INDEPENDENT ASSURANCE REPORT

To the management of eMudhra Technologies Limited ("emSign PKI"):

Scope

We have been engaged, in a reasonable assurance engagement, to report on emSign PKI management's assertion that for its Certification Authority (CA) operations at Bangalore, Karnataka, India, throughout the period 20 February 2018 to 19 September 2018 for its CA as enumerated in **Appendix A**, emSign PKI has:

- disclosed its code signing ("CS") certificate lifecycle management business practices in applicable versions of its Certification Practice Statements in **Appendix B**, including its commitment to provide CS certificates in conformity with the CA/Browser Forum Guidelines on the emSign PKI website, and provided such services in accordance with its disclosed practices;

- maintained effective controls to provide reasonable assurance that:
  - o the integrity of keys and CS certificates it manages is established and protected throughout their lifecycles; and
  - o CS subscriber information is properly authenticated (for the registration activities performed by emSign PKI);

- maintained effective controls to provide reasonable assurance that:
  - o requests for CS Signing Authoring and CS Timestamp Authority certificates are properly authenticated; and
  - o certificates issued to CS Signing Authorities and CS Timestamp Authorities are not valid for a period longer than specified by the CA/Browser Forum; and

- maintained effective controls to provide reasonable assurance that its CS Timestamp Authority is operated in conformity with CA/Browser Forum Guidelines

in accordance with the WebTrust Principles and Criteria for Certification Authorities – Publicly Trusted Code Signing Certificates v1.0.1.

Certification authority's responsibilities

emSign PKI'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 – Publicly Trusted Code Signing Certificates v1.0.1.

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.

The firm applies Canadian Standard on Quality Control 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 assertion based on our procedures. We have 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 and understanding of emSign PKI's CS certificate lifecycle management business practices, including its relevant controls over the issuance, renewal and revocation of CS certificates, CS Signing Authority and CS Timestamp Authority certificates;
2) selectively testing transactions executed in accordance with disclosed CS certificate lifecycle management 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 the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Relative effectiveness of controls

The relative effectiveness and significance of specific controls at emSign PKI 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, emSign PKI'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 system 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.

BDO

Opinion

In our opinion, throughout the period 20 February 2018 to 19 September 2018, emSign PKI 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 – Publicly Trusted Code Signing v1.0.1.

This report does not include any representation as to the quality of emSign PKI's services beyond those covered by the WebTrust Principles and Criteria for Certification Authorities – Publicly Trusted Code Signing v1.0.1, nor the suitability of any emSign PKI's services for any customer's intended purpose.

Use of WebTrust seal

emSign PKI's use of the WebTrust for Certification Authorities – Publicly Trusted Code Signing Seal constituted 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.

BDO

BDO Consulting Sdn. Bhd.

Kuala Lumpur, Malaysia

8 October 2018

BDO

Appendix A – List of Root and Subordinate CAs in Scope

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
1	**emSign Root CA - G2**	00864DBF0FE35ED77D8ED8	ED:EC:4D:45:61:18:28:E7:B3:23:28:11:1C:4D:A5:27:0D:5E:EC:F4	1A:A0:C2:70:9E:83:1B:D6:E3:B5:12:9A:00:BA:41:F7:EE:EF:02:08:72:F1:E6:50:4B:F0:F6:C3:F2:4F:3A:F3
2	emSign CS CA - G2	00C084E666596139A1FA9B	15:86:CA:B6:74:96:17:48:58:34:82:2C:CD:D2:E1:75:9E:AF:44:B7	C2:E4:D1:76:50:05:D5:CA:36:1D:40:0A:43:4B:43:03:6D:BC:93:1E:C6:D7:B9:9C:17:BE:C0:30:CC:74:CA:7D
3	**emSign ECC Root CA - G3**	3CF607A968700EDA8B84	7C:5D:02:84:13:D4:CC:8A:9B:81:CE:17:1C:2E:29:1E:9C:48:63:42	86:A1:EC:BA:08:9C:4A:8D:3B:BE:27:34:C6:12:BA:34:1D:81:3E:04:3C:F9:E8:A8:62:CD:5C:57:A3:6B:BE:6B
4	emSign ECC CS CA - G3	35CF922FB9008249F89C	E6:1A:AE:5A:79:8C:D0:28:4D:37:E0:9E:6B:C5:2D:5D:B4:6C:F8:EB	0D:68:69:A2:B4:F5:DF:77:A6:AF:B0:34:22:5E:9B:EF:34:57:43:CF:30:6E:DF:36:EE:35:B9:D0:5A:FA:D8:9C
5	**emSign Root CA - C2**	2F0AB76B0DCB4AAF2758	B3:F7:8A:A4:D6:0F:88:00:59:E8:51:17:4F:D5:7E:EC:86:22:81:9D	46:CD:08:3B:47:E8:04:02:02:8D:F4:93:96:0E:A1:9C:85:FE:85:19:50:D5:16:5F:1C:7D:A4:FA:A9:51:E2:F8
6	emSign CS CA - C2	00B4E6BA3BE4B674A36434	9A:42:64:A2:E0:62:94:95:C8:12:C3:0F:D5:7E:46:7C:41:2A:B2:2A	B0:E6:BB:9D:6E:7A:94:BC:4A:6B:89:D9:67:43:43:8D:2C:56:5D:BB:0A:69:7A:BB:21:45:7A:CA:22:A1:3C:E4
7	**emSign ECC Root CA - C3**	7B71B68256B8127C9CA8	FB:5A:48:D0:80:20:40:F2:A8:E9:00:07:69:19:77:A7:E6:C3:F4:CF	BC:4D:80:9B:15:18:9D:78:DB:3E:1D:8C:F4:F9:72:6A:79:5D:A1:64:3C:A5:F1:35:8E:1D:DB:0E:DC:0D:7E:B3
8	emSign ECC CS CA - C3	00B8973C4278609F2AF2A4	74:BF:90:17:0E:A3:70:6E:3C:53:C9:CC:01:51:2E:5B:A7:80:80:BB	A3:AF:D7:23:75:C1:D7:A8:33:0E:62:D5:77:E1:35:81:B7:23:32:C8:06:2D:FA:9C:F3:9E:51:AE:65:08:85:82

