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Information technology — Business operational view —

Part 10: IT-enabled coded domains as semantic components in business transactions

Technologies de l'information — Vue opérationnelle d'affaires —

Partie 10: Domaines codés activés comme composantes sémantiques dans les transactions d'affaires



Reference number
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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 or 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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives or www.iec.ch/members_experts/refdocs).

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This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

This second edition cancels and replaced the first edition (ISO/IEC 15944-10:2013), of which it constitutes a minor revision.

The changes are as follows:

— Clause 1 (Scope) has been amended to move the detailed description of "Exclusions" and "Aspects not currently addressed" to a separate informative annex;

— entries in Clause 2 and Clause 3 have been removed to be more conformant to ISO Directives;

— definitions in Clause 3 have been updated to be aligned with other referenced source definitions;

— clauses and annexes have been aligned to changes in ISO/IEC Directives, Part 2;

— minor edits of a temporal nature with respect to dated references, changes in URLs referenced, minor edits, change of font to Cambria, as well as application of the new “ISO House Style”, etc.

A list of all parts in the ISO/IEC 15944 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

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Introduction

0.1 Overview of purpose and nature of coded domains

Coded domains already exist in ISO/IEC 15944 series eBusiness standards, especially ISO/IEC 15944-1, ISO/IEC 15944-2, ISO/IEC 15944-5 and ISO/IEC 15944-8. There are also widely used standards, specifications, authority files, etc., of a "codes representing X" nature used in business transactions involving the making of (legally-binding) commitments, based on common business practices, and doing so in an IT-enabled manner. The primary purpose of this document is to provide an integrated approach, methodology and tool in a single consolidated document the key concepts and their definitions as well as rules pertaining to coded domains.

This document supports all three strategic directions for standards development of ISO/IEC JTC1: namely "portability", "interoperability", and "cultural adaptability".

Within an Open-edi context (based on the ISO/IEC 14662 "Open-edi reference model"[1)]), business transactions are viewed from both a Business Operational View (BOV) and the Functional Services View (FSV). ISO/IEC 15944 focuses on the many requirements of the business operational view aspects of Open-edi in support of electronic business transactions. The primary aspect which distinguishes and differentiates "Open-edi" (and ISO/IEC 14662 Open-edi Reference Model compliant standards) is that they are developed to be able to support the making of commitments among autonomous parties. This requires that the set(s) of recorded (SRIs) information interchanged in the form of Information Bundles (IBs) as well as Semantic Components (SCs), which form part of an IB, are not only IT-enabled and IT-platform neutral. It is especially important that, where these semantics are captured, recorded, referenced and used via a specified coded domain, these are communicated in a very precise and in an "unambiguous" manner, i.e. at the "level of certainty and explicitness required" to support the goal of the commitment exchange forming the goal of the business transaction.

In addition, the following Open-edi requirements need to be supported:

a) need for unambiguity in commitment exchange applies especially to semantics of the data interchanged among the parties concerned;

b) ensure as high a degree of data integrity of the semantics of the data interchanged;

c) maximize an IT-enabled approach;

d) maximize granularity and flexibility.

Given the fact that in Open-edi there are many differing internal and external constraints as well as the wide variety of applications and sectors, it is important that the recorded information interchanged among the parties concerned be as "granular" and precise as possible. Here "coded domains" serve as flexible "lego blocks" from which data values can be retrieved and used as unambiguous semantic components.

The concept of "coded domain" is unique in the context of an Open-edi approach and has been defined in an ISO/IEC 15944 context. This concept and its definition represent an approach, methodology and tool which is needed to support appropriate level of unambiguity of (electronic) data interchange needed to support. The concept of "coded domain" covers several perspectives. For the definition, see entry "D033" in ISO/IEC 15944-7:2009 and ISO/IEC 15944-7:2009, 5.3.2.

1) Business and information (modelling) perspective, i.e., those of users and the BOVs;

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1) ISO/IEC 14662(E/F) is an English/French, side-by-side, International Standard. Its 2010 3rd edition has become a stabilized standard and is now also an ISO/IEC declared "horizontal" standard, i.e., one serving as a base standard for those developing standards in the various fields of EDI, including eBusiness. The stabilized status of ISO/IEC 14662 was re-affirmed for another 10 years by ISO/IEC JTC1 in 2021. ISO/IEC 14662 has since its 1997 1st edition been an ISO/SO freely available standard. [See further https://standards.iso.org/ittf/PubliclyAvailableStandards/index.html]

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2) IT modelling perspectives such as:

   a) Entity-relationship modelling where a coded domain is viewed as an entity type functioning as a “domain”; and,

   b) Object-oriented modelling where a coded domain is viewed as an “object class”.

