QuoVadis Root CA 1 G3

QuoVadis Root CA 3 / QuoVadis Root CA 3 G3

Certificate Policy/ Certification Practice Statement

OIDs:	1.3.6.1.4.1.8024.0.1
	1.3.6.1.4.1.8024.0.3
Effective Date:	September 24, 2021
Version:	4.35

Important Note About this Document

This document is the Certificate Policy/Certification Practice Statement (CP/CPS) of QuoVadis Limited (QuoVadis), a company of DigiCert, Inc. It contains an overview of the practices and procedures that QuoVadis employs as a Certification Authority (CA). This document is not intended to create contractual relationships between QuoVadis Limited and any other person. Any person seeking to rely on Certificates or participate within the QuoVadis Public Key Infrastructure (QuoVadis PKI) must do so pursuant to a definitive contractual document. This document is intended for use only in connection with QuoVadis and its business.

This version of the CP/CPS has been approved for use by the QuoVadis Policy Management Authority (PMA) and is subject to amendment and change in accordance with the policies and guidelines adopted, from time to time, by the PMA and as otherwise set out herein. The date on which this version of the CP/CPS becomes effective is indicated on this CP/CPS. The most recent effective copy of this CP/CPS supersedes all previous versions. No provision is made for different versions of this CP/CPS to remain in effect at the same time.

This document covers aspects of the QuoVadis PKI that relate to all CAs established by QuoVadis under QuoVadis Root CA 1 G3, QuoVadis Root CA 3, and QuoVadis Root CA 3 G3. QuoVadis Root CA 2 and QuoVadis Root CA 2 G3, and QuoVadis services for PKIoverheid operate under separate CP/CPS documents.

There are a number of instances where the legal and regulatory frameworks for Qualified Certificates under the Swiss, Dutch or EU Digital Signature regimes impose additional requirements. In these instances, this Document shows these differences either by indicating in the body of the text "For Qualified Certificates" or with the inclusion of a Text Box as shown below.

Provision relating to Qualified Certificates issued in accordance with Swiss regulations.

Provision relating to Qualified Certificates issued in accordance with Regulation (EU) No. 910/2014 on electronic identification and trust services for electronic transactions in the internal market (the eIDAS Regulation).

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Version Control

Approved by	Date	Version	Comment
QuoVadis PMA	28 February 2002	2.05	ETA Revisions
QuoVadis PMA	01 August 2003	2.06	WebTrust Revisions
QuoVadis PMA	01 April 2004	2.07	WebTrust Revisions
QuoVadis PMA	11 November 2005	2.08	WebTrust Revisions
QuoVadis PMA	17 April 2006	4.00	Cumulative ZertES Revisions
QuoVadis PMA	14 September 2006	4.1	EIDI-V Certificate Requirements
QuoVadis PMA	26 February 2007	4.2	QuoVadis Root CA 3 Added
QuoVadis PMA	03 April 2007	4.3	Clarifications to Appendix A
QuoVadis PMA	29 October 2007	4.4	General Edits and RFC3647 Conformity, cumulative ZertES and ElDI-V Revisions
QuoVadis PMA	27 May 2008	4.5	Addition for QV EU Qualified ICA and ETSI conformance
QuoVadis PMA	20 April 2009	4.6	Additions for Grid Certificates
QuoVadis PMA	22 April 2010	4.7	Updates to QuoVadis Certificate Classes and Appendix A. Includes SuisseID Certificates.
QuoVadis PMA	16 November 2010	4.8	Certificate loss limits for SuisseID IAC Certificates
QuoVadis PMA	1 March 2012	4.9	Addition of restrictions for use of Issuing CAs for Man in the Middle (MITM) purposes
QuoVadis PMA	12 July 2012	4.10	Amendments reflecting requirements for Approved Client Issuing CAs and the CA/B Forum Baseline Requirements (BR)
QuoVadis PMA	31 January 2013	4.11	Updates for SHA256 Roots
QuoVadis PMA	22 May 2013	4.12	Addition of 'QCP Public' Policy
QuoVadis PMA	12 October 2013	4.13	Updates to Device Certificate Section and Grid Server Profile in Appendix A
QuoVadis PMA	11 March 2014	4.14	Updates to Device Certificate Section and physical controls Section
QuoVadis PMA	27 May 2014	4.15	Updates to links to QuoVadis Website and archive periods
QuoVadis PMA	4 August 2014	4.16	Updates for Belgium accreditation. Minor clarifications to Grid Certificate Profile tables
QuoVadis PMA	15 April 2015	4.17	Updates to CAA policy
QuoVadis PMA	2 December 2015	4.18	Updates relating to Swiss Qualified Certificates

QuoVadis PMA	2 August 2016	4.19	Updates for Regulation (EU) No. 910/2014 (the eIDAS Regulation)
QuoVadis PMA	8 May 2017	4.20	Updates for the eIDAS Regulation; includes Legal Person Certificates. Updates for Code Signing Minimum Requirements
QuoVadis PMA	6 September 2017	4.21	Updates for CAA. Updates for submission of complaints
QuoVadis PMA	31 January 2018	4.22	Updates for the Baseline Requirements and Mozilla Root Store Policy
QuoVadis PMA	25 July 2018	4.23	Updates for Certificate Renewal. Additions in Appendix A relating to Qualified Certificate QSCD, where the device is managed by QuoVadis on behalf of the subject (1.3.6.1.4.1.8024.1.410).
QuoVadis PMA	30 July 2018	4.24	Updates for domain vetting (CA/B Forum Ballot 218)
QuoVadis PMA	7 December 2018	4.25	Updates to include changes for EU Qualified certs and itsme Sign Issuing CA G1. More explicit reference to the BR Domain Vetting methods
QuoVadis PMA	6 June 2019	4.26	Updates for where QSCD managed on behalf of Subscriber by QuoVadis. . Updates to revocation requests. Updates for Baseline Requirements domain and IP address validation methods. Change to CRL update frequency
QuoVadis PMA	20 June 2019	4.27	Included PSD2 Qualified eSeal (QSealC) according to ETSI TS 119 495
QuoVadis PMA	23 August 2019	4.28	Adding QuoVadis responsibilities managing keys on behalf of the Subscriber. Clarifying revocation procedures
QuoVadis PMA	27 March 2020	4.29	Changes to comply with Mozilla Root Store Policy v2.7, CA/B Forum Ballot SC25, and clarification to trusted roles. Updates for Subscriber Agreement and Terms of Use. New profiles for Swiss Qualified and Regulated Certificates. Changes to reflect policies and practices adopted from, and editorial conformity with, DigiCert where applicable
QuoVadis PMA	25 August, 2020	4.30	Updates to domain validation and CAA methods. Reduction in TLS validity period. Update to revocation services information.
QuoVadis PMA	30 September, 2020	4.31	Updates to comply with CA/B Forum Ballots SC30, SC31, SC33. Edits to Relying Party obligations. Reporting for Key Compromise.
QuoVadis PMA	22 March, 2021	4.32	Minor updates for clarity. Updated algorithms. CA/B Forum Ballots SC28, SC35. Expiry of QuoVadis Root Certification Authority.
QuoVadis PMA	28 June, 2021	4.33	Clarification on Terms and Conditions, as well as keyUsage and EKU options. Updates for Mozilla Root Store Policy v2.7.1, ETSI TS 319 401 v2.3.1, ETSI TS 319 411-1 v2.3.1, and ETSI TS 319 411-2 v2.3.1

QuoVadis PMA	3 August, 2021	4.34	Minor editorial changes, update to OCSP Response.
QuoVadis PMA	24 September, 2021	4.35	Minor clarification of revocation service times, TLS validity.

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1. INTRODUCTION

1.1. OVERVIEW

This Certificate Policy/Certification Practice Statement (CP/CPS) sets out the certification processes that the QuoVadis PKI uses in the generation, issue, use, and management of Certificates and serves to notify Subscribers and Relying Parties of their roles and responsibilities concerning Certificates. This CP/CPS applies to the following Root CAs:

- QuoVadis Root CA 1 G3
- QuoVadis Root CA 3 / QuoVadis Root CA 3 G3

QuoVadis maintains accreditations and certifications of its PKI. These include:

- Qualified Trust Service Provider (QTSP) under Regulation (EU) No. 910/2014 (eIDAS). QuoVadis is listed on the EU Trusted List (EUTL) for the Netherlands and for Belgium;
- Trust Service Provider under PKIoverheid in the Netherlands;
- Qualified Certification Service Provider in Switzerland (ZertES);
- WebTrust for CAs and WebTrust SSL Baseline with Network Security;
- Accredited CA by the EU Policy Management Authority for Grid Authentication in e-Science (EUGridPMA). This entitles QuoVadis to issue Certificates meeting the guidelines of the International Grid Trust Federation (IGTF); and
- Authorised Certification Service Provider (Bermuda) entitled to issue Accredited Certificates under the requirements of the Electronic Transactions Act 1999.

Any person seeking to rely on Certificates or participate within the QuoVadis PKI must do so pursuant to definitive contractual documentation. Other important documents include both private and public documents, QuoVadis' agreements with its customers, Relying Party agreements, and QuoVadis' privacy policies. QuoVadis may provide additional certificate policies or certification practice statements. These supplemental policies and statements are available to applicable users or relying parties.

Pursuant to the IETF PKIX RFC 3647 framework, this CP/CPS is divided into nine parts that cover the security controls and practices and procedures for certificate and time-stamping services within the QuoVadis PKI. To preserve the outline specified by RFC 3647, section headings that do not apply are accompanied with the statement "Not applicable" or "No stipulation".

In addition, a *QuoVadis PKI Disclosure Statement* which summarises information about the QuoVadis PKI may be found in the QuoVadis Repository.

Where applicable, QuoVadis conforms to the current version of the Baseline Requirements Certificate Policy for the Issuance and Management of Publicly-Trusted Certificates ("Baseline Requirements") published at http://www.cabforum.org, and the Baseline Requirements for the Issuance and Management of Publicly-Trusted Code Signing Certificates ("Code Signing Baseline Requirements") published at https://aka.ms/csbr. In the event of any inconsistency between this CP/CPS and the normative provisions of the foregoing Applicable Requirements, then those Applicable Requirements take precedence over this document.

With the exception of CAs issuing Qualified Certificates in accordance with Swiss Regulations, at QuoVadis' discretion, trustworthy parties may be permitted to operate Issuing CA and RA services within the QuoVadis PKI.

With the exception of CAs issuing Qualified Certificates in accordance with the European eIDAS Regulation, at QuoVadis' discretion, trustworthy parties may be permitted to operate Issuing CA and RA services within the QuoVadis PKI. Trust service components for EU Qualified Certificates may only be performed by QuoVadis-approved entities that have the relevant certifications. When trust service components are provided by another party QuoVadis maintains overall responsibility

and undertakes procedures to ensure that the security and functionality of the trust service meet the appropriate requirements.

1.2. DOCUMENT NAME, IDENTIFICATION AND APPLICABILITY

The Object Identifier (OID) assigned to QuoVadis is 1.3.6.1.4.1.8024. This CP/CPS applies to all CAs and Subscriber Certificates that are signed by the following Root CAs:

Root CA	**OID**
QuoVadis Root CA 1 G3	1.3.6.1.4.1.8024.0.1
QuoVadis Root CA 3 / QuoVadis Root CA 3 G3	1.3.6.1.4.1.8024.0.3

The inclusion of the TLS OIDs (1.3.6.1.4.1.8024.0.1.100.1.1 and 1.3.6.1.4.1.8024.0.3.100.1.1) in the certificatePolicies extension of an end entity Subscriber Certificate asserts adherence to and compliance with the Baseline Requirements.

Separate policy documents in the QuoVadis Repository apply to QuoVadis Certificates signed by the following Root CAs:

- Root CA 2 and QuoVadis Root CA 2 G3 (OID 1.3.6.1.4.1.8024.0.2)
- Netherlands PKIoverheid
- QuoVadis Private PKI / Trust Anchor Root CA (OID 1.3.6.1.4.1.8024.0.4)

QuoVadis also operates Time-stamping Authority (TSA) services under a separate QuoVadis Time-Stamp Policy/Practice Statement (OID 1.3.6.1.4.1.8024.0.2000.6). Additional OIDs assigned by QuoVadis include:

- HydrantID / Avalanche Cloud Corporation (1.3.6.1.4.1.8024.0.3.900.0 and 1.3.6.1.4.1.8024.0.3.900.0.1)
- BEKB - BCBE Issuing CA G2 (1.3.6.1.4.1.8024.0.3.700.0)
- HIN Health Info Net CA G2 (1.3.6.1.4.1.8024.0.3.800.0). HIN certs follow the "QV Standard" Certificate Class.

QuoVadis may include other OIDs as appropriate. OIDs in this list and in QuoVadis certificates belong to their respective owners.

1.3. PUBLIC KEY INFRASTRUCTURE PARTICIPANTS

1.3.1. Certification Authorities

QuoVadis operates certification authorities (CAs) that issue digital certificates. As the operator of CAs, QuoVadis performs functions associated with Public Key operations, including receiving certificate requests, issuing, revoking, rekeying, and renewing a digital Certificate, and maintaining, issuing, and publishing CRLs and OCSP responses.

Issuing CAs may be operated by QuoVadis or by other Organisations that have been authorised by QuoVadis to participate within the QuoVadis PKI. Issuing CAs are required to ensure that the services they perform within the QuoVadis PKI are in compliance at all times with their respective Issuing CA Agreements and this CP/CPS.

For Qualified Certificates issued out of the itsme Sign Issuing CA, the Registration Service and Subject Device Provisioning Service are not performed by QuoVadis. These services are performed entirely by Belgian Mobile ID, which undergoes its own audit. In addition, some services are shared

between QuoVadis and Belgian Mobile ID. QuoVadis retains overall responsibility toward relying parties for all Certificates issued from the of the itsme Sign Issuing CA.

In the case of Qualified Certificates, where QuoVadis manages Key Pairs on behalf of the Subscriber, QuoVadis shall ensure:

- where the policy requires the use of a Qualified Electronic Signature/Seal Creation Device (QSCD) then the signatures are only created by the QSCD;
- in the case of natural persons, the Subscribers' Private Key is maintained and used under their sole control and used only for Electronic Signatures; and
- in the case of legal persons, the Subscribers' Private Key is maintained and used under their control and used only for Electronic Seals.

An Issuing CA may, but shall not be obliged to, detail its specific practices and other requirements in a policy or practices statement adopted by it following approval by the QuoVadis PMA. Issuing CAs are required to conduct regular compliance audits of their RAs to ensure that they are complying their respective RA Agreements and this CP/CPS.

Issuing CAs must not be used for Man in the Middle (MITM) purposes for the interception of encrypted communications or for traffic management of domain names /IP addresses that the entity does not own or control. External Issuing CAs publicly-trusted must either be technically constrained, or undergo an independent audit and be publicly disclosed in the QuoVadis Repository.

See also Section 9.6.1.

1.3.2. Registration Authorities and Other Delegated Third Parties

A Registration Authority (RA) is an entity that performs Identification and Authentication of Certificate Applicants, and initiates, passes along revocation requests for end user Subscriber Certificates, and approves applications for renewal or re-keying Certificates on behalf of an Issuing CA. QuoVadis and Issuing CAs may act as RAs for Certificates they issue.

RAs may be authorised by QuoVadis to delegate the performance of certain functions to third parties if it meets the requirements of the QuoVadis CP/CPS. QuoVadis contractually obligates each RA and delegated third party to abide by the policies and industry standards that are applicable to their responsibilities. Validation of Domains and IP Addresses for TLS and of email addresses included in Certificate Subject fields cannot be delegated.

Third parties, who enter into a contractual relationship with QuoVadis, may act as Enterprise RAs (ERAs) and authorise the issuance of Certificates by QuoVadis for Organisations and Domains that have been pre-authenticated by QuoVadis. ERAs must abide by all the requirements of this CP/CPS and the terms of their services agreement with QuoVadis.

See also Section 9.6.2.

1.3.3. Subscribers

Subscribers use QuoVadis' services and PKI to support transactions and communications. Subscribers under this CP/CPS include all end users (including entities) of Certificates issued by an Issuer CA. A Subscriber is the entity named as the end-user Subscriber of a Certificate. End-user Subscribers may be individuals, organisations or, infrastructure components such as firewalls, routers, trusted servers or other devices used to secure communications within an organisation.

Subscribers are not always the party identified in a Certificate. The *Subject* of a Certificate is the party named in the Certificate. A Subscriber, as used herein, may refer to the Subject of the Certificate and the entity that contracted with QuoVadis for the Certificate's issuance, or the individual responsible for requesting and a Certificate on a trusted system. Prior to verification of identity and issuance of a Certificate, a Subscriber is an *Applicant*. Within the QuoVadis Portal a Subscriber may also be referred to as *Certificate Holder*.

Subscribers are required to act in accordance with this CP/CPS and Subscriber Agreement. *See* also Section 9.6.3.

1.3.4. Relying Parties

Relying Parties are entities that act in Reasonable Reliance on a Certificate and/or Digital Signature issued by QuoVadis. A Relying Party may, or may not, also be a Subscriber of the QuoVadis PKI. Relying parties must check the appropriate CRL or OCSP response prior to relying on information featured in a Certificate. The location of the Certificate Status service is detailed within the Certificate.

Relying Parties are required to act in accordance with this CP/CPS and the Relying Party Agreement. *See* also Section 9.6.4.

1.3.5. Other Participants

Other Participants in the QuoVadis PKI are required to act in accordance with this CP/CPS and/or applicable agreements. Other participants include Accreditation Authorities such as Policy Management Authorities, Application Software Vendors, and applicable Community-of-Interest sponsors. Accreditation Authorities are granted an unlimited right to re-distribute QuoVadis CA Certificates and related information in connection with the accreditation.

1.4. CERTIFICATE USAGE

At all times, participants in the QuoVadis PKI are required to utilise Certificates in accordance with this QuoVadis CP/CPS and all applicable laws and regulations.

1.4.1. Appropriate Certificate Uses

Certificates issued pursuant to this CP/CPS may be used for all legal authentication, encryption, access control, and digital signature purposes, as designated by the key usage and extended key usage fields found within the Certificate. However, the sensitivity of the information processed or protected by a Certificate varies greatly, and each Relying Party must evaluate the application environment and associated risks before deciding on whether to use a Certificate issued under this CP/CPS.

1.4.2. Prohibited Certificate Usage

Certificates do not guarantee that the Subject is trustworthy, honest, reputable in its business dealings, safe to do business with, or compliant with any laws. A Certificate only establishes that the information in the Certificate was verified in accordance with this CP/CPS when the Certificate was issued. Code signing Certificates do not indicate that the signed code is safe to install or free from malware, bugs, or vulnerabilities.

QuoVadis Certificates shall be used only to the extent the use is consistent with applicable law or regulation, and in particular shall be used only to the extent permitted by applicable export or import laws. CA Certificates subject to the Mozilla Root Store Policy will not be used for any functions except CA functions. In addition, end-user Subscriber Certificates cannot be used as CA Certificates.

QuoVadis may periodically re-key Intermediate CAs. Third party applications or platforms that have an Intermediate CA embedded as a root certificate may not operate as designed after the Intermediate CA has been rekeyed.

QuoVadis strongly discourages key pinning and does not consider it a sufficient reason to delay revocation. Customers should also take care in not mixing Certificates trusted for the web with non-web PKI. Any Certificates trusted by Application Software Vendors must comply with all requirements of all applicable root distribution policies, including revocation periods described in Section 4.9.

1.5. POLICY ADMINISTRATION

1.5.1. Organisation Administering The CP/CPS

This CP/CPS and related agreements and security policy documents referenced within this document are administered by the QuoVadis Policy Management Authority (PMA).

1.5.2. Contact Person

Enquiries or other communications about this CP/CPS should be addressed to the QuoVadis PMA.

Policy Director
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11 Bermudiana Road, Suite 1640
Hamilton HM-08, Bermuda

Website: https://www.quovadisglobal.com
Electronic mail: compliance@quovadisglobal.com
Customer complaints: qvcomplaints@digicert.com

1.5.2.1. Revocation Reporting Contact Person

QuoVadis provides additional information for entities requiring assistance with revocation or an investigative report at https://www.quovadisglobal.com/certificate-revocation.

For anyone listed in Section 4.9.2 of this CPS and the CA/Browser Baseline Requirements that requires assistance with revocation or investigative reports, QuoVadis provides this page for reporting and submitting requests with all of the necessary information as outlined in Section 4.9: https://problemreport.digicert.com/

If the problem reporting page is unavailable, there is a system outage, or you believe our findings are incorrect please contact revoke@digicert.com.

Entities submitting Certificate revocation requests must explain the reason for requesting revocation. QuoVadis or an RA will authenticate and log each revocation request according to Section 4.9 of this CP/CPS. QuoVadis will always revoke a Certificate if the request is authenticated as originating from the Subscriber or an authorised representative of the Organisation listed in the Certificate. If revocation is requested by someone other than an authorised representative of the Subscriber or Affiliated Organisation, QuoVadis or an RA will investigate the alleged basis for the revocation request prior to taking action. *See also* Section 4.9.1 and 4.9.3.

1.5.3. Person Determining The CP/CPS Suitability

The QuoVadis PMA determines the suitability and applicability of this CP/CPS based on the results and recommendations received from an independent auditor. The PMA is also responsible for evaluating and acting upon the results of compliance audits.

1.5.4. CP/CPS Approval Procedures

Approval of this CP/CPS and any amendments hereto is by the QuoVadis PMA. Amendments may be made by updating this entire document or by addendum. The QuoVadis PMA, at its sole discretion, determines whether changes to this CP/CPS require notice or any change in the OID of a Certificate issued pursuant to this CP/CPS. *See also* Section 9.10 and Section 9.12. Any changes to this CP/CPS that relate to Grid topics (refer to Section 10.6.1 below) should be approved by the relevant Grid PMA.

1.6. DEFINITIONS AND ACRONYMS

1.6.1. Definitions

Advanced Electronic Signature means an Electronic Signature which meets the requirements set out in Article 26 of the eIDAS Regulation.

Applicant means an entity applying for a Certificate.

Application Software Vendors means a software developer whose software displays or uses QuoVadis Certificates and distributes QuoVadis' Root Certificates.

Authorisation Number: A unique identifier of a Payment Service Provider acting as the Subscriber for PSD2 Certificates. The Authorisation Number is used and recognised by the NCA.

Authorisation Domain Name: The Domain Name used to obtain authorisation for certificate issuance for a given FQDN as defined by the Baseline Requirements.

Certificate Approver is a natural person who is employed by the Applicant, or an authorised agent who has express authority to represent the Applicant to: (i) act as a Certificate Requester and to authorise other employees or third parties to act as a Certificate Requesters, and (ii) to approve Certificate Requests submitted by other Certificate Requesters.

Certificate Policy means a Certificate policy adopted by an Issuing CA operating within the QuoVadis PKI that defines all associated rules and indicates the applicability of a Certificate to a particular community and/or class of application with common security requirements.

Certificate Requester is a natural person who is employed by the Applicant, or an authorised agent who has express authority to represent the Applicant or a third party (such as an ISP or hosting company), and who completes and submits a Certificate Request on behalf of the Applicant.

Confirming Person is a natural person who must be a senior officer of the Applicant (e.g., Secretary, President, CEO, CFO, COO, CIO, CSO, Director, etc.) who has express authority to sign the QV Authority Letter on behalf of the Applicant.

Contract Signer is a natural person who is employed by the Applicant and who has express authority to sign the Subscriber Agreement on behalf of the Applicant.

Counterparty means a person that is known to a Nominating RA or its respective Subsidiaries or Holding Companies and where the relationship with the Counterparty was established in accordance with recognised and documented Know Your Customer standards and with whom the RA is reliably able to identify the Counterparty through business records maintained by the RA or obtained from its respective Subsidiaries or Holding Companies.

Cryptographic Module means secure software, device or utility that (i) generates Key Pairs; (ii) stores cryptographic information; and/or (iii) performs cryptographic functions.

Digital Certificate means a digital identifier within the QuoVadis PKI that: (i) identifies the Issuing CA; (ii) identifies the Holder; (iii) contains the Holder's Public and Private Keys; (iv) specifies the Certificate's Operational Term; is digitally signed by the Issuing CA; and (vi) has prescribed Key Usages and Reliance Factor that governs its issuance and use whether expressly included or incorporated by reference to this CP/CPS.

Digital Signature see Advanced Electronic Signature.

eIDAS Regulation or eIDAS means Regulation (EU) No. 910/2014 on electronic identification and trust services for electronic transactions in the internal market.

Key Pair means two related Keys, one being a Private Key and the other a Public Key having the ability whereby one of the pair will decrypt the other.

National Competent Authority (NCA) means a national authority responsible for the regulation of payment services. The NCA approves or rejects authorisations for Payment Service Providers in its country.

Policy Management Authority (PMA) means the QuoVadis body responsible for overseeing and approving CP/CPS amendments and general management.

Private Key means the key of a Key Pair that is kept secret by the holder of the Key Pair, and that is used to create digital signatures and/or to decrypt electronic records or files that were encrypted with the corresponding Public Key.

Public Key means the key of a Key Pair that may be publicly disclosed by the holder of the corresponding Private Key and that is used by a Relying Party to verify digital signatures created with the holder's corresponding Private Key and/or to encrypt messages so that they can be decrypted only with the holder's corresponding Private Key.

Qualified Certificate A Certificate whose primary purpose is to identify a person with a high level of assurance, where the Certificate meets the qualification requirements defined by the applicable legal framework of the eIDAS Regulation.

Qualified Certificate for Electronic Signature means a Certificate for Electronic Signatures, that is issued by a QTSP and meets the requirements laid down in Annex I of the eIDAS Regulation.

Qualified Certificate for Electronic Seal means a Certificate issued to a Legal Person (company) by a QTSP and is used to secure authenticity, integrity and confidentiality in electronic communication of messages and documents.

Qualified Electronic Signature means an Advanced Electronic Signature that is created by a QSCD and which is based on a Qualified Certificate for Electronic Signatures.

Qualified Electronic Signature/Seal Creation Device (QSCD) means an Electronic Signature/seal creation device that meets the requirements laid down in Annex II of the eIDAS.

Qualified Trust Service Provider (QTSP) means a trust service provider which is granted Qualified status by the relevant supervisory authority of an EU country under the eIDAS Regulation. A Qualified TSP's Approved Qualified services are shown on an EU Trusted List.

Registration Authority means a RA designated by an Issuing CA to operate within the QuoVadis PKI responsible for identification and authentication of Subscribers.

Regulated Certificate means a Certificate that meets the requirements of Article 7 of ZertES (see Section 8.1.1).

Regulated Electronic Signature means an Advanced Electronic Signature which has been created using a secure signature creation unit as referred to in Article 6 of ZertES and is based on a Regulated Certificate issued to a natural person and valid at the time the Electronic Signature is generated.

Relying Party means an Individual or Organisation that has entered into a Relying Party Agreement authorising that person or Organisation to exercise Reasonable Reliance on Certificates, subject to the terms and conditions set forth in the applicable Relying Party Agreement.

Subscriber means a Holder of a Certificate chained to the QuoVadis Root Certificate, including without limitation, organisations, individuals and/or hardware and/or software devices. A Subscriber is (i) named in a Certificate or responsible for the Device named in a Certificate and (ii) holds a Private Key corresponding to the Public Key listed in that Certificate. For clarity, Subscribers are sometimes referred to as Certificate Holders.

Terms and Conditions means the Master Services Agreement, Certificate Terms of Use, Privacy Policy and relevant QuoVadis CP/CPS. The Master Services Agreement references and makes the Certificate Terms of Use, Privacy Policy and relevant QuoVadis CP/CPS part of the Terms and Conditions. The itsme Issuing CA provides its own Terms and Conditions.

