Technical Interoperability Standard for Data Models
TITLE: Technical Interoperability Standard for Data Models /
TÍTULO: Norma Técnica de Interoperabilidad de Relación de modelos de datos

Translation into English checked by: General Directorate for Administrative Modernization, Procedures and Promotion of Electronic Administration / Traducción al inglés revisada por: Dirección General de Modernización Administrativa, Procedimientos e Impulso de la Administración Electrónica

This document is a translation of: Norma Técnica de Interoperabilidad de Relación de modelo de datos, published in the Spanish Official State Gazette (BOE). It is not an official translation and therefore has no legal validity. The original version can be found at:

Digital edition with Adobe Acrobat 5.0

Available this publication at / Disponible esta publicación en el Portal de Administración Electrónica (PAe):
http://administracionelectronica.gob.es/

Published:
© Ministry of Finance and Public Administration
Technical Secretariat,
Information, Documentation and Publications Unit
Publication Center

Edita:
© Ministerio de Hacienda y Administraciones Públicas
Secretaría General Técnica
Subdirección General de Información,
Documentación y Publicaciones
Centro de Publicaciones

NIPO: 630-12-208-1
III. OTHER PROVISIONS

MINISTRY OF FINANCE AND PUBLIC ADMINISTRATION

10050 Resolution of the Secretary of State for Public Administration of 28 June 2012, giving approval to the Technical Interoperability Standard for Data Models.

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.


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 related to data model publication is in accordance with the provisions in Article 10 of the aforementioned Royal Decree 4/2010, of 8 January, on the Semantic Assets.

The Technical Interoperability Standard for Data Models establishes the conditions to design and publish the data models in accordance with Article 10 regarding model formats, identification and documentation, use, definition and encoding, with the aim of facilitating interaction with the Semantic Interoperability Centre, publishing data models. This interaction and publication model is in line with the European standards and practices sponsored by the Semantic Interoperability Centre Europe (SEMIC.EU).

With regard to data model definition and encoding in compliance with Article 10, this Standard sets forth the conditions for statistical definitions and encoding to be in line with the standard models of the National Institute of Statistics, so that standard conceptual, defining, classifying and encoding system, as well as statistical units and nomenclatures, are used to ensure data and result comparison, integration and analysis, as envisaged in Law 12/1989, of 9 May, on the Use of Statistics in the Public Service. In addition, the law requires the use of the Public Administration Office and Administrative Unit codes in the Common Directory managed by the Ministry of Finance and Public Administration (MINHAP) for data model description.
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 Data Models.

Two

That the Technical Interoperability Standard for Data Models 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.

III. Data models to be published

Public Administration agencies and related or reporting public bodies shall establish and share their data models (as well as their definitions and encoding) in:

a) Areas subject to exchange of information with citizens and between Public Administration agencies.
b) Common infrastructures, service and tools not intended for internal use only.

IV. Data model exchange structure

The data models to be published at the Semantic Interoperability Centre (CISE) shall have the exchange structure described in Annex I, containing:

a) Semantic assets in XSD (XML Schema Definition) format, classified by service or business unit of the corresponding agency.
b) Explanation guides in PDF (Portable Document Format) format, in compliance with the Technical Interoperability Standard for Standard Catalogues, for the various exchange systems or services, including:
   i. Description of exchanged data types and definitions under the data model in question, and functional description of the operations that can be performed.
   ii. Brief description of the security measures applicable to the data model’s exchanges.
   iii. Requirements to be met by recipients of the information the model applies to.
   iv. Examples of service implementation under the data model in question.
   v. User’s manuals for exchange services and test kits (optional).

V. Identification of data models

V.1 Public Administration agencies and related or reporting public bodies shall identify the exchange structure of their data models for classification purposes, providing the Semantic Interoperability Centre with the identification, localisation and classification tasks for the data models whose publication is centralised there.

V.2 The information for data model identification shall include at least the data in Annex II.

V.3 Data model description shall comply with the criteria in the Technical Interoperability Standard for Standard Catalogues.

