DarkMatter MANAGEMENT’S ASSERTION as to
its Disclosure of its Business Practices and its Controls
over its Certification Authority Operations
during the period from 8 June 2017 to 19 October 2017

27 October 2017

DarkMatter LLC, a company under the United Arabic Emirates law, (hereafter: DarkMatter), provides the following Certification Authority (CA) services:

- Subscriber registration
- Certificate renewal
- Certificate rekey
- Certificate issuance
- Certificate distribution
- Certificate revocation
- Certificate validation

Its infrastructure consists of the following entities:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4, and
- DarkMatter Audit CA.

The management of DarkMatter is responsible for establishing and maintaining effective controls over its CA operations, including its CA business practices disclosure on its website, 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 DarkMatter’ Certification Authority operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

The management of DarkMatter has assessed its disclosure of its certificate practices and controls over its CA services. Based on that assessment, in DarkMatter management’s opinion, in providing its Certification Authority (CA) services in Abu Dhabi and Dubai, United Arabic Emirates, throughout the period 8 June 2017 to 19 October 2017, DarkMatter has:
Disclosed its business, key lifecycle management, certificate lifecycle management and CA environmental control practices in its Certification Practice Statement, version 1.5, dated June 2017 on the website of DarkMatter at https://ca.darkmatter.ae/CPS/index.html, and

- maintained effective controls to provide reasonable assurance that:
  - DarkMatter’s Certification Practice Statement is consistent with its Certificate Policy.

- 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 DarkMatter); 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.

based on the WebTrust® Principles and Criteria for Certification Authorities, version 2.0 – March 2011 including the following:

**CA BUSINESS PRACTICES DISCLOSURE**

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

**CA BUSINESS PRACTICES MANAGEMENT**

- Certificate Policy Management
- Certification Practice Statement Management
- CP and CPS Consistency
CA ENVIRONMENTAL CONTROLS

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

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
- CA Key Escrow (if applicable)

SUBSCRIBER KEY LIFE CYCLE MANAGEMENT CONTROLS

- CA-Provided Subscriber Key Generation Services
- CA-Provided Subscriber Key Storage and Recovery Services
- Requirements for Subscriber Key Management
CERTIFICATE LIFE CYCLE MANAGEMENT CONTROLS

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

SUBORDINATE CA CERTIFICATE LIFE CYCLE MANAGEMENT CONTROLS

Subordinate CA Certificate Life Cycle Management

For approval:

Scott Rea
SVP – Public Key Infrastructure,
DarkMatter LLC
Independent Accountant’s Report

Amstelveen, 27 October 2017

To the management of DarkMatter LLC:

We have examined the assertion by the management of DarkMatter LLC (hereafter called: DarkMatter) that for its Certification Authority (CA) operations in the United Arabic Emirates, throughout the period 8 June 2017 to 19 October 2017 for its infrastructure consisting of the following entities:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4
- DarkMatter Audit CA

DarkMatter has:

- disclosed its business, key lifecycle management, certificate life cycle management and CA environment control practices in its Certificate Practice Statement v1.5 of June 2017 on https://ca.darkmatter.ae/CPS/index.html
- maintained effective controls to provide reasonable assurance that:
  - DarkMatter’s Certification Practice Statement is consistent with its Certificate Policy
  - DarkMatter provides its services in accordance with its Certificate Policy and 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 DarkMatter); 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 based on the WebTrust Principles and Criteria for Certification Authorities version 2.0.

The management of DarkMatter is responsible for its assertion. 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 American Institute of Certified Public Accountants and, accordingly, included:

- obtaining an understanding of DarkMatter’s key and certificate life cycle management business 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 lifecycle management operations and over development, maintenance and operation of systems integrity;
- selectively testing transactions executed in accordance with disclosed key and certificate lifecycle management business practices;
- testing and evaluating the operating effectiveness of the controls; and
- performing such other procedures as we considered necessary in the circumstances.

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

The relative effectiveness and significance of specific controls at DarkMatter 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.

Because of the nature and inherent limitations of controls, DarkMatter’s ability to meet the aforementioned criteria may be affected. For example, 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. 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.

In our opinion, throughout the period 8 June 2017 to 19 October 2017, DarkMatter management’s assertion, as referred to above, is fairly stated, in all material respects, based on the WebTrust Principles and Criteria for Certification Authorities version 2.0.

This report does not include any representation as to the quality of DarkMatter’ services beyond those covered by the WebTrust for Certification Authorities.
Criteria, or the suitability of any of DarkMatter’s services for any customer’s intended purpose.

DarkMatter’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.