1.6.2. Acronyms

ADN Authorisation Doman Name

CA	Certification Authority or Certificate Authority
CAA	Certificate Authority Authorisation
CP/CPS	Certificate Policy & Certification Practice Statement
CRL	Certificate Revocation List
CSR	Certificate Signing Request
CT	Certificate Transparency
eIDAS	Regulation (EU) 910/2014
ERA	Enterprise Registration Authority
ETSI	European Telecommunications Standards Initiative
EUTL	EU Trusted List
EV	Extended Validation
FIPS	Federal Information Processing Standard
FQDN	Fully Qualified Domain Name
ICANN	Internet Corporation for Assigned Names and Numbers
IETF	Internet Engineering Task Force
IGTF	International Grid Trust Federation
ITU	International Telecommunication Union
OID	Object Identifier
OCSP	Online Certificate Status Protocol
PKCS	Public Key Cryptography Standard
PKI	Public Key Infrastructure
PKIX	IETF Working Group on Public Key Infrastructure
PMA	QuoVadis Policy Management Authority
Portal	Certificate Management System
PSP	Payment Service Provider
RA	Registration Authority
SSL	Secure Sockets Layer
TLS	Transaction Layer Security
UTC	Coordinated Universal Time
X.509	The ITU-T standard for Certificates and their corresponding authentication framework

1.6.3. References

This CP/CPS describes the practices used to comply with the current versions of the following policies, standards, and requirements as relevant:

Standards / Law	
WebTrust	WebTrust Principles and Criteria for Certification Authorities WebTrust Principles and Criteria for Certification Authorities – SSL Baseline with Network Security

Standards / Law	
	WebTrust for Certification Authorities – Extended Validation SSL WebTrust for Certification Authorities – Publicly Trusted Code Signing Certificates
SR 943.03 [ZertES]	Bundesgesetz über Zertifizierungsdienste im Bereich der elektronischen Signatur und anderer Anwendungen digitaler Zertifikate (Bundesgesetz über die elektronische Signatur, ZertES) vom 18. März 2016
SR 943.032 [VZertES]	Verordnung über Zertifizierungsdienste im Bereich der elektronischen Signatur und anderer Anwendungen digitaler Zertifikate (Verordnung über die elektronische Signatur, VZertES) vom 23. November 2016
SR 943.032.1 [TAV]	R 943.032.1 / Anhang: Technische und administrative Vorschriften über Zertifizierungsdienste im Bereich der elektronischen Signatur und anderer Anwendungen digitaler Zertifikate Ausgabe 1: 23.11.2016 Inkrafttreten: 1.1.2017
ETSI EN 319 401	General Policy Requirements for Trust Service Providers
ETSI EN 319 411-1	Policy and security requirements for Trust Service Providers issuing certificates; Part 1: General Requirements
ETSI EN 319 411-2	Policy and security requirements for Trust Service Providers issuing certificates; Part 2: Requirements for trust service providers issuing EU qualified certificates
ETSI EN 319 421	Policy and Security Requirements for Trust Service Providers issuing Electronic Time-Stamps
ETSI EN 319 412-1	Certificate Profiles; Part 1: Overview and common data structures
ETSI EN 319 412-2	Certificate Profiles; Part 2: Certificate profile for certificates issued to natural persons
ETSI EN 319 412-3	Certificate Profiles; Part 3: Certificate profile for certificates issued to legal persons
ETSI EN 319 412-4	Certificate Profiles; Part 4: Certificate profile for web site certificates
ETSI EN 319 412-5	Certificate Profiles; Part 5: QCStatements
ETSI EN 319 422	Time stamping protocol and electronic time-stamp profiles
ETSI TS 119 431-1	Policy and security requirements for Trust Service Providers; Part 1: TSP service components operating a remote QSCD / SCDev
ETSI TS 119 495	Sector Specific Requirements; Qualified Certificate Profiles and TSP Policy Requirements under the payment services Directive (EU) 2015/2366
EUGridPMA	Accredited CA by the EU Policy Management Authority for Grid Authentication in e-Science (EUGridPMA).
PKIoverheid	Accredited Certification Service Provider under PKIoverheid. PKIoverheid is the name for the PKI designed for trustworthy communication within and with the Dutch Government.
Bermuda Authorised Certificate Service Provider	As defined in Bermuda's Electronic Transactions Act 1999
Application Software Vendor	Adobe Approved Trust List Technical Requirements, v.2.0 Apple Root Store Program

Standards / Law	
	Microsoft Trusted Root Store (Program Requirements) Mozilla Root Store Policy v.2.7.1 Chromium Project Root Store Certificate Policy

2. PUBLICATION AND REPOSITORY RESPONSIBILITIES

2.1. REPOSITORIES

QuoVadis provides public repositories for its CA Certificates, revocation data for issued Certificates, CP/CPS, Terms and Conditions, and other important policy documents. The QuoVadis Repository is located at https://www.quovadisglobal.com/repository.

QuoVadis may register TLS Certificates with publicly accessible Certificate Transparency (CT) Logs. Once submitted, Certificate information cannot be removed from a CT Log.

QuoVadis' CA Certificates and its CRLs and OCSP responses are regularly accessible online with systems described in Section 5.

2.2. PUBLICATION OF CERTIFICATE INFORMATION

QuoVadis publishes a Repository that lists all Certificates that have been issued or revoked. Where a Certificate including an email address is issued, the Subscriber consents for the Certificate to be published in the Repository available for Relying Parties to download. The location of the Repository and OCSP responders are given in the individual Certificate Profiles more fully disclosed in Appendix A and Appendix B to this CP/CPS.

QuoVadis hosts test Web pages that allow Application Software Suppliers to test their software with Subscriber Certificates that chain up to each publicly trusted Root Certificate at https://chain-demos.digicert.com/

2.3. TIME OR FREQUENCY OF PUBLICATION

QuoVadis publishes CRL and OCSP resources to allow Relying Parties to determine the validity of a QuoVadis Certificate. Certificate information is published promptly following generation and issue and immediately following the completion of the revocation process.

QuoVadis updates this CP/CPS at least annually to describe how QuoVadis meets the requirements of standards referred to in Sections 1.1 and 1.6.3 including the CA/Browser Forum Baseline Requirements. Those updates indicate conformance by incrementing the version number and adding a dated changelog entry even if no other changes are made to the document as specified in Section 1.2 of this CP/CPS

New or modified versions of the CP/CPS and other policies are typically published within seven days after their approval.

2.4. ACCESS CONTROLS ON REPOSITORIES

Read-only access to the Repository is unrestricted and is available 24 x 7. Logical and physical controls prevent unauthorised write access to Repositories. In the event that the Repository is unavailable then QuoVadis aims to restore availability within 24 hours.

3. IDENTIFICATION AND AUTHENTICATION

The Identification and Authentication procedures used by QuoVadis depend on the Class of Certificate being issued (*See* Appendix A and Appendix B). Issuing CAs may delegate the responsibility to one or more RAs.

3.1. NAMING

3.1.1. Types Of Names

All Subscribers require a distinguished name that complies with the ITU X.500 standard for Distinguished Names (DN). The QuoVadis PMA approves naming conventions for the creation of distinguished names for Issuing CA applicants. Different naming conventions may be used by different Issuing CAs.

The Subject name of all Certificates issued to Individuals shall be the authenticated common name of the Subscriber. Each User must have a unique and readily identifiable X.501 DN. Alternatively, DNs may be based on domain name components, e.g. CN=John Smith, DC=QuoVadis, DC=BM. The Common Name may contain the applicant's first and last name (surname).

For Certificates issued under the Baseline Requirements, the use of Internal Server Names and Reserved IP Addresses is prohibited, and the FQDN or authenticated domain name is placed in the Common Name (CN) attribute of the Subject field and/or the Subject Alternative Name extension.

The Distinguished Names of a Code Signing Certificate must identify the legal entity that intends to have control over the use of the Private Key when signing code.

3.1.2. Need For Names To Be Meaningful

QuoVadis uses Distinguished Names that identify both the entity (i.e. person, organisation, device, or object) that is the subject of the Certificate and the entity that is the issuer of the Certificate. QuoVadis only allows directory information trees that accurately reflect organisation structures.

3.1.3. Pseudonymous Subscribers

QuoVadis may issue pseudonymous end entity Certificates if they are not prohibited by policy and if applicable name space uniqueness requirements are met. For Internationalised Domain Names (IDN), QuoVadis may include the Punycode version of the IDN as a Subject Name.

3.1.4. Rules For Interpreting Various Name Forms

Distinguished Names in Certificates are interpreted using X.500 standards and ASN.1 syntax.

3.1.5. Uniqueness Of Names

The Subject Name of each Certificate issued by an Issuing CA shall be unique within each class of Certificate issued by that Issuing CA over the lifetime of that Issuing CA and shall conform to applicable X.500 standards for the uniqueness of names.

The Issuing CA may, if necessary, insert additional numbers or letters to the Subscriber's Subject Common Name, or other attribute such as subject serialNumber, in order to distinguish between two Certificates that would otherwise have the same Subject Name. Name uniqueness is not violated when multiple Certificates are issued to the same entity.

3.1.6. Recognition, Authentication, And Role Of Trademarks

Unless otherwise specifically stated in this CP/CPS, QuoVadis does not verify an Applicant's right to use a trademark and does not resolve trademark disputes. QuoVadis may reject any application or require revocation of any Certificate that is part of a trademark dispute.

3.2. INITIAL IDENTITY VALIDATION

QuoVadis may use any legal means of communication or investigation to ascertain the identity of an organisational or individual Applicant in compliance with this CP/CPS. QuoVadis may refuse to issue a Certificate in its sole discretion.

3.2.1. Method To Prove Possession Of Private Key

Issuing CAs shall establish that each Applicant for a Certificate is in possession and control of the Private Key corresponding to the Public Key contained in the request for a Certificate. The Issuing CA shall do so in accordance with an appropriate secure protocol, such as the IETF PKIX Certificate Management Protocol, including PKCS#10. This requirement does not apply where a Key Pair is generated on behalf of a Subscriber.

3.2.2. Authentication Of Organisation Identity

The Identity of an Organisation is required to be authenticated with respect to each Certificate that asserts (i) the identity of an Organisation; or (ii) an Individual or Device's affiliation with an Organisation. Without limitation to the generality of the foregoing, the Identity of any Organisation that seeks to act as a RA for its employees and/or employees of its respective Subsidiaries, Holding Companies or Counterparties is required to be authenticated.

In order to authenticate the Identity of an Organisation, at a minimum, confirmation is required that: (i) the Organisation legally exists in the name that will appear in the DN of any Certificates issued under its name, or is legally recognised as doing business under an alternative proposed by the Organisation; and (ii) all other information contained in the Certificate application is accurate.

Registration information provided by an Organisation may be validated by reference to official government records and/or information provided by a reputable vendor of corporate information services. The accuracy and currency of such information may be validated by conducting checks with financial institution references, credit reporting agencies, trade associations, and other entities that have continuous and ongoing relationships with the Organisation under review. In addition, the telephone number provided by the Organisation as the telephone number of its principal place of business may be called to ensure that the number is active and answered by the Organisation.

Where an Issuing CA or RA has a separate and pre-existing commercial relationship with the Organisation under review, the Issuing CA or RA may authenticate the Identity of the Organisation by reference to records kept in the ordinary course of business that, at a minimum, satisfy the requirements of this Section. In all such cases, the Issuing CA or RA shall record the specific records upon which it relied for this purpose.

With respect to TLS Certificates, authentication of Organisation identity is conducted in compliance with this CP/CPS and the TLS Certificate Profiles detailed in Appendix B.

3.2.2.1. Validation of Domain and Email Authorisation and Control

For each FQDN listed in a Certificate, QuoVadis confirms that, as of the date the Certificate was issued, the Applicant either is the Domain Name Registrant or has control over the FQDN by:

i) BR Section 3.2.2.4.1 is no longer used as it is deprecated as of August 1, 2018;

ii) Communicating directly with the Domain Name Registrant via email, fax or postal mail provided by the Domain Name Registrar. Performed in accordance with BR Section 3.2.2.4.2 using a Random Value (valid for no more than 30 days from its creation);

iii) BR Section 3.2.2.4.3 is no longer used because it is deprecated as of May 31, 2019;

iv) Communicating with the Domain's administrator using a constructed email address created by pre-pending 'admin', 'administrator', 'webmaster', 'hostmaster', or 'postmaster' to the Authorisation Domain Name (ADN). Performed in accordance with BR Section 3.2.2.4.4;

v) BR Section 3.2.2.4.5 is no longer used because it is deprecated as of August 1, 2018;

vi) BR Section 3.2.2.4.6 is no longer used because it is deprecated as of April 24, 2020;

vii) Confirming the Applicant's control over the requested ADN (which may be prefixed with a label that begins with an underscore character) by confirming the presence of an agreed-upon Random Value in a DNS record. Performed in accordance with BR Section 3.2.2.4.7;

viii) Confirming the Applicant's control over the FQDN through control of an IP address returned from a DNS lookup for A or AAAA records for the FQDN, performed in accordance with BR Sections 3.2.2.5 and 3.2.2.4.8;

ix) BR Section 3.2.2.4.9 is no longer used because it was deprecated as of March 16, 2019;

x) BR Section 3.2.2.4.10 is no longer used because it was deprecated as of September 22, 2020;

xi) BR Section 3.2.2.4.11 is no longer used because it is deprecated as of February 5, 2018;

xii) Confirming that the Applicant is the Domain Contact for the Base Domain Name (provided that the CA or RA is also the Domain Name Registrar or an Affiliate of the Registrar), performed in accordance with BR Section 3.2.2.4.12;

xiii) Confirming the Applicant's control over the FQDN by sending a Random Value via email to a DNS CAA Email Contact and then receiving a confirming response utilising the Random Value. The relevant CAA Resource Record Set is found using the search algorithm defined in RFC 8659 performed in accordance with BR Section 3.2.2.4.13;

xiv) Confirming the Applicant's control over the FQDN by sending a Random Value via email to the DNS TXT Record Email Contact for the ADN and then receiving a confirming response utilising the Random Value, performed in accordance with BR Section 3.2.2.4.14;

xv) Confirming the Applicant's control over the FQDN by calling the Domain Contact's phone number and obtaining a confirming response to validate the ADN. Each phone call can confirm control of multiple ADNs provided that the same Domain Contact phone number is listed for each ADN being verified and they provide a confirming response for each ADN, performed in accordance with BR Section 3.2.2.4.15;

xvi) Confirming the Applicant's control over the FQDN by calling the DNS TXT Record Phone Contact's phone number and obtaining a confirming response to validate the ADN. Each phone call can confirm control of multiple ADN provided that the same DNS TXT Record Phone Contact phone number is listed for each ADN being verified and they provide a confirming response for each ADN, performed in accordance with BR Section 3.2.2.4.16;

xvii) Confirming the Applicant's control over the FQDN by calling the DNS CAA Phone Contact's phone number and obtain a confirming response. Each phone call can confirm control of multiple domains provided that the same DNS CAA Phone Contact phone number is listed for each domain being verified and a confirming response is provided for each ADN. Performed in accordance with BR Section 3.2.2.4.17;

xviii) Confirming the Applicant's control over the requested FQDN by confirming the presence of an agreed-upon Random Value under the "/.well-known/pki-validation" directory. Performed in accordance with BR Section 3.2.2.4.18;

xix) Confirming the Applicant's control over a FQDN by validating domain control of the FQDN using the ACME HTTP Challenge method, performed in accordance with BR Section 3.2.2.4.19; or

xx) Confirming the Applicant's control over a FQDN by validating domain control of the FQDN by negotiating a new application layer protocol using the ALPN Extension, performed in accordance with BR Section 3.2.2.4.20.

Wildcard Domain Name validation is completed using the above list as permitted by the CA/B Forum Baseline Requirements along with current best practice of consulting a public suffix list.

QuoVadis and its Issuing CAs verify an Applicant's or Organisation's right to use or control of an email address to be contained in a Certificate that will have the "Secure Email" EKU using one of the following procedures, which may not be delegated:

i) By verifying domain control over the email Domain Name using one of the procedures listed in this Section; or

ii) By sending an email message containing a Random Value to the email address to be included in the Certificate and receiving a confirming response within a limited period of time that includes the Random Value to indicate that the Applicant controls that same email address.

QuoVadis maintains a list of High Risk Domains and has implemented technical controls to prevent the issuance of Certificates to certain domains. QuoVadis follows documented procedures that identify and require additional verification activity for High Risk Certificate Requests prior to the Certificate's approval.

QuoVadis uses a documented internal process to check the accuracy of information sources and databases to ensure the data is acceptable, including reviewing the database provider's terms of use. For EV, the approved sources are published in a file linked at https://github.com/digicert/reports/tree/master/validation-sources.

QuoVadis may include the Legal Entity Identifier (LEI) numbers in Certificates after verification through appropriate mechanisms, such as provided by Global Legal Entity Identifier Foundation (GLEIF), that the LEI is associated with the Subject. LEI lookups are not relied upon by QuoVadis as a primary source of information for verification and this information is treated as additional correlation of identity information found in the certificate.

3.2.2.2. Verification of IP Address

For each IP Address listed in a publicly-trusted TLS Certificate, QuoVadis confirms that, as of the date the Certificate was issued, the Applicant controlled the IP Address by:

i) Having the Applicant demonstrate practical control over the IP Address by confirming the presence of a Request Token or Random Value contained in the content of a file or webpage in the form of a meta tag under the "/.well-known/pki-validation" directory on the IP Address, performed in accordance with BR Section 3.2.2.5.1;

ii) Confirming the Applicant's control over the IP Address by sending a Random Value via email, fax, SMS, or postal mail and then receiving a confirming response utilising the Random Value, performed in accordance with BR Section 3.2.2.5.2;

iii) Performing a reverse-IP address lookup and then verifying control over the resulting Domain Name, as set forth above and in accordance with BR Section 3.2.2.5.3;

iv) BR Section 3.2.2.5.3 is no longer used because it was deprecated as of July 31, 2019.

v) Confirming the Applicant's control over the IP Address by calling the IP Address Contact's phone number, as identified by the IP Address RA, and obtaining a response confirming the Applicant's request for validation of the IP Address, performed in accordance with BR Section 3.2.2.5.5;

vi) Confirming the Applicant's control over the IP Address by performing the procedure documented for an "http-01" challenge in draft 04 of "ACME IP Identifier Validation Extension," available at https://tools.ietf.org/html/draft-ietf-acme-ip-04#Section-4, performed in accordance with BR Section 3.2.2.5.6; or

vii) Confirming the Applicant's control over the IP Address by performing the procedure documented for a "tls-alpn-01" challenge in draft 04 of "ACME IP Identifier Validation Extension," available at https://tools.ietf.org/html/draft-ietf-acme-ip-04#Section-4, performed in accordance with BR Section 3.2.2.5.7.

3.2.2.3. Wildcard Domain Validation

Before issuing a certificate with a wildcard character (*) in a CN or subjectAltName of type DNS-ID, QuoVadis follows a documented procedure that determines if the wildcard character occurs in the first label position to the left of a "registry-controlled" label or "public suffix". If a wildcard would fall within the label immediately to the left of a registry-controlled /1 or public suffix, QuoVadis refuses issuance unless the applicant proves its rightful control of the entire Domain Namespace.

3.2.2.4. Verification of Country

If the Applicant requests a publicly-trusted TLS Certificate that will contain the countryName field and other Subject Identity Information, then QuoVadis verifies the identity of the Applicant, and the authenticity of the Applicant Representative's certificate request using a verification process meeting the requirements of Section 3.2.2.1 in the CA/Browser Forum's Baseline Requirements and this Section. QuoVadis inspects any document relied upon for alteration or falsification.

3.2.3. Authentication Of Individual Identity

An Individual's Identity is to be authenticated in accordance with the class/type of Certificate together with the relevant application data and documentation. QuoVadis TLS Certificates are only issued to organisations and not natural persons.

3.2.4. Non-Verified Subscriber Information

QuoVadis does not verify information contained in the Organisation Unit (OU) field in Certificates. Other information may be designated as non-verified according to the Certificate Profile or relevant industry standards.

3.2.5. Validation Of Authority

Where an Applicant's Name is to be associated with an Organisational Name to indicate his or her status as a Counterparty, Employee or specifies an Authorisation level to act on behalf of an Organisation, the RA will validate the Applicant's Authority by reference to business records maintained by the RA, its Subsidiaries, Holding Companies or Affiliates. Validation of authority is conducted in compliance with this CP/CPS and the Certificate Profiles detailed in Appendix B. Validity of authority of Applicant Representatives and Agents is verified against contractual documentation and Reliable Data Sources.

3.2.6. Criteria For Interoperation

QuoVadis may provide interoperation services to certify a non-QuoVadis CA, allowing it to interoperate with the QuoVadis PKI. In order for such interoperation services to be provided the following criteria must be met:

- QuoVadis will perform due diligence on the CA;
- A formal contract must be entered into with QuoVadis, which includes a 'right to audit' clause; and
- The CA must operate under a CPS that meets QuoVadis requirements.

3.3. IDENTIFICATION AND AUTHENTICATION FOR RE-KEY REQUESTS

3.3.1. Identification and Authentication For Routine Re-Key

Subscribers may request re-key of a Certificate prior to a Certificate's expiration. After receiving a request for re-key, QuoVadis creates a new Certificate with the same Certificate contents except for a new Public Key and, optionally, an extended validity period. If the Certificate has an extended validity period, QuoVadis may perform some revalidation of the Applicant but may also rely on information previously provided or obtained. QuoVadis does not re-key a Certificate without additional Identification and Authentication if doing so would allow the Subscriber to use the Certificate beyond the limits specified for the applicable Certificate Profile.

3.3.2. Identification and Authentication For Re-Key After Revocation

QuoVadis does not allow re-key after revocation. To re-key a revoked Certificate, the Subscriber must undergo the initial Identification and Authentication process.

3.4. IDENTIFICATION AND AUTHENTICATION FOR REVOCATION REQUESTS

All revocation requests are authenticated by QuoVadis or the RA responsible for issuing the Certificate. QuoVadis may authenticate revocation requests by referencing the Certificate's Public Key, regardless of whether the associated Private Key is compromised. A Subscriber may request that their Certificate be revoked by:

- Authenticating to a QuoVadis Portal and requesting revocation via that system;
- Applying in person to the RA, Issuing CA or QuoVadis supplying either original proof of identification in the form of a valid Driving License or Passport;
- Telephonic communication using a pre-existing shared secret, password or other information associated with Subscriber's account with the CA following appropriate Identification.

4. CERTIFICATE LIFE-CYCLE OPERATION REQUIREMENTS

4.1. CERTIFICATE APPLICATION

4.1.1. Who Can Submit A Certificate Application

Either the Applicant or an individual authorised to request Certificates on behalf of the Applicant may submit Certificate Requests. Applicants are responsible for any data that the Applicant or an agent of the Applicant supplies to QuoVadis.

QuoVadis does not issue Certificates to entities on a government denied list maintained by the United States or that are located in a country with which the laws of the United States prohibit doing business.

QuoVadis maintains an internal database of previously revoked Certificates and previously rejected certificate requests. QuoVadis uses this information to identify subsequent suspicious certificate requests .

4.1.2. Enrolment Process And Responsibilities

Certificate Requests must be in a form prescribed by the Issuing CA and typically include i) an application form including all registration information as described by this CP/CPS, ii) secure generation of KeyPair and delivery of the Public Key to QuoVadis, (a CSR may not be required), iii) acceptance of the relevant Subscriber Agreement or other terms of use upon which the Certificate is to be issued, iv) and payment of fees. All applications are subject to review, approval, and acceptance by the Issuing CA in its discretion.

A Certificate Request may be used for multiple Certificates to be issued to the same Applicant, (subject to the updating requirement in Section 4.2.1 of the Baseline Requirements for publicly-trusted TLS). The Certificate Request contains a request from, or on behalf of, the Applicant for the issuance of a Certificate, and a certification by, or on behalf of, the Applicant that all of the information contained therein is correct.

All agreements concerning the use of, or reliance upon, Certificates issued within the QuoVadis PKI must incorporate by reference the requirements of this QuoVadis CP/CPS as it may be amended from time to time.

4.2. CERTIFICATE APPLICATION PROCESSING

4.2.1. Performing Identification And Authentication Functions

After receiving a certificate application, QuoVadis or an RA follows a documented procedure to verify the application and other information in accordance with the Identification and Authentication requirements for each Certificate Profile. *See* also Appendix A and Appendix B.

In cases where the certificate request does not contain all the necessary information about the Applicant, QuoVadis or the RA obtains the remaining information from the Applicant or, having obtained it from a reliable, independent third-party data source, confirm it with the Applicant.

For publicly-trusted TLS Certificates, Applicant information is required to include at least one FQDN or IP address to be included in the Certificate's SubjectAltName extension. QuoVadis implements documented procedures that require additional verifications as reasonably necessary for High Risk Certificate Requests prior to the Certificate's approval.

QuoVadis considers a source's availability, purpose, and reputation when determining whether a third-party data source is reasonably reliable. For TLS QuoVadis does not consider a database, source, or form of identification reasonably reliable if QuoVadis or the RA is the sole source of the information.

4.2.1.1. Certificate Authority Authorisation (CAA)

Prior to issuing TLS Certificates, QuoVadis checks for CAA records for each dNSName in the subjectAltName extension of the Certificate to be issued. If the QuoVadis Certificate is issued, it will be issued within the TTL of the CAA record, or 8 hours, whichever is greater.

When processing CAA records, QuoVadis processes the issue, issuewild, and iodef property tags as specified in RFC 8659. QuoVadis may not act on the contents of the iodef property tag. QuoVadis will not issue a Certificate if an unrecognised property is found with the critical flag.

CAA checking is optional for Certificates issued by a Technically Constrained Issuing CA as set out in Baseline Requirements Section 7.1.5, or where CAA was checked prior to the creation of a corresponding CT pre-certificate that was logged in at least 2 public CT log servers.

DNS access failure can be treated as permission to issue when the failure is proven to be outside QuoVadis infrastructure, was retried at least once, and the domain zone does not have a DNSSEC validation chain to the ICANN root.

QuoVadis documents potential issuances that were prevented by a CAA record, and may not dispatch reports of such issuance requests to the contact stipulated in the CAA iodef record(s), if present. QuoVadis supports mailto: and https: URL schemes in the iodef record.

The identifying CAA domains recognised by QuoVadis: are "digicert.com", "digicert.ne.jp", "cybertrust.ne.jp", "symantec.com", "thawte.com", "geotrust.com", "quovadisglobal.com", "rapidssl.com", "digitalcertvalidation.com" and any domain containing those identifying domains as suffixes (e.g. example.digicert.com) or registered country jurisdictions (e.g., digicert.de).

4.2.2. Approval Or Rejection Of Certificate Applications

After receiving a Certificate Application, QuoVadis or an RA verifies the application information and other information in accordance with this CP/CPS.

If an RA (including an Enterprise RA) assists in the verification, the RA must create and maintain records sufficient to establish that it has performed its required verification tasks and communicate the completion of such performance to QuoVadis. After verification is complete, QuoVadis evaluates the corpus of information and decides whether or not to issue the Certificate.

QuoVadis, in its sole discretion, may refuse to issue a Certificate, without incurring any liability for loss or damages arising out of such refusal. QuoVadis reserves the right not to disclose reasons for such a refusal. Rejected Applicants may re-apply. Subscribers are required to check the Certificate's contents for accuracy prior to using the Certificate.

4.2.3. Time To Process Certificate Applications

QuoVadis makes reasonable efforts to confirm Certificate Application information and issue a Certificate within a reasonable time frame, which is dependent on the Applicant providing the necessary details and documentation in a timely manner. Events outside of the control of QuoVadis may delay the issuance process.

4.3. CERTIFICATE ISSUANCE

4.3.1. CA Actions During Certificate Issuance

Certificate issuance is governed by the practices described in and any requirements imposed by this CP/CPS. QuoVadis does not issue end entity TLS Certificates directly from its Root Certificates.

Certificate issuance by a Root CA requires a trusted role authorized by QuoVadis (i.e. the CA system operator, system officer, or PKI administrator) to deliberately issue a direct command in order for the Root CA to perform a Certificate signing operation. Databases and CA processes occurring during Certificate issuance are protected from unauthorised modification. After issuance is complete, the Certificate is stored in a database and sent to the Subscriber.

4.3.2. Notification To Applicant Subscriber By The CA Of Issuance Of Certificate

QuoVadis may deliver Certificates in any secure manner within a reasonable time after issuance. Generally, QuoVadis delivers instructions via email to the email address designated by the Subscriber during the application process.

4.3.3. Notification to NCA for PSD2 Certificates

QuoVadis maintains a register of NCA contact information. When a PSD2 Certificate is issued, QuoVadis will send a notification email to the NCA identified in the Certificate using the pre-registered contact information.

4.4. CERTIFICATE ACCEPTANCE

4.4.1. Conduct Constituting Certificate Acceptance

The Certificate Requester is responsible for installing the issued Certificate on the Subscriber's computer or cryptographic module according to the Subscriber's system specifications. A Subscriber is deemed to have accepted a Certificate when:

- The Subscriber downloads, installs, or otherwise takes delivery of the Certificate; or
- 30 days pass since issuance of the Certificate.

BY ACCEPTING A CERTIFICATE, THE SUBSCRIBER ACKNOWLEDGES THAT HE OR SHE AGREES TO THE TERMS AND CONDITIONS CONTAINED IN THIS CP/CPS AND THE APPLICABLE SUBSCRIBER AGREEMENT. HE OR SHE ASSUMES A DUTY TO RETAIN CONTROL OF THE PRIVATE KEY CORRESPONDING TO THE PUBLIC KEY CONTAINED IN THE CERTIFICATE, TO USE A TRUSTWORTHY SYSTEM AND TO TAKE REASONABLE PRECAUTIONS TO PREVENT THE PRIVATE KEY'S LOSS, EXCLUSION, MODIFICATION, OR UNAUTHORISED USE.

4.4.2. Publication Of The Certificate By The CA

QuoVadis publishes all CA Certificates in its Repository. QuoVadis publishes end-entity Certificates by delivering them to the Subscriber.

4.4.3. Notification Of Certificate Issuance By The CA To Other Entities

Issuing CAs and RAs within the QuoVadis PKI may choose to notify other entities of Certificate issuance.

4.5. KEY PAIR AND CERTIFICATE USAGE

4.5.1. Subscriber Private Key And Certificate Usage

The Certificate shall be used lawfully in accordance with the QuoVadis CP/CPS and Subscriber Agreement.

Subscribers are obligated to protect their Private Keys from unauthorised use or disclosure, discontinue using a Private Key after expiration or revocation of the associated Certificate, and use Certificates in accordance with their intended purpose.

4.5.2. Relying Party Public Key And Certificate Usage

A Party seeking to rely on a Certificate issued within the QuoVadis PKI agrees to and accepts the Relying Party Agreement

Relying Parties may only use software that is compliant with X.509, IETF RFCs, and other applicable standards. QuoVadis does not warrant that any third party software will support or enforce the controls and requirements found herein.