V.4 To be registered at the Semantic Interoperability Centre, the body in charge of data models shall send an e-mail message to admin.cise@seap.minhap.es, subject “REGISTRATION AT CISE” + “Standard body locator from the Common Directory of Offices and Bodies Managed by MINHAP”. The text of the message shall contain the following information: name of issuing body, URL address and email address.

VI. Interaction with Semantic Interoperability Centre

In order to interact with the Semantic Interoperability Centre, Public Administration agencies and related or reporting public bodies shall:
a) Identify the models to be exchanged with CISE, in accordance with Section V in this Standard.
b) Provide CISE with the data model exchange structure using one of the procedures below and making sure the information provided is up to date:
   i. Collection and storage of data models structured according to Section IV in an exchange environment accessible to CISE through the Spanish Public Administration Communication Network for mass upload. The environment shall be adequately identified with an URL (Uniform Resource Locator) defined by the data model owner in accordance with the Technical Interoperability Standard for Standard Catalogues.
   ii. Publication of individual data models using the tools available at CISE following the Centre’s procedures.

c) Proactively update the information given to CISE using the exchange environment or the tools available at CISE.
d) Check the data models available at the information repository of the Semantic Interoperability Centre and get notifications from CISE when data models are published or updated.

VII. Use of data models

VII.1 The common data models published by the Semantic Interoperability Centre shall be preferably applied, in compliance with Article 10.1 of Royal Decree 4/2010, of 8 January.

VII.2 The data models owned by bodies in charge of areas subject to exchange of information with citizens and between Public Administration agencies, or common infrastructures, service and tools published at CISE shall be mandatorily applied, in compliance with Article 10.2 of Royal Decree 4/2010, of 8 January.

VII.3 The Semantic Interoperability Centre shall adequately identify the common data models that must be mandatorily applied, distinguishing them from other data models supplied by Public Administration agencies.

VII.4 Common data models shall be identified, classified and prioritised by the E-Government Sector Committee.

VIII. Encoding

VIII.1 Statistically relevant definition and encoding:

a) Shall be those with a standard model defined at the National Institute of Statistics, available at the Institute’s website and CISE.
b) Shall be identified in the data models they are part of in accordance with Section V in this Standard.
c) Can be compared to the standard models of the National Institute of Statistics when they appear in new models or updated versions of existing ones at CISE.

When data models do not match standard models, the National Institute of Statistics shall inform the Ministry of Finance and Public Administration, which shall in turn inform the relevant body or agency for them to take action.
VIII.2 The encoding of Public Administration Office and Administrative Unit shall use the codes in the Common Directory managed by the Ministry of Finance and Public Administration and fed by all Public Administration agencies and related or reporting public bodies.

The Semantic Interoperability Centre shall publish all the relevant documents on integration, cooperation procedures and Directory information attribute definition taking the contents of this Standard into account about data model exchange. Likewise, CISE shall publish and update the list of cooperating sources and a link to the Common Directory management application.
ANNEX I

XML schemas for data model publication

1. Data model XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:ModDataInd="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/indice"
xmlns:ModDataMeta="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/metadatos"
xmlns:ModData="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos"
xmlns:enifile="http://administracionelectronica.gob.es/ENI/XSD/v1.0/documento-e/contenido"
targetNamespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos" elementFormDefault="qualified"
attributeFormDefault="unqualified">
  <xsd:annotation>
  </xsd:annotation>
  <xsd:import namespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/indice" schemaLocation="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/indice/IndiceModDatos.xsd"/>
  <xsd:import namespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/metadatos" schemaLocation="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/metadatos/MetadatosModDatos.xsd"/>
  <xsd:element name="model" type="ModData:ModelType"/>