3) An information science (information management, library, records management, etc.) perspective where coded domains are viewed as “schedules”, “authority files”, “tables” (which one at times “attaches” to a concept/term thesauri (or indexing/classification schemes of “instance relationships”;

4) An electronic data interchange perspective where coded domains are known as “code sets” i.e., a set of codes representing “xyz”. (pop-ups choices in a data entry module); and,

5) Application and implementation perspective (and physical data model) where coded domains are commonly known as (edi) tables (or reference tables).

The term “coded domain” is introduced to differentiate Open-edi, BOV and e-Business requirements from various other concepts and associated terms such as generic (encodable) value domains, “enumerated domains”, code sets, which appear to be similar in nature similar in nature in ISO standards. (See Annex C for more detailed information).

In addition, a key purpose of this document is to ensure that at the granular level as much information is made available about a semantic component, at whatever level of granularity as is required to ensure unambiguity in a commitment exchange.

Another key purpose of this document is to maximize the level of “intelligence” at the highest most precise level, i.e., that of the actual data values being interchanged. Here, use of coded domains presents a simple and pragmatic approach. No “expert system”, intelligent interface, use of heuristics, etc., can metamorphose “dumb” fuzzy data into unambiguous data values which are precise enough to be able to serve as EDI IBs or SCs in support of the making of commitments as actualized in a instantiated business transaction. On the other hand, “smart data” within an intelligent structure, i.e., as part of a coded domain, can not only stand on its own but also be much simpler, precise, easier to reference and use.

This approach at the data element level focuses on the development of intelligently coded data elements as part of coded domains. This involves rule-based, structured and pre-defined values whose purpose and use has been stated clearly and unambiguously (hereby facilitating an IT-enabled approach).

0.2 Benefits of the use of coded domains

The benefits of using the construct, methodology and implementation of “coded domains”, in compliance with this document, presented below include (in no order of importance):

1) maximizing if not ensuring unambiguity in semantics among parties to a commitment exchange instantiated as a business transaction;

2) ensuring ability to support Human Interface Equivalencies (HIEs) in support of multilingualism and individual accessibility requirements;

3) maximize a total quality management (TQM) approach for data integrity control and trustworthiness and quality assurance;

4) maximize exchange ability of data among Persons and their applications through computer-to-computer electronic data interchange (EDI) among the IT-systems of the parties involved;

5) serve as a methodology and tool which its IT-neutral, i.e., ISO/IEC 15944-10 conformant “coded domains” are completely independent of application software and IT-platforms used;

6) minimization of data entry costs and simplification data entry processes;

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7) enables more efficient and effective search, retrieval and use of recorded information (in multiple languages);

8) significant minimization in costs and duplication of effort due to the inherent shareable nature of coded domains;

9) increased efficiencies and cost reductions in both the internal operations of organizations and public administrations as well as among them via EDI;

10) promotes modularity, re-usability of shared solutions supporting both paperless environments;

11) increased productivity, through reduction of common (non-competitive) costs at organizations and public administrations as well as at the jurisdictional domain level; and,

12) serve as a methodology in support of the development of consensus building with respect to the development of permitted values of a data element in support of the use of a semantic component in (electronic) data interchange (based on the Pareto principle[2]).

0.3 Identification, mapping and IT-enablement of existing standards for widely-used code sets

A coded domain consists of entries of "entities" which the responsible Source Authority (SA) has decided to include into its "Set of codes representing X" for the specified and particular purpose for which this SA has decided to establish and maintain the resulting "set of codes representing X" to be used by its members. However, it is recognized that many "Persons" of different nature, i.e., either as an "organization" and/or "public administration", and at times, "individuals" as well use a "Set of codes representing X" for a purpose and in a context which is quite different from that of the purpose and use of the Source Authority which created and maintains that "Set of Codes representing X".

Two primary examples here are ISO 3166-1 and ISO 3166-2 and ISO 4217 which from an "object class" methodology perspective contain several distinct object classes (see the ISO/IEC definition for "object class" from ISO/IEC 11179-1:2023, 3.31 (as referenced as entry "D147" in ISO/IEC 15944-7 and so used in all parts of the ISO/IEC 15944 series where applicable including in this document as found in 3.94). Annex H provides further information on these two examples via the use of a "semantic qualifier".

In this document, there is frequent use of the phrase "set of codes representing X". This is because there are many existing and widely used sets of codes which need to be converted into "coded domains" from an Open-edi, eBusiness, commitment exchange, etc., user perspective.

In an Open-edi and/or eBusiness context of the use of an actual values of SRIs, i.e. as instantiations, that are intended to be used as "coded domains", are already widely used in existing ISO, IEC, and ITU standards in the form of a "codes representing X" nature, as well as those found in specifications of differing industry sectors. These standards are managed and maintained by recognized authorities and implemented in business practices. From an Open-edi and generic commitment exchange perspective in general as well as that of eBusiness requirements in particular, Open-edi standards support their use and implementation in an IT-enabled form.