A Relying Party should use discretion when relying on a Certificate and should consider the totality of the circumstances and risk of loss prior to relying on a Certificate. If the circumstances indicate that additional assurances are required, the Relying Party must obtain such assurances before using the Certificate. Any warranties provided by QuoVadis are only valid if a Relying Party's reliance was reasonable and if the Relying Party adhered to the Relying Party Agreement set forth in the QuoVadis Repository.

A Relying Party should rely on a Digital Signature or TLS handshake only if:

i) the Digital Signature or TLS session was created during the operational period of a valid Certificate and can be verified by referencing a valid Certificate,

ii) the Certificate is not revoked and the Relying Party checked the revocation status of the Certificate prior to the Certificate's use by referring to the relevant CRLs or OCSP responses, and

iii) the Certificate is being used for its intended purpose and in accordance with this CP/CPS.

4.6. CERTIFICATE RENEWAL

4.6.1. Circumstance For Certificate Renewal

Renewal means the issuance of a new Certificate to the Subscriber without changing the Subscriber or other participant's Public Key or any other information in the Certificate. QuoVadis may renew a Certificate if:

i) the associated Public Key has not reached the end of its validity period;

ii) the Subscriber and attributes are consistent; and

iii) the associated Private Key remains uncompromised.

QuoVadis may also renew a Certificate if a CA Certificate is re-keyed or as otherwise necessary to provide services to a customer. QuoVadis may notify Subscribers prior to a Certificate's expiration date. QuoVadis renewal requires payment of additional fees. QuoVadis may renew a certificate after expiration if the relevant industry permits such practices.

4.6.2. Who May Request Renewal

Only the Certificate Subject or an authorised representative of the Certificate Subject may request renewal of the Subscriber's Certificates.

4.6.3. Processing Certificate Renewal Requests

Renewal application requirements and procedures are generally the same as those used during the Certificate's original issuance. QuoVadis will revalidate any information that is older than the periods specified in applicable standards for the Certificate Profile.

4.6.4. Notification Of New Certificate Issuance To Subscriber

QuoVadis may deliver the Certificate in any secure fashion, such as using a QuoVadis Portal.

4.6.5. Conduct Constituting Acceptance Of A Renewal Certificate

Conduct constituting acceptance of a renewed Certificate is in accordance with Section 4.4.1. Issued Certificates are considered accepted 30 days after the Certificate is renewed, or earlier upon use of the Certificate when evidence exists that the Subscriber used the Certificate.

4.6.6. Publication of the Renewal Certificate By The CA

QuoVadis publishes a renewed Certificate by delivering it to the Subscriber. All renewed CA Certificates are published in QuoVadis' Repository.

4.6.7. Notification of Certificate Issuance By The CA To Other Entities

RAs may receive notification of a Certificate's renewal if the RA was involved in the issuance process.

4.7. CERTIFICATE RE-KEY

Re-keying means creating a new Certificate with a new Public Key and serial number while keeping the Subject information the same.

4.7.1. Circumstance For Certificate Re-Key

Certificates may be re-keyed upon request. After re-keying a Certificate, QuoVadis may revoke the old Certificate but may not further re-key, renew, or modify the previous Certificate. Subscribers requesting re-key should identify and authenticate themselves as permitted by Section 3.3.1.

4.7.2. Who May Request Re-Key

QuoVadis will accept re-key requests from the Subject of the Certificate, an authorised representative for an Organisational certificate, or the nominating RA. QuoVadis may initiate a certificate re-key at the request of the Certificate Subject or at QuoVadis' own discretion.

4.7.3. Processing Certificate Re-Key Request

If the Private Key and any identity and domain information in a Certificate have not changed, then QuoVadis may issue a replacement Certificate using a previously issued Certificate or previously provided CSR. QuoVadis may re-use existing verification and authentication information in accordance with Section 3.3 unless QuoVadis believes that the information has become inaccurate.

4.7.4. Notification Of Certificate Re-Key To Subscriber

QuoVadis may deliver the Certificate in any secure fashion, such as using a QuoVadis Portal.

4.7.5. Conduct Constituting Acceptance Of A Re-Key Certificate

Conduct constituting acceptance of a re-keyed Certificate is in accordance with Section 4.4.1. Issued Certificates are considered accepted 30 days after the Certificate is re-keyed, or earlier upon use of the Certificate when evidence exists that the Subscriber used the Certificate.

4.7.6. Publication Of The Re-Key Certificate By The CA

QuoVadis publishes a re-keyed Certificate by delivering it to the Subscriber.

4.7.7. Notification Of Certificate Re-Key By The CA To Other Entities

RAs may receive notification of a Certificate's renewal if the RA was involved in the issuance process.

4.8. CERTIFICATE MODIFICATION

4.8.1. Circumstances For Certificate Modification

Modifying a Certificate means creating a new Certificate for the same Subject with authenticated information that differs slightly from the old Certificate (e.g., changes to email address or non-essential parts of names or attributes) provided that the modification otherwise complies with this CP/CPS. The new Certificate may have the same or a different subject Public Key. Modified information must undergo the same Identification and Authentication procedures as for a new Certificate.

4.8.2. Who May Request Certificate Modification

QuoVadis modifies Certificates at the request of certain Certificate Subjects or in its own discretion. QuoVadis does not make certificate modification services available to all Subscribers.

4.8.3. Processing Certificate Modification Requests

After receiving a request for modification, QuoVadis verifies any information that will change in the modified Certificate. QuoVadis will only issue the modified Certificate after completing the verification process on all modified information. RAs are required to perform Identification and Authentication of all modified Subscriber information in accordance with the requirements of the applicable Certificate Profile.

4.8.4. Notification of Certificate Modification To Subscriber

QuoVadis may deliver the Certificate in any secure fashion, such as using a QuoVadis Portal.

4.8.5. Conduct Constituting Acceptance Of A Modified Certificate

Conduct constituting acceptance of a modified Certificate is in accordance with Section 4.4.1. Modified Certificates are considered accepted 30 days after the Certificate is modified, or earlier upon use of the Certificate when evidence exists that the Subscriber used the Certificate.

4.8.6. Publication of the Modified Certificate By The CA

QuoVadis publishes modified Certificates by delivering them to Subscribers.

4.8.7. Notification of Certificate Modification By The CA To Other Entities

RAs may receive notification of a Certificate's modification if the RA was involved in the issuance process.

4.9. CERTIFICATE REVOCATION AND SUSPENSION

Revocation of a Certificate permanently ends the operational period of the Certificate prior to the Certificate reaching the end of its stated validity period. Prior to revoking a Certificate, QuoVadis and Issuing CAs verify that a revocation request was initiated by Subscribers, an RA, an Issuing CA, and other entities listed in Section 4.9.2 of this CP/CPS. Other parties may submit Certificate Problem Reports to QuoVadis to report reasonable cause to revoke the Certificate. Issuing CAs are required to provide evidence of the revocation authorisation to QuoVadis upon request.

4.9.1. Circumstances For Revocation

QuoVadis will revoke a Certificate within 24 hours after receipt and confirming one or more of the following occurred:

i) The Subscriber requests in writing that QuoVadis revoke the Certificate;

ii) The Subscriber notifies QuoVadis that the original Certificate Request was not authorised and does not retroactively grant authorisation;

iii) QuoVadis obtains evidence that the Subscriber's Private Key corresponding to the Public Key in the Certificate suffered a Key Compromise;

iv) QuoVadis obtains evidence that the validation of domain authorisation or control for any FDQN or IP address in the Certificate should not be relied upon;

v) QuoVadis is made aware of a demonstrated or proven method that can easily compute the Subscriber's Private Key based on the Public Key in the Certificate (such as a Debian weak key, see https://wiki.debian.org/SSLkeys);

vi) The NCA requests revocation for a PSD2 Certificate where the Subscriber (PSP) has lost its authorisation to act as a PSP or any PSP role in the Certificate has been removed;

vii) QuoVadis becomes aware that a QSCD used for QCP-n-qscd or QCP-l-qscd loses its certification status.

QuoVadis may revoke a Certificate within 24 hours and will revoke a Certificate within 5 days after receipt and confirming that one or more of the following occurred:

i) QuoVadis obtains evidence that the Certificate was misused and/or used outside the intended purpose as indicated by the relevant agreement;

ii) The Subscriber breached a material obligation under the CP/CPS or the relevant agreement

iii) QuoVadis confirms any circumstance indicating that use of a FQDN, IP address, or email address in the Certificate is no longer legally permitted (e.g. a court or arbitrator has revoked a Domain Name registrant's right to use the Domain Name, a relevant licensing or services agreement between the Domain Name registrant and the Applicant has terminated, or the Domain Name registrant has failed to renew the Domain Name);

iv) For code signing, the Application Software Vendor requests revocation and QuoVadis does not intend to pursue an alternative course of action;

v) For code signing, the Certificate is being used to sign Suspect Code;

vi) QuoVadis confirms that a Wildcard Certificate has been used to authenticate a fraudulently misleading subordinate FQDN;

vii) QuoVadis confirms a material change in the information contained in the Certificate;

viii) QuoVadis confirms that the Certificate was not issued in accordance with the CA/Browser Forum requirements or relevant browser policy;

ix) QuoVadis determines or confirms that any of the information appearing in the Certificate is inaccurate;

x) QuoVadis right to issue Certificates under the CA/Browser Forum requirements expires or is revoked or terminated, unless QuoVadis has made arrangements to continue maintaining the CRL/OCSP Repository;

xi) Revocation is required by the QuoVadis CP/CPS;

xii) QuoVadis confirms a demonstrated or proven method that exposes the Subscriber's Private Key to compromise, or if there is clear evidence that the specific method used to generate the Private Key was flawed; or

xiii) Where the Subscriber becomes unsuitable or unauthorised to hold a Certificate on behalf of an employer or its respective Subsidiaries, Holding Companies or Counterparties.

QuoVadis may revoke any Certificate in its sole discretion, including if QuoVadis believes that:

i) Either the Subscriber or QuoVadis obligations under the CP/CPS are delayed or prevented by circumstances beyond the party's reasonable control, including computer or communication failure, and, as a result, another entity's information is materially threatened or compromised;

ii) QuoVadis received a lawful and binding order from a government or regulatory body to revoke the Certificate;

iii) The Subscriber is confirmed to be bankrupt, in liquidation, or deceased;

iv) QuoVadis ceased operations and did not arrange for another CA to provide revocation support for the Certificates;

v) The technical content or format of the Certificate presents an unacceptable risk to application software vendors, Relying Parties, or others;

vi) The Subscriber was added as a denied party or prohibited person to a blocklist or is operating from a destination prohibited under the laws of the United States;

vii) For Adobe Signing Certificates, Adobe has requested revocation; or

viii) For code-signing Certificates, the Certificate was used to sign, publish, or distribute malware, code that is downloaded without user consent, or other harmful content.

ix) QuoVadis receives notice or otherwise becomes aware that there has been some other modification of the information pertaining to the Subscriber that is contained within the Certificate;

x) The Subscriber fails or refuses to comply, or to promptly correct inaccurate, false or misleading information after being made aware of such inaccuracy, misrepresentation or falsity;

QuoVadis always revokes a Certificate if the binding between the subject and the subject's Public Key in the Certificate is no longer valid or if an associated Private Key is compromised.

QuoVadis will revoke an Issuing CA Certificate within seven (7) days after receipt and confirming one or more of the following occurred:

i) The Issuing CA requests revocation in writing;

ii) The Issuing CA notifies QuoVadis that the original Certificate Request was not authorised and does not retroactively grant authorisation;

iii) QuoVadis obtains evidence that the Issuing CA's Private Key corresponding to the Public Key in the Certificate suffered a key compromise or no longer complies with the requirements of Sections 6.1.5 and 6.1.6 of the CA/Browser Forum baseline requirements or any Section of the Mozilla Root Store policy;

iv) QuoVadis obtains evidence that the CA Certificate was misused and/or used outside the intended purpose as indicated by the relevant agreement;

v) QuoVadis confirms that the CA Certificate was not issued in accordance with or that Issuing CA has not complied with the CP/CPS;

vi) QuoVadis determines that any of the information appearing in the CA Certificate is inaccurate or misleading;

vii) QuoVadis or the Issuing CA ceases operations for any reason and has not made arrangements for another CA to provide revocation support for the CA Certificate;

viii) QuoVadis' or the Issuing CA's right to issue Certificates under the Baseline Requirements expires or is revoked or terminated, unless QuoVadis has made arrangements to continue maintaining the CRL/OCSP Repository;

ix) Revocation is required by the QuoVadis CP/CPS; or

x) The technical content or format of the CA Certificate presents an unacceptable risk to Application Software Vendors or Relying Parties.

In the event that an Issuing CA determines that its Certificates or the QuoVadis PKI could become compromised and that revocation of Certificates is in the interests of the PKI, following remedial action,

QuoVadis may authorise the reissue of Certificates to Holders at no charge, unless the actions of the Holders were in breach of the QuoVadis CP/CPS or other contractual documents.

4.9.2. Who Can Request Revocation

Any appropriately authorised party, such as a recognised representative of a Subscriber or RA, may request revocation of a Certificate. QuoVadis may revoke a Certificate without receiving a request and without reason. Third parties may request Certificate revocation for problems related to fraud, misuse, or compromise. Certificate revocation requests must identify the entity requesting revocation and specify the reason for revocation.

QuoVadis provides Anti-Malware Organisations, Subscribers, Relying Parties, Application Software Vendors, and other third parties (such as a National Competent Authority that issued the Authorisation Number in a PSD2 Certificate) with clear instructions on how they can report suspected Private Key compromise, Certificate misuse, Certificates used to sign Suspect Code, Takeover Attacks, or other types of possible fraud, compromise, misuse, inappropriate conduct, or any other matter related to Certificates at https://problemreport.digicert.com/ and other resources listed in Section 1.5.2.1.

4.9.3. Procedure For Revocation Request

QuoVadis processes a revocation request as follows:

i) QuoVadis logs the request or problem report and the reason for requesting revocation based on the list in Section 4.9.1, including contact information for the requestor. QuoVadis may also include its own reasons for revocation in the log.

ii) QuoVadis may request confirmation of the revocation from a known administrator, where applicable, via out-of-band communication (e.g., telephone, fax, etc.).

iii) If the request is authenticated as originating from the Subscriber or an authorised party, QuoVadis revokes the Certificate based on the timeframes listed in 4.9.1 as listed for the reason for revocation.

iv) For requests from third parties, QuoVadis personnel begin investigating the request within 24 hours after receipt and decide whether revocation is appropriate based on the following criteria:

- the nature of the alleged problem;
- the number of reports received about a particular Certificate or website;
- the identity of the complainants (for example, complaints from a law enforcement official that a web site is engaged in illegal activities have more weight than a complaint from a consumer alleging they never received the goods they ordered); and
- relevant legislation.

v) If QuoVadis determines that revocation is appropriate, QuoVadis personnel revoke the Certificate and update the Certificate Status.

In the case of a PSD2 Certificate, the NCA identified in the Certificate may request revocation by contacting psd2@quovadisglobal.nl. NCA revocation requests are authenticated using either a previously communicated shared secret, or use of a Digital Signature supported by Qualified Certificate issued to the NCA.

If QuoVadis deems appropriate, QuoVadis may forward the revocation reports to law enforcement. QuoVadis maintains a continuous 24x7 ability to internally respond to high priority revocation requests and certificate problem reports at https://www.quovadisglobal.com/certificate-revocation and other resources listed in Section 1.5.2.1. Subscribers may also revoke their Certificates via the QuoVadis Portal. For Certificates issued from the itsme sign Issuing CA all revocation requests must be directed to the itsme first-line helpdesk.

4.9.4. Revocation Request Grace Period

Subscribers are required to request revocation within one day after detecting the loss or compromise of the Private Key. No grace period is permitted once a revocation request has been verified. Issuing CAs will revoke Certificates as soon as reasonably practical following verification of a revocation request.

4.9.5. Time Within Which The CA Must Process The Revocation Request

QuoVadis will revoke a CA Certificate within one hour after receiving clear instructions from the PMA.

Within 24 hours after receiving a Certificate problem report or revocation request, QuoVadis investigates the facts and circumstances involved with the report and will provide a preliminary report on its findings to both the Subscriber and the entity who filed the Certificate problem report.

After reviewing the facts and circumstances, QuoVadis works with the Subscriber and any entity reporting the Certificate problem report or other revocation-related notice to establish whether or not the Certificate will be revoked, and if so, a date which QuoVadis will revoke the Certificate. The period from receipt of the Certificate problem report or revocation-related notice to published revocation must not exceed the time frame set forth in Section 4.9.1. The date selected by QuoVadis will consider the following criteria:

i) The nature of the alleged problem (scope, context, severity, magnitude, risk of harm);

ii) The consequences of revocation (direct and collateral impacts to Subscribers and Relying Parties);

iii) The number of Certificate problem reports received about a particular Certificate or Subscriber;

iv) The entity making the complaint (for example, a complaint from a law enforcement official that a Web site is engaged in illegal activities should carry more weight than a complaint from a consumer alleging that she didn't receive the goods she ordered); and

v) Relevant legislation.

The time used for the provision of revocation services is synchronised with UTC at least every 24 hours. Under normal operating circumstances, QuoVadis will revoke Certificates as quickly as practical after validating the revocation request following the guidelines of this Section and Section 4.9.1. For Certificates containing the ETSI OIDs defined in Section 10.1.1 the maximum delay between the receipt of the revocation request and the update of the Certificate Status information is at most 24 hours. For Certificates issued from the itsme sign Issuing CA, this 24 hour time period starts with the receipt of the revocation request at the itsme first-line helpdesk.

4.9.6. Revocation Checking Requirement For Relying Parties

Prior to relying on information listed in a Certificate, a Relying Party must confirm the validity of each Certificate in the Certificate path in accordance with IETF PKIX standards, including checking for Certificate validity, issuer-to-subject name chaining, policy and key use constraints, and revocation status through CRLs or OCSP responders identified in each Certificate in the chain.

4.9.7. CRL Issuance Frequency

QuoVadis uses its offline Root CAs to publish CRLs for its Issuing CAs at least every 6 months and within 18 hours after revoking an Issuing CA Certificate. QuoVadis updates the CRL for end-user Certificates at least every 12.5 hours and the date of the "Next Update" field will not be more than 72.5 hours after the date in the "This Update" field.

Before revoking an Issuing CA Certificate a last CRL is generated with a nextUpdate field value of "99991231235959Z". The last CRL is available in accordance with Section 5.5.2. QuoVadis does not issue a last CRL until all Certificates in the scope of the CRL are either expired or revoked.

After the expiry date of an Issuing CA the most recent CRL will be published for at least 1 month. QuoVadis does not use the ExpiredCertsOnCRL extension.

4.9.8. Maximum Latency For CRL

CRLs for Certificates issued to end entity Subscribers are posted automatically to the online Repository within a commercially reasonable time after generation, usually within 10 minutes of generation. Regularly scheduled CRLs are posted prior to the nextUpdate field in the previously issued CRL of the same scope.

4.9.9. On-Line Revocation/Status Checking Availability

In addition to CRLs, QuoVadis also provides certificate status information via OCSP in accordance with RFC 6960. OCSP is updated immediately when a Certificate is revoked. OSCP responses are valid for a maximum of 48.5 hours. Where applicable, the URL for the OCSP responder may be found within the Authority Information Access (AIA) extension of the Certificate.

Upon expiry of the Issuing CA, the associated OCSP Responder service is discontinued. QuoVadis does not use the OCSP ArchiveCutoff extension and does not compute a last OCSP answer for issued Certificates with the "nextUpdate" field set to "999912312359Z".

4.9.10. OCSP Checking Requirement

A Relying Party must confirm the validity of a Certificate in accordance with Section 4.9.6 prior to relying on the Certificate. The validity interval of an OCSP response is the difference in time between the thisUpdate and nextUpdate field, inclusive. For purposes of computing differences, a difference of 3,600 seconds shall be equal to one hour, and a difference of 86,400 seconds shall be equal to one day, ignoring leap-seconds.

QuoVadis supports an OCSP capability using the GET method for Certificates. OCSP responders under QuoVadis' direct control respond with an "unauthorised" status for Certificates that have not been issued. QuoVadis may monitor its OCSP responders for requests for non-issued Certificates as part of its security response procedures.

4.9.11. Other Forms Of Revocation Advertisements Available

Not applicable.

4.9.12. Special Requirements in Relation to Key Compromise

QuoVadis uses commercially reasonable efforts to notify potential Relying Parties if it discovers or suspects the compromise of a Private Key. Reports to QuoVadis of key compromise must include:

- Proof of key compromise in either of the following formats:
    - A CSR signed by the compromised private key with the Common Name "Proof of Key Compromise for DigiCert"; or
    - The private key itself
- A valid email address so that you can receive confirmation of your problem report and associated certificate revocations

QuoVadis will select the CRLReason code "keyCompromise" (value 1) upon discovery of such reason or as required by an applicable CP/CPS. Should a CA Private Key become compromised, the CA and all Certificates issued by that CA shall be revoked. QuoVadis provides additional instructions and support for keyCompromise at https://www.quovadisglobal.com/certificate-revocation/ and other resources as indicated in Section 1.5.2.1 of this CP/CPS.

4.9.13. Circumstances For Suspension

No suspension of Certificates is permissible within the QuoVadis PKI.

4.9.14. Who Can Request Suspension

No suspension of Certificates is permissible within the QuoVadis PKI.

4.9.15. Procedure For Suspension Request

No suspension of Certificates is permissible within the QuoVadis PKI.

4.9.16. Limits On Suspension Period

No suspension of Certificates is permissible within the QuoVadis PKI.

4.10. CERTIFICATE STATUS SERVICES

4.10.1. Operational Characteristics

Certificate status information is available via CRL and OCSP responder. For publicly-trusted TLS certificates, revocation entries on a CRL or OCSP Response are not removed until after the expiration of the revoked Certificate. The serial number of a revoked Certificate remains on the CRL until one additional CRL is published after the end of the Certificate's validity period, except for revoked Code Signing Certificates, which remain on the CRL for at least 10 years following the Certificate's validity period.

4.10.2. Service Availability

Certificate status services are available 24x7. QuoVadis operates and maintains its CRL and OCSP capability with resources sufficient to provide a response time of ten seconds or less under normal operating conditions.

QuoVadis also maintains a continuous 24x7 ability to respond internally to a high-priority Certificate Problem Report, and where appropriate, forward such a complaint to law enforcement authorities, and/or revoke a Certificate that is the subject of such a complaint.

4.10.3. Optional Features

No stipulation.

4.11. END OF SUBSCRIPTION

A Subscriber's subscription service ends if its Certificate expires or is revoked or if the applicable Subscriber Agreement expires without renewal.

4.12. KEY ESCROW AND RECOVERY

QuoVadis provides optional Private Key Escrow services for certain Certificate Profiles (*see* Appendix A, Section 10.1.2) under this CP/CPS. Private Key Escrow is only available if the Enterprise RA Administrator directs at the Account level. Private Key Escrow is prohibited for the following Certificate types:

- CA Certificates
- QV Advanced+ Certificates
- QV Qualified Certificates
- Any Certificate whose Private Key Usage is dedicated to Signing or Authentication
- TLS Certificates
- Codesigning Certificates

Private Key Escrow shall not be allowed when the nonRepudiation keyUsage is present in a Certificate as of version 4.32 of this CP/CPS.

4.12.1. Key Escrow And Recovery Policy And Practices

RAs are permitted to instruct QuoVadis to escrow the Subscriber's Encryption Private Key as specified in their RA Agreement. End-user Subscriber Private Keys shall only be recovered under the circumstances permitted within the RA Agreement and QuoVadis Portal administrator guide.

Escrowed Private Keys are stored in encrypted form using the QuoVadis Portal. Subscribers are notified when their Private Keys are escrowed. Properly authenticated Subscribers may subsequently retrieve their own Private Keys.

In addition, properly authenticated RA Officers with specific Key Recovery permissions may request retrieval of a Subscriber's Private Keys under the following conditions:

- RAs must protect Subscriber's escrowed Private Keys from unauthorised disclosure.
- RAs may retrieve Subscriber's escrowed Private Keys only for properly authenticated and authorised requests for recovery.
- RAs shall recover a Subscriber's escrowed Private Keys without the Subscriber's authority only for legitimate and lawful purposes, such as to comply with judicial or administrative process or a search warrant, and not for any illegal, fraudulent, or other wrongful purpose.
- RAs must revoke the Subscriber's Key Pair prior to recovering the Private Key.
- RAs may not disclose or allow to be disclosed escrowed keys or archive key-related information to any third party unless required by the law, government rule, or regulation; by the enterprise's organisation policy; or by order of a court of competent jurisdiction.
- RAs are not required to communicate any information concerning a key recovery to the Subscriber except when the Subscriber has requested recovery.

4.12.2. Session Key Encapsulation And Recovery Policy And Practices

Not applicable.

5. FACILITY, MANAGEMENT, AND OPERATIONAL CONTROLS

The Section of the CP/CPS provides a high level description of the security policy, physical and logical access control mechanisms, service levels, and personnel policies used by QuoVadis to provide trustworthy and reliable CA operations. QuoVadis maintains a security program to:

i) Protect the confidentiality, integrity, and availability of data and business process;

ii) Protect against anticipated threats or hazards to the confidentiality, integrity, and availability of data and business process;

iii) Protect against unauthorised or unlawful access, use, disclosure, alteration, or destruction of data and business process;

iv) Protect against accidental loss or destruction of, or damage to data and business processes; and

v) Comply with all other security requirements applicable to the CA by law and industry best practices.

QuoVadis performs an annual risk assessment to identify internal and external threats and assess likelihood and potential impact of these threats to data and business processes.

5.1. PHYSICAL CONTROLS

QuoVadis manages and implements appropriate physical security controls to restrict access to the hardware and software used in connection with CA operations.

5.1.1. Site Location and Construction

QuoVadis performs its CA and TSA operations from secure datacentres located in Bermuda, the Netherlands, and Switzerland. The data centres are equipped with logical and physical controls that make QuoVadis' CA and TSA operations inaccessible to non-trusted personnel. QuoVadis operates under a security policy designed to detect, deter, and prevent unauthorised access to QuoVadis' operations.

5.1.2. Physical Access

QuoVadis permits entry to its secure datacentres only to security-cleared and authorised personnel, whose movements within the facility are logged and audited. A police background check forms part of the security clearance authorisation process. Physical access is controlled by dual-factor authentication using a combination of physical access cards and biometric readers.

5.1.3. Power And Air-Conditioning

Datacentres have primary and secondary power supplies that ensure continuous and uninterrupted access to electric power. Uninterrupted power supplies (UPS) and generators provide redundant backup power.

5.1.4. Water Exposures

The cabinets housing QuoVadis' CA and TSA systems are designed to prevent and protect against water exposure.

5.1.5. Fire Prevention And Protection

QuoVadis datacentres are equipped with fire suppression mechanisms.

5.1.6. Media Storage

QuoVadis protects its media from accidental damage, environmental hazards, unauthorised physical access, and from obsolescence/deterioration during the period that records are required to be retained. Backup files are created on a daily basis. QuoVadis backup files are maintained at either within the QuoVadis service operations area or in a secure off-site storage area.

5.1.7. Waste Disposal

All unnecessary copies of printed sensitive information are shredded on-site before disposal. All electronic media are physically destroyed or are overwritten multiple times to prevent the recovery of the data.

5.1.8. Off-Site Backup

An off-site location is used for the storage and retention of backup software and data. The off-site storage:

i) is available to authorised personnel 24x7for the purpose of retrieving software and data; and

ii) has appropriate levels of physical security in place (i.e., software and data are stored in fire-rated safes and containers which are located behind access-controlled doors in areas accessible only by authorised personnel).

5.2. PROCEDURAL CONTROLS

Administrative processes are dealt with and described in detail in the various documents used within and supporting the QuoVadis PKI. Issuing CAs are required to ensure that administrative procedures related to personnel and procedural requirements, and physical and technological security mechanisms, are maintained in accordance with this CP/CPS and other relevant operational documents.

5.2.1. Trusted Roles

Personnel acting in trusted roles include CA, TSA, and RA system administration personnel, and personnel involved with identity vetting and the issuance and revocation of Certificates. The functions and duties performed by persons in trusted roles are distributed so that one person alone cannot circumvent security measures or subvert the security and trustworthiness of the PKI or TSA operations. A list of personnel appointed to trusted roles is maintained and reviewed annually.

5.2.1.1. CA Administrators

The CA Administrator installs and configures the CA software, including key generation, key backup, and key management. The CA Administrator performs and securely stores regular system backups of the CA system. Administrators do not issue Certificates to Subscribers.

5.2.1.2. Registration Officers – CMS, RA, Validation and Vetting Personnel

The Registration Officer role is responsible for issuing and revoking Certificates.

5.2.1.3. System Administrators/ System Engineers (Operator)

The System Administrator/System Engineer installs and configures system hardware, including servers, routers, firewalls, and network configurations. The System Administrator/System Engineer also keeps critical systems updated with software patches and other maintenance needed for system stability and recoverability.

5.2.1.4. Internal Auditors

Internal Auditors are responsible for reviewing, maintaining, and archiving audit logs and performing or overseeing internal compliance audits to determine if QuoVadis, an Issuing CA, or RA is operating in accordance with this CP/CPS or approved registration procedures.

