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**Elektronski podpisi in infrastrukture zaupanja (ESI) - Digitalni podpisi PAdES - 2.
del: Dodatni profili podpisov PAdES**

Electronic Signatures and Trust Infrastructures (ESI) - PAdES digital signatures - Part 2:
Additional PAdES signatures profiles

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PAdES digital signatures;
Part 2: Additional PAdES signatures profiles**

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Foreword

This draft European Standard (EN) has been produced by ETSI Technical Committee Electronic Signatures and Trust Infrastructures (ESI), and is now submitted for the combined Public Enquiry and Vote phase of the ETSI EN Approval Procedure (ENAP).

The present document is part 2 of a multi-part deliverable covering the PAdES digital signatures. Full details of the entire series can be found in part 1 [4].

Proposed national transposition dates	
Date of latest announcement of this EN (doa):	3 months after ETSI publication
Date of latest publication of new National Standard or endorsement of this EN (dop/e):	6 months after doa
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Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"should"**, **"should not"**, **"may"**, **"need not"**, **"will"**, **"will not"**, **"can"** and **"cannot"** are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

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Introduction

Electronic commerce has emerged as a frequent way of doing business between companies across local, wide area and global networks. Trust in this way of doing business is essential for the success and continued development of electronic commerce. It is therefore important that companies using this electronic means of doing business have suitable security controls and mechanisms in place to protect their transactions and to ensure trust and confidence with their business partners. In this respect digital signatures are an important security component that can be used to protect information and provide trust in electronic business.

The present document is intended to cover digital signatures supported by PKI and public key certificates. This includes evidence as to its validity even if the signer or verifying party later attempts to deny (i.e. repudiates; see ISO/IEC 10181-4 [i.1]) the validity of the signature.

Thus, the present document can be used for any document encoded in a Portable Document Format (PDF) produced by an individual and a company, and exchanged between companies, between an individual and a governmental body, etc. The present document is independent of any environment; it can be applied to any environment, e.g. smart cards, SIM cards, special programs for digital signatures, etc.

The present document is part of a rationalized framework of standards (see ETSI TR 119 000 [i.8]). See ETSI TR 119 100 [i.9] for getting guidance on how to use the present document within the aforementioned framework.

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1 Scope

The present document defines multiple profiles for PAdES digital signatures which are digital signatures embedded within a PDF file.

The present document contains a profile for the use of PDF signatures, as described in ISO 32000-2 [1] and based on CMS digital signatures [i.6], that enables greater interoperability for PDF signatures by providing additional restrictions beyond those of ISO 32000-2 [1]. This first profile is not related to ETSI EN 319 142-1 [4].

The present document also contains a second set of profiles that extend the scope of the profile in ETSI EN 319 142-1 [4], while keeping some features that enhance interoperability of PAdES signatures. These profiles define three levels of PAdES extended signatures addressing incremental requirements to maintain the validity of the signatures over the long term, in a way that a certain level always addresses all the requirements addressed at levels that are below it. These PAdES extended signatures offer a higher degree of optionality than the PAdES baseline signatures specified in ETSI EN 319 142-1 [4].

The present document also defines a third profile for usage of an arbitrary XML document signed with XAdES signatures that is embedded within a PDF file.

The profiles defined in the present document provide equivalent requirements to profiles found in ETSI TS 102 778 [i.10].

Procedures for creation, augmentation, and validation of PAdES digital signatures are out of scope and specified in ETSI EN 319 102-1 [i.11]. Guidance on creation, augmentation and validation of PAdES digital signatures including the usage of the different attributes is provided in ETSI TR 119 100 [i.9].

The present document does not repeat the base requirements of the referenced standards, but instead aims to maximize interoperability of digital signatures in various business areas.

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 in the [ETSI docbox](#).

