

# Technical Interoperability Standard for the Catalogue of Standards



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### III. OTHER PROVISIONS

## MINISTRY OF FINANCE AND PUBLIC ADMINISTRATION

13501 Resolution of the Secretary of State for Public Administration of 3 October 2012, giving approval to the Technical Interoperability Standard for the Catalogue of Standards.

The National Interoperability Framework, established in Article 42, Section 1, of Law 11/2007, of 22 June, on Citizens' E-Access to Public Services, is aimed at creating the conditions necessary to guarantee an appropriate level of technical, semantic and organisational interoperability of the systems and applications used in the Public Administration, allowing the exercise of rights and the fulfilment of obligations through e-access to public services, while acting in the interest of effectiveness and efficiency.

Royal Decree 4/2010, of 8 January, regulating the National Interoperability Framework for E-Government, establishes in Additional Provision 1 the development of a series of Technical Interoperability Standards, which must be complied with in the Public Administration.

The Technical Interoperability Standards describe specific aspects of a wide range of topics such as e-documents, digitisation, e-files, authentic copy and conversion, signature policy, standards, data brokerage, data models, e-document management, connection to the communication network of the Spanish Public Administration, and data models for the exchange of registry entries and declaration of conformity, all of which are necessary to guarantee the more practical and operational aspects of interoperability between Public Administration agencies and citizens. These Technical Operability Standards shall be further developed and improved over time, parallel to the progress of e-government services, their supporting infrastructure, and the evolution of technology, in order to meet the provisions in Article 42.3 of Law 11/2007, of 22 June.

Within the Technical Interoperability Standards, the one concerning the catalogue of standards seeks to make E-Government services available to citizens so that they and Public Administration agencies can choose the technology to use, and to adapt to the development of communication systems and techniques as described in Law 11/2007. It is in accordance with the provisions in the aforementioned Royal Decree 4/2010, of 8 January, on the applicable standards and its main purpose is to serve interoperability.

To this end, the Technical Interoperability Standard for the Catalogue of Standards contains a catalogue of the minimum standards required to comply with Article 11 of Royal Decree 4/2010, of 8 January, and supporting the other Technical Interoperability Standards. It also sets forth the instructions for review and update. The use of standards not included here should be a response to special needs which shall in any case comply with said Article 11.

Drafted in collaboration with all the Public Administration agencies to which it applies, the present Technical Standard has received a favourable report from the Standing Committee of the High Council for E-Government, at the proposal of the E-Government Sector Committee.

In accordance with the provisions in Section 2 of Additional Provision 1 of Royal Decree 4/2010, of 8 January, the Secretary of State decides:

One

To approve the Technical Interoperability Standard for the Catalogue of Standards.

Two

That the Technical Interoperability Standard for the Catalogue of Standards that is being approved by virtue of this document shall come into force on the day following its publication in the Official State Gazette, irrespective of the clauses in Transitory Provision 1 of Royal Decree 4/2010, of 8 January, regulating the National Interoperability Framework for E-Government.

Madrid, 3 October, 2012. Secretary of State for Public Administration Antonio Germán Beteta Barreda.

## TECHNICAL INTEROPERABILITY STANDARD FOR THE CATALOGUE OF STANDARDS

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- I. Purpose
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  - III. Standard catalogue
  - IV. Use of standards
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#### I. Purpose

The Technical Interoperability Standard for the Catalogue of Standards establishes a set of standards in accordance with Article 11 of Royal Decree 4/2010, of 8 January, regulating the National Interoperability Framework for E-Government.

#### II. Scope of application

The clauses in this Standard shall apply within the scope established in Article 3 of Royal Decree 4/2010, of 8 January.

#### III. Standard catalogue

The standard catalogue shall:

- a) Include the set of standards contained in the Annex of this document, according to the different categories.
- b) Abide by the criteria established in Article 11 of Royal Decree 4/2010, of 8 January.
- c) Contain the minimum required standards for interoperability and for the application of the other Technical Interoperability Standards.
- d) Indicate the status of each standard in the life cycle, the associated values being ACCEPTED or ABANDONED.

## IV. Use of standards

Every Public Administration agencies and related or reporting public bodies shall:

a) Select the standard(s) in this catalogue that best suit their needs, based on the specific tasks or functions to be performed, for the documents and services they make available to citizens or other Public Administration agencies, in accordance with the provisions in Article 11 of Royal Decree 4/2010, of 8 January.