5.2.1.5. RA Administrators

RA Administrators manage the RA certificate management systems.

5.2.1.6. Security Officers

The Security Officer is responsible for administering and implementing security practices.

5.2.2. Number of Persons Required Per Task

QuoVadis requires that at least two people acting in a trusted role take action for the most sensitive tasks, such as activating QuoVadis' Private Keys, generating a CA Key Pair, or backing up a QuoVadis Private Key. The Internal Auditor may serve to fulfill the requirement of multiparty control for physical access to the CA system but not logical access.

5.2.3. Identification and Authentication For Each Role

Persons filling trusted roles must undergo an appropriate security screening procedure commensurate to their role and access privileges are configured using the "least privileges" principle for the role. All personnel are required to authenticate themselves to CA, TSA, and RA systems before they are allowed access to systems necessary to perform their trusted roles.

5.2.4. Roles Requiring Separation of Duties

Trusted roles requiring a separation of duties include those performing:

- authorisation functions such as the verification of information in Certificate Requests and certain approvals of Certificate applications and revocation requests,
- backups, recording, and record keeping functions;

- audit, review, oversight, or reconciliation functions; and
- duties related to CA/TSA key management or CA/TSA administration.

To accomplish this separation of duties, QuoVadis specifically designates individuals to the trusted roles defined in Section 5.2.1 above. Individuals designated as Registration Officer or Administrator may perform Operator duties, but an Internal Auditor may not assume any other role.

5.3. PERSONNEL CONTROLS

QuoVadis determines the nature and extent of any background checks, in its sole discretion. Without limitation, QuoVadis shall not be liable for employee conduct that is outside of their duties and for which QuoVadis has no control including, without limitation, acts of espionage, sabotage, criminal conduct, or malicious interference.

5.3.1. Qualifications, Experience And Clearance Requirements

The PMA is responsible and accountable for QuoVadis PKI operations and ensures compliance with this CP/CPS. Prior to the engagement of any person in the Certificate management process, QuoVadis verifies the identity and trustworthiness of such person. QuoVadis determines that all individuals assigned to trusted roles perform their prospective job responsibilities competently and satisfactorily as required.

Without limitation, QuoVadis shall not be liable for employee conduct that is outside of their duties and for which QuoVadis has no control including, without limitation, acts of espionage, sabotage, criminal conduct, or malicious interference.

5.3.2. Background Check Procedures

QuoVadis verifies the identity of each employee appointed to a trusted role and performs a background check prior to allowing such person to act in a trusted role. QuoVadis requires each individual to appear in-person before a human resources employee whose responsibility it is to verify identity. The human resources employee verifies the individual's identity using government-issued photo. Background checks may include a combination of the following as required; verification of individual identity, employment history, education, character references, social security number, previous residences, driving records, professional references, and criminal background.

These procedures are subject to any limitations on background checks imposed by local law. To the extent one of the requirements imposed by this Section cannot be met by QuoVadis due to a prohibition or limitation in local law, QuoVadis utilises a substitute investigative technique permitted by law that provides substantially similar information, including but not limited to obtaining a background check performed by the applicable governmental agency.

5.3.3. Training Requirements

QuoVadis provides relevant skills training in QuoVadis' PKI and TSA operations for the personnel performing information verification duties including:

i) basic PKI knowledge,
ii) software versions used by QuoVadis,
iii) authentication and verification policies and procedures,
iv) QuoVadis security principles and mechanisms,
v) disaster recovery and business continuity procedures,
vi) common threats to the validation process, including phishing and other social engineering tactics, and
vii) CA/Browser Forum Guidelines and other applicable industry and government guidelines.

QuoVadis maintains records of who received training and what level of training was completed. Registration Officers must have the minimum skills necessary to satisfactorily perform validation duties before being

granted validation privileges. All Registration Officers are required to pass an internal examination on the EV Guidelines and the Baseline Requirements prior to validating and approving the issuance of Certificates.

5.3.4. Retraining Frequency And Requirements

Employees must maintain skill levels that are consistent with QuoVadis' industry-relevant training and performance programs in order to continue acting in trusted roles. QuoVadis makes employees acting in trusted roles aware of any changes to QuoVadis' operations as necessary for them to perform their role. If QuoVadis' operations change, QuoVadis will provide documented training, in accordance with an executed training plan, to all employees acting in relevant trusted roles to those changes.

5.3.5. Job Rotation Frequency And Sequence

Not applicable.

5.3.6. Sanctions for Unauthorised Actions

QuoVadis employees and agents failing to comply with this CP/CPS, whether through negligence or malicious intent, are subject to internally maintained processes specifying guidance on administrative or disciplinary actions, up to and including termination of employment or agency and criminal sanctions.

5.3.7. Independent Contractor Requirements

Independent contractors who are assigned to perform trusted roles are subject to the duties and requirements specified for such roles in this Section 5.3 and are subject to sanctions stated above in Section 5.3.6.

5.3.8. Documentation Supplied To Personnel

Personnel in trusted roles are provided with the documentation necessary to perform their duties, including a copy of the CP/CPS, applicable CA/Browser Forum standards, and other technical and operational documentation needed to maintain the integrity of QuoVadis' CA operations. Personnel are also given access to information on internal systems and security documentation, identity vetting policies and procedures, discipline-specific books, treatises and periodicals, and other information.

5.4. AUDIT LOGGING PROCEDURES

5.4.1. Types Of Events Recorded

QuoVadis records details of the actions taken to process a Certificate Request and to issue a Certificate, including all information generated and documentation received in connection with the Certificate Request.

QuoVadis logs the following events:

- CA Certificate and key lifecycle management events;
  - Certificate requests, renewal, and re-key requests, and revocation;
  - Approval and rejection of Certificate Requests;
  - Cryptographic device lifecycle management events;
  - Generation of CRLs and OCSP entries; and
  - Certificate Profiles management.
- Subscriber Certificate lifecycle management events, including:
  - Certificate requests, renewal, and re-key requests, and revocation;
  - Verification activities;
  - Approval and rejection of Certificate Requests;

  - Issuance of Certificates; and
  - Generation of CRLs and OCSP entries.
- Security events, including
  - Successful and unsuccessful PKI system access attempts;
  - PKI and security system actions performed;
  - Security profile changes;
  - Installation, update and removal of software on a PKI System;
  - System crashes, hardware failures, and other anomalies;
  - Firewall and router activities; and
  - Entries to and exits from the CA facility.

QuoVadis event logs include:

- Date and time of the record;
- Identity of the entity making the journal record; and
- Details of the of record.

5.4.2. Frequency Of Processing Log

As required, generally within at least once every two months, a QuoVadis administrator reviews the logs generated by QuoVadis' systems, makes system and file integrity checks, and conducts a vulnerability assessment. The administrator may perform the checks using automated tools. During these checks, the administrator (i) checks whether anyone has tampered with the log, (ii) scans for anomalies or specific conditions, including any evidence of malicious activity, and (iii) if necessary, prepares a written summary of the review. Any anomalies or irregularities found in the logs are investigated. The summaries may include recommendations to DigiCert's operations management committee and are made available to auditors upon request. QuoVadis documents any actions taken as a result of a review.

5.4.3. Retention Period For Audit Log

Audit logs relating to the Certificate lifecycle are retained as archive records for a period no less than eleven (11) years for Swiss Qualified Certificates and for seven (7) years for all other Certificates starting from the destruction of the CA Private Key or revocation or expiration of the Certificate. Certain high volume system generated logs are retained for 18 months based on a risk assessment. QuoVadis makes the audit logs available to auditors, as defined in Section 8, available upon request.

5.4.4. Protection Of Audit Log

The relevant audit data collected is regularly analysed for any attempts to violate the integrity of any element of the QuoVadis PKI. Only certain QuoVadis Trusted Roles and auditors may view audit logs in whole. QuoVadis decides whether particular audit records need to be viewed by others in specific instances and makes those records available. Consolidated logs are protected from modification and destruction. All audit logs are protected in an encrypted format via a Key and/or Certificate generated especially for the purpose of protecting the logs.

5.4.5. Audit Log Backup Procedures

Each Issuing CA performs an onsite backup of the audit log daily. The backup process includes weekly physical removal of the audit log copy from the Issuing CA's premises and storage at a secure, off-site location.

Backup procedures apply to the QuoVadis PKI and the Participants therein including the QuoVadis Root CAs, Issuing CAs and RAs.

5.4.6. Audit Collection System

The security audit process of each Issuing CA runs independently of the Issuing CA software. Security audit processes are invoked at system start up and cease only at system shutdown.

5.4.7. Notification To Event-Causing Subject

Where an event is logged, no notice is required to be given to the individual, organisation, device or application that caused the event.

5.4.8. Vulnerability Assessment

QuoVadis performs annual risk assessments that identify and assess reasonably foreseeable internal and external threats that could result in unauthorized access, disclosure, misuse, alteration, or destruction of any certificate data or certificate issuance process. QuoVadis also routinely assesses the sufficiency of the policies, procedures, information systems, technology, and other arrangements that QuoVadis has in place to control risks identified in risk assessments. QuoVadis' Internal Auditors review the security audit data checks for continuity.

Based on the risk assessment, QuoVadis develops, implements, and maintains a security plan consisting of security procedures, measures, and products designed to achieve the objectives set forth above and to manage and control the risks identified during the risk assessment, commensurate with the sensitivity of the Certificate data and management processes.

QuoVadis' audit log monitoring tools alert the appropriate personnel of any events, such as repeated failed actions, requests for privileged information, attempted access of system files, and unauthenticated responses.

5.5. RECORDS ARCHIVAL

5.5.1. Types Of Records Archived

QuoVadis retains the following information in its archives (as such information pertains to QuoVadis' CA / TSA operations):

- QuoVadis accreditations
- Compliance auditor reports
- CP/CPS versions
- Contractual obligations and other agreements concerning the operation of the CA
- System and equipment configurations, modifications, and updates
- Certificate request and verification
- Rejection or acceptance of a certificate request
- Certificate issuance, rekey, renewal, and revocation requests (and related actions)
- Certificate acceptance including Subscriber Agreements
- Escrow and retrieval requests
- Audit logs
- CA Key generation and destruction
- Appointment of an individual to a trusted role
- Destruction of a cryptographic module

5.5.2. Retention Period For Archive

Audit logs relating to the Certificate lifecycle are retained as archive records for a period no less than eleven (11) years for Swiss Qualified Certificates and for seven (7) years for all other Certificates. Detailed system generated logs are retained for 18 months based on a risk assessment.

5.5.3. Protection Of Archive

Archive records are stored at a secure location and are maintained in a manner that prevents unauthorized modification, substitution, or destruction. Archives are not released except as allowed by the PMA or as required by law. QuoVadis maintains any software application required to process the archive data until the data is either destroyed or transferred to a newer medium.

If QuoVadis needs to transfer any media to a different archive site or equipment, QuoVadis will maintain both archived locations and/or pieces of equipment until the transfer are complete. All transfers to new archives will occur in a secure manner.

5.5.4. Archive Backup Procedures

QuoVadis maintains and implements backup procedures so that in the event of the loss or destruction of the primary archives a complete set of backup copies is readily available.

5.5.5. Requirements For Time-Stamping Of Records

QuoVadis supports time stamping of its records. All events that are recorded within the QuoVadis service include the date and time of when the event took place. This date and time are based on the system time on which the CA system is operating. QuoVadis uses procedures to review and ensure that all systems operating within the QuoVadis PKI rely on a trusted time source.

5.5.6. Archive Collection System

The QuoVadis Archive Collection System is internal. QuoVadis provides assistance to Issuing CAs and RAs within the QuoVadis PKI to preserve their audit trails.

5.5.7. Procedures To Obtain And Verify Archive Information

Only specific QuoVadis Trusted Roles and auditors may view the archives in whole. The contents of the archives will not be released as a whole, except as required by law. QuoVadis may decide to release records of individual transactions upon request of any of the entities involved in the transaction or their authorised representatives. A reasonable handling fee per record (subject to a minimum fee) will be assessed to cover the cost of record retrieval.

5.6. KEY CHANGEOVER

Key changeover is not automatic, but procedures enable the smooth transition from expiring CA Certificates to new CA Certificates. Towards the end of the CA Private Key's lifetime, QuoVadis ceases using its expiring CA Private Key to sign Certificates (well in advance of expiration) and uses the old Private Key only to sign CRLs and OCSP responder Certificates associated with that key. A new CA signing Key Pair is commissioned and all subsequently issued Certificates and CRLs are signed with the new private signing key. Both the old and the new Key Pairs may be concurrently active.

5.7. COMPROMISE AND DISASTER RECOVERY

5.7.1. Incident and Compromise Handling Procedures

QuoVadis maintains internal incident response procedures to guide personnel in response to security incidents, natural disasters, and similar events that may give rise to system compromise. These procedures include notification to Application Software Vendors, Subscribers, and Relying Parties as appropriate in the

event of a disaster, security compromise, or business failure. QuoVadis reviews, tests, and updates its incident response plans and procedures on a periodic basis.

5.7.2. Computing Resources, Software, and/or Data Are Corrupted

QuoVadis makes regular system backups weekly basis and maintains backup copies of its CA Private Keys, which are stored in a secure, separate location. If QuoVadis discovers that any of its computing resources, software, or data operations have been compromised, QuoVadis assesses the threats and risks that the compromise presents to the integrity or security of its operations or those of affected parties. If QuoVadis determines that a continued operation could pose a significant risk to Relying Parties or Subscribers, QuoVadis suspends such operation until it determines that the risk is mitigated.

5.7.3. Entity Private Key Compromise Procedures

If QuoVadis suspects that one of its CA Private Keys has been compromised, the PMA will convene a response team to assess the incident and take appropriate action. QuoVadis will meet the requirements of Section 1.1 by following incident response plans whose steps generally include the following:

i) Collect information related to the incident;

ii) Determine the degree and scope of compromise; and report on the course of action that should be taken to correct the problem and prevent reoccurrence;

iii) If appropriate, contact government agencies, law enforcement, and other interested parties and activate any other appropriate additional security measures; and

iv) Incorporate lessons learned into the implementation of long term solutions and the Incident Response Plan.

QuoVadis may generate a new Key Pair and sign a new Certificate. If a disaster physically damages QuoVadis' equipment and destroys all copies of QuoVadis' Private Keys then QuoVadis will provide notice to affected parties at the earliest feasible time.

5.7.4. Business Continuity Capabilities After a Disaster

To maintain the integrity of its services, QuoVadis implements data backup and recovery procedures as part of its Business Continuity Management Plan (BCMP). Stated goals of the BCMP are to ensure that certificate status services be only minimally affected by any disaster involving QuoVadis' primary facility and that QuoVadis be capable of maintaining other services or resuming them as quickly as possible following a disaster. QuoVadis periodically reviews, tests, and updates the BCMP and supporting procedures.

5.8. CA AND/OR RA TERMINATION

Unless otherwise addressed in an applicable agreement between QuoVadis and a counterparty, before terminating its CA or RA activities, QuoVadis may:

i) Notify relevant Government and Certification bodies under applicable laws and related regulations;

ii) Provide notice and information about the termination by sending notice by email to its customers, Application Software Vendors and by posting such information on QuoVadis' web site; and

iii) Transfer all responsibilities to a qualified successor entity.

Unless otherwise addressed in an applicable agreement between QuoVadis and a counterparty, if a qualified successor entity does not exist, QuoVadis will:

i) transfer those functions capable of being transferred to a reliable third party and arrange to preserve all relevant records with a reliable third party or a government, regulatory, or legal body with appropriate authority;

ii) revoke all Certificates that are still un-revoked or un-expired on a date as specified in the notice and publish final CRLs;

iii) destroy all Private Keys; and

iv) make other necessary arrangements that are in accordance with this CP/CPS.

For Qualified Certificates, a notice of termination of the Issuing CA must be communicated in accordance with pre-established procedures to SAS, the body responsible for accrediting the Certificate Service Provider.

For EU Qualified Certificates, QuoVadis has implemented procedures to be followed in the event of termination of the service provision. These procedures provide for the transfer of relevant records to a regulatory body and the continuation of revocation status in the event of termination. QuoVadis also has formally documented complaint and dispute resolution procedures.

QuoVadis has made arrangements to cover the costs associated with fulfilling these requirements in case QuoVadis becomes bankrupt or is unable to cover the costs. Any requirements of this Section that are varied by contract apply only the contracting parties.

6. TECHNICAL SECURITY CONTROLS

6.1. KEY PAIR GENERATION AND INSTALLATION

6.1.1. Key Pair Generation

QuoVadis CA Key Pairs are generated by multiple trusted individuals acting in trusted roles and using a cryptographic hardware device as part of scripted key generation ceremony in the environments described in Section 5.1 and logged in accordance with Section 5.4. The cryptographic hardware is evaluated to FIPS 140-2 Level 3 and/or Common Criteria EAL 4 or higher. Hardware Security Modules (HSM) are always stored in a physically secure environment and are subject to security controls throughout their lifecycle. Activation of the hardware requires the use of two-factor authentication tokens. QuoVadis creates auditable evidence during the key generation process to prove that the CP/CPS was followed and role separation was enforced during the key generation process. QuoVadis requires that an external auditor witness the generation of or review a recording of any CA keys to be used as publicly-trusted Root Certificates. For other CA Key Pair generation ceremonies, an Internal Auditor, external auditor, or independent third party attends the ceremony, or an external auditor examines the signed and documented record of the key generation ceremony, as allowed by applicable policy.

Subscribers must generate their Key Pair in a manner that is appropriate for the Certificate type.

For Qualified Certificates of type QCP-n-qscd, the Subscriber Private Keys are generated and stored on a QSCD.

For relevant EU Qualified Certificates of type QCP-n-qscd or QCP-l-qscd, the Subscriber Private Keys are generated and stored on a QSCD which meets the requirements laid down in Annex II of the eIDAS Regulation and is certified to the appropriate standards.

In the case that a QSCD used by QuoVadis for QCP-n-qscd or QCP-l-qscd loses its certification status, non-expired Certificates using the affected QCSD will be revoked.In some cases, a QTSP generates and manages Private Keys on behalf of the Subscriber. This is signified by the presence of the 1.3.6.1.4.1.8024.1.410 OID in Certificate policies. *See also* Section 10.1.1.

For Adobe Acrobat Trust List (AATL) Certificates, Subscribers must generate their Key Pairs in a medium that prevents exportation or duplication and that meets or exceeds FIPS 140-2 Level 3.

QuoVadis never creates key pairs for publicly-trusted TLS Certificates and will not accept a certificate request using a Key Pair previously generated by DigiCert or QuoVadis. For publicly-trusted TLS Certificates, QuoVadis rejects a certificate request if the requested Public Key does not meet the requirements set forth in Sections 6.1.5 and 6.1.6 of CA/Browser Baseline Requirements or if it has a known weak Private Key (such as a Debian weak key, see http://wiki.debian.org/SSLkeys).

6.1.2. Private Key Delivery To Subscriber

Where QuoVadis generates Private Keys on behalf of the Subscriber, they are provided in a secure manner via the QuoVadis Portal (for example for S/MIME Certificates) or Digital Signature platform.

For some EU Qualified Certificates, QuoVadis may generate and manages Private Keys on behalf of the Subscriber. Where the policy requires the use of a QSCD then the signatures shall only be created by the QSCD.

In the case of natural persons, the Subscribers' Private Key is maintained and used under their sole control and used only for Electronic Signatures. In the case of legal persons, the Private Key is maintained and used under their control and used only for Electronic Seals.

6.1.3. Electronic Signature Public Key Delivery To Certificate Issuer

Subscribers generate Key Pairs and deliver Public Keys to the Issuing CA in a secure and trustworthy manner, such as submitting a CSR message to a QuoVadis Portal.

6.1.4. CA Public Key To Relying Parties

QuoVadis' Public Keys are provided to Relying Parties as specified in a certificate validation or path discovery policy file, as trust anchors in commercial browsers and operating system root stores, and/or as roots signed by other CAs. All Accreditation Authorities supporting QuoVadis Certificates and all Application Software Vendors are permitted to redistribute QuoVadis CA Certificates.

QuoVadis may also distribute Public Keys that are part of an updated signature Key Pair as a self-signed Certificate, as a new CA Certificate, or in a key roll-over Certificate. Relying Parties may also obtain QuoVadis CA Certificates from QuoVadis' web site or by email.

6.1.5. Key Sizes

QuoVadis follows the relevant ETSI and NIST guidance in using and retiring signature algorithms and key sizes. Key sizes for individual Certificate Profiles are disclosed in Appendix A and Appendix B. Currently QuoVadis generates and uses at least the following key sizes, signature algorithms and hash algorithms for signing Certificates, CRLs, and OCSP responses:

- 2048-bit or greater RSA Key (with a modulus size in bits divisible by 8);
- 256-bit ECDSA Key or greater with the matching Secure Hash Algorithm version as required and a valid point on the elliptic curve; or
- a hash algorithm that is equally or more resistant to a collision attack allowed by the references in Sections 1.1 and 8.1.

Signatures on CRLs, OCSP responses, and OCSP responder Certificates that provide status information for Certificates that were generated using SHA-1 may continue to be generated using the SHA-1 algorithm if it is compliant with all applicable programs listed in Section 1.1. All other signatures on CRLs, OCSP responses, and OCSP responder Certificates must use the SHA-256 hash algorithm or one that is equally or more resistant to collision attack.

QuoVadis requires end-entity Certificates to contain a key size that is at least 2048 bits for RSA, DSA, or Diffie-Hellman and 224 bits for elliptic curve algorithms. QuoVadis may require higher bit keys in its sole discretion.

Any Root Certificates participating in the AATL program issued after July 1, 2017 must be at least 3072-bit for RSA and 256-bit for ECDSA.

QuoVadis and Subscribers may fulfill transmission security requirements using TLS or another protocol that provides similar security, provided the protocol requires at least AES 128 bits or equivalent for the symmetric key and at least 2048-bit RSA or equivalent for the asymmetric keys.

6.1.6. Public Key Parameters Generation And Quality Checking

QuoVadis uses cryptographic modules that conform to FIPS 186-2 and provide random value generation and on-board generation of Public Keys and a wide range of ECC curves.

6.1.7. Key Usage Purposes (As Per X.509 V3 Key Usage Field)

Private Keys corresponding to QuoVadis Root Certificates are not used to sign Certificates except in the following cases:

i) Self-signed Certificates to represent the QuoVadis Root CAs;

ii) Certificates for subordinate Issuing CAs and Cross Certificates;

iii) Certificates for infrastructure purposes (administrative role certificates, internal CA operational device certificates); and

iv) Certificates for OCSP Response verification.

Subscriber Certificates assert key usages based on the intended application of the Key Pair and cannot include anyExtendedKeyUsage. Key usage bits and extended key usages are specified in Appendix A and Appendix B.

An Issuing CA's Private Keys may be used for Certificate signing and CRL and OCSP response signing and shall not be used for any other purpose.

6.2. PRIVATE KEY PROTECTION AND CRYPTOGRAPHIC MODULE ENGINEERING CONTROLS

All Participants in the QuoVadis PKI are required to take all appropriate and adequate steps to protect their Private Keys in accordance with the requirements of this QuoVadis CP/CPS. Without limitation to the generality of the foregoing, all Participants in the QuoVadis PKI must (i) secure their Private Key and take all reasonable and necessary precautions to prevent the loss, damage, disclosure, modification, or unauthorised use of their Private Key (to include password, Token or other activation data used to control access to the Private Key); and (ii) exercise sole and complete control and use of the Private Key that corresponds to their Public Key.

6.2.1. Cryptographic Module Standards And Controls

The generation and maintenance of the Root and Issuing CA Private Keys are facilitated through the use of HMS. The HSM used by Issuing CAs in the QuoVadis PKI are designed to provide at least FIPS 140-2 Level 3 and/or Common Criteria EAL 4 security standards in both the generation and the maintenance in all Root and Issuing CA Private Keys.

For Qualified Certificates of type QCP-n-qscd, the Subscriber Private Keys are generated and stored on a QSCD.

For relevant EU Qualified Certificates of type QCP-n-qscd or QCP-l-qscd, the Subscriber Private Keys are generated and stored on a QSCD which meets the requirements laid down in Annex II of the eIDAS Regulation and is certified to the appropriate standards.

In some cases, QuoVadis generates and manages Private Keys on behalf of the Subscriber and operates the QSCD in accordance with Annex II of the eIDAS Regulation. This will be signified by the presence of the 1.3.6.1.4.1.8024.1.410 OID in Certificate policies. Refer to Section 10.1.1 for further details.

QuoVadis must verify that QSCDs are certified as a QSCD in accordance requirements laid down in Annex II of the eIDAS Regulation. QuoVadis must monitor this certification status and take appropriate measures if the certification status of a QSCD changes. The QSCD certification status and evidence of the QuoVadis monitoring are in scope of the external eIDAS/ETSI conformity assessments.

6.2.2. Private Key (Nof-M) Multi-Person Control

QuoVadis' authentication mechanisms are protected securely when not in use and may only be accessed by actions of multiple trusted persons. Backups of CA Private Keys are securely stored and require two-person access. Re-activation of a backed-up CA Private Key (unwrapping) requires the same security and multi-person control as when performing other sensitive CA Private Key operations.

6.2.3. Private Key Escrow

QuoVadis does not escrow its CA signature keys. QuoVadis may provide escrow services for end entity Subscriber Certificates in order to provide key recovery as described in Section 4.12.1.

6.2.4. Private Key Backup

QuoVadis Private Keys are generated and operated inside cryptographic modules which have been evaluated to at least FIPS 140-2 Level 3. When keys are transferred to other media for backup and disaster recovery purposes, the keys are transferred and stored in an encrypted form. QuoVadis' CA Key Pairs are backed up by multiple trusted individuals using a cryptographic hardware device as part of scripted key backup process.

6.2.5. Private Key Archive

See Section 4.12. QuoVadis does not archive CA Certificate Private Keys.

6.2.6. Private Key Transfer Into Or From A Cryptographic Module

All CA keys must be generated by and in a cryptographic module. Private Keys are exported from the cryptographic module into backup tokens only for HSM transfer, offline storage, and backup purposes. The Private Keys are encrypted when transferred out of the module and never exist in plaintext form. When transported between cryptographic modules, QuoVadis encrypts the Private Key and protects the keys used for encryption from disclosure. Private Keys used to encrypt backups are securely stored and require two-person access. If QuoVadis becomes aware that an Issuing CA's Private Key has been communicated to an unauthorised person or an organization not affiliated with the Issuing CA, then QuoVadis will revoke all certificates that include the Public Key corresponding to the communicated Private Key.

If QuoVadis pre-generates Private Keys and transfers them into a hardware token, for example transferring generated end-entity Subscriber Private Keys into a smart card, it will securely transfer such Private Keys into the token to the extent necessary to prevent loss, theft, modification, unauthorized disclosure, or unauthorized use of such Private Keys.

6.2.7. Private Key Storage On Cryptographic Module

CA Private Keys are generated and stored in a physically secure environment within cryptographic modules that are validated to FIPS 140-2 Level-3. Root CA Private Keys are stored offline in cryptographic modules or backup tokens as described above in Sections 6.2.2, 6.2.4, and 6.2.6.

6.2.8. Method Of Activating Private Key

QuoVadis' Private Keys are activated according to the specifications of the HSM manufacturer. Activation data entry is protected from disclosure.

Subscribers are solely responsible for protecting their Private Keys in a manner commensurate with the Certificate Profile. Subscribers should use a strong password or equivalent authentication method to prevent unauthorized access or use of the Subscriber's Private Key. Subscribers. When deactivated, Private Keys shall be kept in encrypted form only and secured. At a minimum, Subscribers are required to authenticate themselves to the cryptographic module before activating their Private Keys.

6.2.9. Method Of Deactivating Private Key

QuoVadis' Private Keys are deactivated via manual and passive logout procedures on the applicable HSM device when not in use. QuoVadis never leaves its HSM devices in an active unlocked or unattended state.

Subscribers should deactivate their Private Keys via logout and removal procedures when not in use.

6.2.10. Method Of Destroying Private Key

QuoVadis personnel, acting in trusted roles, destroy CA, RA, and status server Private Keys when no longer needed. Subscribers shall destroy their Private Keys when the corresponding Certificate is revoked or expired or if the Private Key is no longer needed.

QuoVadis may destroy a Private Key by deleting it from all known storage partitions. QuoVadis also zeroizes the HSM device and associated backup tokens according to the specifications of the hardware manufacturer. This reinitializes the device and overwrites the data with binary zeros. If the zeroization or re-initialization procedure fails, QuoVadis will crush, shred, and/or incinerate the device in a manner that destroys the ability to extract any Private Key. Such destruction shall be documented.

6.2.11. Cryptographic Module Rating

The cryptographic modules used by the QuoVadis PKI are validated to FIPS 140-2 Level-3 and/or Common Criteria EAL 4 security standards or higher.

For Qualified Certificates, the Subscriber Private Keys are generated and stored on a QSCD.

For relevant Qualified Certificates, in accordance with the eIDAS Regulation, the Subscriber Private Keys are generated and stored on a QSCD that meets the requirements laid down in Annex II of eIDAS and is certified to the appropriate standards. Where QuoVadis manages the QSCD on behalf of the Subscriber, QuoVadis operates the QSCD in accordance with Annex II of eIDAS.