Appendix B – Certification Practice Statements in Scope

Certification Practice Statement	Begin Effective Date	End Effective Date
Version 1.01	15 February 2018	4 June 2018
Version 1.02	5 June 2018	25 June 2018
Version 1.03	26 June 2018	-

EMSIGN PKI MANAGEMENT'S ASSERTION

eMudhra Technologies Limited ("emSign PKI") operates the Certification Authority (CA) services known as enumerated in Appendix A, and provides Code Signing ("CS") CA services.
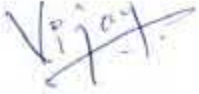
The management of emSign PKI is responsible for establishing and maintaining effective controls over its CS CA operations, including its CS CA business practices disclosure on its repository, CS key lifecycle management controls, CS certificate lifecycle management controls, CS Signing Authority and CS Timestamp Authority 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 only provide reasonable assurance with respect to emSign PKI's Certification Authority operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

emSign PKI management has assessed its disclosure of its certificate practices and controls over its CS CA services. Based on that assessment, in emSign PKI management's opinion, in providing its CS Certification Authority (CA) services at Bangalore, Karnataka, India, throughout the period 20 February 2018 to 19 September 2018, emSign PKI has:

- disclosed its code signing ("CS") certificate lifecycle management business practices in applicable versions of its Certification Practice Statements as enumerated in Appendix B, including its commitment to provide CS certificate in conformity with the CA/Browser Forum Guidelines on the emSign PKI website, and provided such services in accordance with its disclosed practices;

- maintained effective controls to provide reasonable assurance that:
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- maintained effective controls to provide reasonable assurance that:
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    - certificates issued to CS Signing Authorities and CS Timestamp Authorities are not valid for a period longer than specified by the CA/Browser Forum; and

- maintained effective controls to provide reasonable assurance that its CS Timestamp Authority is operated in conformity with CA/Browser Forum Guidelines

in accordance with the WebTrust Principles and Criteria for Certification Authorities - Publicly Trusted Code Signing v1.0.1.

Vijay Kumar M

Senior Vice President - Head of Technology

8 October 2018

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2	emSign CS CA - G2	00C084E666596139 A1FA9B	15:86:CA:B6:74:96:17 :48:58:34:82:2C:CD:D 2:E1:75:9E:AF:44:B7	C2:E4:D1:76:50:05:D5:CA:3 6:1D:40:0A:43:4B:43:03:6D :BC:93:1E:C6:D7:B9:9C:17: BE:C0:30:CC:74:CA:7D
3	emSign ECC Root CA - G3	3CF607A968700EDA 8B84	7C:5D:02:84:13:D4:C C:8A:9B:81:CE:17:1C: 2E:29:1E:9C:48:63:42	86:A1:EC:BA:08:9C:4A:8D:3 B:BE:27:34:C6:12:BA:34:1D :81:3E:04:3C:F9:E8:A8:62: CD:5C:57:A3:6B:BE:6B
4	emSign ECC CS CA - G3	35CF922FB9008249 F89C	E6:1A:AE:5A:79:8C:D 0:28:4D:37:E0:9E:6B: C5:2D:5D:B4:6C:F8:E B	0D:68:69:A2:B4:F5:DF:77:A 6:AF:B0:34:22:5E:9B:EF:34: 57:43:CF:30:6E:DF:36:EE:3 5:B9:D0:5A:FA:D8:9C
5	emSign Root CA - C2	2F0AB76B0DCB4AA F2758	B3:F7:8A:A4:D6:0F:88 :00:59:E8:51:17:4F:D 5:7E:EC:86:22:81:9D	46:CD:08:3B:47:E8:04:02:0 2:8D:F4:93:96:0E:A1:9C:85 :FE:85:19:50:D5:16:5F:1C:7 D:A4:FA:A9:51:E2:F8
6	emSign CS CA - C2	00B4E6BA3BE4B674 A36434	9A:42:64:A2:E0:62:94 :95:C8:12:C3:0F:D5:7 E:46:7C:41:2A:B2:2A	B0:E6:BB:9D:6E:7A:94:BC:4 A:6B:89:D9:67:43:43:8D:2C :56:5D:BB:0A:69:7A:BB:21: 45:7A:CA:22:A1:3C:E4
7	emSign ECC Root CA - C3	7B71B68256B8127C 9CA8	FB:5A:48:D0:80:20:40 :F2:A8:E9:00:07:69:1 9:77:A7:E6:C3:F4:CF	BC:4D:80:9B:15:18:9D:78:D B:3E:1D:8C:F4:F9:72:6A:79 :5D:A1:64:3C:A5:F1:35:8E: 1D:DB:0E:DC:0D:7E:B3
8	emSign ECC CS CA - C3	00B8973C4278609F 2AF2A4	74:BF:90:17:0E:A3:70 :6E:3C:53:C9:CC:01:5 1:2E:5B:A7:80:80:BB	A3:AF:D7:23:75:C1:D7:A8:3 3:0E:62:D5:77:E1:35:81:B7: 23:32:C8:06:2D:FA:9C:F3:9 E:51:AE:65:08:85:82

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