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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 CAs as enumerated in **Appendix A**, emSign PKI has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in applicable versions of its Certification Practice Statements in **Appendix B**;

- maintained effective controls to provide reasonable assurance that:
  - emSign PKI provides its services in accordance with applicable versions of its Certification Practice Statements as enumerated in **Appendix B**;

- 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 emSign PKI; 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 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 Principles and Criteria for Certification Authorities v2.1.

emSign PKI does not escrow its CA keys, does not provide integrated circuit card lifecycle management and certificate suspension services. Accordingly, our audit did not extend to controls that would address those criteria.

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 v2.1.

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 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 emSign PKI's key and certificate lifecycle management business practices and its control over key and certificate integrity, over the authenticity and confidentiality of subscriber and relying party information, over the continuity of key and certificate lifecycle management operations and over development, maintenance and operations of systems integrity;
2) selectively testing transactions executed in accordance with disclosed key and certificate lifecycle 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 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 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 20 February 2018 to 19 September 2018, emSign PKI's 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 v2.1

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 v2.1, nor the suitability of any of emSign PKI's services for any customer's intended purpose.

Use of the WebTrust seal

emSign PKI'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.

BDO Consulting Sdn. Bhd.

Kuala Lumpur, Malaysia

8 October 2018

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 - G1**	31F5E4620C6C58EDD6D8	FB:EF:0D:86:9E:B0:E3:DD:A9:B9:F1:21:17:7F:3E:FC:F0:77:2B:1A	40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
2	emSign SSL CA - G1	217AD58B1C713C002091	34:D1:F7:39:32:45:40:4A:99:2B:7D:89:6A:57:69:AD:95:AF:E3:37	47:B2:EF:BC:36:70:E7:DB:4B:41:F2:2C:51:FC:02:EE:84:FB:2D:BF:30:82:A4:9F:2C:26:88:12:2E:92:10:A1
3	emSign EV SSL CA - G1	626CB92B237FF82E3F50	B2:9D:CF:41:A7:E9:C3:E0:85:56:40:98:4B:F6:8F:7C:55:29:E7:7E	43:34:EE:B2:CC:11:4F:82:BE:E6:F8:A7:E5:AE:A0:3A:42:EB:2E:1F:70:CB:D6:61:02:E4:14:D7:2F:00:33:B9
4	emSign Class 1 CA - G1	00D59B7C9B36A2D44922EA	DC:60:8F:0A:DE:B1:99:84:9B:84:40:03:E3:75:03:32:03:80:00:90	CF:6D:03:33:D0:BE:2C:69:A4:2D:45:39:60:DE:E9:E1:09:D9:E8:84:3E:A3:06:1A:16:71:D6:EA:F8:5E:B7:D8
5	emSign Class 2 CA - G1	3C5BDA55C0A236A744CD	E6:DD:0D:B9:9B:D2:15:40:CF:23:08:2D:6C:19:B8:5C:68:32:52:32	63:A8:36:9D:C8:24:A4:2B:C7:AE:6E:E5:D2:6A:AF:D3:2D:F4:AF:67:7C:A1:8B:94:1B:7A:57:E3:3B:1E:35:59
6	emSign Class 3 CA - G1	00A08870825A326BED9611	5C:A5:9C:41:EF:6E:41:61:46:79:2C:DF:D8:55:45:05:D5:A7:1A:86	42:DA:1C:56:2F:80:E4:6D:A7:A3:21:24:4E:FC:23:D0:FA:A9:FE:BB:B7:AA:03:77:D9:6B:42:D9:E8:8A:B2:00
7	emSign Device CA - G1	0465835247364A904A8E	0B:93:78:E2:E0:35:07:6D:DF:86:77:8F:8C:51:8D:E3:35:7C:A9:77	4C:91:98:B6:73:55:08:58:79:9A:D2:74:4C:C0:83:C1:BA:00:27:E7:7D:3B:8F:D6:D5:6C:F5:36:20:D0:99:E2
8	**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
9	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
10	emSign EV CS CA - G2	3CA9F3D18C08E50959D5	47:95:C9:61:C0:B0:6A:44:10:2F:1A:35:DA:58:B0:96:AA:F6:4B:8E	69:E2:44:8C:5F:03:EE:DE:5E:C2:C9:07:EF:E9:6C:3D:33:AD:67:9B:49:CD:29:C3:8C:51:82:32:31:21:BE:FF