  <xsd:complexType name="ModelType">
    <xsd:sequence>
      <xsd:element ref="ModDataInd:index"/>
      <xsd:element ref="ModDataMeta:metadataModData"/>
      <xsd:element name="PDFIndex" type="enifile:ContentType" minOccurs="0"/>
    </xsd:sequence>
    <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
  </xsd:complexType>
</xsd:schema>
```
2. Data model index XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:enids="http://administracionelectronica.gob.es/ENI/XSD/v1.0/firma"
    xmlns:ModDataInd="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/index"
    xmlns:ModDataIndcon="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/index/contenido"
    targetNamespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/index"
    elementFormDefault="qualified"
    attributeFormDefault="unqualified">
    <xsd:annotation>
    </xsd:annotation>
    <xsd:import namespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/index/contenido" schemaLocation="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/index/contenido/IndiceModDatosCon.xsd" />
    <xsd:element name="index" type="ModDataInd:IndexType" />
    <xsd:complexType name="IndexType">
        <xsd:sequence>
            <xsd:element ref="ModDataIndcon:ContentIndex" />
            <xsd:element ref="enids:signatures" />
        </xsd:sequence>
        <xsd:attribute name="Id" type="xsd:ID" use="optional" />
    </xsd:complexType>
</xsd:schema>
```
3. Data model index content XSD

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:ModDataIndcon="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/indice/contenido"
targetNamespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/ModDatos/indice/contenido" elementFormDefault="qualified"
attributeFormDefault="unqualified">
    <xsd:annotation>
        <xsd:documentation xml:lang="es"> Data model index content XSD version 1.0 - </xsd:documentation>
    </xsd:annotation>

    <xsd:element name="ContentIndex" type="xsd:string"/>
    <xsd:element name="Date" type="xsd:date"/>
    <xsd:element name="IndexedDocument" type="xsd:string"/>
    <xsd:element name="Type" type="xsd:string"/>
    <xsd:element name="Locator" type="xsd:string"/>
    <xsd:element name="FootprintValue" type="xsd:string"/>
    <xsd:element name="SummaryFunction" type="xsd:string"/>
    <xsd:element name="AdditionDate" type="xsd:date"/>
    <xsd:element name="Order" type="xsd:integer"/>
    <xsd:element name="IndexedFolder" type="xsd:string"/>
    <xsd:element name="FolderLocator" type="xsd:string"/>
    <xsd:element name="IndexedDocument" type="xsd:string"/>
    <xsd:element name="Date" type="xsd:date"/>
    <xsd:element name="IndexedFolder" type="xsd:string"/>
</xsd:schema>
4. Data model metadata XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:annotation>
</xsd:annotation>
```
5. Signature XSD

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:enids="http://administracionelectronica.gob.es/ENI/XSD/v1.0/firma"
    xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
    targetNamespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/firma"
    elementFormDefault="qualified"
    attributeFormDefault="unqualified">
    <xsd:annotation>
        <xsd:documentation xml:lang="es">E-SIGNATURE XSD ENI (version 1.0)</xsd:documentation>
    </xsd:annotation>
    <xsd:import namespace="http://www.w3.org/2000/09/xmldsig#"
        schemaLocation="http://www.w3.org/TR/xmldsig-core/xmldsig-core-schema.xsd"/>
    <xsd:element name="signatures" type="enids:signatures"/>
    <xsd:complexType name="signatures">
        <xsd:sequence>
            <xsd:element name="signature" type="enids:E-SignatureType" minOccurs="1" maxOccurs="unbounded"/>
        </xsd:sequence>
    </xsd:complexType>
</xsd:schema>
```
<xsd:complexType name="E-SignatureType">
  <xsd:sequence>
    <xsd:element name="SignatureType">
      <xsd:annotation>
        <xsd:documentation xml:lang="es">
          - TF01 - CSV.
          - TF02 - XAdES internally detached signature.
          - TF03 - XAdES enveloped signature.
          - TF04 - CAdES detached/explicit signature.
          - TF05 - CAdES attached/implicit signature.
          - TF06 - PAdES.
        </xsd:documentation>
      </xsd:annotation>
      <xsd:simpleType>
        <xsd:restriction base="xsd:string">
          <xsd:enumeration value="TF01"/>
          <xsd:enumeration value="TF02"/>
          <xsd:enumeration value="TF03"/>
          <xsd:enumeration value="TF04"/>
          <xsd:enumeration value="TF05"/>
          <xsd:enumeration value="TF06"/>
        </xsd:restriction>
      </xsd:simpleType>
    </xsd:element>
    <xsd:element name="SignatureContent">
      <xsd:complexType>
        <xsd:choice>
          <xsd:element name="CSV">
            <xsd:complexType>
              <xsd:sequence>
                <xsd:element name="CSVValue" type="xsd:string"/>
                <xsd:element name="CSVGenerationRegulation" type="xsd:string"/>
              </xsd:sequence>
            </xsd:complexType>
          </xsd:element>
          <xsd:element name="SignatureWithCertificate">
            <xsd:complexType>
              <xsd:choice>
                <xsd:element name="Base64Signature" type="xsd:base64Binary"/>
                <xsd:element ref="ds:Signature"/>
                <xsd:element name="SignatureReference">
                  <xsd:annotation>
                    <xsd:documentation xml:lang="es">
                      Internal reference to file containing signature.
                    </xsd:documentation>
                  </xsd:annotation>
                </xsd:element>
              </xsd:choice>
            </xsd:complexType>
          </xsd:element>
        </xsd:choice>
      </xsd:complexType>
    </xsd:element>
    <xsd:element>
      <xsd:complexType>
        <xsd:sequence>
          <xsd:element name="Id" type="xsd:ID" use="optional"/>
          <xsd:element name="ref" type="xsd:string" use="optional"/>
        </xsd:sequence>
      </xsd:complexType>
    </xsd:element>
  </xsd:sequence>
</xsd:complexType>
6. E-document content XSD