As illustrated in Figure 1, the standard for the IT-enablement of the widely used "codes representing X" standards is needed to provide guidance for the transformation and achieve consistency among applications of different standards. Requirements need to be specified for the coded domain, including identification, mapping to existing codes, as well as cultural adaptability features. In this document, these specifications are based on explicitly stated rules and scope of coded domains, rules and guidelines for the construct and characteristics of coded domain and its member codes, especially from the semantic perspectives, to support commitment exchanges of Open-edi.

It is a general rule and practice in ISO/IEC 15944 standards series development that one maximizes the use of Formal Description Techniques (FDTs). The rules and guidelines along with associated definitions

2) This document, which focuses on the more primitive aspects of "coded domain", also applies the "Pareto Principle" Also known as the "80-20 rule", or the "law of the vital few", it states that in many cases 80 % of the effects come from 20 % of the causes. In this context, the concepts and definitions as well as the rules and guidelines presented in this document can be viewed to be the 20 % which covers 80 % of the common user requirements.

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of concepts is an approach of using a lexical model as the formal approach to specify requirements from a business operational view (BOV) perspective. The FDTs can also be used to produce the formal models or to describe the rule-base for coded domain, which in turn become a integrate part of coded domains.

This document also specifies that Open-edi coded domains need to be registered as such in compliance with ISO/IEC 15944-2:2015 requirement. (See further Clause 11).

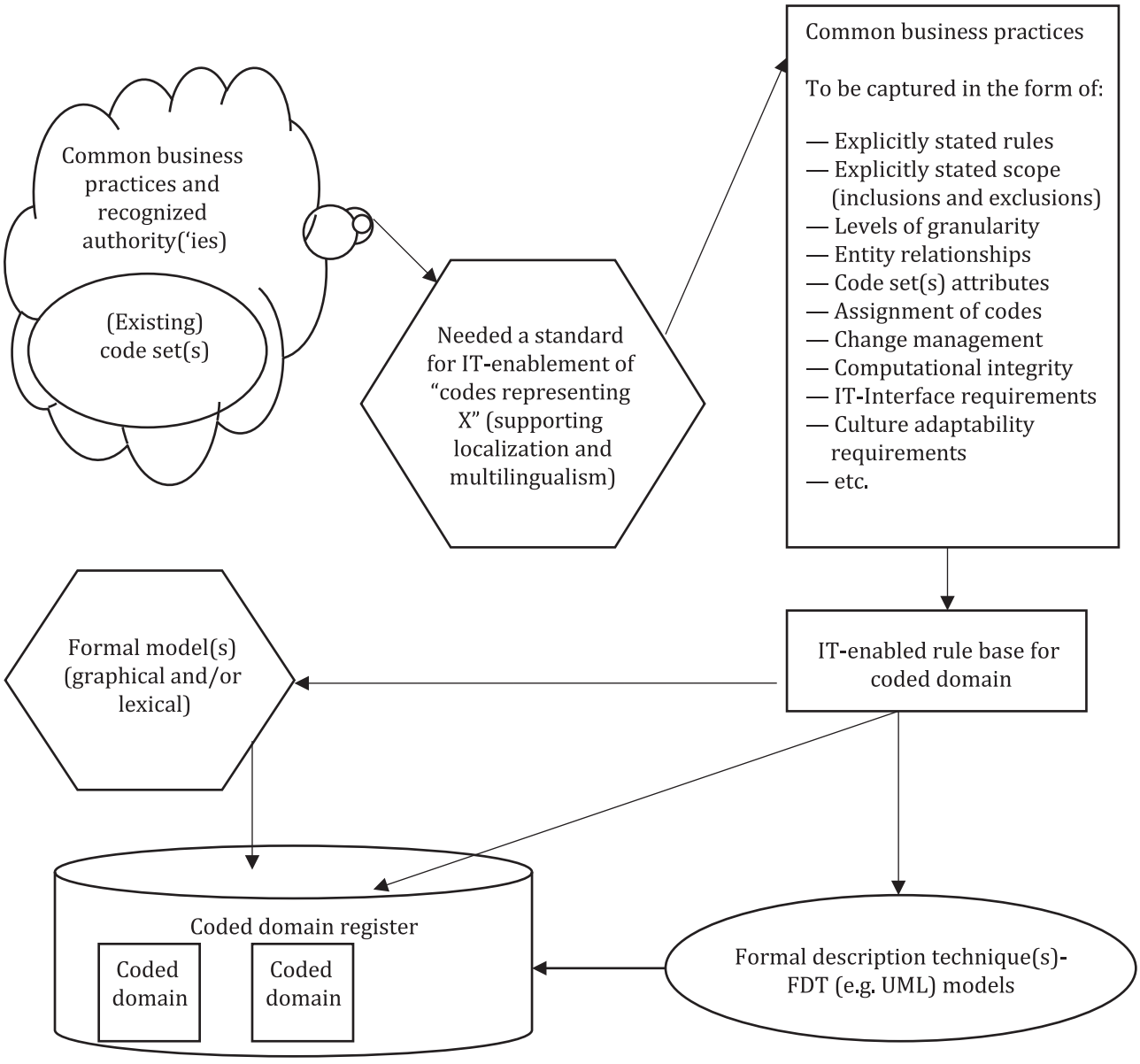


Figure 1 — Need for standard and methodologies for coded domains

Thus, this document facilitates and allows for the:

— development of Referenceable Semantic Components in Open-edi Scenarios (e.g. as "roles" and "information bundles")

— mapping into existing standards and tools for repositories, interchange, access, encoding, syntax, (e.g. ASN.1, IRDS, SQL, 11179-based registries, HTML, XML, ANSI X.12, UN/CEFACT, ISO 9735 "EDIFACT", etc.).

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0.4 Link to fundamental components in Business Transaction Model (BTM)

As described in ISO/IEC 15944-1:2023, 6.1.5, a business transaction requires three basic components, namely "Person", "process" and "data".

These three fundamental elements of the Business Transaction Model (BTM) are represented graphically in Figure 2, which has been adapted from ISO/IEC 15944-1:2023, Figure 7.

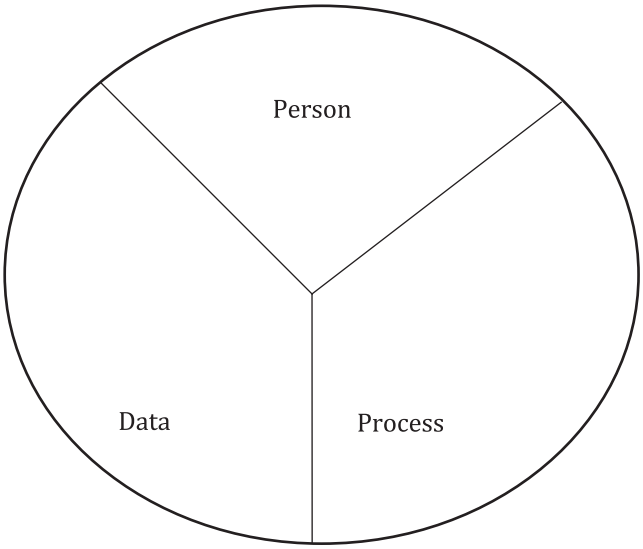


Figure 2 — Business Transaction Model — Fundamental components

The "coded domains" apply to all three of these fundamental components of the BTM. For example, with respect to "data" (and data element), numerous sets of codes representing XYZ" exist which are already or can be transformed into IT-enabled domains. With respect to "Person", ISO/IEC 15944-1 identified existing "coded domains" for the identification and registration of Persons in the form of ISO standards:

— ISO/IEC 6532 for organizations;

— ISO/IEC 7812 for individuals, organizations and public administrations; and

— ISO/IEC 7501 for individuals (See ISO/IEC 15944-1:2023, Annex D for further information on these identification schemas.)

With respect to the "process" component, ISO/IEC 15944-1 identified a set of five fundamental activities which may take place in any order. The five fundamental activities are: (a) planning; (b) identification; (c) negotiation; (d) actualization; and, (e) post-actualization.

— On the whole, a coded domain consists of predefined and structured data elements. ISO/IEC 15944-1:2023, 6.4.2 described the relations between concepts of "recorded information" and "data". Data is one type of recorded information that can be processed by computer systems. Data is data-element based or non-data element based, as described by Figure 3 and Figure 4, which are adapted from ISO/IEC 15944-1:2023, 6.4.2.

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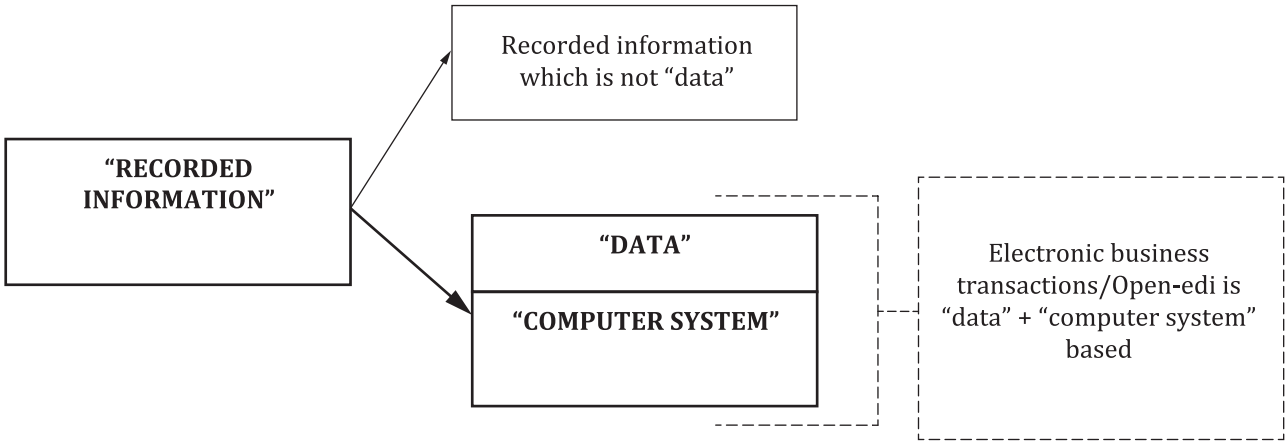


