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The framework for standardization of signatures: overview

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Contents

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Foreword

This Technical Report (TR) has been produced by ETSI Technical Committee Electronic Signatures and Infrastructures (ESI).

Modal verbs terminology

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Introduction

As a response to the adoption of Directive 1999/93/EC [i.1] on a Community framework for electronic signatures (eSignature Directive) in 1999, and in order to facilitate the use and the interoperability of eSignature based solutions, the European Electronic Signature Standardization Initiative (EESSI) was set up to coordinate the European standardization organizations CEN and ETSI in developing a number of standards for electronic signature products and services.

Commission Decision 2003/511/EC [i.2], on generally recognized standards for electronic signature products, was adopted by the Commission following the results of the EESSI. This decision was aimed to foster the use of electronic signature by publishing "generally recognized standards" for electronic signature products in compliance with article 3(5) of the Directive. However, by referencing only two standards (respectively on security requirements for trustworthy systems managing certificates for electronic signatures and secure signature creation devices), it had a limited impact on the mapping of the European standardization on electronic signatures (which covers many more documents and topics, including ancillary services to electronic signature) and the legal provisions and requirements laid down in Directive 1999/93/EC [i.1].

Emerging cross-border use of electronic signatures and the increasing use of several market instruments (e.g. Services Directive [i.3], Public Procurement [i.4] and [i.5], eInvoicing [i.6]) that rely in their functioning on electronic signatures and the framework set by the eSignature Directive emphasized problems with the mutual recognition and cross-border interoperability of electronic signature.

Intending to address the legal, technical and standardization related causes of these problems, the Commission launched a study on the standardization aspects of electronic signature [i.7] which concluded that the multiplicity of standardization deliverables together with the lack of usage guidelines, the difficulty of access and lack of business orientation is detrimental to the interoperability of electronic signatures, and formulated a number of recommendations to mitigate this. Also due to the fact that many of the documents have yet to be progressed to full European Standards (ENs), their status may be considered to be uncertain. The Commission also launched the CROBIES study [i.8] to investigate solutions addressing some specific issues regarding profiles of secure signature creation devices, supervision practices as well as common formats for trusted lists, qualified certificates and electronic signatures.

In line with Standardization Mandate 460 [i.9], consequently issued by the Commission to CEN, CENELEC and ETSI for updating the existing signature standardization deliverables, CEN and ETSI have set up the eSignature Coordination Group in order to coordinate the activities achieved for Mandate 460.

One of the first tasks in the context of Mandate 460 was to establish a rationalized framework for signature standardization to overcome these issues within the context of the eSignature Directive, taking into account possible revisions to this Directive. In August 2014, the European Commission published Regulation 910/2014/EU of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC [i.21]. That Regulation will effectively supersede Directive 1999/93/EC [i.1] on 1 July 2016. This brings within the scope of Regulation additional services for identification and authentication alongside an extended range of signature related trust services and defines additional forms of qualified certificates.

A work programme has been established and will be maintained to address any elements identified as missing in the framework for standardization of signatures. Unless specifically addressing specific types of legally defined electronic signatures (e.g. as in Directive 1999/93/EC [i.1] or in Regulation 910/2014/EU [i.21]), all documents of the framework intend to cover digital signatures supported by PKI and public key certificates [i.17], and aim to meet the general requirements of the international community to provide trust and confidence in electronic transactions, including, amongst other, applicable requirements from EU legislation [i.1] and [i.21]. Digital signatures are data appended to, or being a cryptographic transformation of a data unit that allows a recipient of the data unit to prove the source and integrity of the data unit and protect against forgery. They can enable, when appropriately supported by relevant trust services, implementation of electronic signatures and electronic seals as they are defined in the applicable European legislation [i.1] and [i.21].

1 Scope

The present document describes the general structure for ETSI/CEN digital signature standardization outlining existing and potential standards for such signatures, hereafter referred to as the framework for standardization of signatures. This framework identifies six areas of standardization with a list of existing and potential future standards in each area.

NOTE: Each title providing the name of a listed standard in the framework for standardization of signatures includes a hyperlink that leads to download facilities for such a standard, including all its versions, both as TS/TR and/or as EN when applicable.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

Referenced documents which are not found to be publicly available in the expected location might be found at http://docbox.etsi.org/Reference.

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The following referenced documents are necessary for the application of the present document.

Not applicable.

2.2 Informative references

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The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

[i.1] Directive 1999/93/EC of the European Parliament and of the Council of 13 December 1999 on a Community framework for electronic signatures.

[i.2] Commission Decision 2003/511/EC of 14.7.2003 on the publication of reference numbers of generally recognised standards for electronic signature products in accordance with Directive 1999/93/EC of the European Parliament and of the Council.

[i.3] Directive 1998/34/EC of the European Parliament and the Council of 22.6.1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services.

[i.4] Directive 2004/18/EC of the European Parliament and Council of 31.3.04 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

[i.5] Directive 2004/17/EC of the European Parliament and Council of 31.3.04 coordinating the procurement procedures of entities operating in the water, energy, transport and postal services sectors.

[i.6] Directive 2006/112/EC of 28.11.06 on the common system of value added tax.