In the event of functions or needs not met by the standards in this catalogue, suitable standard(s) can be selected in accordance with the provisions in Article 11 of Royal Decree 4/2010, of 8 January. Information shall be given on the standard(s) selected as indicated in Section V.2 of this Standard.

b) In order to interact with other Public Administration agencies, abide by the standards selected by the body issuing the document being requested or providing the service being accessed, which shall be published in accordance with Article 8 of Royal Decree 4/2010, of 8 January. Standard selection shall comply with the provisions in Article 11 of said Royal Decree.

c) Publish the standards selected for the services and procedures made available to citizens, in accordance with applicable regulations.

d) Use other formats when required by special circumstances or when necessary to guarantee the evidential value of digital information of activities and procedures for format conversion.

## V. Catalogue of Standards review and update

1. The catalogue of standards shall be reviewed and updated on an annual basis, in compliance with Article 11 of Royal Decree 4/2010. The review and update process shall include at least the following:

a) Survey among Public Administration agencies on the use of the standards in the catalogue.

b) Assessment and, if necessary, deletion of those standards whose status is ABANDONED. Selection of new standards to meet the functions previously covered by deleted standards.

c) Review of the other standards in the catalogue in their various versions at the time of review, update of those standards that need to be updated, and identification of ABANDONED standards and establishment of a maximum time of use for them.

d) Identification of new standards to be included in the catalogue.

e) Assessment of new needs or functions that cannot be classified under the established terms and, if necessary, change in categories and update of the catalogue of standards accordingly.

2. Formal requests for updates can be sent for consideration to the Executive Secretary of the E-Government Sector Committee, including:

a) Type of request: standard inclusion, standard deletion, change in existing standards.

b) Standard information to be updated.

c) Reasons for update.

## ANNEX

## Standards

The table below shows the set of standards in the catalogue of standards.  
Each standard shall have the following attributes:

a) Interoperability chain: Link in the chain the standard is related to.

- Integrated, secure, multi-channel accessibility.
- Associated services and infrastructure.
- System and service integration.
- Data models.

b) Category: Functional category the standard belongs to.

- Authentication:

Certificates.

E-signature.

E-signature policy.

- Timestamp.

- Encryption.

- Encoding:

Character encoding.

Language.

- Access control.

- File formats:

Text and/or image.

Vector-based maps and geographical information systems.

File compression.

Multimedia containers.

Sound.

Video.

- Document and archive management.

- Integrity.

- Metrics.

- Communication and exchange protocols:

Email.

Application-specific.

Web services.

Network and transport technologies.

- Semantics:

Metadata.

Semantic technologies.

- Data integration technologies.

- Identification technologies.

c) Name:

- Common: The name the standard is known by, usually identified with the extension. The value is defined when the minimum required metadata "Format name" for e-documents.
- Formal: The name associated with the standard's formal specification.

d) Type:

- Open standard.
- Widespread use.

e) Version: Minimum required version of the standard.

- f) Extension: Non-comprehensive list of the most common extensions associated with the standard, for information purposes.

g) Status:

- Accepted.
- Abandoned.