Figure 3 — Relation of "recorded information", "data" and "computer system" in electronic business transactions/Open-edi

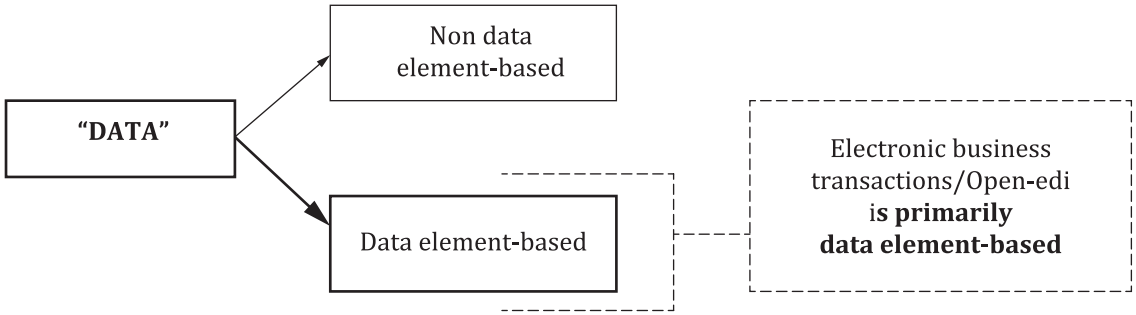


Figure 4 — Relations "data" and "data elements" in electronic business transactions / Open-edi

0.5 IT-enabled and content predefined semantic components

As specified by ISO/IEC 14662, Open-edi scenarios include components of roles, information bundles, and scenario attributes. The coded domain is related to information bundles, which consist of semantic components (SC). A semantic component is a unit of recorded information unambiguously defined in the context of business goal of the business transaction.

Since not specifically required by the ISO/IEC 14662, the semantic components for "Person", "process" and "data" can be either structured or unstructured, and they can also have predefined contents or undefined contents. It is an ISO/IEC JTC1 requirement that a standard shall support IT-enablement and computational integrity when possible. Therefore, it is the purpose of this document to maximize the IT-enablement, interoperability, computational integrity approach through the use of coded domains whose context provided predefined and structured data values for use as semantic component, as shown in Figure 5.

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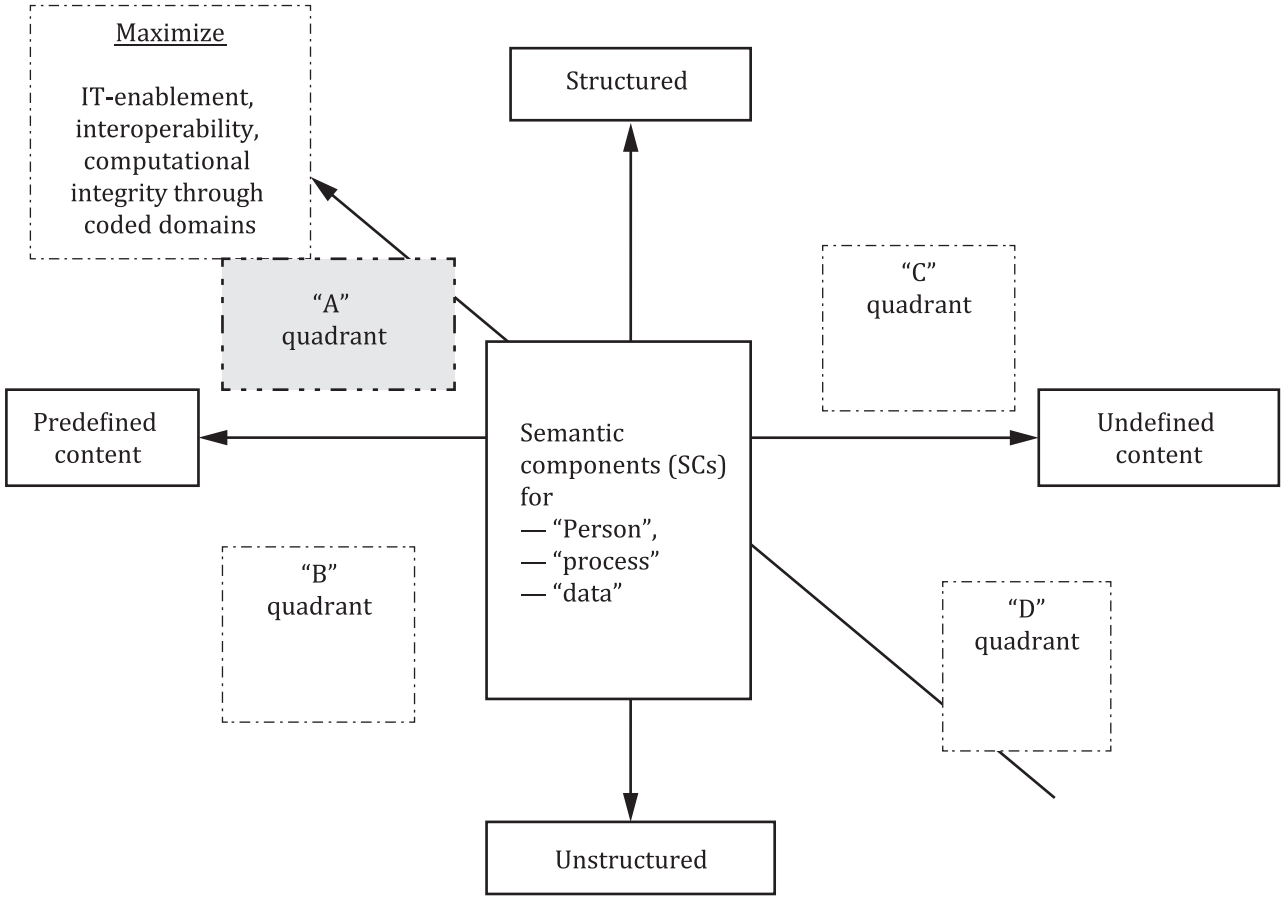


Figure 5 — Purpose of coded domain as IT-enabled and content predefined semantic components

The focus of this document is to support "Quadrant A" requirements in the development and use of "coded domains". This means that the rules governing the allowable contents, i.e., values, in a set of recorded information which (1) support and enable a structured approach; and (2) all the permitted values for the semantic component are predefined (and if not there is a very systematic and rule-base to deal with "Others" in an IT-enabled manner)."

0.6 Coded domains as reusable business objects

In existing business transactions, whether conducted on a for-profit or not-for-profit basis, business information documents as well as implementable (executable) computer programs consist of reusable components unambiguously understood among participating parties. Coded domains can be used in support of any type of scenario component, i.e., "roles", "Information Bundles (IBs)", and "semantic components" (SCs). Coded domains can also be used in support of a scenario attribute registered through procedures specified by ISO/IEC 15944-2.

Registration of coded domains offers several benefits to the e-Business community, including the following:

a) supports wider use of registered coded domains both by providing international recognition to the fact that such coded domains conform to an International Standard and by making them publicly available to potential users;

b) provides both immediate recognition to extensions of an International Standard and a source for updates to that International Standard during the regular maintenance cycle;

c) may provide a single mechanism to access information concerning coded domains that are specified in different standards;

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d) provides a mechanism for managing temporal change. Coded domains specified in a standard or in a register may change over time either due to changes in technology or for other reasons. Published standards do not clearly document what changes may have occurred, and do not include information about earlier versions of specified code sets. Such information can be maintained in a register;

e) may be used to make sets of standardized tags available for encoding of registered coded domains in data sets;

f) supports cultural and linguistic adaptability by providing both a means for recording equivalent HIEs of coded domains used in different languages, cultures, application areas, and professions and a means for making those equivalent names publicly available.

0.7 Use of "Person", "organization" and "party" in the context of business transaction and commitment exchange

In electronic business transactions, whether undertaken on a for profit or not-for-profit basis, the key element of any type of business transaction is commitment exchange among Persons made among their Decision Making Applications (DMAs) of the Information Technology Systems (IT Systems) acting on behalf of "Persons". (For the applicable normative elements here, see further ISO/IEC 14662:2010, 5.2.) "Persons" are the only entities able to make commitments (The text in this section is based on existing text in ISO/IEC 15944-1:2023, 0.3 and ISO/IEC 14662:2010). Quoting from ISO/IEC 15944-1:2023, 0.4:

> *"When the ISO/IEC 14662 Open-edi Reference Model standard was being developed, the "Internet" and "WWW" were an embryonic stage and their impact on private and public sector organizations was not fully understood. The Business Operational View (BOV) was therefore initially defined as:*
>
> *"a perspective of business transactions limited to those aspects regarding the making of business decisions and commitments among organizations which are needed for the description of a business transaction".*

The existing and widely-used ISO/IEC 6523 definition of "organization" was used in the 1st edition of ISO/IEC 14662. The fact that today Open-edi through the Internet and WWW also involves "individuals" has now been taken into account in the current editions of both ISO/IEC 14662 and all parts of ISO/IEC 15944. [The 1st edition of ISO/IEC 14662 (1997) did not define "commitment", nor the discrete properties and behaviours an entity must have to be capable of making a "commitment" as well as bridging legal and IT perspectives in the dematerialized world of the Internet].

During the development of ISO/IEC 15944-1:2023, the term "commitment" was defined. At the same time, it was recognized that in order to be able to make a commitment, the term "Open-edi Party" was not specific enough to satisfy scenario specifications when the legal aspects of commitment were considered. In many instances, commitments were noted as being actually among IT systems acting under the direction of those legally capable of making commitment, rather than the individuals in their own capacities. It was also recognized that in some jurisdictions a commitment can be made by "artificial" persons such as corporate bodies. Finally, it was recognized that there are occasions where agents act, either under the instruction of a principal, or as a result of requirement(s) laid down by a jurisdiction, or where an individual is prevented by a relevant jurisdiction from being able to make a commitment.

To address these extended requirements, the additional concept and term of "Person" was defined. The construct of Person has been defined in such a way that it is capable of having the potential legal and regulatory constraints applied to it".

There are three categories, i.e. sub-types, of Persons as players in Open-edi, namely (1) the Person as "individual", (2) the Person as "organization", and (3) the Person as "public administration". There are also three basic (or primitive) roles of Persons in business transactions, namely "buyer", "seller", and "regulator".

In modelling business transactions, jurisdictional domains prescribe their external constraints in the role of "regulator" and execute them as "public administration". (See ISO/IEC 15944-1:2023, 5.4)

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Very often, the requirements of jurisdictional domains are specified through the use of sets of "Codes representing X...". These sets of codes are created and maintained by Source Authorities via a rulebase with a resulting coded domain(s) in the form of a data element(s) whose permitted values represent predefined semantics and in a structured form, i.e. as a type of semantic component. As such, jurisdictional domains serve as Source Authorities for coded domains.

These three sub-types of Persons are also the possible Source Authorities for coded domains. On the whole, Source Authorities for coded domains are either "organizations" or "public administrations".

In this document:

— the use of Person with a capital "P" represents Person as a defined term, i.e. as the entity within an Open-edi Party that carries the legal responsibility for making commitment(s);

— "individual", "organization", and "public administration" are defined terms representing the three common sub-types of "Person"; and,

— the words "person(s)" and/or "party(ies)" are used in their generic contexts independent of roles of "Person" as defined in ISO/IEC 14662 and ISO/IEC 15944-1. A "party" to a business transaction has the properties and behaviours of a "Person".

0.8 Importance and role of terms and definitions

An essential element of any standard is that of having clearly and explicitly stated definitions for the concepts which it uses or introduces. Definitions capture the key concepts of a standard and form the essential foundation for any standard. As such, it is important that definitions be explicit, unambiguous and precise with respect to the semantics conveyed. At times, in order to ensure that the concept being defined is not confused with other related concepts (or words that have common or possible different meanings), International Standards introduce, i.e. "invent", new terms as labels for these concepts. This is also because the use of "synonyms" is not allowed in definitions in International Standards. The same approach has been taken in ISO/IEC 15944. (See further 5.3.2, 5.4, as well as Clause 6 and Clause 7)

The ISO/IEC Directives, Part 2 provide for "Terms and definitions" as a "Technical normative element", necessary for the understanding of certain terms used in the document. A primary reason for having "Terms and definitions" in a standard is because one cannot assume that there exists a common understanding, worldwide, for a specific concept. And even if one assumes that such an understanding exists, then having such a common definition in Clause 3 serves to formally and explicitly affirm (re-affirm) such a common understanding, i.e. ensure that all parties concerned share this common understanding as stated through the text of the definitions of these concepts in Clause 3.

A primary objective of ISO/IEC 15944 is to ensure that there is a common understanding of the Business Operational View (BOV) from commercial, legal, ITC, public policy and cross-sectoral perspectives. It is therefore very important to ascertain and confirm that which may be considered a "common understanding" in one of these domains is also unambiguously understood and accepted in the others.

One concludes this introductory clause by:

1) noting that the "definition" of the concept "definition" is *"representation of a concept by a descriptive statement which serves to differentiate it from related **concept**s"* [ISO 2087-1:2000, 3.3.1]

2) noting that an essential characteristic of eBusiness standards is that they involve and support the making of (legally recognized) "commitments" among two or more autonomous Persons. This requires not only a "common understanding" among all the parties involved but also is one which is as unambiguous as possible, especially where such business transactions are executed via Open-edi based IT systems; and

3) stating that a very effective and practical approach to supporting the requirements noted in 1) and 2) above, is to develop and provide bilingual/multilingual equivalencies of the definition of a concept (and its associated label or "term") in two or more languages. A primary reason here is that establishing an equivalency of the definition of a concept in another language from the "source language" uncovers "hidden ambiguities" in the source language. Often, it is in the preparation

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of an HIE for the definition (and its associated term) that ambiguities, i.e. in the semantics, from one language into one or more other languages are discovered. At times, this results in the need to improve the text of the definition of the concept in the source language. Alternatively, such development of one or more HIEs of the definition of a concept can result in the addition of a clarifying “Note(s)” or “Example(s)” in both the source language and its HIEs. (For the normative elements, see further ISO/IEC 15944-7:2009, 5.3 and in particular, ISO/IEC 15944-7:2009, 5.3.1)

0.9 Use of "identifier" as "identifier (in business transaction)" to prevent ambiguity

ISO/IEC 15944-1:2023, 6.1.4 focuses on the requirement for the unambiguous identification of entities in business transactions. "Unambiguous" is a key issue in business transaction because states of ambiguity and uncertainty are not desired from commercial, legal, consumer and information technology perspectives. Issues of unambiguousness apply to all aspects of a business transaction and even more so to those which are EDI-based.

A key objective of ISO/IEC 15944 is to serve as a methodology and tool for the specification and unambiguous identification of Open-edi scenarios, scenario attributes and scenario components as re-useable elements, i.e. as re-useable business objects, in support of common business transactions. These and related objectives of interoperability and re-usability of Open-edi scenarios and scenario components for business transaction require their unambiguous identification.

See 3.1.36 for the definition of unambiguous.

"Identifier (in business transaction)" is defined as: *an **unambiguous**, unique and a linguistically neutral value, resulting from the application of a **rule-based identification process**. **identifiers** must be unique within the identification scheme of the issuing authority.* [ISO/IEC 15944-1:2023, 3.27]

Thus, users of this document should understand that the "identifier" in this document is used as a defined term as "identifier (in a business transaction)".

As specified in 5.5 and Clause 8 of this document, each entry within a coded domain contains a identifier and HIE(s), the HIE provides human readable semantics, while the identifier unambiguously identifies the semantics.

0.10 Standard based on rules and guidelines

This document is based on rules and guidelines, which are explained in ISO/IEC 15944-1:2023, 6.1.2. The common rules are sequentially enumerated and presented in bold font. Where guidelines are provided for a rule they are numbered sequentially after that rule and are shown in an italic font. Choice of words in the rules, the guidelines and the terms and definitions are governed by maximizing the ability to map, on the one hand, to commercial and legal frameworks of the day-to-day world of business, and on the other, to information and technology frameworks, service providers, and standardizers, etc.

0.11 Organization and description of document

This document identifies requirements for the IT-enablement, semantics unambiguity, as well as other requirements of coded domains, which originates from the existing standards about codes representing X nature, through the specification of their principle, identification and description, composition, management and registration, and templates as a tool for implementation.

The Introduction (Clause 0) provides the detailed description of the need for a standard about coded domains, from various view points, i.e. the need for coded domain on general perspectives and its relationship with reusability, unique identification, and other important aspects of Open-edi.

Clause 1 provides the scope of the current version of this document. Some of the aspects that are not currently addressed may be specified in future versions.

Following Clause 2, 3 and 4, Clause 5 describes the overall principles of coded domains that govern all other clauses of this document.

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Clause 6 specifies the identification and business operational description of coded domains. By the specification of the construct of coded domain, a number of components of coded domains are specified and will be specified in detail in Clauses 7, 8 and 9.

Clause 10, Clause 11 and Clause 12 specify more formal presentations of coded domains. Clause 10 specifies rules for the registration of coded domains, Clause 11 describes the description of coded domains using OeDT, and Clause 12 provides templates for IT-enabled coded domains.

This document contains several annexes with Annexes A and B being normative and the following Annexes C, D, E, F, G, H and I presented for information purposes.

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Information technology — Business operational view —

Part 10: IT-enabled coded domains as semantic components in business transactions

1 Scope

This document specifies the fundamental principles governing coded domains, identification and description of the coded domains from the BOV view, the rules governing the rule-base of coded domains, the rules for management of ID codes, rules for specifying Human Interface Equivalents (HIEs) to an ID Code, the relations between the coded domain and controlled vocabularies, the rules governing the registration of coded domains as re-usable business objects, and the IT-enablement of coded domains.

The document is applicable to the use of standards, specifications, authority files, etc., of a "codes representing X" nature being used in electronic business transactions among parties engaged in Open-edi, which pertains to flows of information using information bundles which cause pre-defined (or pre-definable) changes in the states of the IT systems of the parties to such electronic data interchanges.

Detailed exclusions to the scope of this document are provided in Annex I.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 639-2:1998, *Codes for the representation of names of languages — Part 2: Alpha-3 code*

ISO/IEC 14662:2010, *Information technology — Open-edi reference model*

ISO/IEC 15944-1:2023, *Information technology — Business operational view — Part 1: Operational aspects of Open-edi for implementation*

ISO/IEC 15944-2:2015, *Information technology — Business operational view — Part 2: Registration of scenarios and their components as business objects*

ISO/IEC 15944-5:2008, *Information technology — Business operational view — Part 5: Identification and referencing of requirements of jurisdictional domains as sources of external constraints*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

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