6.3. OTHER ASPECTS OF KEY PAIR MANAGEMENT

6.3.1. Public Key Archival

Public Keys will be recorded in Certificates that will be archived in the Repository. No separate archive of Public Keys will be maintained.

6.3.2. Certificate Operational Periods And Key Pair Usage Periods

Please see the variable Issuing CA 'Valid From' and 'Valid To' fields in the Certificate Profiles outlined in Appendix A. The maximum validity periods for Certificates issued within the QuoVadis PKI are:

Type	**Certificate Term**
Publicly-trusted Root CAs	30 years
Publicly-trusted Issuing CAs	10 - 15 years
Qualified Certificates	12 to 36 months
TLS Certificates	398 days
All other Certificates	12 to 36 months

For the purpose of calculations, a day is measured as 86,400 seconds. Any amount of time greater than this, including fractional seconds and/or leap seconds, represents an additional day.

Relying Parties may still validate signatures generated with these keys after expiration of the Certificate.

QuoVadis may voluntarily retire its CA Private Keys before the periods listed above to accommodate key changeover processes. QuoVadis does not issue Subscriber Certificates with an expiration date that exceeds the Issuing CA's term or that exceeds the routine re-key identification requirements specified in Section 3.1.1.

6.4. ACTIVATION DATA

6.4.1. Activation Data Generation And Installation

QuoVadis activates the cryptographic module containing its CA Private Keys according to the specifications of the hardware manufacturer meeting the requirements of FIPS 140-2 Level-3 and/or Common Criteria EAL 4. The cryptographic hardware is held under two-person control as explained in Section 5.2.2 and elsewhere in this CP/CPS. QuoVadis will only transmit activation data via an appropriately protected channel and at a time and place that is distinct from the delivery of the associated cryptographic module.

QuoVadis personnel and Subscribers are instructed to use strong passwords and to protect PINs and passwords that meet the requirements specified by the CA/Browser Forum's Network Security Requirements and other relevant standards.

6.4.2. Activation Data Protection

If activation data must be transmitted, it shall be via a channel of appropriate protection, and distinct in time and place from the associated Cryptographic Module. PINs may be supplied to Users in two portions using different delivery methods, for example by e-mail and by standard post, to provide increased security against third-party interception of the PIN. Activation Data should be memorised, not written down. Activation Data must never be shared. Activation data must not consist solely of information that could be easily guessed, e.g., a Subscriber's personal information.

6.4.3. Other Aspects Of Activation Data

Where a PIN is used, the User is required to enter the PIN and identification details such as their Distinguished Name before they are able to access and install their Keys and Certificates.

6.5. COMPUTER SECURITY CONTROLS

QuoVadis has a formal Information Security Policy that documents the QuoVadis policies, standards and guidelines relating to information security. This Information Security Policy has been approved by QuoVadis PMA and is communicated to all employees.

6.5.1. Specific Computer Security Technical Requirements

QuoVadis secures its CA systems and authenticates and protects communications between its systems and trusted roles. QuoVadis' CA servers and support-and-vetting workstations run on trustworthy systems that are configured and hardened using industry best practices. All CA systems are scanned for malicious code and protected against spyware and viruses. Inactivity log out timeframes are set and enforced through internal information security policies and procedures to ensure security.

RAs must ensure that the systems maintaining RA software and data files are trustworthy systems secure from unauthorized access, which can be demonstrated by compliance with audit criteria applicable under Section 5.4.1.

QuoVadis' CA systems are configured to:

i) authenticate the identity of users before permitting access to the system or applications;
ii) manage the privileges of users and limit users to their assigned roles;
iii) generate and archive audit records for all transactions;
iv) enforce domain integrity boundaries for security critical processes; and
v) support recovery from key or system failure.

All Certificate Status Servers:

i) authenticate the identity of users before permitting access to the system or applications;
ii) manage privileges to limit users to their assigned roles;
iii) enforce domain integrity boundaries for security critical processes; and
iv) support recovery from key or system failure.

QuoVadis enforces multi-factor authentication on any Portal account capable of directly causing Certificate issuance.

6.5.2. Computer Security Rating

A version of the core CA software used by QuoVadis has obtained the Common Criteria EAL 4+ certification.

6.6. LIFE CYCLE TECHNICAL CONTROLS

6.6.1. System Development Controls

QuoVadis has mechanisms in place to control and monitor the acquisition and development of its CA systems. Change requests require the approval of at least one administrator who is different from the person submitting the request. QuoVadis only installs software on CA systems if the software is part of the CA's operation. CA hardware and software are dedicated to performing operations of the CA.

Vendors are selected based on their reputation in the market, ability to deliver quality product, and likelihood of remaining viable in the future. Management is involved in the vendor selection and purchase decision process. Non-PKI hardware and software is purchased without identifying the purpose for which the component will be used. All hardware and software are shipped under standard conditions to ensure delivery of the component directly to a trusted employee who ensures that the equipment is installed without opportunity for tampering.

Some of the PKI software components used by QuoVadis are developed in-house or by consultants using standard software development methodologies. All such software is designed and developed in a controlled environment and subjected to quality assurance review. Other software is purchased commercial off-the-shelf (COTS). Quality assurance is maintained throughout the process through testing and documentation or by purchasing from trusted vendors as discussed above.

Updates of equipment and software are purchased or developed in the same manner as the original equipment or software and are installed and tested by trusted and trained personnel. All hardware and software essential to QuoVadis' operations is scanned for malicious code on first use and periodically thereafter.

6.6.2. Security Management Controls

QuoVadis has mechanisms in place to control and continuously monitor the security-related configurations of its CA systems. When loading software onto a CA system, QuoVadis verifies that the software is the correct version and is supplied by the vendor free of any modifications.

6.6.3. Life Cycle Security Controls

No stipulation.

6.7. NETWORK SECURITY CONTROLS

QuoVadis CA and RA functions are performed using networks secured in accordance to prevent unauthorised access, tampering, and denial-of-service attacks. Communications of sensitive information shall be protected using point-to-point encryption for confidentiality and Digital Signatures for non-repudiation and authentication.

QuoVadis documents and controls the configuration of its systems, including any upgrades or modifications made. Root Keys are kept offline and brought online only when necessary to sign Issuing CA Certificates, OCSP Responder Certificates, or periodic CRLs. Firewalls and boundary control devices are configured to allow access only by the addresses, ports, protocols and commands required for the trustworthy provision of PKI services by such systems.

QuoVadis performs vulnerability scans of its networks at least once a quarter, and penetration tests at least annually.

The QuoVadis security policy is to block all ports and protocols and open only ports necessary to enable CA functions. All CA equipment is configured with a minimum number of services and all unused network ports and services are disabled.

6.8. TIME-STAMPING

The QuoVadis Time-stamping Authority (TSA) uses PKI and trusted time sources to provide reliable standards-based time- stamps. The QuoVadis Time-stamp Policy defines the operational and management practices of the QuoVadis TSA such that Participants and Relying Parties may evaluate their confidence in the operation of the time- stamping services.

The QuoVadis Time-Stamp Policy/Practice Statement is structured in accordance with ETSI EN 319 421 and should be read in conjunction with this CP/CPS. The QuoVadis Time-stamp Policy aims to deliver time-stamping services used in support of either Swiss or eIDAS Qualified Electronic Signatures, as well as any application requiring proof that a datum existed before a particular time.

7. CERTIFICATE, CRL, AND OCSP PROFILES

QuoVadis uses the ITU X.509, version 3 standard to construct Certificates. QuoVadis adds certain certificate extensions to the basic certificate structure for the purposes intended by X.509v3 as per Amendment 1 to ISO/IEC 9594-8, 1995. *See* Appendix A and Appendix B.

For publicly-trusted TLS Certificates, QuoVadis meets the technical requirements set forth in Sections 2.2, 6.1.5, and 6.1.6 of the CA/Browser Forum Baseline Requirements and this CP/CPS.

QuoVadis generates non-sequential Certificate serial numbers (positive numbers greater than zero) that contain at least 64 bits of output from a CSPRNG.

7.1. CERTIFICATE PROFIILE

The table below describes the basic fields that may be included in QuoVadis Certificates. Refer to APPENDIX A for additional Certificate contents that are specific to the individual Certificate Profiles.

7.1.1. Version Number(s)

All Certificates are X.509 version 3 Certificates.

7.1.2. Certificate Extensions

The extensions defined for X.509 v3 Certificates provide methods for associating additional attributes with users or Public Keys and for managing relationships between CAs. *See* Appendix A and Appendix B.

For Root CA, Subordinate CA, and Subscriber Certificates used for publicly-trusted TLS, QuoVadis abide by Section 7.1.2 of the Baseline Requirements and configure the Certificate extensions to those requirements.

For TLS Certificates, the subjectAltName extension is populated in accordance with RFC 5280 with the authenticated value in the Common Name field of the subject DN (domain name or public iPAddress). The SubjectAltName extension may contain additional authenticated domain names or public iPAddresses.

For internationalized domain names, the Common Name is represented as a puny-code value and that Common Name will be represented in the Subject Alternative Name extension as a puny-coded A-label value.

These different encodings of the same name are treated as equal values for the purposes of Common Name to Subject Alternative Name duplication requirements.

QuoVadis' Technically Constrained Subordinate CA Certificates include an Extended Key Usage (EKU) extension specifying all extended key usages for which the Subordinate CA Certificate is authorized to issue certificates. The anyExtendedKeyUsage KeyPurposeId does not appear in the EKU extension of publicly trusted certificates.

7.1.3. Algorithm Object Identifiers

QuoVadis Certificates are signed using one of the following algorithms or others as approved in accordance with Section 1.1:

sha384WithRSAEncryption	[iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) 12]
sha512WithRSAEncryption	[iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) sha512WithRSAEncryption(13]
sha256WithRSAEncryption	[iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) 11]
ecdsa-with-sha256	[iso(1) member-body(2) us(840) ansi-X9-62 (10045) signatures(4) ecdsa-with-SHA2 (3) 2]
ecdsa-with-Sha384	[iso(1) member-body(2) us(840) ansi-X9-62 (10045) signatures(4) ecdsa-with-SHA2(3) 3]
id-RSASSA-PSS	[iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) rsassa-pss(10)]

Issuing CAs shall not issue Certificates with SHA-1 as an algorithm.

RSASSA-PSS is not used for TLS Certificates and specifies the SHA-256 hash algorithm (2.16.840.1.101.3.4.2.1) as a parameter. For all other RSA algorithms the parameters field is NULL.

QuoVadis and Subscribers may generate Key Pairs using the following:

id-dsa	[iso(1) member-body(2) us(840) x9-57(10040) x9cm(4) 1]
RsaEncryption	[iso(1) member-body(2) us(840) rsadsi(113549) pkcs(1) pkcs-1(1) 1]
Dhpublicnumber	[iso(1) member-body(2) us(840) ansi-x942(10046) number-type(2) 1]
id-keyExchangeAlgorithm	[joint-iso-ccitt(2) country(16) us(840) organization(1) gov(101) dod(2) infosec(1) algorithms(1) 22]
id-ecPublicKey	[iso(1) member-body(2) us(840) ansi-X9-62(10045) id-publicKeyType(2) 1]

Elliptic curve Public Keys submitted to QuoVadis for inclusion in end entity Certificates should be based on NIST "Suite B" curves.

As described in Section 1.2, QuoVadis uses the Key and hash algorithms specified in the CA/Browser Forum Baseline Requirements. *See* also Appendix A and Appendix B.

7.1.4. Name Forms

Each Certificate includes a serial number that is unique to the Issuing CA. Optional subfields in the subject of an TLS Certificate must either contain information verified by QuoVadis or be left empty. TLS Server Certificates cannot contain metadata such as '.', '-' and ' ' characters or and/or any other indication that the value/field is absent, incomplete, or not applicable.

QuoVadis does not issue publicly-trusted TLS Certificates to a Reserved IP address or Internal Name.

For CA Certificates, the commonName attribute is present contains an identifier that uniquely identifies the CA and distinguishes it from other CAs. Certificates are populated with the Issuer Name and Subject

Distinguished Name required under Section 3.1.1. Issuer DNs meet the requirements in the CA/Browser Forum Baseline Requirements. *See* also Appendix A and Appendix B.

7.1.5. Name Constraints

QuoVadis may include name constraints in the nameConstraints field when appropriate. For publicly-trusted TLS certificates, QuoVadis follows the requirements of Section 7.1.5 of the Baseline Requirements.

7.1.5.1. Name-Constrained serverAuth CAs

If the technically constrained Issuing CA Certificate includes the id-kp-serverAuth EKU, then it includes the Name Constraints X.509v3 extension with constraints on dNSName, iPAddress and DirectoryName as follows:

i) For each dNSName in permittedSubtrees, QuoVadis confirms that the Applicant has registered the dNSName or has been authorized by the domain registrant to act on the registrant's behalf in line with the verification practices of Baseline Requirements Section 3.2.2.4.

ii) For each iPAddress range in permittedSubtrees, QuoVadis confirms that the Applicant has been assigned the iPAddress range or has been authorized by the assigner to act on the assignee's behalf.

iii) For each DirectoryName in permittedSubtrees QuoVadis confirms the Applicant's and/or Subsidiary's Organisational name(s) and location(s) such that end entity Certificates issued from the Issuing CA will comply with Section 7.1.2.4 and 7.1.2.5 of the Baseline Requirements.

If the Issuing CA is not allowed to issue certificates with an iPAddress, then the Issuing CA Certificate specifies the entire IPv4 and IPv6 address ranges in excludedSubtrees. The Issuing CA Certificate includes within excludedSubtrees an iPAddress GeneralName of 8 zero octets (covering the IPv4 address range of 0.0.0.0/0). The Issuing CA Certificate also includes within excludedSubtrees an iPAddress GeneralName of 32 zero octets (covering the IPv6 address range of ::0/0). Otherwise, the Issuing CA Certificate includes at least one iPAddress in permittedSubtrees.

If the Issuing CA is not allowed to issue certificates with dNSNames, then the Issuing CA Certificate includes a zero-length dNSName in excludedSubtrees. Otherwise, the Issuing CA Certificate includes at least one dNSName in permittedSubtrees.

7.1.5.2. Name-Constrained emailProtection CAs

If the technically constrained Issuing CA includes the id-kp-emailProtection EKU, it also includes the Name Constraints X.509v3 extension with constraints on rfc822Name, with at least one name in permittedSubtrees, each such name having its ownership validated according to Section 3.2.2.4 of the Baseline Requirements.

7.1.6. CP/CPS Object Identifier

The OIDs assigned to this CP/CPS are 1.3.6.1.4.1.8024.0.1 and 1.3.6.1.4.1.8024.0.3. Certificate Policy OIDs that incorporate this CP/CPS are listed in Appendix A and Appendix B.

7.1.7. Usage Of Policy Constraints Extension

Not applicable.

7.1.8. Policy Qualifiers Syntax And Semantics

QuoVadis Certificates include a brief statement in the Policy Qualifier field of the Certificate Policy extension to inform potential Relying Parties on notice of the limitations of liability and other terms and conditions on the use of the Certificate, including those contained in this CP/CPS, which are incorporated by reference into the Certificate.

7.1.9. Processing Semantics For The Critical Certificate Policies Extension

No stipulation.

7.2. CRL PROFILE

If present, this extension cannot be marked critical. This extension must be present for a Root CA or Issuing CA Certificate, including Cross Certificates. This extension may be present for Certificates not technically capable of causing issuance, subject to the requirement that the CRLReason cannot be unspecified (0) or certificateHold (6).

If a reasonCode CRL entry extension is present, the CRLReason must indicate the most appropriate reason for revocation of the certificate. QuoVadis uses the following reasonCode values from RFC 5280:

- keyCompromise (1)
- cACompromise (2)
- affiliationChanged (3)
- superseded (4)
- cessationOfOperation (5)

7.2.1. Version Number

QuoVadis issues X.509 version 2 CRLs that contain the following fields:

Field	**Value**
Issuer Signature Algorithm	sha-256WithRSAEncryption [1 2 840 113549 1 1 11] OR sha-384WithRSAEncryption [1 2 840 113549 1 1] OR sha-512WithRSAEncryption [1 2 840 113549 1 1 13] OR ecdsa-with-sha256 [1 2 840 10045 4 3 2] OR ecdsa-with-sha384 [1 2 840 10045 4 3 3]
Issuer Distinguished Name	QuoVadis Issuing CA name
thisUpdate	CRL issue date in UTC format
nextUpdate	Date when the next CRL will issue in UTC format.
Revoked Certificates List	List of revoked Certificates, including the serial number and revocation date
Issuer's Signature	[Signature]

7.2.2. CRL And CRL Entry Extensions

QuoVadis CRLs have the following extensions:

Extension	**Value**
CRL Number	Never repeated monotonically increasing integer
Authority Key Identifier	Subject Key Identifier of the CRL issuer Certificate
Invalidity Date	Optional date in UTC format
Reason Code	Reason for revocation as described in Section 7.2

7.3. OCSP PROFILE

7.3.1. OCSP Version Numbers

The QuoVadis OCSP Responders conform to version 1, as defined by RFC 6960. If an OCSP response is for a Root CA or Issuing CA, including Cross Certificates, and that Certificate has been revoked, the revocationReason field within the RevokedInfo of the CertStatus is present and asserted.

OCSP Responder Certificates have a maximum validity of 12 months.

7.3.2. OCSP Extensions

The singleExtensions of an OCSP response cannot contain the reasonCode (OID 2.5.29.21) CRL entry extension.

7.4. LDAP PROFILE

QuoVadis hosts a Repository in the form of a Lightweight Directory Access Protocol (LDAP) directory for the purpose of (i) storing and making available all X.509 v3 Certificates issued under the QuoVadis PKI, (ii) facilitating public access to download these Certificates for Subscriber and Relying Party requirements, and (iii) receiving (from the QuoVadis PKI), storing and making publicly available, regularly updated CRL v2 information, for the purpose of Certificate validation.

7.4.1. LDAP Version Numbers

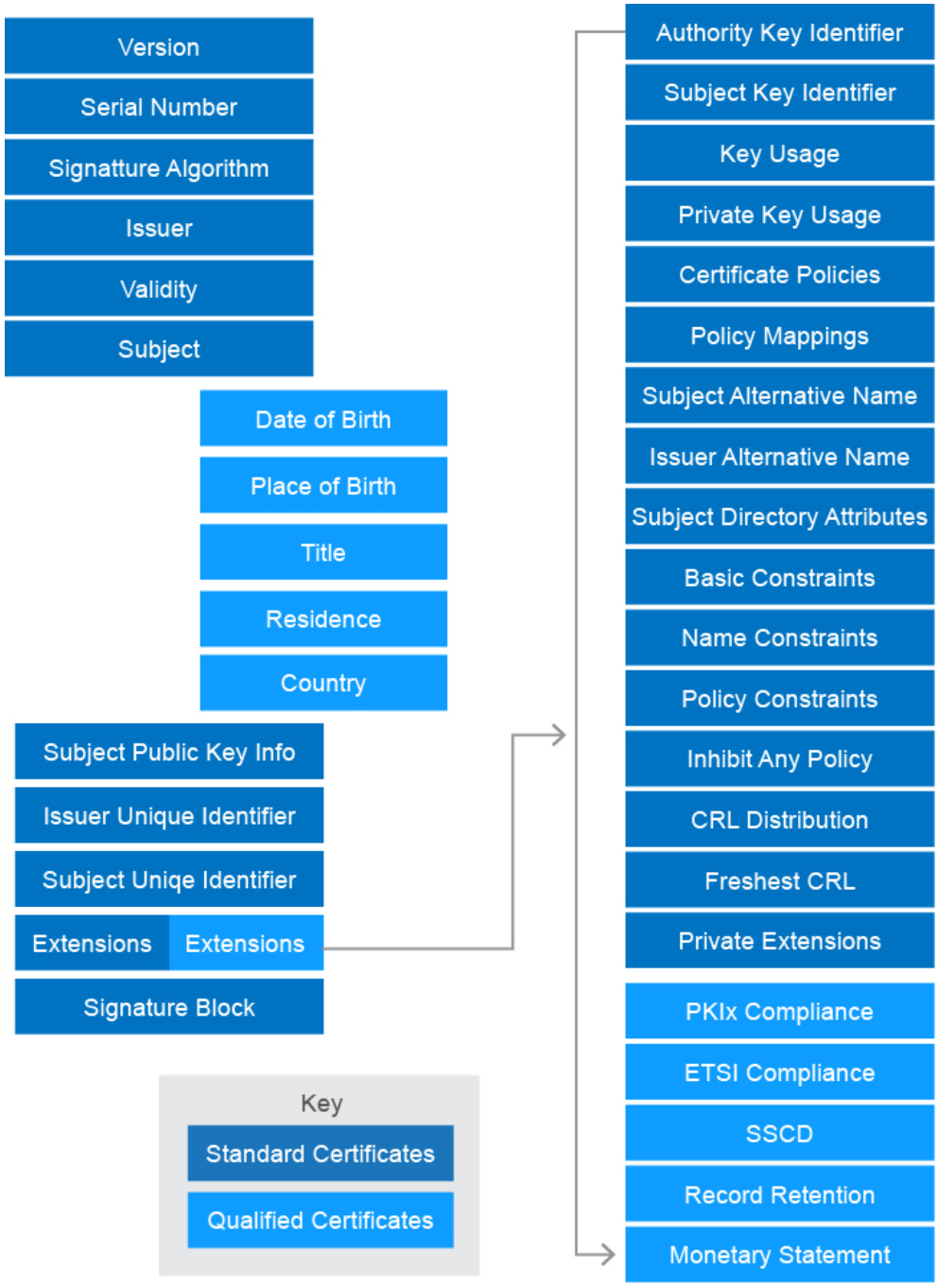
LDAP v3 in accordance with RFC 4510.

7.4.2. LDAP Extensions

Not applicable.

7.5. CERTIFICATE FIELDS AND ROOT CA CERTIFICATE HASHES

7.5.1. Certificate Fields



7.5.2. QuoVadis Root Certificate Hashes

Note that all QuoVadis CA Certificates and CRLs are available for download from the QuoVadis Repository at https://www.quovadisglobal.com/repository.

7.5.2.1. QuoVadis Root CA 1 G3 Certificate Hashes

Field	Certificate Profile
Serial Number	78 58 5f 2e ad 2c 19 4b e3 37 07 35 34 13 28 b5 96 d4 65 93
Signature Block	Signature matches Public Key Root Certificate: Subject matches Issuer Key Id Hash (sha1): 92 ae ef 0e 89 02 ee 6d 79 68 d1 a1 0e 75 60 01 fa e4 eb fc Subject Key Id (precomputed): a3 97 d6 f3 5e a2 10 e1 ab 45 9f 3c 17 64 3c ee 01 70 9c cc Cert Hash(sha1): 1b 8e ea 57 96 29 1a c9 39 ea b8 0a 81 1a 73 73 c0 93 79 67

7.5.2.2. QuoVadis Root CA 3 Certificate Hashes

Field	Certificate Profile
Serial Number	05c6
Signature Block	Signature matches Public Key Root Certificate: Subject matches Issuer Key Id Hash(sha1): 14 8d b3 54 ed 9b 2f 13 08 7c c3 8b 4b c1 5b 96 8a c5 53 78 Subject Key Id (precomputed): f2 c0 13 e0 82 43 3e fb ee 2f 67 32 96 35 5c db b8 cb 02 d0 Cert Hash(sha1): 1f 49 14 f7 d8 74 95 1d dd ae 02 c0 be fd 3a 2d 82 75 51 85

7.5.2.3. QuoVadis Root CA 3 G3 Certificate Hashes

Field	Certificate Profile
Serial Number	2e f5 9b 02 28 a7 db 7a ff d5 a3 a9 ee bd 03 a0 cf 12 6a 1d
Signature Block	Signature matches Public Key Root Certificate: Subject matches Issuer Key Id Hash (sha1): b7 1a 8b 40 df 93 d0 5c e0 98 03 08 91 59 6d 61 e8 15 f6 fe Subject Key Id (precomputed): c6 17 d0 bc a8 ea 02 43 f2 1b 06 99 5d 2b 90 20 b9 d7 9c e4 Cert Hash(sha1): 48 12 bd 92 3c a8 c4 39 06 e7 30 6d 27 96 e6 a4 cf 22 2e 7d

8. COMPLIANCE AUDIT AND OTHER ASSESSMENTS

8.1. FREQUENCY, CIRCUMSTANCE AND STANDARDS OF ASSESSMENT

The practices in this CP/CPS are designed to meet or exceed the requirements of generally accepted industry standards, including the latest versions of the WebTrust Programs for CAs as required by the Mozilla Root Store policy and other programs and standards listed in Section 1.1 and 1.6.3.

Publicly available audit reports provided by Conformance Assessment Bodies responsible for these audits will be published at https://www.quovadisglobal.com/accreditations. Compliance audits as carried out under these provisions may substitute for audits noted in this CP/CPS.

8.2. IDENTITY AND QUALIFICATIONS OF ASSESSOR

WebTrust auditors must meet the requirements of Section 8.2 of the CA/Browser Forum Baseline Requirements. ETSI Conformance Assessment Bodies must meet the requirements of the relevant national accrediting authority. Auditors shall be experienced in performing information security audits, specifically having significant experience with PKI and cryptographic technologies.

8.3. ASSESSOR'S RELATIONSHIP TO ASSESSED ENTITY

The auditor and the Issuing CA under audit, must not have any other relationship that would impair the auditor's independence and objectivity under Generally Accepted Auditing Standards. These relationships include financial, legal, social or other relationships that could result in a conflict of interest.

8.4. TOPICS COVERED BY ASSESSMENT

Audits as applicable cover QuoVadis' business practices disclosure, the integrity of QuoVadis' PKI operations, and an Issuing CAs' compliance with this CP/CPS and referenced requirements. Audits verify that QuoVadis is compliant with the CP/CPS and applicable standards and regulatory requirements.

Each audit scheme used by QuoVadis incorporates periodic monitoring and/or accountability procedures to ensure that audits continue to be conducted in accordance with the requirements of the scheme. Audits are conducted by a Qualified Auditor, as specified in Section 8.2.

8.5. ACTIONS TAKEN AS A RESULT OF DEFICIENCY

If an audit reports a material noncompliance with applicable law, this CP/CPS, or any other contractual obligations related to QuoVadis' services, then (i) the auditor will document the discrepancy, (ii) the auditor will promptly notify QuoVadis, and (iii) QuoVadis will develop a plan to cure the noncompliance. QuoVadis will submit the plan to the PMA for approval and to any third party that QuoVadis is legally obligated to satisfy. The PMA may require additional action if necessary to rectify any significant issues created by the non-compliance, including requiring revocation of affected Certificates. QuoVadis is entitled to suspend and/or terminate of services through revocation or other actions as deemed by the PMA to address the non-compliant Issuing CA.

For Qualified Certificates the course of action and time frame for rectification of any deficiency as set by the relevant accrediting authority must be followed.

8.6. COMMUNICATION OF AUDIT RESULTS

The results of each audit are reported to the PMA and to any third party entities which are entitled by law, regulation, or agreement to receive a copy of the audit results. The results of the most recent audits of QuoVadis are posted at https://www.quovadisglobal.com/accreditations on an annual basis and within three months of completion.

8.7. SELF AUDITS

QuoVadis controls service quality by performing quarterly self-audits against a randomly selected sample of TLS Certificates being no less than three percent of the Certificates issued. Audits of other Certificate types will be at the discretion of QuoVadis to gain reasonable assurance of compliance to applicable requirements.

9. OTHER BUSINESS AND LEGAL MATTERS

9.1. FEES

9.1.1. Certificate Issuance Or Renewal Fees

QuoVadis charges fees for verification, certificate issuance and renewal. QuoVadis may change its fees at any time in accordance with the applicable customer agreement.

9.1.2. Certificate Access Fees

QuoVadis may charge a reasonable fee for access to its certificate databases.

9.1.3. Revocation Or Status Information Access Fees

QuoVadis does not charge a certificate revocation fee or a fee for checking the validity status of an issued Certificate using a CRL. QuoVadis may charge a fee for providing customized CRLs, OCSP services, or other value-added revocation and status information services. QuoVadis does not permit access to revocation information, Certificate status information, or time stamping in their Repositories by third parties that provide products or services that utilize such Certificate status information without QuoVadis' prior express written consent.

9.1.4. Fees For Other Services

QuoVadis does not charge a fee for access to this CP/CPS. Any use made for purposes other than simply viewing the document, such as reproduction, redistribution, modification, or creation of derivative works, shall be subject to a license agreement with the entity holding the copyright to the document.

9.1.5. Refund Policy

QuoVadis or Issuing CAs under the QuoVadis hierarchy may establish a refund policy, details of which may be contained in relevant contractual agreements.

9.2. FINANCIAL RESPONSIBILITIES

9.2.1. Insurance Coverage

QuoVadis maintains in full force and effect a liability insurance policy. Within the QuoVadis PKI the Root CA and all Issuing CAs and RAs are required to demonstrate that they have the financial resources necessary to discharge their obligations under this CP/CPS and any other relevant and associated documentation or agreements.

QuoVadis and each Issuing CA and/or RA shall maintain appropriate insurances necessary to provide for their respective liabilities as Participants within the QuoVadis PKI. Failure to establish and maintain insurances may be the basis for the revocation of their respective Certificates.