## Catalogue of standards

Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status
		Common	Formal				
Integrated, secure, multichannel accessibility	Authentication – E-signature	CAAdES	ETSI TS 101 733 Electronic Signatures and Infrastructures (ESI); CMS Advanced Electronic Signatures (CAAdES)	Open	1.6.3	.p7s .csig	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature	CMS	Cryptographic Message Syntax (CMS)	Open	RFC 5652	.sig	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature	ETSI TS 102 176-1	ETSI TS 102 176-1 Electronic Signatures and Infrastructures (ESI); Algorithms and Parameters for Secure Electronic Signature; Part 1: Hash Functions and Asymmetric Algorithms	Open	2.0.0	-	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature	PAdES	ETSI TS 102 778-3 Electronic Signatures and Infrastructures (ESI); PDF Advanced Electronic Signature Profiles; Part 3: PAdES Enhanced – PAdES-BES and PAdES-EPES Profiles	Open	PAdES-1 1.1.1 PAdES-3 1.1.2 PAdES-4 1.1.2	.p7s .pdf	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature	PDF Signature	PDF Signature	Widespread use	-	.pdf	Abandoned
Integrated, secure, multichannel accessibility	Authentication – E-signature	PKCS#7	PKCS #7: Cryptographic Message Syntax Version 1.5	Open	RFC 2315	-	Abandoned
Integrated, secure, multichannel accessibility	Authentication – E-signature	XAdES	ETSI TS 101 903 XML Advanced Electronic Signatures (XAdES)	Open	1.2.2	.xml .dsig .xsig	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature	XML-DSig	XML Signature Syntax and Processing	Open	Second edition 2008	.xml .dsig .xsig .sig	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature policy	ETSI TR 102 038	ETSI TR 102 038 TC Security – Electronic Signatures and Infrastructures (ESI) XML Format for Signature Policies	Open	RFC 3125 1.1.1	-	Accepted
Integrated, secure, multichannel accessibility	Authentication – E-signature policy	ETSI TR 102 272	ETSI TR 102 272 Electronic Signatures and Infrastructures (ESI); ASN.1 Format for Signature Policies	Open	1.1.1	-	Accepted
Integrated, secure, multichannel accessibility	Encryption	TLS	Transport Layer Security (TLS)	Open	RFC 5878 RFC 5746 RFC 5705 RFC 5489 RFC 5487 RFC 5469 RFC 5289 RFC 5288	-	Accepted
Integrated, secure, multichannel accessibility	Encoding – Character encoding	Base16, Base32, Base64	Base16, Base32, and Base64 Data Encodings	Open	RFC 4648	-	Accepted



Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status
		Common	Formal				
Integrated, secure, multichannel accessibility	Encoding – Character encoding	UCS UTF	ISO/IEC 10646:2003 Information Technology – Universal Multiple-Octet Coded Character Set (UCS)	Open	2003	-	Accepted
Integrated, secure, multichannel accessibility	Encoding – Language	RFC 4646 ISO 639	Tags for Identifying Languages ISO 639 Codes for the Representation of Names of Languages	Open	2002 - 2008 RFC 4646	-	Accepted
Integrated, secure, multichannel accessibility	File formats – Vector-based maps and geographical information systems	GML	ISO 19136:2007 Geographic Information – Geography Markup Language (GML)	Open	2007	.gml	Accepted
Integrated, secure, multichannel accessibility	File formats – Vector-based maps and geographical information systems	WFS	ISO 19142:2010 Geographic information – Web Feature Service	Open	2010	.gml	Accepted
Integrated, secure, multichannel accessibility	File formats – Vector-based maps and geographical information systems	WMS	ISO 19128:2005 Geographic information – Web Map Server Interface	Open	2010	.gml	Accepted
Integrated, secure, multichannel accessibility	File formats – File compression	GZIP	GNU Zip	Open	RFC 1952	.gz	Accepted
Integrated, secure, multichannel accessibility	File formats – File compression	ZIP	ZIP RFC 1952	Open	-	.zip	Accepted
Integrated, secure, multichannel accessibility	File formats – Multimedia containers	AVI	Audio Video Interleave		Widespread use	-	.avi Abandoned
Integrated, secure, multichannel accessibility	File formats – Multimedia containers	MPEG-4 MP4 media	ISO/IEC 14496-14:2003 Information Technology – Coding of Audio-Visual Objects; Part 14: MP4 File Format	Open	2003	.mpeg .mp4	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	Comma Separated Values	Comma Separated Values	Open	RFC 4180	.csv .txt	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	HTML	HyperText Markup Language	Open	4.01	.html .htm	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	CSS	Cascading Style Sheets	Open	2.1	.css	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	JPEG	ISO/IEC 15444. Information technology – JPEG 2000 Image Coding System	Open	2004 - 2008	.jpg .jpeg	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	MHTML	Multipurpose Internet Mail Extension HTML	Open	RFC 2557	.mhtml .mht	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	ISO/IEC 26300:2006 OASIS 1.2	ISO/IEC 26300:2006 Information technology – Open Document Format for Office Applications (OpenDocument) OASIS 1.2	Open	1.0	.odt .ods .odp .odg	Accepted

Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status	
		Common	Formal					
Integrated, secure, multichannel accessibility	File formats – Text and/or image	Strict Open XML	ISO/IEC 29500-1:2012 Information technology – Document Description and Processing Languages – Office Open XML File Formats; Part 1: Fundamentals and Markup Language Reference – Strict	Open	2012	.docx .xlsx .pptx	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	PDF	ISO 32000-1:2008 Document Management – Portable Document Format; Part 1: PDF 1.7	Open	1.4	.pdf	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	PDF/A	ISO 19005-1:2005 ISO 19005-2:2011 Document Management – Electronic Document File Format for Long-Term Preservation	Open	1.4 1.7	.pdf	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	PNG	ISO/IEC 15948:2004 Information technology – Computer Graphics and Image Processing – Portable Network Graphics (PNG): Functional Specification	Open	2004	.png	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	RTF	Rich Text Format		Widespread use	1.6	.rtf	Abandoned
Integrated, secure, multichannel accessibility	File formats – Text and/or image	SVG	Scalable Vector Graphics	Open		1.1	.svg	Accepted
Integrated, secure, multichannel accessibility	File formats – Text and/or image	TIFF	ISO 12639:2004 Graphic technology – Prepress Digital Data Exchange – Tag Image File Format For Image Technology (TIFF/IT)	Open	2004	.tiff	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	TXT	Plain Text	Open	-	.txt	Accepted	
Integrated, secure, multichannel accessibility	File formats – Text and/or image	XHTML	eXtensible HyperText Markup Language	Open	1.0	.html .htm	Accepted	
Integrated, secure, multichannel accessibility	File formats – Sound	MP3 MPEG-1 Audio Layer 3	ISO/IEC 11172-1:1993 ISO/IEC 11172-2:1993 ISO/IEC 11172-3:1993 ISO/IEC 11172-4:1995 ISO/IEC TR 11172-5:1998		Widespread use	1993 - 1998	.mp3	Accepted
Integrated, secure, multichannel accessibility	File formats – Sound	OGG-Vorbis	OGG Vorbis	Open		2010	.ogg .oga	Accepted
Integrated, secure, multichannel accessibility	File formats – Video	MPEG-4 MP4 video	ISO/IEC 14496-14:2003 Information Technology – Coding of Audio-Visual Objects; Part 14: MP4 File Format		Widespread use	2003	.mpeg .mp4	Accepted

Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status
		Common	Formal				
Integrated, secure, multichannel accessibility	File formats – Video	WebM	WebM	Open	2010	.webm	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	ISAAR CPF	International Standard Archival Authority Records for Corporate Bodies, Persons and Families		Widespread use	-	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	ISAD (G)	General International Standard Archival Description		Widespread use	-	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	ISDF	International Standard for Describing Functions		Widespread use	-	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	NEDA	Conceptual Model for Archival Description and Basic Data Requirements for Archival Document Description, Actors and Functions; Part 1: Types of Agencies		Widespread use	2007	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	UNE-ISO 30300	UNE-ISO 30300:2011 Information and Documentation – Management Systems for Records – Fundamentals and Vocabulary	Open		2011	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	UNE-ISO 30301	UNE-ISO 30301:2011 Information and Documentation – Management Systems for Records – Requirements	Open		2011	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	UNE-ISO 15489	UNE-ISO 15489-1:2006; Part 1: General Issues UNE-ISO/TR 15489-2:2006; Part 2: Guidelines (ISO/TR 15489-2:2001)	Open		2006	Accepted
Integrated, secure, multichannel accessibility	Document and archive management	UNE-ISO 23081	UNE-ISO 23081-1:2008; Part 1: Principles UNE-ISO/TS 23081-2:2008; Part 2: Implementation and Conceptual Elements	Open		2008	Accepted
Integrated, secure, multichannel accessibility	Integrity	SHA	Secure Hash Algorithms	Open	RFC 4634 RFC 3874	-	Accepted
Associated services and infrastructure	Access control	LDAP	Lightweight Directory Access Protocol	Open	RFC 4510	-	Accepted
Associated services and infrastructure	Communication and exchange protocols – Email	MIME	Multipurpose Internet Mail Extensions	Open	RFC 2045	-	Accepted
Associated services and infrastructure	Communication and exchange protocols – Email	SMTP	Simple Mail Transfer Protocol	Open	RFC 5321	-	Accepted
Associated services and infrastructure	Communication and exchange protocols – Network and transport technologies	DNS	Domain Name System	Open	RFC 1035	-	Accepted
Associated services and infrastructure	Communication and exchange protocols – Network and transport technologies	HTTP	HyperText Transfer Protocol	Open	1.1 RFC 2616 RFC 2817	http://	Accepted

Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status
		Common	Formal				
Associated services and infrastructure	Communication and exchange protocols – Network and transport technologies	IPSec	Security Architecture for the Internet Protocol	Open	RFC 2401 RFC 4302 RFC 4835	-	Accepted
Associated services and infrastructure	Communication and exchange protocols – Network and transport technologies	NTP	Network Time Protocol	Open	RFC 5905	-	Accepted
System and service integration	Authentication – Certificates	OCSP	X.509 Internet Public Key Infrastructure Online Certificate Status Protocol – OCSP	Open	RFC 2560	-	Accepted
System and service integration	Authentication –Timestamp	ETSI TS 102 023	ETSI TS 102 023 Electronic Signatures and Infrastructures (ESI); Policy Requirements for Time-Stamping Authorities	Open	RFC 3628	-	Accepted
System and service integration	Communication and exchange protocols – Web services	SOAP	Simple Object Access Protocol	Open	1.1	-	Accepted
System and service integration	Communication and exchange protocols – Web services	UDDI	Universal Discovery, Description and Integration	Open	3.0	-	Accepted
System and service integration	Communication and exchange protocols – Web services	WSDL	Web Services Definition Language	Open	1.1	-	Accepted
System and service integration	Communication and exchange protocols – Web services	WS-Security	Web Services Security: SOAP Message Security	Open	1.1	-	Accepted
System and service integration	Identification technologies	ASN.1	ISO/IEC 8824 Information Technology – Abstract Syntax Notation One (ASN.1)	Open	2008	-	Accepted
System and service integration	Identification technologies	OID	ISO/FDIS 26324 Information and Documentation – Digital Object Identifier System	Open	2010	-	Accepted
System and service integration	Identification technologies	URI	Uniform Resource Identifier	Open	RFC 3986 RFC 5785	-	Accepted
System and service integration	Identification technologies	URL	Uniform Resource Locators	Open	RFC 1738	-	Accepted
System and service integration	Identification technologies	URN	Uniform Resource Names (URN) Namespaces	Open	-	-	Accepted
Data models	Metrics	Dates and times	ISO 8601:2004 Data Elements and Interchange Formats – Information Interchange – Representation of Dates and Times	Open	2004	-	Accepted
Data models	Communication and exchange protocols – Application-specific	CODICE	Interoperable Components and Documents for E-Hiring	Open	2.0	.xml	Accepted
Data models	Communication and exchange protocols – Application-specific	Facturae	E-Invoice	Open	3.0	.xml	Accepted

Interoperability chain	Category	Name		Type	Minimum required version	Extension	Status
		Common	Formal				
Data models	Communication and exchange protocols – Application-specific	SCSP	Replacement of Paper Certificates	Open	2.0	-	Accepted
Data models	Communication and exchange protocols – Application-specific	SICRES	Common Information System for Input and Output Records (SICRES)	Open	2.0 3.0	-	Accepted
Data models	Semantics	DCAT	Data Catalog Vocabulary	Open	-	-	Accepted
Data models	Semantics – Metadata	MoReq	Model Requirements for the Management of Electronic Records	Open	-	-	Accepted
Data models	Semantics – Metadata	PREMIS	PREservation Metadata: Implementation Strategies V2.1		-	-	Accepted
Data models	Semantics – Metadata	INSPIRE Metadata Regulation	Commission Regulation (EC) No. 1205/2008 of 3 December 2008 implementing Directive 2007/2/EC of the European Parliament and of the Council as Regards Metadata (Text With EEA Relevance)	Open	-	-	Accepted
Data models	Semantics – Semantic technologies	N3	Notation3	Open	-	.n3	Accepted
Data models	Semantics – Semantic technologies	OWL	Ontology Web Language	Open	2.0	-	Accepted
Data models	Semantics – Semantic technologies	RDF	Resource Description Framework	Open	1.0	-	Accepted
Data models	Semantics – Semantic technologies	RDFa	Resource Description Framework – in – attributes	Open	2008	-	Accepted
Data models	Semantics – Semantic technologies	SKOS	Simple Knowledge Organization System	Open	2009	-	Accepted
Data models	Semantics – Semantic technologies	SPARQL	Query Language for RDF	Open	2008	-	Accepted
Data models	Semantics – Semantic technologies	Turtle	Terse RDF Triple Language	Open	2011	.ttl	Accepted
Data models	Data integration technologies	XML	eXtensible Markup Language (XML)	Open	1.0	.xml	Accepted
Data models	Data integration technologies	XSD	XML Schema	Open	1.0	.xsd	Accepted