |
| CN = QuoVadis Qualified Web ICA G3 O = QuoVadis Trustlink B.V. C = NL | 2ca8cdc5b8ed750 780c72e3392c994 1c0ffb8826 | 3F225BDBCD788CE924870CAF92F814B7C6FF4EDABABAD93F1D3A9177252CF1D1 |
| CN = QuoVadis Europe EV SSL CA G1 O = QuoVadis Trustlink B.V. C = NL | 3a020322b6816c1 8b72acbb592bef74 dd786a8b8 | CB6666B32BFF2EFEDCC4187DF149A6D34A5D10B7165B9CFF2A67C0E311AEEED7 |
| CN = VR IDENT SSL CA 2020 O = Fiducia & GAD IT AG C = DE | 035fe137cd0551e 4c1f1b00beba5aee 53f952734 | 347D18DCCC2EFC51A920E7A7FBB07BFBDA35613681F82DCA5C4C72BB0C83C035 |
| CN = QuoVadis Enterprise Trust CA 2 G4 O = QuoVadis Trustlink B.V. C = NL | 41d2651bf57daeec 594226cf55639c4 c3285c24c | 1E356823FE40C0EAAC29F9ED5463B7B2DB1C088B63EBB05876A2E631C1087798 |
| CN = HydrantID SSL ICA G2 O = HydrantID (Avalanche Cloud Corporation) C = US | 7517167783d043 7eb556c357946e4 563b8ebd3ac | 9C6D08933201407FBF2B12540B67CC0E4C9666F132E1504762A717CBAE8F3FD6 |
| CN = QuoVadis Code Signing CA G1 O = QuoVadis Limited C = BM | 1ce6507ec1d9c0b 16178feee058cae7 a0b142858 | DA0AFAF15CD300E34B520FB78A4FA68EB42C4601E939B903E0B1D71DF5965BFF |
| CN = QuoVadis Enterprise Trust CA 2 G3 O = QuoVadis Limited C = BM | 31a84f278bbe4a6 96e4cb2f415a2e4 473bdcca38 | B6F6559BBCE0A2CC91E507B5D7319E32487EDAE28A063BC73B6405E6C44665B6 |
| CN = QuoVadis Global SSL ICA G3 O = QuoVadis Limited C = BM | 2d2c802018b7907 c4d2d79df7fb1bd8 72727cc93 | 30242443F6895A94560E48E4DFF720536EAF5163CB42F5E877402ABDE2F8627C |

| Distinguished name | Certificate Serial Number | SHA-256 Fingerprint |
|---|--|--|
| CN = QuoVadis Global SSL ICA G3 O = QuoVadis Limited C = BM | 653247814F5FA6 6BB854DAF053F3 29265D726538 | 161EE5386329B28A27FF405736552A621D5A844A43811E3623E52EEFA0BA840A |
| CN=QuoVadis Global SSL ICA G2 O=QuoVadis Limited C=BM | 510E47EC6C66D3 3CFFDEC552FD884 0978C9C273E | E5CD0DD44E1120C79415C84F5369D79AE04F047E80DC0856351AABC232056CA5 |

Appendix B

| | Disclosure | Description | Relevant WebTrust Criteria | Publicly Disclosed Link |
|---|--|---|---|-------------------------|
| 1 | QuoVadis: "unexpired but revoked" constrained CAs unable to be reported in CCADB | Some CA certificates may be too large to add to CCADB due to size of the technical constraints. | WebTrust Principles and Criteria for: Certification Authorities v2.2.2, SSL Baseline with Network Security v2.5, and Extended Validation SSL, v1.7.3. | 1777341 |
| 2 | QuoVadis: Failure to provide a preliminary report within 24 hours | A problem report sent to compliance@quovadisglobal.com concerning a key compromise and what would be considered a (preliminary) report is received 2 days later. | WebTrust Principles and Criteria for: Certification Authorities v2.2.2, SSL Baseline with Network Security v2.5, and Extended Validation SSL, v1.7.3. | 1762456 |