
**Information technology — Specification and
standardization of data elements —**

Part 6:

Registration of data elements

iTeh *Technologies de l'information — Spécifications et normalisation des
éléments de données —*

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Partie 6: Enregistrement des éléments de données

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO and IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 11179-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 14, *Data element principles*.

ISO/IEC 11179 consists of the following parts, under the general title *Information technology - Specification and standardization of data elements*:

- Part 1: *Framework for the specification and standardization of data elements*
- Part 2: *Classification of concepts for identification of domains*
- Part 3: *Basic attributes of data elements*
- Part 4: *Rules and guidelines for the formulation of data definitions*
- Part 5: *Naming and identification principles for data elements*
- Part 6: *Registration of data elements*

Annex A forms an integral part of this part of ISO/IEC 11179. Annexes B and C are for information only.

Introduction

This part of ISO/IEC 11179 describes the procedure by which data elements required in various application areas are registered and assigned an internationally unique identifier. The uniqueness of a registered data element is determined by a combination of the Registration Authority Identifier (RAI), the unique identifier assigned to a data element within a Registration Authority (RA), and the version under which a data element registration is submitted or updated. The registered data elements are included in registers of data elements, maintained by an RA, to which the data elements logically and functionally belong. Organizations wishing to become RA may do so in accordance with the procedure prescribed in Clause 5.

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Information technology — Specification and standardization of data elements —

Part 6:

Registration of data elements

1 Scope

For each data element to be registered, this part of ISO/IEC 11179 defines the type of information that shall be specified, the conditions that shall be met, and the procedure(s) that shall be followed. This part of ISO/IEC 11179 does NOT specify the register's system design, file organization techniques, storage media, programming languages, etc. to be used in its implementation. The procedure prescribed herein, however, may be extended to register other shared objects, such as object classes, data element concepts, and permissible data element values.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 11179. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 11179 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 2382-1:1993, *Information technology - Vocabulary - Part 1: Fundamental terms.*

ISO 2382-4:1987, *Information processing systems - Vocabulary - Part 04: Organization of data.*

ISO/IEC 6523-1: ____¹, *Information technology - Structure for the identification of organizations and organization parts - Part 1: Identification of organization identification schemes.*

ISO/IEC 6523-2: ____¹, *Information technology - Structure for the identification of organizations and organization parts - Part 2: Registration of organization identification schemes.*

ISO/IEC 7826-1:1994, *Information technology - General structure for the interchange of code values - Part 1: Identification of coding schemes.*

ISO/IEC 11179-3:1994, *Information technology - Specification and standardization of data elements - Part 3: Basic attributes of data elements.*

¹ To be published. (Revision of ISO 6523:1984)

ISO/IEC 11179-4:1995, *Information technology - Specification and standardization of data elements - Part 4: Rules and guidelines for the formulation of data definitions.*

ISO/IEC 11179-5:1995, *Information technology - Specification and standardization of data elements - Part 5: Naming and identification principles for data elements.*

ISO/IEC JTC 1 Directives, *Procedures for the technical work of ISO/IEC JTC 1 on Information Technology*, third edition, 1995.

3 Definitions

For the purposes of this part of ISO/IEC 11179, the definitions given in ISO/IEC 7826-1 and the following definitions apply.

3.1 administrative status: A designation of the position in the processing life-cycle of a registration authority for handling registration requests.

3.2 data: A representation of facts, concepts, or instructions in a formalized manner, suitable for communication, interpretation, or processing by humans or automatic means. (Ref. ISO/IEC 2382-1).

3.3 data element: A unit of data for which the definition, identification, representation, and permissible values are specified by means of a set of *attributes*.

3.4 data element concept: A concept that can be represented in the form of a data element, described independently of any particular representation.

3.5 data element value: A value out of a set of permissible values pertaining to a data element.

3.6 data identifier (DI): An identifier assigned to a data element within an RA [RE: ISO/IEC 11179-3, 6.1.2].

3.7 data item: One occurrence of a data element.

3.8 international registration data identifier (IRDI): An internationally unique identifier for a data element as defined in the framework of this part of ISO/IEC 11179.

3.9 information interchange: The process of sending and receiving data in such a manner that the information content, or meaning assigned to the data, is not altered during the transmission.

3.10 register: A set of files (paper, electronic, or a combination) containing the assigned data elements and the associated information. (Definition adapted after that in Annex E of the ISO/IEC JTC 1 Directives).

3.11 registration: The assignment of an unambiguous identifier to a data element in a way that makes the assignment available to interested parties. (Definition adapted after that in Annex E of the ISO/IEC JTC 1 Directives).

3.12 registration authority identifier (RAI): An identifier assigned to a Registration Authority [RE: ISO/IEC 11179-3, 6.1.4].