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
11	emSign Time Stamping CA - G2	00BA9E35E51ECFAC6C4740	C0:0F:C1:F7:CF:9E:26:FF:8B:71:4A:CB:EC:F6:09:9F:2E:FA:C4:A1	C3:BE:06:C6:B0:A9:23:34:42:31:80:E9:5E:A1:E6:83:AA:B9:C3:B7:D0:F5:CB:8A:4F:51:FB:C1:00:6F:3D:C0
12	**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
13	emSign ECC SSL CA - G3	72DDC7E9DCE9B0DCFFC7	13:8D:4C:28:99:E1:62:B7:D2:E0:53:E3:18:D1:62:DC:1C:CA:66:FA	6B:51:D1:DC:F4:EB:7A:EE:42:41:85:CB:1B:95:80:57:4B:39:CB:96:38:63:DE:3E:C1:AD:31:DD:B0:76:CE:9F
14	emSign ECC EV SSL CA - G3	01FE3E6C68DEBBEC263E	D1:AA:B4:D2:D2:25:82:4E:B3:F0:93:60:17:4A:9B:63:7A:F9:1F:0D	01:16:F1:7F:97:CD:EF:4A:DE:2E:63:CF:2C:1B:06:4F:D9:9F:40:4D:2B:91:41:00:BC:24:1F:07:81:85:33:23
15	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
16	emSign ECC EV CS CA - G3	23BA23AB486AE7D5C0FE	FA:5C:F7:B7:49:4D:5D:6B:F0:32:28:E1:E5:D5:AD:FA:FA:D5:BC:83	0B:AD:A9:79:B7:14:02:FE:86:06:96:03:2C:F4:0E:9D:2A:3F:41:CC:B5:D0:3B:E3:3F:BB:94:A8:0D:7F:FC:7C
17	emSign ECC Class 1 CA - G3	00FB1E21982EB1B55C5925	46:BE:80:C3:C8:27:FE:EC:9B:58:2B:1A:62:5D:B2:D5:D1:02:38:68	AB:A6:A6:5D:CE:89:55:BA:F0:68:5A:B8:88:09:B7:69:9C:17:44:96:EF:9E:E9:91:53:32:51:49:4F:43:CE:10
18	emSign ECC Class 2 CA - G3	23E1BA02DFF3E900EDDD	E0:16:FE:BD:C4:E1:65:C6:A5:99:4C:89:5E:71:8E:D4:5D:67:F1:FD	4E:9B:73:15:67:17:7E:17:76:A9:6D:66:D9:12:0B:3D:EB:28:B8:00:93:7E:A4:66:25:65:B3:EF:5E:C8:00:0B
19	emSign ECC Class 3 CA - G3	00B8EB258324DB08ACC2F5	22:62:4A:BC:7E:6D:A1:30:B7:2A:C9:95:7E:2A:23:DE:3D:27:F3:8D	70:66:A0:F4:2F:53:0E:0D:B5:AF:EE:72:A3:B0:4D:E6:14:E7:D2:30:5C:67:D1:2C:75:6B:B2:15:E3:7C:B9:75
20	emSign ECC Time stamping CA - G3	0084A863D6F61818464D34	F1:DD:23:B0:F4:F1:1D:EB:24:35:64:63:3C:10:A9:D9:54:8F:08:3F	C4:22:AB:86:C1:72:9E:88:9F:BC:AF:5C:D7:3F:21:7E:03:C2:9F:E2:AC:50:21:2F:45:13:07:D9:15:86:9F:47