<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:enifile="http://administracionelectronica.gob.es/ENI/XSD/v1.0/documento-e/contenido"
    targetNamespace="http://administracionelectronica.gob.es/ENI/XSD/v1.0/documento-e/contenido"
    elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xsd:annotation>
    <xsd:documentation xml:lang="es">DOCUMENT CONTENT XSD ENI (version 1.0)</xsd:documentation>
  </xsd:annotation>
  <xsd:element name="content" type="enifile:ContentType"/>
  <xsd:complexType name="ContentType">
    <xsd:sequence>
      <xsd:choice>
        <xsd:element name="XMLData" type="xsd:anyType">
          <xsd:annotation>
            <xsd:documentation xml:lang="es">XML format contents. For XML encoded in structures different from this root structure, a CDATA clause shall be added.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="BinaryValue" type="xsd:base64Binary">
          <xsd:annotation>
            <xsd:documentation xml:lang="es">Base64 contents.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
        <xsd:element name="FileReference" type="xsd:string">
          <xsd:annotation>
            <xsd:documentation xml:lang="es">Internal reference to content files.</xsd:documentation>
          </xsd:annotation>
        </xsd:element>
      </xsd:choice>
      <xsd:element name="FormatName" type="xsd:string">
        <xsd:annotation>
          <xsd:documentation xml:lang="es">The e-document’s content file format shall be in accordance with the Technical Interoperability Standard for Standard Catalogues.</xsd:documentation>
        </xsd:annotation>
      </xsd:element>
    </xsd:sequence>
    <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
  </xsd:complexType>
</xsd:schema>
## ANNEX II

Identification of data models

**Table 1: Data model identification**

<table>
<thead>
<tr>
<th>Information</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Name identifying data model.</td>
</tr>
<tr>
<td>Body</td>
<td>Standard locator of Public Administration agency or body making the asset available, taken from the Common Directory managed by MINHAP.</td>
</tr>
<tr>
<td>Statistical relevance</td>
<td>Statistical relevance definition and encoding in the model.</td>
</tr>
<tr>
<td>Location</td>
<td>Location of URI (Uniform Resource Identifier) service exchange type and, if available, location of web service.</td>
</tr>
<tr>
<td>E-mail address of generating unit</td>
<td>Email address of unit, body or agency generating data model. Required for error management in communications with Semantic Interoperability Centre.</td>
</tr>
</tbody>
</table>