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

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

- [1] [ISO 32000-2](#): "Document management — Portable document format —Part 2: PDF 2.0".
- [2] Void.
- [3] [IETF RFC 5280](#): "Internet X.509 Public Key Infrastructure Certificate and Certificate Revocation List (CRL) Profile".
- [4] [ETSI EN 319 142-1](#): "Electronic Signatures and Infrastructures (ESI); PAdES digital signatures; Part 1: Building blocks and PAdES baseline signatures"..
- [5] [ETSI EN 319 122-1](#): "Electronic Signatures and Infrastructures (ESI); CAdES digital signatures; Part 1: Building blocks and CAdES baseline signatures".
- [6] [ETSI EN 319 132-1](#): "Electronic Signatures and Trust Infrastructures (ESI); XAdES digital signatures; Part 1: Building blocks and XAdES baseline signatures".

- [7] [ETSI EN 319 132-2](#): "Electronic Signatures and Infrastructures (ESI); XAdES digital signatures; Part 2: Extended XAdES signatures".
- [8] Adobe® XFA: "[XML Forms Architecture \(XFA\) Specification](#)" version 3.3, (January 2012), Adobe Systems Incorporated".
- [9] W3C® Recommendation: "[XML Signature Syntax and Processing Version 1.1](#)".
- [10] [IETF RFC 5035 \(2007\)](#): "Enhanced Security Services (ESS) Update: Adding CertID Algorithm Agility".
- [11] Void.
- [12] Void.
- [13] [IETF RFC 5652 \(2009\)](#): "Cryptographic Message Syntax (CMS)".

2.2 Informative references

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NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

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] ISO/IEC 10181-4: "Information technology — Open Systems Interconnection — Security frameworks for open systems: Non-repudiation framework".
- [i.2] ETSI TS 119 312: "Electronic Signatures and Trust Infrastructures (ESI); Cryptographic Suites".
- [i.3] IETF RFC 5755: "An Internet Attribute Certificate Profile for Authorization".
- [i.4] W3C® Working Group Note: "XML Signature Best Practices", 11 April 2013.
- [i.5] ISO 19005-1:2005: "Document management — Electronic document file format for long-term preservation — Part 1: Use of PDF 1.4 (PDF/A-1)".
- [i.6] Void.
- [i.7] ISO 19005-4 (2020): "Electronic document file format for long-term preservation — Part 4: Use of ISO 32000-2 (PDF/A-4)".
- [i.8] ETSI TR 119 000: "Electronic Signatures and Infrastructures (ESI); The framework for standardization of digital signatures and trust services; Overview".
- [i.9] ETSI TR 119 100: "Electronic Signatures and Infrastructures (ESI); Guidance on the use of standards for signature creation and validation".
- [i.10] ETSI TS 102 778: "Electronic Signatures and Infrastructures (ESI); PDF Advanced Electronic Signature Profiles".
- [i.11] ETSI EN 319 102-1: "Electronic Signatures and Trust Infrastructures (ESI); Procedures for Creation and Validation of AdES Digital Signatures; Part 1: Creation and Validation".
- [i.12] ETSI TR 119 001: "Electronic Signatures and Infrastructures (ESI); The framework for standardization of signatures; Definitions and abbreviations".

3 Definitions of terms, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms given in ISO 32000-2 [1], ETSI TR 119 001 [i.12] and ETSI EN 319 142-1 [4] apply.

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI TR 119 001 [i.12] and the following apply:

CA	Certification Authority
CMS	Cryptographic Message Syntax

NOTE: As specified in IETF RFC 5652 [13].

CRL	Certificate Revocation List
DER	Distinguished Encoding Rules
ESS	Enhanced Security Services
MDP	Modification Detection and Prevention
PDF	Portable Document Format
SIM	Subscriber Identity Module
TSA	Time-Stamping Authority
UBL	Universal Business Language
UTC	Coordinated Universal Time
XML	XML Forms Architecture
XMP	eXtensible Metadata Platform

4 Profile for CMS digital signatures in PDF

4.1 Features

The present profile specifies digital signatures that:

- Are encoded in CMS as defined by CMS (see IETF RFC 5652 [13]).
- Support serial signatures.
- Optionally include signature time-stamps.
- Optionally include revocation information.
- Protect integrity of the document and authenticates the signer identity information included in the signing certificate.
- Can optionally include the "reasons" for the signature.
- Can optionally include a description of the location of signing.
- Can optionally include contact info of the signer.

A "legal content attestation" can be used to indicate to the relying party the PDF capabilities which may affect the signed document (e.g. JavaScript™).