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
21	emSign ECC Device CA - G3	00876282A8FD758C391EC3	A5:AC:F9:1F:5A:25:8E:10:B0:29:DA:19:00:26:86:E8:A1:E6:E8:D9	70:B9:BA:59:54:12:CF:86:14:B7:67:47:FD:68:3C:CA:27:59:F4:26:42:16:48:34:FB:EF:DD:88:50:5C:4F:1C
22	**emSign Root CA - C1**	00AECF00BAC4CF32F843B2	FE:A1:E0:70:1E:2A:03:39:52:5A:42:BE:5C:91:85:7A:18:AA:4D:B5	12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F
23	emSign SSL CA - C1	0086766B7F96DF60C46F8B	FC:C5:15:40:F1:AF:4F:13:B2:98:F2:71:0E:63:15:37:D1:94:6B:74	F9:1A:AC:A0:E4:E5:33:74:7A:08:80:BF:CF:6F:26:72:0D:C1:D0:54:94:C3:93:8D:A6:80:22:90:D5:A0:9B:32
24	emSign EV SSL CA - C1	00BADFD29B3F1E678C6960	C9:71:16:45:43:3B:16:5E:5F:46:FD:EE:35:4D:44:7B:7D:AE:75:07	F6:F1:59:28:6A:14:01:DE:53:97:E2:1A:00:90:53:4A:85:F5:E7:B9:F9:8F:D4:A5:A4:7B:1D:FF:D4:BF:DE:D4
25	emSign Class 1 CA - C1	7E065336C075C7998B63	3B:0E:EF:29:3B:11:48:29:2C:01:15:D1:8E:7B:79:69:05:7B:C9:52	0E:F7:B8:63:FA:AB:C3:84:A6:94:FF:63:2D:AA:F9:BD:31:CE:D2:3E:92:46:55:9A:59:EC:D7:47:27:54:CC:E6
26	emSign Class 2 CA - C1	1A5C82DEDCBC6A153030	26:68:C0:F3:FC:40:1C:F7:CA:12:4B:4F:92:C3:8B:14:94:48:3B:FD	05:B3:0B:3F:C4:4F:85:75:33:4B:D8:12:EF:9F:A8:A5:2A:75:74:3E:19:BC:35:A5:BE:39:12:EC:A6:2C:46:69
27	emSign Class 3 CA - C1	00B474F64D86392189496E	7B:9E:A6:C5:27:7E:64:97:AB:84:01:3A:EA:26:96:6B:92:4E:87:E1	69:B0:DD:09:B9:8F:36:A9:CC:7B:D7:FF:E8:A0:0D:CD:31:9A:5F:C9:47:C9:C8:AF:72:C9:28:94:D8:E8:10:92
28	emSign Device CA - C1	00B19BE3081E2D97B5BFCB	92:C5:7C:AD:63:20:E5:4C:23:CF:69:11:CF:A7:87:FB:81:F4:91:F8	D0:34:B1:87:51:BE:E1:0A:AA:F9:4C:2F:14:35:0D:3F:65:4E:5B:93:4D:0D:DA:59:2B:31:E5:81:87:A4:89:52
29	**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
30	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