In accordance with ZertES, policy limits concerning Swiss Qualified Certificates are maintained in excess of CHF Two Million per occurrence and CHF Eight Million annual aggregate.

9.2.2. Other Assets

Issuing CAs and RAs shall maintain sufficient assets and financial resources to perform their duties within the QuoVadis PKI and be reasonably able to bear liability to Subscribers and Relying Parties.

9.2.3. Insurance Or Warranty Coverage For End-Entities

No stipulation.

9.2.4. Fiduciary Relationships

QuoVadis is not the agent, fiduciary or other representative of any Subscriber and/or Relying Party and must not be represented by the Subscriber and/or Relying Party to be so. Subscribers and/or Relying Parties have no authority to bind QuoVadis by contract or otherwise, to any obligation.

Participation in the QuoVadis PKI does not make any participant an agent, fiduciary, trustee, or other representative of any entity, legal or otherwise. Nothing contained in this QuoVadis CP/CPS or in any corresponding Subscriber or Relying Party Agreement shall be deemed to constitute QuoVadis, QuoVadis PKI Participants or any of their agents, directors, employees, consultants, suppliers, contractors, partners or Counterparties a fiduciary, endorser, promoter, agent, partner, representative, or Counterparty of any entity, and the use of or reliance upon Certificates or other forms of participation within the QuoVadis PKI is to be construed accordingly.

9.3. CONFIDENTIALITY OF BUSINESS INFORMATION

9.3.1. Scope Of Confidential Information

The following information is considered confidential and protected against disclosure using a reasonable degree of care:

i) Private Keys;

ii) Activation data used to access Private Keys or to gain access to the CA system;

iii) Business continuity, incident response, contingency, and disaster recovery plans;

iv) Other security practices used to protect the confidentiality, integrity, or availability of information;

v) Information held by QuoVadis as private information in accordance with Section 9.4;

vi) Audit logs and archive records; and

vii) Transaction records, financial audit records, and external or internal audit trail records and any audit reports (with the exception of an auditor's letter confirming the effectiveness of the controls set forth in this CP/CPS).

Any personal or corporate information held by Issuing CAs related to a Subscriber's application and the issuance of Certificates is considered confidential and will not be released without the prior consent of the relevant Holder, unless required otherwise by law or to fulfil the requirements of this QuoVadis CP/CPS.

There is no requirement to place a copy of any Private Key with any backup/recovery or escrow service. Under contract between an Issuing CA and a Subscriber or the Subscriber's Nominating RA, a copy of an entity's encryption Keys may be escrowed by QuoVadis for possible retrieval of encrypted information upon the loss or corruption of the original encryption Keys.

9.3.2. Information Not Within The Scope Of Confidential Information

Information appearing in Certificates or stored in the Repository is not considered confidential, unless statutes or special agreements so dictate.

9.3.3. Responsibility To Protect Confidential Information

QuoVadis employees, agents, and contractors are responsible for protecting confidential information and are contractually obligated to do so. Employees receive training on how to handle confidential information.

9.4. PRIVACY OF PERSONAL INFORMATION

9.4.1. Privacy Plan

QuoVadis follows the Privacy Notices posted on its website when handling personal information. See https://www.quovadisglobal.com/privacy-policy. Personal information is only disclosed when the disclosure is required by law or when requested by the subject of the personal information. Such privacy policies shall conform to applicable local privacy laws and regulations including the Council Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 and the Swiss Federal Act on Data Protection of June 19, 1992 (SR 235.1).

9.4.2. Information Treated As Private

QuoVadis treats all personal information about an individual that is not publicly available in the contents of a Certificate or CRL as private information. QuoVadis protects private information using appropriate safeguards and a reasonable degree of care.

9.4.3. Information Deemed Not Private

Subject to local laws, private information does not include CP/CPS and other Repository documents, Certificates, CRLs, or their contents.

9.4.4. Responsibility To Protect Private Information

QuoVadis employees and contractors are expected to handle personal information in strict confidence and meet the requirements of US and European law concerning the protection of personal data. QuoVadis will not divulge any private Subscriber information to any third party for any reason, unless compelled to do so by law or competent regulatory authority. All sensitive information is securely stored and protected against accidental disclosure.

9.4.5. Notice And Consent To Use Private Information

In the course of accepting a Certificate, individuals have agreed to allow their personal data submitted in the course of registration to be processed by and on behalf of the QuoVadis CA, and used as explained in the registration process. They have also been given an opportunity to decline from having their personal data used for particular purposes. They have also agreed to let certain personal data appear in publicly accessible directories and be communicated to others.

9.4.6. Disclosure Pursuant To Judicial Or Administrative Process

If required by a legitimate and lawful judicial order or regulation that complies with requirements of this CP/CPS, QuoVadis may disclose private information without notice.

9.4.7. Other Information Disclosure Circumstances

No stipulation.

9.5. INTELLECTUAL PROPERTY RIGHTS

QuoVadis owns the intellectual property rights in QuoVadis' services, including the Certificates, trademarks and the Proprietary Marks used in providing the services, and this CP/CPS.

For the avoidance of doubt, external documents or electronic records signed or protected using QuoVadis Certificates are not considered to be QuoVadis documents for the purposes of this Section, nor is QuoVadis responsible for the content of those documents or records.

9.5.1. Property Rights In Certificates And Revocation Information

QuoVadis retains all intellectual property rights in and to the Certificates and revocation information that it issues. QuoVadis and customers shall grant permission to reproduce and distribute Certificates on a nonexclusive royalty-free basis, provided that they are reproduced in full and that use of Certificates is subject to the Relying Party Agreement referenced in the Certificate. QuoVadis, and customers shall grant permission to use revocation information to perform Relying Party functions subject to the applicable CRL usage agreement, Relying Party Agreement, or any other applicable agreements.

9.5.2. Property Rights In The CP/CPS

Issuing CAs acknowledge that QuoVadis retains all intellectual property rights in and to this CP/CPS.

9.5.3. Property Rights In Names

A Subscriber and/or Applicant retains all rights it has (if any) in any trademark, service mark, or trade name contained in any Certificate and Distinguished Name within any Certificate issued to such Subscriber or Applicant.

9.5.4. Property Rights In Keys And Key Material

Key Pairs corresponding to Certificates of CAs and end-user Subscribers are the property of QuoVadis and end-user Subscribers that are the respective subjects of the Certificates, regardless of the physical medium within which they are stored and protected, and such persons retain all intellectual property rights in and to these Key Pairs. Without limiting the generality of the foregoing, QuoVadis Root Public Keys and the Root CA Certificates containing them, including all Public Keys and self-signed Certificates, are the property of QuoVadis. QuoVadis licenses software and hardware manufacturers to reproduce such Root CA Certificates to place copies in trustworthy hardware devices or software.

9.5.5. Violation Of Property Rights

Issuing CAs shall not knowingly violate the intellectual property rights of any third party.

9.6. REPRESENTATIONS AND WARRANTIES

9.6.1. CA Representations And Warranties

By issuing a Certificate, QuoVadis represents and warrants that, during the period when the Certificate is valid, QuoVadis has complied with this CP/CPS in issuing and managing the Certificate to the parties listed below:

- The party to the relevant QuoVadis Subscriber Agreement and Terms of Use;
- All Relying Parties who reasonably rely on a Valid Certificate; and
- All Application Software Vendors with whom QuoVadis has entered into a contract for inclusion of its Root Certificate in software distributed by such Application Software Vendor.

QuoVadis discharges its obligations by:

- QuoVadis complies, in all material aspects, with this CP/CPS, and all applicable laws and regulations;
- QuoVadis publishes and updates CRLs and OCSP responses on a regular basis;
- All Certificates issued under this CP/CPS will be verified in accordance with this CP/CPS and meet the minimum requirements found herein and in the Baseline Requirements as appropriate; and
- QuoVadis will maintain a Repository of public information on its website.

QuoVadis hereby warrants (i) it has taken reasonable steps to verify that the information contained in any Certificate is accurate at the time of issue (ii) Certificates shall be revoked if QuoVadis believes or is notified that the contents of the Certificate are no longer accurate, or that the Private Key associated with a Certificate has been compromised in any way.

QuoVadis makes no other warranties, and all warranties, express or implied, statutory or otherwise, are excluded to the greatest extent permissible by applicable law, including without limitation all warranties as to merchantability or fitness for a particular purpose.

QuoVadis provides test certificates for all types of Certificates.

9.6.2. RA Representations And Warranties

RAs represent and warrant that:

i) The RA's certificate issuance and management services conform to the QuoVadis CP/CPS and applicable CA or RA Agreements;

ii) Information provided by the RA does not contain any false or misleading information;

iii) Reasonable steps are taken to verify that the information contained in any Certificate is accurate at the time of issue;

iv) Translations performed by the RA are an accurate translation of the original information;

v) All Certificates requested by the RA meet the requirements of this CP/CPS and RA Agreement; and

vi) The RA will request that Certificates be revoked by QuoVadis if they believe or are notified that the contents of the Certificate are no longer accurate, or that the key associated with a Certificate has been compromised in any way.

QuoVadis' RA Agreement may contain additional representations. Subscriber Agreements may include additional representations and warranties.

9.6.3. Subscriber Representations And Warranties

Prior to being issued and receiving a Certificate, Subscribers are solely responsible for any misrepresentations they make to third parties and for all transactions that use Subscriber's Private Key, regardless of whether such use was authorised. Subscribers are required to notify QuoVadis and any applicable RA if a change occurs that could affect the status of the Certificate.

QuoVadis requires, as part of the Subscriber Agreement or Terms of Use, that the Applicant make the commitments and warranties in this Section for the benefit of QuoVadis and all Relying Parties and Application Software Vendors. This make take the form of either:

i) The Applicant's agreement to the Subscriber Agreement with QuoVadis; or

ii) The Applicant's acknowledgement of the Terms of Use.

Subscribers represent to QuoVadis, Application Software Vendors, and Relying Parties that, for each Certificate, the Subscriber will:

i) Securely generate its Private Keys and protect its Private Keys from compromise, and exercise sole and complete control and use of its Private Keys;

ii) Provide accurate and complete information when communicating with QuoVadis, and to respond to QuoVadis' instructions concerning Key Compromise or Certificate misuse;

iii) Confirm the accuracy of the certificate data prior to installing or using the Certificate;

iv) For Qualified Certificates (a) if the policy requires the use of a QSCD, Electronic Signatures must only be created by a QSCD, (b) in the case of natural persons, the Private Key should only be used for Electronic Signatures, and (c) in the case of legal persons, the Private Key must be maintained and used under the control of the Subscriber and it should only be used for Electronic Seals.

v) Promptly (a) request revocation of a Certificate, cease using it and its associated Private Key, and notify QuoVadis if there is any actual or suspected misuse or compromise of the Private Key associated with the Public Key included in the Certificate, and (b) request revocation of the Certificate, and cease using it, if any information in the Certificate is or becomes incorrect or inaccurate;

vi) Ensure that individuals using Certificates on behalf of an organisation have received security training appropriate to the Certificate;

vii) Use the Certificate only for authorised and legal purposes, consistent with the Certificate purpose, this CP/CPS, and the relevant Subscriber Agreement, including only installing TLS Server Certificates on servers accessible at the Domain listed in the Certificate and not using code signing Certificates to sign malicious code or any code that is downloaded without a user's consent; and

viii) Promptly cease using the Certificate and related Private Key after the Certificate's expiration or revocation, or in the event that QuoVadis notifies the Subscriber that the QuoVadis PKI has been compromised.

Subscriber Agreements may include additional representations and warranties.

9.6.4. Relying Parties Representations And Warranties

Relying parties are required to act in accordance with this CP/CPS and the Relying Party Agreement. A Relying Party must exercise Reasonable Reliance as set out in this Section.

i) Prior to relying on the Certificate or other authentication product or service, Relying Parties are obliged to check all status information provided by QuoVadis related to the Certificate or other authentication product or service to confirm that the information was still valid and that the product or service had not expired or been revoked. For Certificates, this includes checking to ensure that each Certificate in the Certificate Chain is valid, unexpired, and non-revoked (by using any CRL or OCSP information available).

To be relied upon as an EU Qualified Certificate, the CA/trust anchor for the validation of the Certificate shall be as identified in a service digital identifier of an EU Trusted List entry with service type identifier http://uri.etsi.org/TrstSvc/Svctype/CA/QC" for a QTSP. ETSI TS 119 615 provides guidance on how to validate a Certificate against the EU Trusted Lists. ETSI TS 119 172-4 describes how to validate a digital signature to determine whether it can be considered as an EU Qualified electronic signature or seal.

ii) Prior to relying on an authentication product or service, Relying Parties must gather sufficient information to make an informed decision about the proper use of the authentication product or service and whether intended reliance on the authentication product or service was reasonable in light of the circumstances. This includes evaluating the risks associated with their intended use and the limitations associated with the authentication product or service provided by QuoVadis.

iii) Relying Parties' reliance on the authentication product or service is reasonable based on the circumstances. Relying Parties reliance will be deemed reasonable if:

- the attributes of the Certificate relied upon and the level of assurance in the Identification and Authentication provided by the Certificate are appropriate in all respects to the level of risk and the reliance placed upon that Certificate by the Relying Party;
- the Relying Party has, at the time of that reliance, used the Certificate for purposes appropriate and permitted by the CP/CPS and under the laws and regulations of the jurisdiction in which the Relying Party is located;
- the Relying Party has, at the time of that reliance, acted in good faith and in a manner appropriate to all the circumstances known, or circumstances that ought reasonably to have been known, to the Relying Party;

- the Relying Party has, at the time of that reliance, verified the Digital Signature, if any;
- the Relying Party has, at the time of that reliance, verified that the Digital Signature, if any, was created during the Operational Term of the Certificate being relied upon;
- the Relying Party ensures that the data signed has not been altered following signature by utilising trusted application software,
- the signature is trusted and the results of the signature are displayed correctly by utilising trusted application software;
- the identity of the Subscriber is displayed correctly by utilising trusted application software; and
- any alterations arising from security changes are identified by utilising trusted application software.

If the circumstances indicate a need for additional assurances, it is Relying Parties' responsibility to obtain such assurances. A Relying Party shall make no assumptions about information that does not appear in a Certificate. All obligations within this Section relate to Reasonable Reliance on the validity of a Digital Signature, not the accuracy of the underlying electronic record. Relying Party Agreements may include additional representations and warranties.

9.6.5. Representations And Warranties Of Other Participants

Participants within the QuoVadis PKI represent and warrant that they accept and will perform any and all duties and obligations as specified by this CP/CPS.

9.7. DISCLAIMERS OF WARRANTIES

OTHER THAN AS PROVIDED IN SECTION 9.6.1, THE CERTIFICATES ARE PROVIDED "AS IS" AND "AS AVAILABLE" AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, QUOVADIS DISCLAIMS ALL EXPRESS AND IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, AND NON-INFRINGEMENT. QUOVADIS DOES NOT WARRANT THAT ANY CERTIFICATE WILL MEET SUBSCRIBER'S OR ANY OTHER PARTY'S EXPECTATIONS OR THAT ACCESS TO THE CERTIFICATES WILL BE TIMELY OR ERROR-FREE. QuoVadis does not guarantee the accessibility of any Certificates and may modify or discontinue offering any Certificates at any time. Subscriber's sole remedy for a defect in the Certificates is for QuoVadis to use commercially reasonable efforts, upon notice of such defect from Subscriber, to correct the defect, except that QuoVadis has no obligation to correct defects that arise from (i) misuse, damage, modification or damage of the Certificates or combination of the Certificates with other products and services by parties other than QuoVadis, or (ii) Subscriber's breach of any provision of the Subscriber Agreement.

9.8. LIABILITY AND LIMITATIONS OF LIABILITY

This Section 9.8 does not limit a party's liability for: (i) death or personal injury resulting from the negligence of a party; (ii) gross negligence, willful misconduct or violations of applicable law, or (iii) fraud or fraudulent statements made by a party to the other party in connection with this CP/CPS. TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW AND NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY OR LIMITATION OF LIABILITY: (A) QUOVADIS AND ITS AFFILIATES, SUBSIDIARIES, OFFICERS, DIRECTORS, EMPLOYEES, AGENTS, PARTNERS AND LICENSORS (THE "QUOVADIS ENTITIES") WILL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, OR PUNITIVE DAMAGES (INCLUDING ANY DAMAGES ARISING FROM LOSS OF USE, LOSS OF DATA, LOST PROFITS, BUSINESS INTERRUPTION, OR COSTS OF PROCURING SUBSTITUTE SOFTWARE OR SERVICES) ARISING OUT OF OR RELATING TO THIS CP/CPS OR THE SUBJECT MATTER HEREOF; AND (B) THE QUOVADIS ENTITIES' TOTAL CUMULATIVE LIABILITY ARISING OUT OF OR RELATING TO THIS CP/CPS OR THE SUBJECT MATTER HEREOF WILL NOT EXCEED THE AMOUNTS PAID BY OR ON BEHALF OF SUBSCRIBER TO QUOVADIS IN THE TWELVE MONTHS PRIOR TO THE EVENT GIVING RISE TO SUCH LIABILITY, REGARDLESS OF WHETHER SUCH LIABILITY ARISES FROM CONTRACT, INDEMNIFICATION, WARRANTY, TORT (INCLUDING

NEGLIGENCE), STRICT LIABILITY OR OTHERWISE, AND REGARDLESS OF WHETHER QUOVADIS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSS OR DAMAGE. NO CLAIM, REGARDLESS OF FORM, WHICH IN ANY WAY ARISES OUT OF THIS CP/CPS, MAY BE MADE OR BROUGHT BY SUBSCRIBER OR SUBSCRIBER'S REPRESENTATIVES MORE THAN ONE (1) YEAR AFTER THE BASIS FOR THE CLAIM BECOMES KNOWN TO SUBSCRIBER.

For Swiss Qualified Certificates, QuoVadis liability is in accordance with Articles 17, 18, 19 of ZertES.

For EU Qualified Certificates, QuoVadis liability is in accordance with Extract 37 and Article 13 of the eIDAS Regulation.

9.9. INDEMNITIES

9.9.1. Indemnification By QuoVadis

To the extent permitted by applicable law, QuoVadis shall indemnify each Application Software Vendor against any claim, damage, or loss suffered by an Application Software Vendor related to an Certificate issued by QuoVadis, regardless of the cause of action or legal theory involved, except where the claim, damage, or loss suffered by the Application Software Vendor was directly caused by the Application Software Vendor's software displaying either (i) a valid and trustworthy Certificate as not valid or trustworthy or (ii) displaying as trustworthy (a) an Certificate that has expired or (b) a revoked Certificate where the revocation status is available online but the Application Software Vendor's software failed to check or ignored the status.

9.9.2. Indemnification By Subscribers

To the extent permitted by law, each Subscriber shall indemnify QuoVadis, its partners, and their respective directors, officers, employees, agents, and contractors against any loss, damage, or expense, including reasonable attorney's fees, related to (i) any misrepresentation or omission of material fact by Subscriber, regardless of whether the misrepresentation or omission was intentional or unintentional; (ii) Subscriber's breach of the Subscriber Agreement, this CP/CPS, or applicable law; (iii) the compromise or unauthorised use of a Certificate or Private Key caused by the Subscriber's negligence or intentional acts; or (iv) Subscriber's misuse of the Certificate or Private Key. The applicable Subscriber Agreement may include additional indemnity obligations.

9.9.3. Indemnification By Relying Parties

To the extent permitted by law, each Relying Party shall indemnify QuoVadis, its partners, and their respective directors, officers, employees, agents, and contractors against any loss, damage, or expense, including reasonable attorney's fees, related to the Relying Party's (i) breach of the Relying Party Agreement, an End-User License Agreement, this CP/CPS, or applicable law; (ii) unreasonable reliance on a Certificate; or (iii) failure to check the Certificate's status prior to use.

9.10. TERM AND TERMINATION

9.10.1. Term

This CP/CPS and any amendments to this CP/CPS are effective when published in the QuoVadis Repository and remain in effect until replaced with a newer version.

9.10.2. Termination

This CP/CPS as amended from time to time shall remain in force until it is replaced by a newer version.

9.10.3. Effect Of Termination And Survival

The conditions and effect resulting from termination of this CP/CPS will be communicated via the QuoVadis website upon termination. That communication will outline the provisions that may survive termination of this CP/CPS and remain in force. The responsibilities for protecting business confidential and private personal information shall survive termination, and the terms and conditions for all existing Certificates shall remain valid for the remainder of the validity periods of such Certificates.

9.11. INDIVIDUAL NOTICES AND COMMUNICATIONS WITH PARTICIPANTS

QuoVadis accepts notices related to this CP/CPS at the locations specified in Section 2.2. Notices are deemed effective after the sender receives a valid and digitally signed acknowledgment of receipt from QuoVadis. If an acknowledgement of receipt is not received within five days, the sender must resend the notice in paper form to the street address specified in Section 2.2 using either a courier service that confirms delivery or via certified or registered mail with postage prepaid and return receipt requested. QuoVadis may allow other forms of notice in its Subscriber Agreements.

Notices to Application Software Vendors are sent out in accordance with the respective requirements.

9.12. AMENDMENTS

9.12.1. Procedure For Amendment

Amendments to this CP/CPS are made and approved by the QuoVadis PMA at least annually. Amendments are made by posting an updated version of the CP/CPS to the Repository. Updates supersede any designated or conflicting provisions of the referenced version of the CP/CPS. Controls are in place to reasonably ensure that this CP/CPS is not amended and published without the prior authorisation of the QuoVadis PMA. Issuing CAs are notified of changes to the CP/CPS as and when they are approved.

9.12.2. Notification Mechanism And Period

QuoVadis posts CP/CPS revisions to the Repository (https://www.quovadisglobal.com/repository). The QuoVadis PMA is responsible for determining what constitutes a material change of the CP/CPS. For routine modifications, QuoVadis does not guarantee or set a notice-and-comment period and may make changes to this CP/CPS without notice and without changing the version number. When the QuoVadis PMA determines a CP/CPS change may have a significant impact on Subscribers or Relying Parties, due notice of seven (7) days will be provided in the Repository. Subscribers whose Certificates remain valid at the effective date of the CP/CPS change shall be deemed to have accepted the modification.

9.12.3. Circumstances Under Which Object Identifiers Must Be Changed

The QuoVadis PMA is solely responsible for determining whether an amendment to the CP/CPS requires an OID change.

9.13. DISPUTE RESOLUTION PROVISIONS

To the extent permitted by law, before a Participant files suit or initiates an arbitration claim with respect to a dispute involving any aspect of this Agreement, Participant shall notify QuoVadis, and any other party to the dispute for the purpose of seeking business resolution. Both Participant and QuoVadis shall make good faith efforts to resolve such dispute via business discussions. If the dispute is not resolved within sixty (60) days after the initial notice, then a party may proceed as permitted under applicable law and as specified under this CP/CPS and other relevant agreements.

i) Arbitration: In the event a dispute is allowed or required to be resolved through arbitration, the parties will maintain the confidential nature of the existence, content, or results of any arbitration hereunder, except as may be necessary to prepare for or conduct the arbitration hearing on the merits, or except as may be necessary in connection with a court application for a preliminary

remedy, a judicial confirmation or challenge to an arbitration award or its enforcement, or unless otherwise required by law or judicial decision.

ii) Class Action and Jury Trial Waiver: THE PARTIES EXPRESSLY WAIVE THEIR RESPECTIVE RIGHTS TO A JURY TRIAL FOR THE PURPOSES OF LITIGATING DISPUTES HEREUNDER. Each party agrees that any dispute must be brought in the respective party's individual capacity, and not as a plaintiff or class member in any purported class, collective, representative, multiple plaintiff, or similar proceeding ("Class Action"). The parties expressly waive any ability to maintain any Class Action in any forum in connection with any dispute. If the dispute is subject to arbitration, the arbitrator will not have authority to combine or aggregate similar claims or conduct any Class Action nor make an award to any person or entity not a party to the arbitration. Any claim that all or part of this Class Action waiver is unenforceable, unconscionable, void, or voidable may be determined only by a court of competent jurisdiction and not by an arbitrator.

For Swiss Qualified Certificates such arbitration shall, unless agreed otherwise between the parties, take place in Switzerland.

For Qualified Certificates issued in accordance with eIDAS, arbitration for disputes related to financial or commercial matters will be dealt with in the country of the relevant QuoVadis entity named in the contract with the client. Arbitration for Certificate-related disputes will be dealt with in the country named in relevant QuoVadis Issuing CA Certificate.

9.14. GOVERNING LAW

The (i) laws that govern the interpretation, construction, and enforcement of this Agreement and all matters, claims or disputes related to it, including tort claims, and (ii) the courts or arbitration bodies that have exclusive jurisdiction over any of the matters, claims or disputes contemplated in sub-Section (i) above, will each depend on where Customer is domiciled, as set forth in the table below.

In instances where the International Chamber of Commerce is designated below as the court or arbitration body with exclusive jurisdiction of such matters, claims or disputes, then the parties hereby agree that (x) all matters, claims or disputes arising out of or in connection with this Agreement shall be finally settled under the Rules of Arbitration of the International Chamber of Commerce (Rules) by one or more arbitrators appointed in accordance with the Rules, (y) judgment on the award rendered by such arbitration may be entered in any court having jurisdiction, and (z) this arbitration clause shall not preclude parties from seeking provisional remedies in aid of arbitration from a court of appropriate jurisdiction.

Customer is Domiciled in:	**Governing Law is laws of:**	**Court or arbitration body with exclusive jurisdiction:**
The United States of America, Canada, Mexico, Central America, South America, the Caribbean, or any other country not otherwise included in the rest of the table below	Utah state law and United States federal law	State and Federal courts located in Salt Lake County, Utah

Customer is Domiciled in:	Governing Law is laws of:	Court or arbitration body with exclusive jurisdiction:
Europe, Switzerland, the United Kingdom, Russia, the Middle East or Africa	England	International Chamber of Commerce, International Court of Arbitration, with seat of arbitration in the below city corresponding to the QuoVadis contracting entity listed in the Order Form. For QV CH: Zurich For QV NL: Amsterdam For QV DE: Munich For QV BE/DigiCert Europe: Brussels For QV UK: London
Japan	Japan	International Chamber of Commerce, International Court of Arbitration, with seat of arbitration in Tokyo
Australia or New Zealand	Australia	International Chamber of Commerce, International Court of Arbitration, with seat of arbitration in Melbourne
A Country in Asia or the Pacific region, other than Japan, Australia or New Zealand	Singapore	International Chamber of Commerce, International Court of Arbitration, with seat of arbitration in Singapore

9.15. COMPLIANCE WITH APPLICABLE LAW

This CP/CPS is subject to all applicable laws and regulations, including United States restrictions on the export of software and cryptography products. Subject to Section 9.4.5, QuoVadis meets the requirements of the European data protection laws and has established appropriate technical and organization measures against unauthorized or unlawful processing of personal data and against the loss, damage, or destruction of personal data.

9.16. MISCELLANEOUS PROVISIONS

9.16.1. Entire Agreement

QuoVadis contractually obligates each RA to comply with this CP/CPS and applicable industry guidelines. QuoVadis also requires each party using its products and services to enter into an agreement that delineates the terms associated with the product or service. If an agreement has provisions that differ from this CP/CPS, then the agreement with that party controls, but solely with respect to that party. Third parties may not rely on or bring action to enforce such agreement.

9.16.2. Assignment

Any entities operating under this CP/CPS may not assign their rights or obligations without the prior written consent of QuoVadis. Unless specified otherwise in a contact with a party, QuoVadis does not provide notice of assignment.

9.16.3. Severability

If any provision of this CP/CPS is held invalid or unenforceable by a competent court or tribunal, the remainder of the CP/CPS will remain valid and enforceable. Each provision of this CP/CPS that provides for a limitation of liability, disclaimer of a warranty, or an exclusion of damages is severable and independent of any other provision.

9.16.4. Enforcement (Attorneys' Fees And Waiver Of Rights)

QuoVadis may seek indemnification and attorneys' fees from a party for damages, losses, and expenses related to that party's conduct. QuoVadis' failure to enforce a provision of this CP/CPS does not waive QuoVadis' right to enforce the same provision later or right to enforce any other provision of this CP/CPS. To be effective, waivers must be in writing and signed by QuoVadis.

9.16.5. Force Majeure

QuoVadis is not liable for any delay or failure to perform an obligation under this CP/CPS to the extent that the delay or failure is caused by an occurrence beyond QuoVadis' reasonable control. The operation of the Internet is beyond QuoVadis' reasonable control.

To the extent permitted by applicable law, Subscriber Agreements and Relying Party Agreements shall include a force majeure clause protecting QuoVadis. See also Section 9.8.3 (Excluded Liability) above.

9.17. OTHER PROVISIONS

No stipulation.

10. APPENDIX A

10.1. CERTIFICATE PROFILES

Within the QuoVadis PKI an Issuing CA can only issue Certificates with approved Certificate Profiles. All Certificate Profiles within the QuoVadis PKI are detailed below.

Procedures for Subscriber registration as well as descriptions of fields are described below for each type of Certificate issued. Additionally, specific Certificate Policies and QuoVadis' liability arrangements that are not described in this CP/CPS may be drawn up under contract for individual Subscribers.

