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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 its Code Signing Certification Authority Operations based on WebTrust Principles and Criteria for Certification Authorities - Code Signing Baseline Requirements v2.7** that provides Code Signing Certification Authority services at Bermuda, the Netherlands, Switzerland, the United Kingdom, Belgium and Germany, throughout the period 1 January 2022 to 31 December 2022 for Certification Authorities as enumerated in [Appendix A](#), QuoVadis has:

- ▶ Disclosed its Code Signing (CS) Certificate practices and procedures and its:
 - ▶ [QuoVadis Root CA 1 / Root CA 3 Certificate Policy / Certification Practice Statement, version 4.40](#) dated 23 September 2022 for the QuoVadis Root CA, QuoVadis Root CA 1 G3, QuoVadis Root CA 3, and QuoVadis Root CA 3 G3; and
 - ▶ [QuoVadis Root CA 2 Certification Policy/ Certification Practice Statement, version 2.19](#) dated 23 September 2022. for the QuoVadis Root CA 2, QuoVadis Root CA 2 G3.
- ▶ Maintained effective controls to provide reasonable assurance that:
 - ▶ CS subscriber information was properly collected, authenticated (for the registration activities performed by the Certification Authority (CA) and Registration Authority (RA)) and verified;
 - ▶ Its CS Signing Authority and CS Timestamp Authority are operated in conformity with CA/Browser Forum Code Signing Working Group requirements; and
 - ▶ The integrity of keys and CS certificates it manages is established and protected throughout their life cycles,

based on the [WebTrust Principles and Criteria for Certification Authorities – Code Signing Baseline Requirements v2.7](#).

QuoVadis' management is responsible for its assertion and 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 Principles and Criteria for Certification Authorities - Code Signing Baseline Requirements 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 WebTrust Principles and Criteria for Certification Authorities - Code Signing Baseline Requirements v2.7 criteria, or the suitability of any of QuoVadis' services for any customer's intended purpose.

A handwritten signature in black ink that reads 'Ernst & Young LLP'.

Ernst & Young LLP

31 March 2023

Management's Assertion Regarding the Effectiveness of Its Controls Over its Code Signing Certification Authority Operations. Based on WebTrust Principles and Criteria for Certification Authorities - Code Signing Baseline Requirements v2.7

31 March 2023

The management of QuoVadis Limited (QuoVadis) has assessed the disclosure of its certificate practices and its controls over its Code Signing Certification Authority services. Based on that assessment, in QuoVadis Management's opinion, in providing its Code Signing Certification Authority services at Bermuda, the Netherlands, Switzerland, the United Kingdom, Belgium and Germany, during the period from 1 January 2022 through 31 December 2022 has:

- Disclosed its Code Signing (CS) Certificate practices and procedures in its:
 - [QuoVadis Root CA 1 / Root CA 3 Certificate Policy / Certification Practice Statement, version 4.40](#) dated 23 September 2022 and
 - [QuoVadis Root CA 2 Certification Policy/ Certification Practice Statement, version 2.19](#) dated 23 September 2022.

including its commitment to provide Code Signing Certificates in conformity with the applicable Minimum Requirements for Publicly Trusted Code Signing, and provided such services in accordance with its disclosed practices,

- Maintained effective controls to provide reasonable assurance that:
 - CS subscriber information was properly collected, authenticated (for the registration activities performed by the Certification Authority (CA), Registration Authority (RA)) and verified;
 - Its CS Signing Authority and CS Timestamp Authority are operated in conformity with CA/Browser Forum Code Signing Working Group requirements; and
 - The integrity of keys and CS certificates it manages is established and protected throughout their life cycles

for the QuoVadis Root CA, QuoVadis Root CA 1 G3, QuoVadis Root CA 2, QuoVadis Root CA 2 G3, QuoVadis Root CA 3, QuoVadis Root CA 3 G3, the issuing CAs, and Time Stamping certificates in [Appendix A](#), based on the [WebTrust Principles and Criteria for Certification Authorities – Code Signing Baseline Requirements v2.7](#).