On behalf of KPMG Advisory N.V.
Amstelveen, 27 October 2017

drs. ing. R.F. Koorn RE CISA
Partner
DarkMatter MANAGEMENT’S ASSERTION as to
its Disclosure of its Business Practices and its Controls
over its Certification Authority Operations
during the period from 8 June 2017 to 19 October 2017

27 October 2017

DarkMatter LLC, a company under the United Arabic Emirates law, (hereafter: DarkMatter), provides its SSL Certification Authority (CA) services through its PKI infrastructure consisting of:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4, and
- DarkMatter Audit CA.

The management of DarkMatter is responsible for establishing and maintaining effective controls over its SSL CA operations, including its network and certificate security system controls, its SSL CA business practices disclosure on its website, SSL key lifecycle management controls, and SSL 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 DarkMatter’s CA operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

The management of DarkMatter has assessed the design of controls over its SSL-CA Services as scoped above. Based on that assessment, in DarkMatter management’s opinion, in providing its SSL-CA services throughout the period 8 June 2017 to 19 October 2017, DarkMatter has:

- Disclosed its Certificate practices and procedures in its Certification Practice Statement, version 1.5, dated June 2017, including its commitment to provide SSL Certificates in conformity with the applicable CA/Browser Forum Guidelines on https://ca.darkmatter.ae/CPS/index.html, and provided such services in accordance with its disclosed practices

- maintained effective controls to provide reasonable assurance that
  - the integrity of keys and SSL certificates it manages is established and protected throughout their life cycles; and
SSL subscriber information is properly collected, authenticated (for the registration activities performed by DarkMatter) 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.

- maintained effective controls to provide reasonable assurance that it meets the Network and Certificate System Security Requirements as set forth by the CA/Browser Forum.

in accordance with the WebTrust® Principles and Criteria for Certification Authorities – SSL Baseline Requirements with Network Security – Version 2.2, including the following:

- **CA BUSINESS PRACTICES DISCLOSURE**
- **CA SERVICE INTEGRITY**
  - Key Generation Ceremony
  - Certificate Content And Profile
  - Certificate Request Requirements
  - Verification Practices
  - Certificate Revocation And Status Checking
  - Employee And Third Parties
  - Data Records
  - Audit

- **CA ENVIRONMENTAL SECURITY**

For approval:

Scott Rea
SVP – Public Key Infrastructure,
DarkMatter LLC
Independent Accountant’s Report

Amstelveen, 27 October 2017

To the management of DarkMatter LLC:

We have examined the assertion by the management of DarkMatter LLC (hereafter called: DarkMatter) that for its Certification Authority (CA) operations in the United Arabic Emirates, throughout the period 8 June 2017 to 19 October 2017 for its infrastructure consisting of the following entities:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4
- DarkMatter Audit CA

DarkMatter has:

- disclosed its SSL certificate lifecycle management business practices in its Certificate Practice Statement v1.5 of June 2017, including its commitment to provide SSL certificates in conformity with the CA/Browser Forum Guidelines on [https://ca.darkmatter.ae/CPS/index.html](https://ca.darkmatter.ae/CPS/index.html)
- maintained effective controls to provide reasonable assurance that:
  - the integrity of keys and SSL certificates it manages is established and protected throughout their lifecycles; and
  - SSL subscriber information is properly authenticated (for the registration activities performed by DarkMatter)
- 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
- maintained effective controls to provide reasonable assurance that it meets the Network and Certificate System Security Requirements as set forth by the CA/Browser Forum based on the WebTrust Principles and Criteria for Certification Authorities – SSL Baseline with Network Security v2.2.

The management of DarkMatter is responsible for its assertion. 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 American Institute of Certified Public Accountants and, accordingly, included:

- obtaining an understanding of DarkMatter’s SSL certificate life cycle management practices, including its relevant controls over the issuance, renewal and revocation of SSL certificates and obtaining an understanding of DarkMatter’s network and certificate system security to meet the requirements set forth by the CA/Browser Forum;
- selectively testing transactions executed in accordance with disclosed SSL certificate lifecycle management practices;
- testing and evaluating the operating effectiveness of the controls; and
- performing such other procedures as we considered necessary in the circumstances.

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

The relative effectiveness and significance of specific controls at DarkMatter 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.

Because of the nature and inherent limitations of controls, DarkMatter’s ability to meet the aforementioned criteria may be affected. For example, 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. 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.

In our opinion, throughout the period 8 June 2017 to 19 October 2017, DarkMatter management’s assertion, as referred to above, is fairly stated, in all material respects, based on the WebTrust Principles and Criteria for Certification Authorities – SSL Baseline with Network Security (version 2.2).

This report does not include any representation as to the quality of DarkMatter’ services beyond those covered by the WebTrust for Certification Authorities – SSL Baseline with Network Security Criteria, or the suitability of any of DarkMatter’ services for any customer’s intended purpose.

DarkMatter’s use of the WebTrust for Certification Authorities – SSL Baseline with Network Security 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.
On behalf of KPMG Advisory N.V.
Amstelveen, 27 October 2017

drs. ing. R.F. Koorn RE CISA
Partner
DarkMatter MANAGEMENT’S ASSERTION as to
its Disclosure of its Business Practices and its Controls
over its Extended Validation Certification Authority Operations
during the period from 8 June 2017 to 19 October 2017

27 October 2017

DarkMatter LLC, a company under the United Arabic Emirates law, (hereafter: DarkMatter), provides Extended Validation Certification Authority (EV-CA) services through its PKI infrastructure, consisting of:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4, and
- DarkMatter Audit CA.

The management of DarkMatter is responsible for establishing and maintaining effective controls over its EV SSL CA operations, including its EV SSL CA business practices disclosure on its website, EV SSL key lifecycle management controls, and EV SSL 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 DarkMatter’s EV-CA operations. Furthermore, because of changes in conditions, the effectiveness of controls may vary over time.

The management of DarkMatter has assessed its disclosures of its certificate practices and controls over its EV SSL CA services. Based on that assessment, in DarkMatter management’s opinion, in providing its EV SSL CA services at Abu Dhabi and Dubai, United Arabic Emirates, throughout the period 8 June 2017 to 19 October 2017, DarkMatter has:

- Disclosed its extended validation SSL (“EV SSL”) Certificate life cycle management practices in its certificate practice statement, version 1.5, dated June 2017, including its commitment to provide EV SSL certificates in conformity with the CA/Browser Forum Guidelines on https://ca.darkmatter.ae/CPS/index.html, and provided such services in accordance with its disclosed practices
- maintained effective controls to provide reasonable assurance that:
The integrity of keys and EV certificates it manages is established and protected throughout their life cycles; and

EV SSL subscriber information is properly collected, authenticated (for the registration activities performed by DarkMatter) and verified

generated on the AICPA/CICA WebTrust for Certification Authorities Extended Validation SSL Audit Criteria (version 1.6), including the following:

- CA Business Practices Disclosure
- Service Integrity
  - EV Certificate Content and Profile
  - EV Certificate Request Requirements
  - Information Verification Requirements
  - Certificate Status Checking and Revocation
  - Employee and Third Party Issues
  - Data and Record Issues

For approval:

Scott Rea
SVP – Public Key Infrastructure,
DarkMatter LLC
Independent Accountant’s Report

Amstelveen, 27 October 2017

To the management of DarkMatter LLC:

We have examined the assertion by the management of DarkMatter LLC (hereafter called: DarkMatter) that for its Certification Authority (CA) operations in the United Arabic Emirates, throughout the period 8 June 2017 to 19 October 2017 for its infrastructure consisting of the following entities:

- UAE Global Root CA G3
- UAE Global Root CA G4
- DarkMatter Root CA G3
- DarkMatter Root CA G4
- DarkMatter Audit CA

DarkMatter has:

- disclosed its extended validation SSL (“EV SSL”) certificate lifecycle management business practices in its Certificate Practice Statement v1.5 of June 2017, including its commitment to provide EV SSL certificates in conformity with the CA/Browser Forum Guidelines on https://ca.darkmatter.ae/CPS/index.html, 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 is established and protected throughout their lifecycles; and
  - EV SSL subscriber information is properly authenticated (for the registration activities performed by DarkMatter)

based on the AICPA/CICA WebTrust for Certification Authorities - Extended Validation Audit Criteria (version 1.6).

The management of DarkMatter is responsible for its assertion. 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 American Institute of Certified Public Accountants and, accordingly, included:

- obtaining an understanding of DarkMatter’s EV SSL certificate life cycle management practices, including its relevant controls over the issuance, renewal and revocation of EV SSL certificates;
DarkMatter LLC
Independent Accountant’s Report

- selectively testing transactions executed in accordance with disclosed EV SSL certificate lifecycle management practices;
- testing and evaluating the operating effectiveness of the controls; and
- performing such other procedures as we considered necessary in the circumstances.

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

The relative effectiveness and significance of specific controls at DarkMatter CA 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.

Because of the nature and inherent limitations of controls, DarkMatter’s ability to meet the aforementioned criteria may be affected. For example, 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. 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.

In our opinion, throughout the period 8 June 2017 to 19 October 2017, DarkMatter management’s assertion, as referred to above, is fairly stated, in all material respects, based on the WebTrust for Certification Authorities - Extended Validation Criteria (version 1.6).

This report does not include any representation as to the quality of DarkMatter’ services beyond those covered by the WebTrust for Certification Authorities - Extended Validation Criteria, or the suitability of any of DarkMatter’ services for any customer’s intended purpose.

DarkMatter’s 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.

On behalf of KPMG Advisory N.V.
Amstelvene, 27 October 2017

drs. ing. R.F. Koorn RE CISA
Partner