10.1.1. QuoVadis Certificate Class

Certificate Class	Description	Policy OID	Assurance Level	Requires token?
QV Standard	Based on the ETSI Lightweight Certificate Policy (LCP), which has the policy identifier OID 0.4.0.2042.1.3	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.100 ETSI policy identifier OID: 0.4.0.2042.1.3 (optional)	Low	Optional
QV Advanced	Based on the ETSI Normalised Certificate Policy (NCP), which has the OID 0.4.0.2042.1.1. Features face-to-face (or equivalent) authentication of holder identity and organisational affiliation (if included).	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.200 ETSI policy identifier OID: 0.4.0.2042.1.1 (optional)	Medium	Optional
QV Advanced +	Similar to "QV Advanced" issued on an SSCD. Based on the ETSI Normalised Certificate Policy requiring an SSCD (NCP+), which has the OID 0.4.0.2042.1.2 Includes Swiss Regulated Certificates.	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.300 ETSI policy identifier OID: 0.4.0.2042.1.2 (optional)	High	Yes Adobe AATL Approved
QV Qualified	QuoVadis Qualified Certificate on a QSCD	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.400 ETSI policy identifier OIDs: 0.4.0.194112.1.2 (QCP-n-qscd) 0.4.0.194112.1.3 (QCP-l-qscd)	High	Yes Adobe AATL Approved
	QuoVadis Qualified Certificate on a QSCD, where the device is managed by a QTSP.	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.410	High	Yes

Certificate Class	Description	Policy OID	Assurance Level	Requires token?
	Relevant to the Policy in ETSI EN 319 411-2 for: EU Qualified Certificates issued to a natural person (QCP-n-qscd), with the OID 0.4.0.194112.1.2 EU Qualified Certificates issued to a legal person (QCP-l-qscd), with the OID 0.4.0.194112.1.3	ETSI policy identifier OIDs: 0.4.0.194112.1.2 (QCP-n-qscd) 0.4.0.194112.1.3 (QCP-l-qscd)		Adobe AATL Approved
	QuoVadis Qualified Certificate not on a QSCD. Relevant to the Policy in ETSI EN 319 411-2 for: EU Qualified Certificates issued to a natural person (QCP-n), with the OID 0.4.0.194112.1.0 EU Qualified Certificates issued to a legal person (QCP-l), with the OID 0.4.0.194112.1.1	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.450 ETSI policy identifier OIDs: 0.4.0.194112.1.0 (QCP-n) 0.4.0.194112.1.1 (QCP-l)	High	No
	QuoVadis Qualified Certificate not on a QSCD, where the device is managed by a QTSP. Relevant to the Policy in ETSI EN 319 411-2 for: EU Qualified Certificates issued to a natural person (QCP-n), with the OID 0.4.0.194112.1.0 EU Qualified Certificates issued to a legal person (QCP-l), with the OID 0.4.0.194112.1.1	QuoVadis Certificate Class OID: 1.3.6.1.4.1.8024.1.460 ETSI policy identifier OIDs: 0.4.0.194112.1.0 (QCP-n) 0.4.0.194112.1.1 (QCP-l)	High	No
QV Closed Community	Used for reliance by members of the Issuer community only. Policies are defined in the CP/CPS of the Issuing CA.	1.3.6.1.4.1.8024.1.500	Medium	Optional
QV Device	Issued to devices, including Time-stamp Certificates.	1.3.6.1.4.1.8024.1.600	Medium	Optional

10.1.2. Key Usage And Escrow

Different QuoVadis Certificate Profiles may be issued with different key usages, and be eligible for optional Key Escrow, according to the following table:

Certificate Type	**Key Usage/ Extended Key Usage Options**	**Applicability to QuoVadis Certificate Classes**			
		QV Standard	**QV Advanced**	**QV Advanced +**	**QV Qualified**
Signing and Encryption	**Key Usage** digitalSignature nonRepudiation keyEncipherment **Extended Key Usage** smartcardlogon clientAuth emailProtection documentSigning enrolmentAgent	Allowed (Escrow only permitted for certain Issuing CAs. Not permitted for any CAs on EUTL)	Allowed (Escrow only permitted for certain Issuing CAs. Not permitted for any CAs on EUTL)	Allowed (Escrow not permitted)	Not Allowed
Signing	**Key Usage** digitalSignature nonrepudiation **Extended Key Usage** smartcardlogon clientAuth emailProtection documentSigning enrolmentAgent	Allowed (Escrow not permitted)	Allowed (Escrow not permitted)	Allowed (Escrow not permitted)	Allowed (Escrow not permitted)
Encryption	**Key Usage** keyEncipherment **Extended Key Usage** emailProtection	Allowed (Escrow permitted)	Allowed (Escrow permitted)	Allowed (Escrow not permitted)	Not Allowed
Authentication	**Key Usage** digitalSignature **Extended Key Usage** smartcardlogon clientAuth enrolmentAgent	Allowed (Escrow not permitted)	Allowed (Escrow not permitted)	Allowed (Escrow not permitted)	Not Allowed

The Certificate Profiles that follow indicate the fields which are VARIABLE on initial registration by the Subscriber ("Holder Variable") and those which are FIXED by the Issuing CA either based on policy or by IETF Standard, applicable law, or regulation.

10.2. QV STANDARD

Purpose		
Standard Certificates provide flexibility for a range of uses appropriate to their reliance value including S/MIME, electronic signatures, authentication, and encryption.		
Registration Process		
Validation procedures for QuoVadis Standard Certificates collect either direct evidence or an attestation from an appropriate and authorised source, of the identity (such as name and organisational affiliation) and other specific attributes of the Certificate Holder.		
Attribute	**Values**	**Comment**
Subject	/CN (mandatory) (GN+SN or Pseudonym) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory)	See definitions in Section 7.1.1. Variable
SAN	/E 1.3.6.1.4.1.311.20.2.3 UPN	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.100 QV Standard Certificate 0.4.0.2042.1.3 ETSI LCP OID (optional)	Fixed
Key Usage (Critical)	digitalSignature (optional) nonRepudiation keyEncipherment (optional)	Variable
Extended Key Usage	clientAuth emailProtection documentSigning smartcardLogon enrolmentAgent	Variable (at least one is present)

10.3. QV ADVANCED

Purpose
QV Advanced Certificates provide reliable vetting of the holder's identity and may be used for a broad range of applications including Digital Signatures, encryption, and authentication.
Registration Process
Validation procedures for QV Advanced Certificates are based on the Normalised Certificate Policy (NCP) described in ETSI EN 319 411-1. Unless the Subscriber has already been identified by the RA through a face-to-face identification meeting, accepted Know Your Customer (KYC) standards or a contractual relationship with the RA, validation requirements for a Subscriber shall include the following: If the subject is a natural person (i.e. physical person as opposed to legal person) evidence of the subject's identity (e.g. name) shall be checked against this natural person either directly by physical presence of the

person (the subject shall be witnessed in person unless a duly mandated subscriber represents the subject), or shall have been checked indirectly using means which provides equivalent assurance to physical presence.

If the subject is a natural person evidence shall be provided of:

- Full name (including surname and given names consistent with applicable law and national identification practices); and
- Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name.

If the subject is a natural person who is identified in association with a legal person (e.g. the Subscriber), evidence of the identity shall be checked against a natural person either directly by physical presence of the person (the subject shall be witnessed in person unless a duly mandated subscriber represents the subject), or shall have been checked indirectly using means which provides equivalent assurance to physical presence.

If the Subscriber is a natural person who is identified in association with a legal person (organisational entity), additional evidence shall be provided of:

- Full name and legal status of the associated legal person;
- Any relevant existing registration information (e.g. company registration) of the associated legal person; and
- Evidence that the Subscriber is affiliated with the legal person.

If the Subscriber is a legal person (organisational entity), evidence shall be provided of:

- Full name of the legal person; and
- Reference to a nationally recognized registration or other attributes which may be used to, as far as possible, distinguish the legal person from others with the same name.

If the Subscriber is a device or system operated by or on behalf of a legal person, evidence shall be provided of:

- identifier of the device by which it may be referenced (e.g. Internet domain name);
- full name of the organisational entity;
- a nationally recognized identity number, or other attributes which may be used to, as far as possible, distinguish the organisational entity from others with the same name.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) = Legal Person (/O) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory)	See definitions in Section 7.1.1 Variable
SAN	/E 1.3.6.1.4.1.311.20.2.3 UPN	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.200 QV Advanced Certificate 0.4.0.2042.1.1 ETSI NCP OID (optional)	Fixed

Key Usage (Critical)	digitalSignature (optional) nonRepudiation keyEncipherment (optional)	Variable
Extended Key Usage	clientAuth emailProtection documentSigning smartcardLogon	Variable (at least one is present)

10.4. QV ADVANCED +

Purpose
QuoVadis Advanced+ Certificates are used for the same purposes as QuoVadis Advanced Certificates, with the only difference being that they are issued on a Secure Cryptographic Device. The QuoVadis Advanced+ Certificate Class is trusted in the Adobe Approved Trust List (AATL). Swiss Regulated Certificates issued under the Swiss Federal signature law (ZertES) are included in the QuoVadis Advanced+ Certificate Class.
Registration Process
QuoVadis Advanced+ Certificates are based on with the Normalised Certificate Policy (NCP+) described in ETSI EN 319 411-1. Unless the Subscriber has already been identified by the RA through a face-to-face identification meeting, accepted Know Your Customer (KYC) standards or a contractual relationship with the RA, validation requirements for a Subscriber shall include the following: If the subject is a natural person (i.e. physical person as opposed to legal person) evidence of the subject's identity (e.g. name) shall be checked against this natural person either directly by physical presence of the person (the subject shall be witnessed in person unless a duly mandated subscriber represents the subject), or shall have been checked indirectly using means which provides equivalent assurance to physical presence. If the subject is a natural person evidence shall be provided of: • Full name (including surname and given names consistent with applicable law and national identification practices); and • Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name. If the subject is a natural person who is identified in association with a legal person (e.g. the Subscriber), evidence of the identity shall be checked against a natural person either directly by physical presence of the person (the subject shall be witnessed in person unless a duly mandated subscriber represents the subject), or shall have been checked indirectly using means which provides equivalent assurance to physical presence. If the Subscriber is a natural person who is identified in association with a legal person (organisational entity), additional evidence shall be provided of: • Full name and legal status of the associated legal person; • Any relevant existing registration information (e.g. company registration) of the associated legal person; and • Evidence that the Subscriber is affiliated with the legal person. If the Subscriber is a legal person (organisational entity), evidence shall be provided of: • Full name of the legal person; and

- Reference to a nationally recognized registration or other attributes which may be used to, as far as possible, distinguish the legal person from others with the same name.

If the Subscriber is a device or system operated by or on behalf of a legal person, evidence shall be provided of:

- identifier of the device by which it may be referenced (e.g. Internet domain name);
- full name of the organisational entity;
- a nationally recognized identity number, or other attributes which may be used to, as far as possible, distinguish the organisational entity from others with the same name.

QuoVadis Advanced+ Certificates must be issued on a Secure Cryptographic Device either held by the Subscriber or managed by QuoVadis and adhere to the following requirements:

- Secure Cryptographic Device storage, preparation, and distribution is securely controlled by CA or RA;
- User activation data is securely prepared and distributed separately from the Secure Cryptographic Device;
- If keys are generated under the Subscriber's control, they are generated within the Secure Cryptographic Device used for signing or decrypting;
- The Subscriber's Private Key can be maintained under the subject's sole control; and
- Only use the Subscriber's Private Key for signing or decrypting with the Secure Cryptographic Device.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) = Legal Person (/O) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory)	See definitions in Section 7.1.1 Variable
SAN	/E 1.3.6.1.4.1.311.20.2.3 UPN	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.300 QV Advanced+ Certificate 0.4.0.2042.1.2 ETSI NCP+ OID (optional)	Fixed
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	digitalSignature (optional) nonRepudiation keyEncipherment (optional)	Variable
Extended Key Usage	clientAuth emailProtection documentSigning smartcardLogon	Variable (at least one is present)

10.4.1. Swiss Regulated Certificate issued to a Natural Person

Purpose		
Swiss Regulated Certificates (non qualified) issued under the Swiss Federal signature law (ZertES) are included in the QuoVadis Advanced+ Certificate Class. They are issued out of Swiss Regulated CAs and have the notice text "regulated certificate" in the CertificatePolicies user notice. Swiss Regulated Certificates can be issued to natural and legal persons. Swiss Qualified Certificates are described in the separate Section.		
Registration Process		
Swiss Regulated Certificates are issued in accordance with the ZertES requirements using the QuoVadis Signing Service. The guidelines in TAV-ZERTES apply to the specification of Swiss Regulated Certificates. For the issuance and life cycle management of Swiss Regulated Certificates, QuoVadis adheres to the same organisational and operational procedures and uses the same technical infrastructure as for a ZertES Qualified Certificate. Evidence of the Subscriber's identity shall be checked against a physical person either directly, or shall have been checked indirectly using means which provide equivalent assurance to physical presence according to ZertES. Only a valid passport or national ID is accepted as evidence. Storage of personal data is in accordance with ZertES. Evidence shall be provided of: • Full name (including surname and given names consistent with applicable law and national identification practices); and • Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name. If the Subscriber is identified in association with an organisational entity, additional evidence shall be provided of: • Full name and legal status of the associated organisational entity; • Any relevant existing registration information (e.g. company registration) of the organisational entity; • Authorisation from an authorised Organisation representative; and • Evidence that the Subscriber is associated with the organisational entity. Private Keys for Swiss Regulated Certificates are generated and stored on a Hardware that meets FIPS PUB 140-2 level 3 or EAL 4 standards. This Hardware is either a USB-token handed out to clients or a HSM located in a QuoVadis datacentre. The level of assurance using a HSM aims to be the same as achieved by a stand-alone SSCD. Access by the Subscriber to the keys is protected using multifactor authentication. Swiss Regulated Certificates issued by QuoVadis have a maximum validity of three years.		
Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional)	See definitions in Section 7.1.1 Variable

	/T (optional) /O (optional) /OU (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory)	
SAN	/E 1.3.6.1.4.1.311.20.2.3 UPN	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.300 QV Advanced+ Certificate 0.4.0.2042.1.2 ETSI NCP+ OID URL: https://www.quovadisglobal.com/repository User Notice: Regulated certificate	Fixed
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	digtalSignature	Fixed
Extended Key Usage	clientAuth emailProtection smartcardlogon	Fixed

10.4.2. Swiss Regulated Certificate issued to a Legal Person (Company Seal)

Purpose
Swiss Regulated Certificates (non qualified) issued under the Swiss Federal signature law (ZertES) are included in the QV Advanced+ Certificate Class. Swiss Regulated Certificates are issued out of the "QuoVadis Swiss Regulated CAs" and have the notice text "regulated certificate" in the CertificatePolicies user notice.
Registration Process
Swiss Regulated Certificates are issued in accordance with the ZertES requirements using the QuoVadis Signing Service. The guidelines in TAV-ZERTES apply to the specification of Swiss Regulated Certificates. For the issuance and life cycle management of Swiss Regulated Certificates, QuoVadis adheres to the same organisational and operational procedures and uses the same technical infrastructure as for a ZertES compliant Qualified Certificate. The identity of the legal person and, if applicable, any specific attributes of the person, shall be verified: • by the physical presence by an authorised representative of the legal person; or • using methods which provide equivalent assurance in terms of reliability to the physical presence of an authorised representative of the legal person according to ZertES Evidence shall be provided of: • Full name of the organisational entity (private organisation, government entity, business entity or non- commercial entity) consistent with the national or other applicable identification practices); and

- When applicable, the association between the legal person and the other organisational entity identified in association with this legal person that would appear in the organisation attribute of the Certificate, consistent with the national or other applicable identification practices.

For the authorised representative of the legal person, evidence shall be provided of:

- Full name (including surname and given names consistent with applicable law and national identification practices); and
- Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name.

Evidence of the Certificate applicant identity shall be checked against a physical person either directly, or shall have been checked indirectly using means which provide equivalent assurance to physical presence according to ZertES. Only a valid passport or national ID is accepted as evidence. Storage of personal data is in accordance with ZertES.

Evidence shall be provided of:

- Full name (including surname and given names consistent with applicable law and national identification practices); and
- Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name.

Private Keys for Swiss Regulated Certificates are generated and stored on a Hardware that meets FIPS PUB 140-2 level 3 or EAL 4 standards. This Hardware is either a USB-token handed out to clients or an HSM located in a QuoVadis datacentre. The level of assurance using an HSM aims to be the same as achieved by a stand-alone SSCD. Access by the Subscriber to the keys is protected using multifactor authentication.

Swiss Regulated Certificates issued by QuoVadis have a maximum validity of three years.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = /O /O (mandatory) /OU (optional) /E (optional) /L /ST /C (mandatory)	See definitions in Section 7.1.1 Variable
SAN	/E	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.300 QV Advanced+ Certificate 0.4.0.2042.1.2 ETSI NCP+ OID URL: https://www.quovadisglobal.com/repository User Notice: Regulated certificate	Fixed
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	digitalSignature	Fixed
Extended Key Usage	emailProtection documentSigning	Fixed

10.5. QV QUALIFIED - EIDAS

10.5.1. eIDAS Qualified Certificate issued to a Natural Person on a QSCD

Purpose
The purpose of these EU Qualified Certificates are to identify the Subscriber with a high level of assurance, for the purpose of creating Qualified Electronic Signatures meeting the qualification requirements defined by the eIDAS Regulation. These Certificates meet the relevant ETSI "Policy for EU Qualified certificate issued to a natural person where the private key and the related certificate reside on a QSCD" (QCP-n-qscd). Swiss Qualified certificates issued under the Swiss Federal signature law (ZertES) also meet this ETSI policy QCP-n- qscd. These Swiss Qualified certificates are issued only to natural persons out of the "QuoVadis Swiss Regulated CAs" and have the notice text "qualified certificate" in the CertificatePolicies user notice. The content of these Certificates meet the relevant requirements of: • ETSI EN 319 412-1: Certificate Profiles; Part 1: Overview and common data structures • ETSI EN 319 412-2: Certificate Profiles; Part 2: Certificate profile for certificates issued to natural persons • ETSI EN 319 412-5: Certificate Profiles; Part 5: QCStatements
Registration Process
Identity validation procedures for these Certificates meet the relevant requirements of ETSI EN 319 411-2 for "Policy for EU qualified certificate issued to a natural person where the private key and the related certificate reside on a QSCD" (QCP-n-qscd). QuoVadis recommends that QCP-n-qcsd certificates are used only for electronic signatures. The identity of the natural person and, if applicable, any specific attributes of the person, shall be verified: i) by the physical presence of the natural person; or ii) using methods which provide equivalent assurance in terms of reliability to the physical presence and for which QuoVadis can prove the equivalence. The proof of equivalence can be done according to the eIDAS Regulation [i.1]. Evidence shall be provided of: • Full name (including surname and given names consistent with applicable law and national identification practices); and • Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name. Evidence may be provided on behalf of the subject by the RA. However, the subject remains responsible for the content of the Certificate. If the Subscriber is a physical person who is identified in association with an organisational entity, additional evidence shall be provided of: • Full name and legal status of the associated organisational entity; • Any relevant existing registration information (e.g. company registration) of the organisational entity; and • Evidence that the Subscriber is associated with the organisational entity. These Certificates require a QSCD that meets the requirements laid down in Annex II of the eIDAS Regulation. The Subscriber's obligations (or respectively the obligations on the TSP managing the key on their behalf) require that the Private Key is maintained (or respectively is used) under the Subject's sole control.

Attribute	Values	Comment
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /T (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory) If serialNumber is present then it must be structured per Section 5.1.3 of ETSI EN 319 412-1: • 3 character identity type reference (e.g. PAS or IDC); • 2 character ISO 3166 country code; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • identifier.	See definitions in Section 7.1.1 Variable
SAN	/E	Optional
Certificate Policies	1.3.6.1.4.1.8024.1.400 QV Qualified QSCD, or 1.3.6.1.4.1.8024.1.410 QV Qualified QSCD – on behalf of 0.4.0.194112.1.2 (QCP-n-qscd) URL: https://www.quovadisglobal.com/repository User Notice: Qualified certificate	Fixed Only Swiss Qualified
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	digitalSignature (optional) Nonrepudiation keyEncipherment (optional)	Variable
Extended Key Usage	clientAuth (optional) emailProtection documentSigning	Variable (at least one is present)
qcStatements		
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed

id-etsi-qcs-QcSSCD (0.4.0.1862.1.4) id-etsi-qcs-4	esi4-qcStatement-4: The private key related to the certified public key resides on a QSCD.	Fixed
id-etsi-qcs-QcType (0.4.0.1862.1.6) id-etsi-qcs-6	esi4-qcStatement-6: Type of certificate id-etsi-qcs-QcType 1 = Certificate for electronic Signatures as defined in Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcPDS (0.4.0.1862.1.5) id-etsi-qcs-5	URL= https://www.quovadisglobal.com/repository Language = EN	Fixed
id-qcs-pkixQCSyntax-v2 (1.3.6.1.5.5.7.11.2)	0.4.0.194121.1.1 (optional semantics identifier OID that is included in QuoVadis Certificates)	Fixed

10.5.2. eIDAS Qualified Certificate issued to a Natural Person

Purpose
The purpose of these EU Qualified Certificates are to identify the Subscriber with a high level of assurance, for the purpose of creating Advanced Electronic Signatures meeting the qualification requirements defined by the eIDAS Regulation. This type of QuoVadis Qualified Certificates does not use a QSCD for the protection of the private key. The content of these Certificates meet the relevant requirements of: • ETSI EN 319 412-1: Certificate Profiles; Part 1: Overview and common data structures • ETSI EN 319 412-2: Certificate Profiles; Part 2: Certificate profile for certificates issued to natural persons • ETSI EN 319 412-5: Certificate Profiles; Part 5: QCStatements
Registration Process
Identity validation procedures for these Certificates meet the relevant requirements of ETSI EN 319 411-2 for the "Policy for EU qualified certificate issued to a natural person" (QCP-n). QuoVadis recommends that QCP-n certificates are used only for electronic signatures. The identity of the natural person and, if applicable, any specific attributes of the person, shall be verified: • by the physical presence of the natural person; or • using methods which provide equivalent assurance in terms of reliability to the physical presence and for which QuoVadis can prove the equivalence. The proof of equivalence can be done according to the eIDAS Regulation [i.1]. Evidence shall be provided of: • Full name (including surname and given names consistent with applicable law and national identification practices); and • Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name. If the Subscriber is a physical person who is identified in association with an organisational entity, additional evidence shall be provided of: • Full name and legal status of the associated organisational entity; • Any relevant existing registration information (e.g. company registration) of the organisational entity; and

• Evidence that the Subscriber is associated with the organisational entity. The Subscriber's obligations (or respectively the obligations on the TSP managing the key on their behalf) require that the Private Key is maintained (or respectively is used) under the Subject's sole control.		
Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /T (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory) If serialNumber is present then it must be structured per Section 5.1.3 of ETSI EN 319 412-1: • 3 character identity type reference (e.g. PAS or IDC); • 2 character ISO 3166 country code; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • identifier.	See definitions in Section 7.1.1 Variable
SAN	/E	Optional
Certificate Policies	1.3.6.1.4.1.8024.1.450 QV Qualified no QSCD, or 1.3.6.1.4.1.8024.1.460 QV Qualified no QSCD – on behalf of 0.4.0.194112.1.0 (QCP-n) URL: https://www.quovadisglobal.com/repository	Fixed
Key Usage (Critical)	digitalSignature (optional) Nonrepudiation keyEncipherment (optional)	Variable
Extended Key Usage	emailProtection clientAuth documentSigning	Variable
qcStatements		
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed

id-etsi-qcs-QcType (0.4.0.1862.1.6) id-etsi-qcs-6	esi4-qcStatement-6: Type of certificate id-etsi-qcs-QcType 1 = Certificate for electronic Signatures as defined in Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcPDS (0.4.0.1862.1.5) id-etsi-qcs-5	URL= https://www.quovadisglobal.com/repository Language = EN	Fixed
id-qcs-pkixQCSyntax-v2 (1.3.6.1.5.5.7.11.2)	0.4.0.194121.1.1 (id-etsi-qcs-semanticsId-Natural) (optional semantics identifier OID that is included in QuoVadis Certificates)	Fixed
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed

10.5.3. eIDAS Qualified Certificate issued to a Legal Person on a QSCD

Purpose

The purpose of these EU Qualified Certificates are to identify the Subscriber with a high level of assurance, for the purpose of creating Qualified Electronic Seals meeting the qualification requirements defined by the eIDAS Regulation. This type of QuoVadis Qualified Certificates uses a QSCD for the protection of the private key.

These Certificates meet the relevant ETSI "Policy for EU qualified certificate issued to a legal person where the private key and the related certificate reside on a QSCD" (QCP-l-qscd). QuoVadis recommends that QCP-l-qscd certificates are used only for electronic seals.

The content of these Certificates meet the relevant requirements of:

- ETSI EN 319 412-1: Certificate Profiles; Part 1: Overview and common data structures
- ETSI EN 319 412-2: Certificate Profiles; Part 3: Certificate profile for certificates issued to legal persons
- ETSI EN 319 412-5: Certificate Profiles; Part 5: QCStatements
- ETSI TS 119 495: Qualified Certificate Profiles and TSP Policy Requirements under the payment services Directive (EU) 2015/2366

Registration Process

Identity validation procedures for these Certificates meet the relevant requirements of ETSI EN 319 411-2 for "Policy for EU qualified certificate issued to a legal person where the private key and the related certificate reside on a QSCD" (QCP-l-qscd).

The identity of the legal person and, if applicable, any specific attributes of the person, shall be verified:

- by the physical presence by an authorised representative of the legal person; or
- using methods which provide equivalent assurance in terms of reliability to the physical presence of an authorised representative of the legal person and for which QuoVadis can prove the equivalence. The proof of equivalence can be done according to the Regulation (EU) N° 910/2014 [i.1].

Evidence shall be provided of:

- Full name of the organisational entity consistent with the national or other applicable identification practices); and

- When applicable, the association between the legal person and the other organisational entity identified in association with this legal person that would appear in the organisation attribute of the Certificate, consistent with the national or other applicable identification practices.

For the authorised representative of the legal person, evidence shall be provided of:

- Full name (including surname and given names consistent with applicable law and national identification practices); and
- Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name.

Additional steps to verify PSD2 specific attributes including name of the National Competent Authority (NCA), the PSD2 Authorisation Number or other recognized identifier, and PSD2 roles. These details are provided by the Certificate Applicant and confirmed by QuoVadis using authentic information from the NCA (e.g,, using a national public register, EBA PSD2 Register, EBA Credit Institution Register or authenticated letter). QuoVadis also confirms the PSD2 role(s) of the Certificate Applicant (RolesOfPSP) in accordance with the rules for validation provided by the NCA, if applicable:

- i) account servicing (PSP_AS)
  OID: id-psd2-role-psp-as { 0.4.0.19495.1.1 }
- ii) payment initiation (PSP_PI)
  OID: id-psd2-role-psp-pi { 0.4.0.19495.1.2 }
- iii) account information (PSP_AI)
  OID: id-psd2-role-psp-ai { 0.4.0.19495.1.3 }
- iv) issuing of card-based payment instruments (PSP_IC)
  OID: id-psd2-role-psp-ic { 0.4.0.19495.1.4 }

These Certificates require a QSCD that meets the requirements laid down in Annex II of the eIDAS Regulation. The Subscriber's obligations (or respectively the obligations on the TSP managing the key on their behalf) require that the Private Key is maintained (or respectively is used) under the Subject's sole control.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) =/0 /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory) If serialNumber is present then it must be structured per Section 5.1.3 of ETSI EN 319 412-1: • 3 character identity type reference (e.g. PAS or IDC); • 2 character ISO 3166 country code; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • identifier. For PSD2: • “PSD" as 3 character legal person identity type reference;	See definitions in Section 7.1.1 Variable

	• 2 character ISO 3166 [7] country code representing the NCA country; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • 2-8 character NCA identifier (A-Z uppercase only, no separator) • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • PSP identifier (authorisation number as specified by the NCA).	
SAN	/E	Optional
Certificate Policies	1.3.6.1.4.1.8024.1.400 QV Qualified – QSCD or 1.3.6.1.4.1.8024.1.410 QV Qualified QSCD – on behalf of 0.4.0.194112.1.3 (QCP-l-qscd) URL: https://www.quovadisglobal.com/repository	Fixed
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	Nonrepudiation digitalSignature (optional)	Variable
Extended Key Usage	clientAuth (optional) emailProtection (optional) documentSigning (optional)	Variable (at least one is present)
qcStatements		
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcSSCD (0.4.0.1862.1.4) id-etsi-qcs-4	esi4-qcStatement-4: The private key related to the certified public key resides on a QSCD.	Fixed
id-etsi-qcs-QcType (0.4.0.1862.1.6) id-etsi-qcs-6	esi4-qcStatement-6 : Type of certificate id-etsi-qcs-QcType 2 = Certificate for electronic Seals as defined in Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcPDS (0.4.0.1862.1.5) id-etsi-qcs-5	URL= https://www.quovadisglobal.com/repository Language = EN	Fixed
id-qcs-pkixQCSyntax-v2 (1.3.6.1.5.5.7.11.2)	0.4.0.194121.1.2 optional semantics identifier OID (id-etsi-qcs- SemanticsId-Legal) that is included in QuoVadis Certificates	Fixed
id-etsi-psd2-qcStatement (0.4.0.19495.2)	PSD2QcType ::= SEQUENCE{rolesOfPSP RolesOfPSP, nCAName NCAName,nCAId NCAId}	Only for PSD2, Variable. Refer to: ETSI TS 119 495 5.1

10.5.4. eIDAS Qualified Certificate issued to a Legal Person

Purpose

The purpose of these EU Qualified Certificates are to identify the Subscriber with a high level of assurance, for the purpose of creating Advanced Electronic Seals meeting the qualification requirements defined by the eIDAS Regulation.