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	SHA256 fingerprint
CN = QuoVadis Root Certification Authority OU = Root Certification Authority O = QuoVadis Limited C = BM	3ab6508b	A45EDE3BBBF09C8AE15C72EFC07268D693A21C996FD51E67CA079460FD6D8873
CN = QuoVadis Root CA 1 G3 O = QuoVadis Limited C = BM	78585f2ead2c194b e3370735341328b 596d46593	8A866FD1B276B57E578E921C65828A2BED58E9F2F288054134B7F1F4BFC9CC74
CN = QuoVadis Root CA 2 O = QuoVadis Limited C = BM	509	85A0DD7DD720ADB7FF05F83D542B209DC7FF4528F7D677B18389FEA5E5C49E86
CN = QuoVadis Root CA 2 G3 O = QuoVadis Limited C = BM	445734245b81899 b35f2ceb82b3b5ba 726f07528	8FE4FB0AF93A4D0D67DB0BEBB23E37C71BF325DCBCDD240EA04DAF58B47E1840
CN = QuoVadis Root CA 3 O = QuoVadis Limited C = BM	05c6	18F1FC7F205DF8ADDDEB7FE007DD57E3AF375A9C4D8D73546BF4F1FED1E18D35
CN = QuoVadis Root CA 3 G3 O = QuoVadis Limited C = BM	2ef59b0228a7db7a ffd5a3a9eebd03a0 cf126a1d	88EF81DE202EB018452E43F864725CEA5FBD1FC2D9D205730709C5D8B8690F46
CN = QuoVadis Code Signing CA G1 O = QuoVadis Limited C = BM	1ce6507ec1d9c0b1 6178feee058cae7a 0b142858	DA0AFAF15CD300E34B520FB78A4FA68EB42C4601E939B903E0B1D71DF5965BFF
CN = QuoVadis Enterprise Trust CA 3 G3 O = QuoVadis Limited C = BM	0c2163a44924ffb7 fcd675acdcae72 08cca95a	DA5462526A0C2E9852A86186B025390158759CDCA6AE21F09F713CA6ACDD1F1
CN = QuoVadis Enterprise Trust CA 1 G3 O = QuoVadis Limited C = BM	0ad86fa335b93ef4 8c8e3bf77d4c6314 3643adb9	0531C86F785958939FDC539924D395D1EFA409364E6827D3AB9876311FFB27B0
CN = HydrantID SSL ICA G2 O = HydrantID (Avalanche Cloud Corporation) C = US	7517167783d0437 eb556c357946e45 63b8ebd3ac	9C6D08933201407FBF2B12540B67CC0E4C9666F132E1504762A717CBAE8F3FD6

Distinguished name	Certificate Serial Number	SHA256 fingerprint
CN = QuoVadis Time-Stamping Authority CA G2 O = QuoVadis Limited C = CH	692EDA51C0FE8C3 530B3D4675BBCE 907D89A6C44	B9583D4E090E8A6B1B5FD3FD079ABAD2B1EC326E183A4B763473E2ACE04E43CD
CN = QuoVadis Time-Stamping Authority CA G1 O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	4335c24f7215311 c1098838d7a0d55 84cdbf517f	D2BA0BFEC43FA7803860CDE6B3377421B1F563EC124B51D908415B0E937323E6
Time stamping certificates		
CN = betsa01.quovadisglobal.com OU = Time-stamp Authority OU = 1.3.6.1.4.1.8024.0.2000.6.6 O = QuoVadis Trustlink BVBA 2.5.4.97 = NTRBE-0537698318 C = BE	3a09853b026439cff 2238e569f1cd82383 a4d645	ED8BDADD09356B5187920CFBDEEFFDCEDE9AD4048E6721E99C08F060B3DA506D
CN = betsa02.quovadisglobal.com OU = Time-stamp Authority OU = 1.3.6.1.4.1.8024.0.2000.6.6 O = QuoVadis Trustlink BVBA 2.5.4.97 = NTRBE-0537698318 C = BE	06ed901728ebb49fd bce957910d05dac6 1423a98	02BC927087B228EB75D793334FDE666924EA629C909E9129B6DB113EE487B867
CN = betsa03.quovadisglobal.com OU = Time-stamp Authority OU = 1.3.6.1.4.1.8024.0.2000.6.6 O = QuoVadis Trustlink BVBA 2.5.4.97 = NTRBE-0537698318 C = BE	17e2d9c5314c1ee2 ab67989a68e82696 ea4c2f4b	9EBF3643C1F8317EADC272C88AA9148D7910044E99EC68804A5D843F0B8EA532
CN = eutsa01.quovadisglobal.com OU = TSA OU = 1.3.6.1.4.1.8024.0.2000.6.7 O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	7e10a3f32bcc5c0ac c3e76875a9955a48 02b22d1	E3E7A9C95E2E0A7652D0385E6EEDB36EF9E2931996B22023BDE627BD0F546C12
CN = eutsa02.quovadisglobal.com OU = TSA OU = 1.3.6.1.4.1.8024.0.2000.6.7 O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	486f5e26b41fd2adcf cb04db2bcd224853c c7a82	49AF19DF2F4600773950315E0625C18C5608696395B331718B721AEAF99EE9F5

Distinguished name	Certificate Serial Number	SHA256 fingerprint
CN = eutsa03.quovadisglobal.com OU = TSA OU = 1.3.6.1.4.1.8024.0.2000.6.7 O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	410a765e13d5f41b3 8ced68826e0a117d 7c7912f	F388A5D051111543F04879ADC620A99B0273EA6A21265A786D8721B495B9AC08
CN = chtsa01.quovadisglobal.com OU = 1.3.6.1.4.1.8024.0.2000.6.1 OU = Qualified TSA O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	50fe57881ac830eab 3cb2f0f5142ccbab28 865c6	7663D593856C28DB39358453D90B9C1A342B15172CAD9F4F0EF87A38B7F9A880
CN = chtsa02.quovadisglobal.com OU = 1.3.6.1.4.1.8024.0.2000.6.1 OU = Qualified TSA O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	17bdf3e1d2ddf9892f 98461dd662aedba5 a21f09	9BDB4A2BEC0D2ABA31A2787451DB79D09CAD9F188252B644E8813B9B89A725DD
CN = chtsa03.quovadisglobal.com OU = 1.3.6.1.4.1.8024.0.2000.6.1 OU = Qualified TSA O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	56510dc97fbcfe5c4a 0bdd313702c1be13 e1da45	F435058C1234EB48F78D1C6C4DF3D6A6FAC5ECECEA3EC3CAC2BCD763DBB67659
CN = tsachecc1.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	33e2f3f5071828206 2f198c336ec133a04 9988f5	62C6BE5602AEB6A06E1E70DFA35826B5F5C262596E7792E68B9E217EC5715A28
CN = tsachecc2.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	7d97c440d4779244 dff693e4bc43ba8aa 0d6ca83	AB28F49C6FC4EA507DD07C54D756ED19588A14E9B919BE59DA75061E936B4620
CN = tsachecc3.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	51fdf148fd29fbe262 ebe801d84e4e89a5 ac7bf0	290F26907C5FEB19AC9D3ADCF44DFF2E0E27DDD4B04DB1E3CB0D6FE6AA852717
CN = tsachrsa1.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	170475361f3db4f8f3 091c8c426ee37e20 10648c	64821BC9D159F0DF0F7AE8BE2485E5387E6EA01C30226F08C98E5F98056E3ED5

Distinguished name	Certificate Serial Number	SHA256 fingerprint
CN = tsachrsa2.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	25150b6a8a4ace57 e1a5f1a53b9f11f645 63d6fe	DBDAFF2F6E583A4513A60B01500D049AF64C7A8AAF4AC653D2D639CE95DB36FE
CN = tsachrsa3.quovadisglobal.com O = QuoVadis Trustlink Schweiz AG 2.5.4.97 = NTRCH-CHE-112.210.349 C = CH	5a233693dcb56a2d 57d7470796816c89 a7eadf37	4729D4BFC9A38513C48136E8B207560338D1268BE1CDDF49BF7FD52178C02526
CN = tsaeuecc1.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	20b489261aeb68de c9a56372e71b050a b3dd4fa1	83E5A4E72196430D0243CF60684AD40C6C154FFD86DAC241D6DDD8554ED36523
CN = tsaeuecc2.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	4e9b17662f025cf62f 7cdccb4dc9877152 72682	074B3CC04BE176EC0D4932E24F267BF04F53E226854A959AF11C61353ADFF711
CN = tsaeuecc3.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	2a5937b37d3f8a1b5 27829ff7d8aacf9be0 3684f	30E6C69F3ECC319AE0FD9D04B814D72C65C7191479D3A64AF9B83D2448D6F6D4
CN = tsaeursa1.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	60ea45364ecd40ed a7ba6a21943727a3 c003b10b	05FAB66BE7146F0E5DA162E40DA2C8D66191769E7148932A3EAD1DD288E16E1C
CN = tsaeursa2.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	53f12573f0368e61ef 8cd168708b147c03 e1a0bd	5C10834CA06AE848018741B90F7BE0EA41372A25EBB74BB2DE9433FB0F01111B
CN = tsaeursa3.quovadisglobal.com O = QuoVadis Trustlink B.V. 2.5.4.97 = NTRNL-30237459 C = NL	23d5a821e193d342 c94a18ab12fa1ab57 a38c4ef	DCF02414CB20B04ED564C9DD998C27B81DCD0921DAD832974549CC44D5FCCF4C
CN = tsabeecc1.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	7b641d4f00359d52f 5b70929b7a350088 34c7825	EE5B7FAA1276033F133E35A99B63F1251752026D3CE5767472F59649DC995265
CN = tsabeecc2.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	443996059c0d5f7fa 9c82106204c573ff3 164184	DE653CEF417537E5B7835B5C1A98DE0F16E8E26BE882EE8B51592D038AB9DD12

Distinguished name	Certificate Serial Number	SHA256 fingerprint
CN = tsabeecc3.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	33dfaad17e34e6f28 afd3cda63cd6ba8f8 11d6d6	E1360E524D40E5CC7732C00B88D06B0A9B0737EB84B8E51E65DC22A998DC6A90
CN = tsabersa1.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	5b2ec212183fd0be6 3b052c5f6cf7ff5968c 9aa3	1C3FBCA1AE829AD6D9D7FD58A830C3451A63C120C1F0D09DF2030F4AE91DC5CE
CN = tsabersa2.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	3aeda5181a8aa9c1 524f2d914d2240bf8 650e389	BD71E88DCA4DB8E7ABFDD2D23AE3EE72F3A3103C6966C594F93367E5625CB0D4
CN = tsabersa3.quovadisglobal.com O = DigiCert Europe Belgium B.V. 2.5.4.97 = NTRBE-0537698318 C = BE	05781569dd1b3b19 b3050dfe1e3777950 15e1b4e	E11F9D8A54F1FDA688B333E4EA144B4A6036A10D0DBC5A13057F6452AB5284B6

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