3.13 registration authority (RA): Any organization authorized to register data elements.

3.14 registration status: A designation of the position in the registration life-cycle of a data element.

3.15 responsible organization (RO): The organization or unit within an organization that is responsible for the contents of the mandatory attributes by which the data element is specified.

3.16 submitting organization (SO): The organization or unit within an organization that has submitted the data element for addition, change, or cancellation/withdrawal in the data element dictionary.

3.17 version: Identification of an issue of a data element specification in a series of evolving data element specifications within a Registration Authority.

3.18 version identifier (VI): An identifier assigned to a version under which a data element registration is submitted or updated [RE: ISO/IEC 11179-3, 6.3].

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4 Identification of data elements

Data elements registered under the provisions of this part of ISO/IEC 11179 are each assigned an International Registration Data Identifier (IRDI). This identifier value uniquely identifies the data element within the framework of this part of ISO/IEC 11179.

4.1 Components of International Registration Data Identifier (IRDI)

As discussed in the Introduction of this part of ISO/IEC 11179, the uniqueness of a registered data element is determined by the combination of the values of three identifying attributes, as depicted in Figure 1 and defined in Part 3 of ISO/IEC 11179:

- a) An identifier assigned to a Registration Authority [RE: ISO/IEC 11179-3, 6.1.4] hereafter called Registration Authority Identifier (RAI).
- b) An identifier assigned to a data element within an RA [RE: ISO/IEC 11179-3, 6.1.2] hereafter called Data Identifier (DI).
- c) An Identifier assigned to a version under which a data element registration is submitted or updated [RE: ISO/IEC 11179-3, 6.3] hereafter called Version Identifier (VI).

NOTES

1. Although the version may not necessarily be required to make a data element unique within a register, the inclusion of the version in the International Data Element Identifier would provide a unique reference point, should a conflict arise.
2. OPI and OPIS are optional per ISO/IEC 6523. ISO/IEC 11179-6 uses the entire structure of ISO/IEC 6523 as an RAI.

4.2 Assignment of values to International Registration Data Identifier (IRDI) components

An IRDI will be assigned to a data element submitted for registration. The assignment shall be performed in accordance with the procedures specified in 6.1. The values of each component of IRDI are assigned as follows.

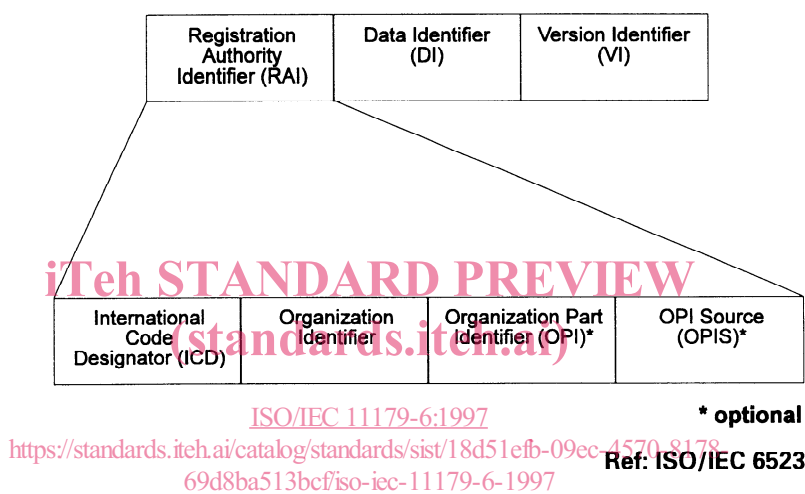


Figure 1: Structure of International Registration Data Identifier (IRDI)

4.2.1 Assignment of Registration Authority Identifier (RAI)

Every organization wishing to become an RA shall possess an internationally recognized organization code, assigned in accordance with the procedure prescribed in ISO/IEC 6523. The entire structure for identification of organizations, as described in Clause 3 of ISO/IEC 6523, shall be the internationally unique RAI for the purpose specified in this part of ISO/IEC 11179.

4.2.2 Assignment of Data Identifier (DI)

Each new data element accepted into the register shall be assigned a new DI. A new DI shall also be assigned to an existing data element when it is modified in such a way as to change the meaning of the data element or the representation form of the potential values of the data element. For example, changes to the mandatory attributes Definition and/or Form of Representation (referenced in Annex A) would require the assignment of a new DI. Editorial

changes to the definition, however, would not cause generation of a new data element, as long as the essential meaning expressed by the definition remains the same. For example, the value of the administrative attributes listed in Annex A may change without causing generation of a new DI.

Based on the requirements of the subject matter included in its register, each RA shall establish and publish, as appropriate, specific guidelines for any additional conditions requiring assignment of a new DI (i.e. generation of a new data element), due to changes in the values of mandatory attributes established for its register.