These Certificates meet the relevant ETSI "Policy for EU qualified certificate issued to a legal person" (QCP-l). QuoVadis recommends that QCP-l certificates are used only for electronic seals. The content of these Certificates meet the relevant requirements of:

- ETSI EN 319 412-1: Certificate Profiles; Part 1: Overview and common data structures
- ETSI EN 319 412-2: Certificate Profiles; Part 3: Certificate profile for certificates issued to legal persons
- ETSI EN 319 412-5: Certificate Profiles; Part 5: QCStatements
- ETSI TS 119 495: Qualified Certificate Profiles and TSP Policy Requirements under the payment services Directive (EU) 2015/2366

Registration Process

Identity validation procedures for these Certificates meet the relevant requirements of ETSI EN 319 411-2 for "Policy for EU qualified certificate issued to a legal person" (QCP-l). The identity of the legal person and, if applicable, any specific attributes of the person, shall be verified:

I. by the physical presence by an authorised representative of the legal person; or

II. using methods which provide equivalent assurance in terms of reliability to the physical presence of an authorised representative of the legal person and for which QuoVadis can prove the equivalence. The proof of equivalence can be done according to the Regulation (EU) N° 910/2014 [i.1].

Evidence shall be provided of:

- Full name of the organisational entity consistent with the national or other applicable identification practices); and
- When applicable, the association between the legal person and the other organisational entity identified in association with this legal person that would appear in the organisation attribute of the Certificate, consistent with the national or other applicable identification practices.

For the authorised representative of the legal person, evidence shall be provided of:

- Full name (including surname and given names consistent with applicable law and national identification practices); and
- Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name.

Additional steps to verify PSD2 specific attributes including name of the National Competent Authority (NCA), the PSD2 Authorisation Number or other recognized identifier, and PSD2 roles. These details are provided by the Certificate Applicant and confirmed by QuoVadis using authentic information from the NCA (e.g,, using a national public register, EBA PSD2 Register, EBA Credit Institution Register or authenticated letter). QuoVadis also confirms the PSD2 role(s) of the Certificate Applicant (RolesOfPSP) in accordance with the rules for validation provided by the NCA, if applicable:

- i) account servicing (PSP_AS)
  OID: id-psd2-role-psp-as { 0.4.0.19495.1.1 }
- ii) payment initiation (PSP_PI)
  OID: id-psd2-role-psp-pi { 0.4.0.19495.1.2 }

- iii) account information (PSP_AI)
  OID: id-psd2-role-psp-ai { 0.4.0.19495.1.3 }
- iv) issuing of card-based payment instruments (PSP_IC)
  OID: id-psd2-role-psp-ic { 0.4.0.19495.1.4 }

The Subscriber's obligations (or respectively the obligations on the TSP managing the key on their behalf) require that the Private Key is maintained (or respectively is used) under the Subject's sole control.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) =/0 /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory) If serialNumber is present then it must be structured per Section 5.1.3 of ETSI EN 319 412-1: • 3 character identity type reference (e.g. PAS or IDC); • 2 character ISO 3166 country code; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • identifier. For PSD2: • “PSD" as 3 character legal person identity type reference; • 2 character ISO 3166 [7] country code representing the NCA country; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • 2-8 character NCA identifier (A-Z uppercase only, no separator) • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • PSP identifier (authorisation number as specified by the NCA).	See definitions in Section 7.1.1 Variable
SAN	/E	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.450 QV Qualified – no QSCD or 1.3.6.1.4.1.8024.1.460 QV Qualified no QSCD – on behalf of 0.4.0.194112.1.1 (QCP-l) URL: https://www.quovadisglobal.com/repository	Fixed
Key Usage (Critical)	digitalSignature (optional) nonRepudiation	Variable

Extended Key Usage	clientAuth (optional) emailProtection (optional) documentSigning (optional)	Variable (at least one is present)
qcStatements		
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcType (0.4.0.1862.1.6) id-etsi-qcs-6	esi4-qcStatement-6: Type of certificate id-etsi-qcs-QcType 2 = Certificate for electronic Seals as defined in Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcPDS (0.4.0.1862.1.5) id-etsi-qcs-5	URL= https://www.quovadisglobal.com/repository Language = EN	Fixed
id-qcs-pkixQCSyntax-v2 (1.3.6.1.5.5.7.11.2)	0.4.0.194121.1.2 optional semantics identifier OID (id-etsi-qcs- SemanticsId-Legal) that is included in QuoVadis Certificates	Fixed
id-etsi-psd2-qcStatement (0.4.0.19495.2)	PSD2QcType ::= SEQUENCE{rolesOfPSP RolesOfPSP, nCAName NCAName,nCAId NCAId}	Only for PSD2 Variable Refer to: ETSI TS 119 495 5.1

10.6. QV SWISS QUALIFIED

Purpose
QV Swiss Qualified Certificates are Qualified personal certificates according to the Swiss Federal signature law (ZertES). They are issued out of the "QuoVadis Swiss Regulated CAs" and have the notice text "qualified certificate" in the CertificatePolicies user notice. QV Swiss Qualified Certificates are used to sign documents electronically. The Digital Signature is tamperproof and legally equivalent to a handwritten signature.
Registration Process
QV Swiss Qualified Certificates are issued in accordance with the ZertES requirements using various QuoVadis Signing Services designed for this type of Certificate. The guidelines in TAV-ZERTES apply to the specification of QV Qualified Switzerland Certificates. Evidence of the Subscriber's identity shall be checked against a physical person either directly, or shall have been checked indirectly using means which provide equivalent assurance to physical presence. Only a valid passport or national ID is accepted as evidence. Storage of personal data is in accordance with ZertES. Evidence shall be provided of: • Full name (including surname and given names consistent with applicable law and national identification practices); and • Date and place of birth, reference to a nationally recognised identity document, or other attributes which may be used to, as far as possible, distinguish the person from others with the same name. If the Subscriber is identified in association with an organisational entity, additional evidence shall be provided of: • Full name and legal status of the associated organisational entity;

- Any relevant existing registration information (e.g. company registration) of the organisational entity;
- Authorisation from an authorised Organisation representative; and
- Evidence that the Subscriber is associated with the organisational entity.

Private Keys for QV Swiss Qualified Certificates are generated and stored on an HSM or USB Token that meets the ZertES requirements FIPS PUB 140-2, level 3 or EAL 4 standards. HSMs for QuoVadis Signing Services are located in QuoVadis datacentres. Access by the Subscriber to the keys is protected using multifactor authentication aimed to achieve the same level of assurance of sole control as achieved by a stand-alone SSCD.

QV Swiss Qualified Certificates have a maximum validity of three years; in special use-cases they are issued with a validity of only one hour.

Attribute	**Values**	**Comment**
Subject	/CN (mandatory) = Natural Person (/GN+/SN or Pseudonym) /GN (mandatory if CN without Pseudonym) /SN (mandatory if CN without Pseudonym) Pseudonym (optional) /T (optional) /O (optional) /OU (optional) /serialNumber (optional) /E (optional) /L (optional) /ST (optional) /C (mandatory) If serialNumber is present then it must be structured per Section 5.1.3 of ETSI EN 319 412-1: • 3 character identity type reference (e.g. PAS or IDC); • 2 character ISO 3166 country code; • hyphen-minus "-" (0x2D (ASCII), U+002D (UTF-8)); and • identifier.	See definitions in Section 7.1.1 Variable
SAN	/E	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.400 QV Qualified – QSCD or 1.3.6.1.4.1.8024.1.410 QV Qualified QSCD – on behalf of 0.4.0.194112.1.2 (QCP-n-qcsd) URL: https://www.quovadisglobal.com/repository User Notice : qualified certificate	Fixed
Adobe Acrobat Trust List	1.2.840.113583.1.1.9.1 Adobe Time-stamp (link to TSA) 1.2.840.113583.1.1.9.2 Adobe Archive RevInfo (long term validation)	Optional
Key Usage (Critical)	nonRepudiation	Fixed

Extended Key Usage	emailProtection documentSigning	Fixed
qcStatements		
id-etsi-qcs-QcCompliance (0.4.0.1862.1.1) id-etsi-qcs-1	esi4-qcStatement-1: Claim that the certificate is an EU Qualified Certificate in accordance with Regulation EU No 910/2014	Fixed: issued before January 13, 2021
id-etsi-qcs-QcCClegislation (0.4.0.1862.1.7) id-etsi-qcs-7	esi4-qcStatement-7: Claim that the certificate is a Swiss Qualified Certificate (CH)	Fixed: issued after January 13, 2021
id-etsi-qcs-QcSSCD (0.4.0.1862.1.4) id-etsi-qcs-4	esi4-qcStatement-4: The private key related to the certified public key resides on a QSCD.	Fixed
id-etsi-qcs-QcType (0.4.0.1862.1.6) id-etsi-qcs-6	esi4-qcStatement-6: Type of certificate id-etsi-qcs-QcType 1 = Certificate for electronic Signatures as defined in Regulation EU No 910/2014	Fixed
id-etsi-qcs-QcPDS (0.4.0.1862.1.5) id-etsi-qcs-5	URL= https://www.quovadisglobal.com/repository Language = en	Fixed
id-qcs-pkixQCSyntax-v2 (1.3.6.1.5.5.7.11.2)	0.4.0.194121.1.2 (optional semantics identifier OID that is included in QuoVadis Certificates)	Fixed

10.7. QV CLOSED COMMUNITY

Closed Community Issuing CAs can, under contract, create Certificate Profiles for the issuance of Certificates to members of that community.

Certificates issued by Closed Community Issuing CAs are for reliance by members of that community only, and as such a Closed Community Issuing CA can, by publication of a stand-alone CP/CPS to its community issue various Certificates in accordance with the CP/CPS.

QuoVadis must approve all closed community Certificate policies to ensure that they do not conflict with the terms of the relevant CP/CPS and also industry standards.

Under no circumstances can Closed Community Issuing CAs issue Qualified Certificates under the Swiss Digital Signature law.

10.7.1. Grid Certificates

This Section provides an overview of the requirements and Certificate contents for Grid Certificates issued in accordance with the requirements of the International Grid Trust Federation (IGTF) or one of its member bodies.

All Grid End User Certificates and Grid Server Certificates issued must comply with the Grid Certificate Profile as defined by the Open Grid Forum GFD.125.

All Grid Certificates will be issued to Applicants based on cryptographic data generated by the Applicant, or based on cryptographic data that can be held only by the Applicant on a secure hardware token. Any single subject Distinguished Name must be linked to one and only one entity and must not be linked to any other entity over the life of the CA. Pseudonyms will not be allowed for Grid Certificates. Private Key archival or escrow is forbidden for all Grid Certificates. Revocation requests must be properly authenticated before they are accepted. Revocation requests can be made by end entities, RAs and QuoVadis. Others can also request

revocation if they can sufficiently prove compromise of the associated Private Key. Subscribers must request revocation as soon as possible. This should be within one working day after detection of loss or compromise of the Private Key pertaining to the Certificate, or if the data in the Certificate is no longer valid. Proxy Certificates will be supported in relation to Grid Certificate. A Grid Certificate must be revoked if a related Proxy Certificate is compromised in any way. The maximum Certificate Revocation List lifetime for Grid Certificates is 30 days.

Grid Certificate Re-Keying can only take place if the Subscriber is already in possession of a valid Grid Certificate and uses this Certificate to submit the Re-Key request. Certificates can only be Re-Keyed for up to a maximum of 3 years, after which period the Subscriber is required to apply for a new Certificate. If the Subscriber has lost their Private Key, or if their existing Certificate has expired, they will need to apply for new Certificate.

10.7.1.1. Grid End User Certificate

Purpose		
Grid technology provides the software infrastructure for sharing of computing resources across various domains. The purpose of a Grid End User Certificate is to help the Subscriber to access the Grid services that require Certificate-based authentication.		
Registration Process		
The identity vetting of all Applicants must be performed by an approved RA. Face to face registration is required at the RA or alternatively the Applicants can have their identity vetted at a post office providing an approved identity vetting service. The Applicant must present a valid photo ID and/or valid official documents in accordance with formally documented RA procedures. The RA is responsible for recording, at the time of validation, sufficient information regarding the Applicant to identify the Applicant. The RA is responsible for maintaining documented evidence on retaining the same identity over time. The Certificate request submitted for certification must be bound to the act of identity vetting.		
Digital Certificate Delivery		
All successful Grid End User Certificate requests will be processed by the QuoVadis Grid Issuing CA. QuoVadis will not generate the Private Keys for Grid End User Certificates. If software tokens are used, the Private Key must be protected with a strong pass phrase that follows current best practices for choosing high-quality passwords.		
Attribute	**Values**	**Comment**
Issuer	/CN = Variable /O = QuoVadis Limited /C = BM	Fixed
Validity	Maximum Certificate lifetime of 1 year	Fixed
Subject	/CN (mandatory) = Natural Person (/GN+/SN) /O (mandatory) /OU (optional) /L (optional) /ST (optional) /C (mandatory)	See definitions in Section 7.1.1 Variable
Domain Components (DC)	DC=com, DC=quovadisglobal, DC=grid, DC=<organisation identifier>, DC=users	Holder Variable
SAN	/E	Variable
Certificate Policies	1.3.6.1.4.1.8024.0.1.10.0.0 QV Grid 1.2.840.113612.5.2.2.1 IGTF Classic Authentication Profile	Fixed

Key Usage (Critical)	digitalSignature keyEncipherment dataEncipherment	Fixed
Extended Key Usage	clientAuth emailProtection	Fixed

10.7.1.2. Grid Server Certificate

Purpose		
Grid technology provides the software infrastructure for sharing of computing resources across various domains. The purpose of a Grid Server Certificate is to help secure communications with Grid servers.		
Registration Process		
The identity vetting of all Applicants must be performed by an approved RA. For Grid Server Certificates, the RA must validate the identity and eligibility of the person in charge of the specific entities using a secure method. The RA is responsible for recording, at the time of validation, sufficient information regarding the Applicant to identify the Applicant. As part of the registration process the RA must ensure that the Applicant is appropriately authorised by the owner of the associated Fully Qualified Domain Name (FQDN) or the responsible administrator of the machine to use the FQDN identifiers asserted in the Certificate. The RA is responsible for maintaining documented evidence on retaining the same identity over time. The RA must validate the association of the Certificate Signing Request. The Certificate Request submitted for certification must be bound to the act of identity vetting.		
Digital Certificate Delivery		
Private Keys pertaining to Grid Server Certificates may be stored without a passphrase, but must be adequately protected by system methods if stored without passphrase.		
Attribute	**Values**	**Comment**
Issuer	/CN = Variable /O = QuoVadis Limited /C = BM	Fixed
Validity	Maximum Certificate lifetime of 1 year	Fixed
Subject	/CN /O (mandatory) /L (optional) /ST (optional) /C (mandatory)	See definitions in Section 7.1.1 Variable
Domain Components (DC)	DC=com, DC=quovadisglobal, DC=grid, DC=<organisation identifier>, DC=hosts	Holder Variable
SAN	SAN dNSName with the Fully Qualified Domain Name or an iPAddress	Variable
Certificate Policies	1.3.6.1.4.1.8024.0.1.10.0.0 QV Grid 1.2.840.113612.5.2.2.1 IGTF Classic Authentication Profile 2.23.140.1.2.2 CABF OV	Fixed
Key Usage (Critical)	digitalSignature keyEncipherment dataEncipherment	Fixed

Extended Key Usage	clientAuth serverAuth	Fixed

10.8. QUOVADIS DEVICE

Purpose		
QuoVadis Device Certificates are intended for a variety of uses including for Time-stamp Authority (TSA) applications. QuoVadis Device Certificates that have the serverAuth EKU comply with the CA/Browser Forum Baseline Requirements.		
Registration Process		
QuoVadis acts as RA for Device Certificates it issues. Before issuing a Device Certificate, QuoVadis performs procedures to verify that all Subject information in the Certificate is correct, and that the Applicant is authorised to use the domain name and/or Organisation name to be included in the Certificate, and has accepted a Subscriber Agreement for the requested Certificate. Documentation requirements for organisation Applicants may include, Certificate of Incorporation, Memorandum of Association, Articles of Incorporation or equivalent documents. Documentation requirements for individual Applicants may include trustworthy, valid photo ID issued by a Government Agency (such as a passport). QuoVadis may accept at its discretion other official documentation supporting an application.		
Key Usage (Critical)	Depends on the type of Certificate.	Variable
Extended Key Usage	Depends on the type of Certificate.	Variable
Subject Alternative Name	If the serverAuth EKU is present then this field must contain either a dNSName containing the Fully- Qualified Domain Name or an iPAddress containing the IP address of a server.	Variable
Certificate Policies	1.3.6.1.4.1.8024.1.600 QV Device Certificate If the serverAuth EKU is present: = 2.23.140.1.2.2 If the serverAuth EKU is present, either: = 1.3.6.1.4.1.8024.0.1.100.1.1 (if chains to QV Root 1), OR = 1.3.6.1.4.1.8024.0.3.100.1.1 (if chains to QV Root 3) If the codeSigning EKU is present: = 2.23.140.1.2.3 If the timeStamping EKU is present, operated by QuoVadis: 1.3.6.1.4.1.8024.0.2000.6	Variable
Certificate Transparency	(1.3.6.1.4.1.11129.2.4.4) If the serverAuth EKU is present, this field MAY include two or more Certificate Transparency proofs from approved CT Logs.	Optional

11. APPENDIX B

11.1. BUSINESS SSL

Field	**Value**
Validity Period	1 or 2 years expressed in UTC format. Effective September 1, 2020: maximum 397 days.
Subject Distinguished Name	
Organisation Name	subject:organisationName (2.5.4.10)
Organisation Unit	subject:organisationUnit (2.5.6.5) Discontinued effective August 31, 2020.
Common Name	subject:commonName (2.5.4.3) cn = Common name
State or province (if any)	subject:stateOrProvinceName (2.5.4.8)
Country	subject:countryName (2.5.4.6)
Subject Public Key Information	2048-bit RSA key modulus, rsaEncryption (1.2.840.113549.1.1.1)
Signature Algorithm	sha256RSA (1.2.840.113549.1.1.11)
Extension	**Value**
Authority Key Identifier	c=no; Octet String – Same as Issuer's Subject Key Identifier
Subject Key Identifier	c=no; Octet String – Same as calculated by CA from PKCS#10
Key Usage	c=yes; Digital Signature, Key Encipherment (a0)
Extended Key Usage	c=no; serverAuth (1.3.6.1.5.5.7.3.1) clientAuth (1.3.6.1.5.5.7.3.2)
Certificate Policies	c=no; Certificate Policies; {1.3.6.1.4.1.8024.0.2.100.1.1 } Certificate Policies; {2.23.140.1.2.2} [1,1] Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: http://www.quovadisglobal.com/repository
Certificate Transparency (optional)	(1.3.6.1.4.1.11129.2.4.4) This field MAY include two or more Certificate Transparency proofs from approved CT Logs.

Purposes of Business SSL

QuoVadis Business SSL Certificates are intended for use in establishing web-based data communication conduits via TLS protocols. The primary purposes of a Business SSL Certificate are to:

- Identify the individual or entity that controls a website; and
- Facilitate the exchange of encryption keys in order to enable the encrypted communication of information over the Internet between the user of an Internet browser and a website.

QuoVadis Certificates focus only on the identity of the Subject named in the Certificate, and not on the behaviour of the Subject. As such, Certificates are not intended to provide any assurances, or otherwise represent or warrant:

- That the Subject named in the Certificate is actively engaged in doing business;
- That the Subject named in the Certificate complies with applicable laws;
- That the Subject named in the Certificate is trustworthy, honest, or reputable in its business dealings; or
- That it is "safe" to do business with the Subject named in the Certificate.

Eligible Applicants

Individuals (natural persons), incorporated entities, government entities, general partnerships, unincorporated associations, and sole proprietorships may apply for QuoVadis Business SSL Certificates.

Verification Requirements

Identity: QuoVadis verifies the identity and address of the organisation and that the address is the Applicant's address of existence or operation. QuoVadis verifies the identity and address of the Applicant using documentation provided by, or through communication with, at least one of the following:

i) A government agency in the jurisdiction of the Applicant's legal creation, existence, or recognition;

ii) A third party database that is periodically updated and considered a Reliable Data Source;

iii) A site visit by the CA or a third party who is acting as an agent for the CA; or

iv) An Attestation Letter.

DBA/Tradename: If the Subject Identity Information is to include a DBA or tradename, QuoVadis verifies the Applicant's right to use the DBA/tradename using at least one of the following:

i) Documentation provided by, or communication with, a government agency in the jurisdiction of the Applicant's legal creation, existence, or recognition;

ii) A Reliable Data Source;

iii) Communication with a government agency responsible for the management of such DBAs or tradenames;

iv) An Attestation Letter accompanied by documentary support; or

v) A utility bill, bank statement, credit card statement, government-issued tax document, or other form of identification that the CA determines to be reliable.

Verification of Country: QuoVadis verifies the country associated with the Subject using one of the following:

i) the IP Address range assignment by country for either (i) the web site's IP

ii) address, as indicated by the DNS record for the web site or (ii) the Applicant's IP address;

iii) the ccTLD of the requested Domain Name;

iv) information provided by the Domain Name Registrar; or

v) a method identified in "Identity" above.

Application Process

During the Certificate approval process, QuoVadis Validation Specialists employ controls to validate the identity of the Applicant and other information featured in the Certificate Application to ensure compliance with this CP/CPS.

Step 1: The Applicant provides a signed Certificate Application to QuoVadis, which includes identifying information to assist QuoVadis in processing the request and issuing the Business SSL Certificate, along with a PKCS#10 CSR and billing details.

Step 2: QuoVadis independently verifies information using a variety of sources.

Step 3: The Applicant accepts the Subscriber Agreement and approves Certificate issuance. Step 4: All signatures are verified through follow-up procedures or telephone calls.

Step 5: QuoVadis obtains and documents further explanation or clarification as necessary to resolve discrepancies or details requiring further explanation. If satisfactory explanation and/or additional documentation are not received within a reasonable time, QuoVadis will decline the Certificate Request and notify the Applicant accordingly. Two QuoVadis Validation Specialists must approve issuance of the Certificate.

Step 6: QuoVadis creates the Business SSL Certificate.

Step 7: The Business SSL Certificate is delivered to the Applicant.

Renewal

Renewal requirements and procedures include verification that the Applicant continues to have authority to use the domain name, and that the Certificate Application is approved by an authorised representative of the Applicant.

11.2. CODE SIGNING

Field	**Value**	**Comments**
Validity Period	1, 2, or 3 years expressed in UTC format	
Subject Distinguished Name		
Organisation Name	subject:organisationName (2.5.4.10)	Required field. The Subject's verified legal name.
Organisation Unit	subject:organisationUnit (2.5.6.5)	Optional field. Must not include a name, DBA, tradename, trademark, address, location, or other text that refers to a specific natural person or Legal Entity unless QuoVadis has verified this information
Common Name	subject:commonName (2.5.4.3)	Required field. The Subject's verified legal name.
State or province (if any)	subject:stateOrProvinceName (2.5.4.8)	Required if the subject:localityName field is absent. Optional if the subject:localityName fields is present.
Locality	subject:locality (2.5.4.6)	Required if the subject:stateOrProvinceName field is absent. Optional if the subject:stateOrProvinceName field is present.
Country	subject:countryName (2.5.4.6)	Required field.
Subject Public Key Information	2048-bit RSA key modulus, rsaEncryption (1.2.840.113549.1.1.1)	

Signature Algorithm	sha256RSA (1.2.840.113549.1.1.11)	
Extension	**Value**	
Authority Key Identifier	c=no; Octet String	
Subject Key Identifier	c=no; Octet String	
Key Usage	c=yes; digitalSignature (80)	
Extended Key Usage	c=no; 1.3.6.1.5.5.7.3.3 (codeSigning)	
Field	**Value**	**Comments**
Certificate Policies	c=no; Certificate Policies; {1.3.6.1.4.1.8024.0.2.200.1.1 } Certificate Policies; { 2.23.140.1.4.1 } [1,1] Policy Qualifier Info: Policy Qualifier Id=CPS Qualifier: http://www.quovadisglobal.com/repository	1.3.6.1.4.1.8024.0.2.200.1.1 is the QuoVadis Code Signing OID. 2.23.140.1.2.3 is the Code Signing Baseline Requirements OID.
Authority Information Access	c=no; Access Method= - Id-ad-ocsp (On-line Certificate Status Protocol - 1.3.6.1.5.5.7.48.1); URL =http://ocsp.quovadisglobal.com - id-ad-caIssuers (CA Issuer - 1.3.6.1.5.5.7.48.2); URL = http://trust.quovadisglobal.com/<CA Name>.crt	
CRL Distribution Points	c = no; CRL HTTP URL =http://crl.quovadisglobal.com/<CA Name>.crl	

Purposes of Code Signing

The primary purpose of QuoVadis Code Signing Certificates is to establish that executable code originates from a source identified by QuoVadis. QuoVadis Certificates focus only on the identity of the Subject named in the Certificate, and not on the behaviour of the Subject. As such, Certificates are not intended to provide any assurances, or otherwise represent or warrant:

- That the Subject named in the Certificate is actively engaged in doing business;
- That the Subject named in the Certificate complies with applicable laws;
- That the Subject named in the Certificate is trustworthy, honest, or reputable in its business dealings; or
- That it is “safe” to do business with the Subject named in the Certificate.

Eligible Applicants

Eligible Applicants include Individual Applicants and Organisational Applicants.

An Individual Applicant is an Applicant that is an individual and requests a Certificate that will list the Applicant's legal name as the Certificate subject.

An Organisational Applicant is an Applicant that requests a Certificate subject other than the name of an individual. Organisational Applicants include private and public corporations, LLCs, partnerships, government entities, non-profit organisations, trade associations, and other entities.

Private Key Protection

Subscriber Key Pairs must be generated and protected in one of the following options:

- A Trusted Platform Module (TPM) that generates and secures a Key Pair and that can document the Certificate
- Holder's Private Key protection through a TPM key attestation
- A hardware cryptographic module with a unit design form factor certified as conforming to at least FIPS 140 Level 2, Common Criteria EAL 4+, or equivalent.
- Another type of hardware storage token with a unit design form factor of SD Card or USB token (not necessarily certified as conformant with FIPS 140 Level 2 or Common Criteria EAL 4+). The Subscriber MUST also warrant that it will keep the token physically separate from the device that hosts the code signing function until a signing session is begun.

Verification Requirements

Before issuing a Code Signing Certificate, QuoVadis performs limited procedures to verify that all Subject information in the Certificate is correct, and that the Applicant is authorised to sign code in the name to be included in the Certificate.

Prior to issuing a Code Signing Certificate to an Organisational Applicant, QuoVadis:

i) Verifies the Applicant's possession of the Private Key;

ii) Verifies the Subject's legal identity, including any Doing Business As (DBA) as described in Section 3.2.2.2 of the Baseline Requirements,

iii) Verifies the Subject's address, and

iv) Verifies the Certificate Requester's authority to request a Certificate and the authenticity of the Certificate Request using a verified method of communication.

Prior to issuing a Code Signing Certificate to an Individual Applicant, the QuoVadis:

i) Verifies the Subject's identity using a government photo ID,

ii) Verifies the Subject's address using reliable data sources,

iii) Obtains a biometric associated with the Subject, such as a fingerprint or notarised handwritten Declaration of Identity,

iv) Verifies the Certificate Requester's authority to request a Certificate and the authenticity of the Certificate Request using a verified method of communication.

A Declaration of Identity is a written document that consists of the following:

i) the identity of the person performing the verification,

ii) a signed declaration by the verifying person stating that they verified the identity of the Applicant,

iii) a unique identifying number from an identification document of the verifier,

iv) a unique identifying number from an identification document of the Applicant,

v) the date and time of the verification, and

vi) a declaration of identity by the Applicant that is signed in handwriting in the presence of the person performing the verification.

Application Process

During the Certificate approval process, QuoVadis Validation Specialists employ controls to validate the identity of the Applicant and other information featured in the Certificate Application to ensure compliance with this CP/CPS.

Step 1: The Applicant provides a signed Certificate Application to QuoVadis, which includes identifying information to assist QuoVadis in processing the request and issuing the Certificate, along with a PKCS#10 CSR and billing details.

Step 2: QuoVadis independently verifies information using a variety of sources in accordance with the "Verification Requirements" Section above.

Step 3: The Applicant accepts the Subscriber Agreement and approves Certificate issuance.

Step 4: All signatures are verified through follow-up procedures or telephone calls.

Step 5: QuoVadis obtains and documents further explanation or clarification as necessary to resolve discrepancies or details requiring further explanation. If satisfactory explanation and/or additional documentation are not received within a reasonable time, QuoVadis will decline the Certificate Request and notify the Applicant accordingly. Two QuoVadis Validation Specialists must approve issuance of the Certificate.

Step 6: QuoVadis creates the Code Signing Certificate. Step 7: The Certificate is delivered to the Applicant.