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
31	emSign EV CS CA - C2	00AE0882F16DBA80375653	5B:9F:D5:1A:1D:04:3E:61:B6:65:17:B8:B0:E9:F5:85:F5:48:2D:17	02:49:98:10:12:10:64:4F:68:FA:E9:11:55:43:A5:E6:D2:6A:6D:B0:D2:C1:03:66:FF:2D:5B:B5:05:D8:87:2D
32	emSign Time Stamping CA - C2	63720D6AB070BF2A157D	C1:41:93:9D:9D:EF:34:CC:72:FD:D8:40:A6:1E:D6:B7:2A:43:AA:E9	57:1F:C7:06:54:AB:8C:1A:A3:B4:A2:61:A3:D5:05:FA:E1:0B:C4:55:8F:A1:7C:72:84:9B:6B:98:BC:84:5C:AE
33	**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
34	emSign ECC SSL CA - C3	5B7D9BB1FD33B9BC1D84	E3:E8:97:1E:BF:C4:3D:3A:B0:DC:F7:1D:9D:3F:5F:2C:B1:6D:EB:6C	A0:61:D4:45:39:97:14:C3:8F:C1:01:A6:E9:AF:BD:B3:81:F1:12:FA:5D:E7:D5:BC:14:90:45:58:D1:ED:32:76
35	emSign ECC EV SSL CA - C3	1B50581F7334B30B2723	48:B7:68:E8:3C:B2:E6:B1:12:44:4C:C4:D7:D3:9A:0B:6F:E9:5A:C6	C0:A5:78:F2:10:9E:6F:42:D3:D9:39:94:8D:EE:AB:72:9B:20:F7:B2:3B:42:37:AB:D8:49:4D:F5:54:CF:98:5C
36	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
37	emSign ECC EV CS CA - C3	6004C5E20B62FDD48C46	A7:6A:A4:7D:5D:0E:18:02:D1:3E:EE:04:D6:DF:21:C7:3A:23:61:9C	CB:21:09:79:92:40:20:97:03:37:AE:32:DA:5C:3F:98:1A:9E:05:71:4E:C2:2B:B1:C3:42:1F:E6:95:E5:15:7A
38	emSign ECC Class 1 CA - C3	00BD6A0796AB3F8955521E	8C:D9:9F:A0:21:35:3E:FC:B4:3A:99:6C:2E:F2:0A:29:6F:F0:EC:92	FA:D2:E9:86:49:F1:C6:06:15:0F:55:26:9E:BC:03:5A:EA:22:FF:AC:13:1D:E6:4B:A6:90:0C:75:D8:44:7B:7E
39	emSign ECC Class 2 CA - C3	00D1142766698BFCDEDA02	56:4C:89:B8:25:C8:98:EE:BD:F2:7C:62:2D:AE:69:39:3A:B6:17:2C	DB:45:91:F8:78:F6:67:2F:5B:70:73:3A:66:AD:7C:95:37:B9:7E:6F:0A:F5:CA:49:AA:B8:EC:B2:CE:02:F8:6B
40	emSign ECC Class 3 CA - C3	3D12A1CF78258D580854	F1:66:AB:96:8C:A4:0D:D2:26:62:33:2F:9A:55:09:5D:D9:E6:48:4A	5A:9A:03:F2:D3:FE:58:9B:E6:3C:DA:11:82:0A:9F:25:F0:74:C9:20:34:F5:1C:04:7D:34:22:6D:25:2E:C0:25

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
41	emSign ECC Time stamping CA - C3	00B94B49C6436 D72090201	0B:BF:47:0B:3D:65 :F5:4E:73:4C:1C:A D:1E:4E:67:52:09: 2D:26:BD	71:D2:EE:4D:DA:25:1D: 92:44:F7:CE:7C:6D:47: 8E:C5:52:D4:24:EF:71: 9F:02:B7:10:30:F2:82:1 B:6B:C8:53
42	emSign ECC Device CA - C3	00D9365F15842 A1D0689C3	04:F6:54:AF:2E:B4 :DD:A7:44:1E:CA:F 0:63:9C:24:15:43: 58:2F:CF	3D:45:11:D0:A8:0A:A9: 49:A6:D9:9B:25:3A:17: 34:71:79:7C:44:59:18:7 A:63:29:E7:36:C3:7C:B 5:49:3E:46

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'S MANAGEMENT ASSERTION

eMudhra Technologies Limited ("emSign PKI") operates the Certification Authority (CA) services known as enumerated in Appendix A, and provides the following CA services:

- Subscriber registration
- Certificate renewal
- Certificate rekey
- Certificate issuance
- Certificate distribution
- Certificate revocation
- Certificate validation
- Subscriber key generation and management

The management of emSign PKI is responsible for establishing and maintaining effective controls over its CA operations, including its CA business practices disclosure in its 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 mechanism, 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 disclosures of its certificate practices and controls over its CA services. Based on that assessment, in emSign PKI management's opinion, in providing its Certification Authority (CA) services at Bangalore, Karnataka, India throughout the period 20 February 2018 to 19 September 2018, emSign PKI has:

- disclosed its business, key lifecycle management, certificate lifecycle management, and CA environmental control practices in its applicable Certification Practice Statements as enumerated in Appendix B;

- maintained effective controls to provide reasonable assurance that:
  - emSign PKI provides its services in accordance with its applicable Certification Practice Statements as enumerated in Appendix B;

- 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 emSign PKI; and
  - subordinate CA certificate requests are accurate, authenticated, and approved; and

- 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 authorized and performed to maintain CA systems integrity

in accordance with the WebTrust Principles and Criteria for Certification Authorities v2.1, including the following:

CA Business Practices Disclosure

- Certificate Policy and Certification Practice Statement (CP/CPS)

CA Business Practices Management

- CP/CPS Management

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

CA Key Lifecycle 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 Lifecycle Management

Subscriber Key Lifecycle Management Controls

- CA-Provided Subscriber Key Generation Services
- CA-Provided Subscriber Key Storage and Recovery Services
- Requirements for Subscriber Key Management

Certificate Lifecycle Management Controls

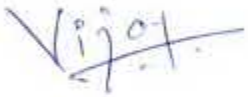
- Subscriber Registration

- Certificate Renewal
- Certificate Rekey
- Certificate Issuance
- Certificate Distribution
- Certificate Revocation
- Certificate Validation

Subordinate CA Certificate Lifecycle Management Controls

- Subordinate CA Certificate Lifecycle Management

emSign PKI does not escrow its CA keys, does not provide integrated circuit card lifecycle management and certificate suspension services. Accordingly, our assertion does not extend to controls that would address those criteria.



Vijay Kumar M

Senior Vice President - Head of Technology

8 October 2018

emudhra Technologies

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 - G1**	31F5E4620C6C58EDD6D8	FB:EF:0D:86:9E:B0:E3:DD:A9:B9:F1:21:17:7F:3E:FC:F0:77:2B:1A	40:F6:AF:03:46:A9:9A:A1:CD:1D:55:5A:4E:9C:CE:62:C7:F9:63:46:03:EE:40:66:15:83:3D:C8:C8:D0:03:67
2	emSign SSL CA - G1	217AD58B1C713C002091	34:D1:F7:39:32:45:40:4A:99:2B:7D:89:6A:57:69:AD:95:AF:E3:37	47:B2:EF:BC:36:70:E7:DB:4B:41:F2:2C:51:FC:02:EE:84:FB:2D:BF:30:82:A4:9F:2C:26:88:12:2E:92:10:A1
3	emSign EV SSL CA - G1	626CB92B237FF82E3F50	B2:9D:CF:41:A7:E9:C3:E0:85:56:40:98:4B:F6:8F:7C:55:29:E7:7E	43:34:EE:B2:CC:11:4F:82:BE:E6:F8:A7:E5:AE:A0:3A:42:EB:2E:1F:70:CB:D6:61:02:E4:14:D7:2F:00:33:B9
4	emSign Class 1 CA - G1	00D59B7C9B36A2D44922EA	DC:60:8F:0A:DE:B1:99:84:9B:84:40:03:E3:75:03:32:03:80:00:90	CF:6D:03:33:D0:BE:2C:69:A4:2D:45:39:60:DE:E9:E1:09:D9:E8:84:3E:A3:06:1A:16:71:D6:EA:F8:5E:B7:D8
5	emSign Class 2 CA - G1	3C5BDA55C0A236A744CD	E6:DD:0D:B9:9B:D2:15:40:CF:23:08:2D:6C:19:B8:5C:68:32:52:32	63:A8:36:9D:C8:24:A4:2B:C7:AE:6E:E5:D2:6A:AF:D3:2D:F4:AF:67:7C:A1:8B:94:1B:7A:57:E3:3B:1E:35:59
6	emSign Class 3 CA - G1	00A08870825A326BED9611	5C:A5:9C:41:EF:6E:41:61:46:79:2C:DF:D8:55:45:05:D5:A7:1A:86	42:DA:1C:56:2F:80:E4:6D:A7:A3:21:24:4E:FC:23:D0:FA:A9:FE:BB:B7:AA:03:77:D9:6B:42:D9:E8:8A:B2:00
7	emSign Device CA - G1	0465835247364A904A8E	0B:93:78:E2:E0:35:07:6D:DF:86:77:8F:8C:51:8D:E3:35:7C:A9:77	4C:91:98:B6:73:55:08:58:79:9A:D2:74:4C:C0:83:C1:BA:00:27:E7:7D:3B:8F:D6:D5:6C:F5:36:20:D0:99:E2
8	**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
9	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
10	emSign EV CS CA - G2	3CA9F3D18C08E50959D5	47:95:C9:61:C0:B0:6A:44:10:2F:1A:3	69:E2:44:8C:5F:03:EE:DE:5E:C2:C9:07:EF:E9:

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
			5:DA:58:B0:96:AA:F6:4B:8E	6C:3D:33:AD:67:9B:49:CD:29:C3:8C:51:82:32:31:21:BE:FF
11	emSign Time Stamping CA - G2	00BA9E35E51ECFAC6C4740	C0:0F:C1:F7:CF:9E:26:FF:8B:71:4A:CB:EC:F6:09:9F:2E:FA:C4:A1	C3:BE:06:C6:B0:A9:23:34:42:31:80:E9:5E:A1:E6:83:AA:B9:C3:B7:D0:F5:CB:8A:4F:51:FB:C1:00:6F:3D:C0
12	**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
13	emSign ECC SSL CA - G3	72DDC7E9DCE9B0DCFFC7	13:8D:4C:28:99:E1:62:B7:D2:E0:53:E3:18:D1:62:DC:1C:CA:66:FA	6B:51:D1:DC:F4:EB:7A:EE:42:41:85:CB:1B:95:80:57:4B:39:CB:96:38:63:DE:3E:C1:AD:31:DD:B0:76:CE:9F
14	emSign ECC EV SSL CA - G3	01FE3E6C68DEBBEC263E	D1:AA:B4:D2:D2:25:82:4E:B3:F0:93:60:17:4A:9B:63:7A:F9:1F:0D	01:16:F1:7F:97:CD:EF:4A:DE:2E:63:CF:2C:1B:06:4F:D9:9F:40:4D:2B:91:41:00:BC:24:1F:07:81:85:33:23
15	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
16	emSign ECC EV CS CA - G3	23BA23AB486AE7D5C0FE	FA:5C:F7:B7:49:4D:5D:6B:F0:32:28:E1:E5:D5:AD:FA:FA:D5:BC:83	0B:AD:A9:79:B7:14:02:FE:86:06:96:03:2C:F4:0E:9D:2A:3F:41:CC:B5:D0:3B:E3:3F:BB:94:A8:0D:7F:FC:7C
17	emSign ECC Class 1 CA - G3	00FB1E21982EB1B55C5925	46:BE:80:C3:C8:27:FE:EC:9B:58:2B:1A:62:5D:B2:D5:D1:02:38:68	AB:A6:A6:5D:CE:89:55:BA:F0:68:5A:B8:88:09:B7:69:9C:17:44:96:EF:9E:E9:91:53:32:51:49:4F:43:CE:10
18	emSign ECC Class 2 CA - G3	23E1BA02DFF3E900EDDD	E0:16:FE:BD:C4:E1:65:C6:A5:99:4C:89:5E:71:8E:D4:5D:67:F1:FD	4E:9B:73:15:67:17:7E:17:76:A9:6D:66:D9:12:0B:3D:EB:28:B8:00:93:7E:A4:66:25:65:B3:EF:5E:C8:00:0B
19	emSign ECC Class 3 CA - G3	00B8EB258324DB08ACC2F5	22:62:4A:BC:7E:6D:A1:30:B7:2A:C9:95:7E:2A:23:DE:3D:27:F3:8D	70:66:A0:F4:2F:53:0E:0D:B5:AF:EE:72:A3:B0:4D:E6:14:E7:D2:30:5C:67:D1:2C:75:6B:B2:15:E3:7C:B9:75

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
20	emSign ECC Time stamping CA - G3	0084A863D6F61818464D34	F1:DD:23:B0:F4:F1:1D:EB:24:35:64:63:3C:10:A9:D9:54:8F:08:3F	C4:22:AB:86:C1:72:9E:88:9F:BC:AF:5C:D7:3F:21:7E:03:C2:9F:E2:AC:50:21:2F:45:13:07:D9:15:86:9F:47
21	emSign ECC Device CA - G3	00876282A8FD758C391EC3	A5:AC:F9:1F:5A:25:8E:10:B0:29:DA:19:00:26:86:E8:A1:E6:E8:D9	70:B9:BA:59:54:12:CF:86:14:B7:67:47:FD:68:3C:CA:27:59:F4:26:42:16:48:34:FB:EF:DD:88:50:5C:4F:1C
22	**emSign Root CA - C1**	00AECF00BAC4CF32F843B2	FE:A1:E0:70:1E:2A:03:39:52:5A:42:BE:5C:91:85:7A:18:AA:4D:B5	12:56:09:AA:30:1D:A0:A2:49:B9:7A:82:39:CB:6A:34:21:6F:44:DC:AC:9F:39:54:B1:42:92:F2:E8:C8:60:8F
23	emSign SSL CA - C1	0086766B7F96DF60C46F8B	FC:C5:15:40:F1:AF:4F:13:B2:98:F2:71:0E:63:15:37:D1:94:6B:74	F9:1A:AC:A0:E4:E5:33:74:7A:08:80:BF:CF:6F:26:72:0D:C1:D0:54:94:C3:93:8D:A6:80:22:90:D5:A0:9B:32
24	emSign EV SSL CA - C1	00BADFD29B3F1E678C6960	C9:71:16:45:43:3B:16:5E:5F:46:FD:EE:35:4D:44:7B:7D:AE:75:07	F6:F1:59:28:6A:14:01:DE:53:97:E2:1A:00:90:53:4A:85:F5:E7:B9:F9:8F:D4:A5:A4:7B:1D:FF:D4:BF:DE:D4
25	emSign Class 1 CA - C1	7E065336C075C7998B63	3B:0E:EF:29:3B:11:48:29:2C:01:15:D1:8E:7B:79:69:05:7B:C9:52	0E:F7:B8:63:FA:AB:C3:84:A6:94:FF:63:2D:AA:F9:BD:31:CE:D2:3E:92:46:55:9A:59:EC:D7:47:27:54:CC:E6
26	emSign Class 2 CA - C1	1A5C82DEDCBC6A153030	26:68:C0:F3:FC:40:1C:F7:CA:12:4B:4F:92:C3:8B:14:94:48:3B:FD	05:B3:0B:3F:C4:4F:85:75:33:4B:D8:12:EF:9F:A8:A5:2A:75:74:3E:19:BC:35:A5:BE:39:12:EC:A6:2C:46:69
27	emSign Class 3 CA - C1	00B474F64D86392189496E	7B:9E:A6:C5:27:7E:64:97:AB:84:01:3A:EA:26:96:6B:92:4E:87:E1	69:B0:DD:09:B9:8F:36:A9:CC:7B:D7:FF:E8:A0:0D:CD:31:9A:5F:C9:47:C9:C8:AF:72:C9:28:94:D8:E8:10:92
28	emSign Device CA - C1	00B19BE3081E2D97B5BFCB	92:C5:7C:AD:63:20:E5:4C:23:CF:69:11:CF:A7:87:FB:81:F4:91:F8	D0:34:B1:87:51:BE:E1:0A:AA:F9:4C:2F:14:35:0D:3F:65:4E:5B:93:4D:0D:DA:59:2B:31:E5:81:87:A4:89:52
29	**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:

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
				D5:16:5F:1C:7D:A4:FA:A9:51:E2:F8
30	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
31	emSign EV CS CA - C2	00AE0882F16DBA80375653	5B:9F:D5:1A:1D:04:3E:61:B6:65:17:B8:B0:E9:F5:85:F5:48:2D:17	02:49:98:10:12:10:64:4F:68:FA:E9:11:55:43:A5:E6:D2:6A:6D:B0:D2:C1:03:66:FF:2D:5B:B5:05:D8:87:2D
32	emSign Time Stamping CA - C2	63720D6AB070BF2A157D	C1:41:93:9D:9D:EF:34:CC:72:FD:D8:40:A6:1E:D6:B7:2A:43:AA:E9	57:1F:C7:06:54:AB:8C:1A:A3:B4:A2:61:A3:D5:05:FA:E1:0B:C4:55:8F:A1:7C:72:84:9B:6B:98:BC:84:5C:AE
33	**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
34	emSign ECC SSL CA - C3	5B7D9BB1FD33B9BC1D84	E3:E8:97:1E:BF:C4:3D:3A:B0:DC:F7:1D:9D:3F:5F:2C:B1:6D:EB:6C	A0:61:D4:45:39:97:14:C3:8F:C1:01:A6:E9:AF:BD:B3:81:F1:12:FA:5D:E7:D5:BC:14:90:45:58:D1:ED:32:76
35	emSign ECC EV SSL CA - C3	1B50581F7334B30B2723	48:B7:68:E8:3C:B2:E6:B1:12:44:4C:C4:D7:D3:9A:0B:6F:E9:5A:C6	C0:A5:78:F2:10:9E:6F:42:D3:D9:39:94:8D:EE:AB:72:9B:20:F7:B2:3B:42:37:AB:D8:49:4D:F5:54:CF:98:5C
36	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
37	emSign ECC EV CS CA - C3	6004C5E20B62FDD48C46	A7:6A:A4:7D:5D:0E:18:02:D1:3E:EE:04:D6:DF:21:C7:3A:23:61:9C	CB:21:09:79:92:40:20:97:03:37:AE:32:DA:5C:3F:98:1A:9E:05:71:4E:C2:2B:B1:C3:42:1F:E6:95:E5:15:7A
38	emSign ECC Class 1 CA - C3	00BD6A0796AB3F8955521E	8C:D9:9F:A0:21:35:3E:FC:B4:3A:99:6C:2E:F2:0A:29:6F:F0:EC:92	FA:D2:E9:86:49:F1:C6:06:15:0F:55:26:9E:BC:03:5A:EA:22:FF:AC:13:1D:E6:4B:A6:90:0C:75:D8:44:7B:7E
39	emSign ECC Class 2 CA - C3	00D1142766698BFCDEDA02	56:4C:89:B8:25:C8:98:EE:BD:F2:7C:6	DB:45:91:F8:78:F6:67:2F:5B:70:73:3A:66:AD:7

No	Common Name	Certificate Serial No	Subject Key Identifier	SHA-256 Fingerprint
			2:2D:AE:69:39:3A:B6:17:2C	C:95:37:B9:7E:6F:0A:F5:CA:49:AA:B8:EC:B2:CE:02:F8:6B
40	emSign ECC Class 3 CA - C3	3D12A1CF78258D580854	F1:66:AB:96:8C:A4:0D:D2:26:62:33:2F:9A:55:09:5D:D9:E6:48:4A	5A:9A:03:F2:D3:FE:58:9B:E6:3C:DA:11:82:0A:9F:25:F0:74:C9:20:34:F5:1C:04:7D:34:22:6D:25:2E:C0:25
41	emSign ECC Time stamping CA - C3	00B94B49C6436D72090201	0B:BF:47:0B:3D:65:F5:4E:73:4C:1C:AD:1E:4E:67:52:09:2D:26:BD	71:D2:EE:4D:DA:25:1D:92:44:F7:CE:7C:6D:47:8E:C5:52:D4:24:EF:71:9F:02:B7:10:30:F2:82:1B:6B:C8:53
42	emSign ECC Device CA - C3	00D9365F15842A1D0689C3	04:F6:54:AF:2E:B4:DD:A7:44:1E:CA:F0:63:9C:24:15:43:58:2F:CF	3D:45:11:D0:A8:0A:A9:49:A6:D9:9B:25:3A:17:34:71:79:7C:44:59:18:7A:63:29:E7:36:C3:7C:B5:49:3E:46

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	-