4.2.3 Assignment of Version Identifier (VI)

In general, a new VI may be generated when any attribute value (other than one requiring a new DI) changes. Each data element, however, may require a different versioning treatment. For example, a change in Permissible DE Values for an Employee Name may not require a new version, while a change of Permissible DE Values for Account Type will likely require a version change. Each RA shall establish specific guidelines for the subject matters in which it specializes and for which it is responsible.

5 Registration participating organizations

There are three types of Registration Acting Bodies (RAB) in the framework of this part of ISO/IEC 11179: SOs, RAs, and ROs. Each type of RAB shall, respectively, meet the criteria, fulfill the roles, and assume the responsibilities prescribed in the following subclauses of this part of ISO/IEC 11179.

5.1 Designation of Registration Acting Bodies (RAB)

5.1.1 Eligibility of Submitting Organizations (SO)

All SOs wishing to register data elements according to this part of ISO/IEC 11179 shall be able to do so in accordance with the procedures prescribed in this part of ISO/IEC 11179. Each RA may establish its own criteria for membership eligibility.

5.1.2 Designation of Responsible Organizations (RO)

ROs are usually designated by a business entity to coordinate the contents of mandatory attributes of related data elements managed by its SOs. In the absence of a designated RO, an SO shall act as an RO.

5.1.3 Establishment of Registration Authorities (RA)

While this part of ISO/IEC 11179 provides the procedures for registering data elements, it does not intend to establish organizations to serve as RAs for this part of ISO/IEC 11179. It is envisioned that any organization wishing to become an RA for the purpose of registering data elements may do so.

In order to establish itself as an RA, an organization shall complete the following:

- Secure an RAI in accordance with 4.2.1.
- Prescribe, amend, and interpret the procedures to be followed for the registration of data elements in accordance with this part of ISO/IEC 11179.
- Determine any additional conditions specifically required by its domain of registration.
- Specify the format for each attribute listed in Annex A of this part of ISO/IEC 11179 and for any additional attributes that the RA may deem necessary, and specify the media by which a data element may be submitted for registration. The registration form and accompanying procedure shall be made available to requesting SOs.
- Determine the format and media in which applications shall be submitted. The RA shall also provide SOs with guidance on the submission of applications.
- Establish and publish the rules by which its register shall be made available. The RA shall specify the allowable users, the accessible contents, the frequency of availability, and the language(s), media, and format in which the information is provided.

5.2 Role of Registration Acting Bodies (RAB)

5.2.1 Role of Submitting Organizations (SO)

An SO wishing to register a data element shall follow the procedures and requirements prescribed in this part of ISO/IEC 11179 for submission to the appropriate RA.

5.2.2 Role of Responsible Organizations (RO)

An RO is the organization, or part thereof, that is responsible for the integrity and accuracy of the attributes values of the data element; e.g. the semantics and permissible values of data elements maintained and controlled by an RA.

The RO, at the RA's request, shall review proposals from Submitting Authorities on relevant attributes, e.g. name, definition, and permissible data element values. The RO shall inform the RA of any essential modifications in the specification of the assigned data elements.

¹ "Language(s)" here denotes national natural languages, e.g. French, English, Spanish.

5.2.3 Role of Registration Authorities (RA)

An RA shall receive and process proposals from SOs for registration of data elements falling within its registration domain. An RA is responsible for maintaining the register of data elements and issuing of IRDIs.

5.3 Responsibilities of Registration Acting Bodies (RAB)

5.3.1 Responsibilities of Submitting Organizations (SO)

An SO is responsible for the following activities:

- Providing the information specified in Annex A in the form required by the RA.
- Providing any additional information that may reasonably be required by the RA to enable it to perform its responsibilities.
- Ensuring that when a data element has been registered, specification of the attribute values of the data element is not changed without first advising the RA.

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5.3.2 Responsibilities of Responsible Organizations (RO)

An RO shall:

- At the RA's request, advise on the semantics, name, and permissible value of data elements submitted for registration.
- Notify the RA of any amendments to the data elements assigned to the RO.
- Decide, in case of confusion and/or conflict, on the attribute values of the assigned data elements.

5.3.3 Responsibilities of Registration Authorities (RA)

Regarding applications for registering data elements, an RA shall fulfill the following responsibilities:

- Receive and process applications for the registration of data elements, assign IRDI values, and maintain a data element register in accordance with the following provisions.
- Consult the appropriate ROs when requests affect the mandatory attributes of the data elements being registered.
- Handle all aspects of the registration process in accordance with good business practice and, in particular, take all reasonable precautions to safeguard the register. Specifically, the responsibilities of an RA are as follows: