



BSI Standards Publication

Information technology — Business operational view

Part 7: eBusiness vocabulary

National foreword

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**Information technology — Business
Operational View —**

**Part 7:
eBusiness vocabulary**

*Technologies de l'information — Vue opérationnelle d'affaires —
Partie 7: Vocabulaire e-affaires*



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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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 15944-7 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

ISO/IEC 15944 consists of the following parts, under the general title *Information technology — Business Operational View*:

- *Part 1: Operational aspects of Open-edi for implementation*
- *Part 2: Registration of scenarios and their components as business objects*
- *Part 4: Business transaction scenarios — Accounting and economic ontology*
- *Part 5: Identification and referencing of requirements of jurisdictional domains as sources of external constraints*
- *Part 6: Technical introduction to e-Business modelling* [Technical Report]
- *Part 7: eBusiness vocabulary*

When future parts of ISO/IEC 15944 are completed, terms and definitions for added concepts will be integrated into this part of ISO/IEC 15944, either via an amendment or in the next edition.

The following parts are under preparation:

- *Part 3: Open-edi description techniques (OeDTs)*
- *Part 8: Identification of privacy requirements as external constraints on business transactions*

0 Introduction

0.1 Purpose and overview

ISO/IEC 15944 focuses on the many requirements of the business operational view aspects of Open-edi in support of electronic business transactions¹. These requirements need to be integrated and taken into account in the development of business semantic descriptive techniques for modelling eBusiness transactions and components thereof as re-useable business objects. They include:

- a) commercial frameworks and associated requirements;
- b) legal frameworks and associated requirements;
- c) public policy requirements, particularly those of a generic nature such as consumer protection, privacy, accommodation of handicapped/disabled persons;
- d) requirements arising from the need to support cultural adaptability. These include meeting localization and multilingual requirements (e.g. as might be required by a particular jurisdictional domain or as desired to provide goods, a service and/or right in a particular market). In the context of making commitments, this requires the ability to distinguish, in the development of specification of scenarios, scenario components, and their semantics, between:
 - 1) the use of unique, unambiguous and linguistically neutral identifiers (often as composite identifiers) at the information technology (IT) interface level among the IT systems of participating parties on the one hand; and, on the other,
 - 2) their multiple human interface equivalent (HIE) expressions in a representation form appropriate to the Persons involved in making the resulting commitments.

One of these requirements is to have explicitly stated rules and especially clear, unambiguous and complete definitions (and their associated “terms”) of concepts essential to support BOV requirements. This is because these definitions in support of eBusiness requirements are crucial to a harmonized approach and one which is to be used in the making of commitments among parties to a business transaction.

A key purpose therefore of this part of ISO/IEC 15944 is to present, in a single document, a consolidated set of all the eBusiness terms and definitions found in:

- ISO/IEC 14662, *Information technology — Open edi reference model*, and
- all parts of ISO/IEC 15944.

Another purpose of this part of ISO/IEC 15944 is to support and facilitate an IT-enabled approach to the creation and maintenance of human interface equivalents (HIEs) for all the eBusiness terms and definitions in multiple languages of jurisdictional domains (and especially those of ISO P-members).

¹ See 0.1.2 and Figure 3 in ISO/IEC 15944-1:2002 for the various sources of requirements on the business operational view (BOV) aspects of Open-edi which need to be integrated and/or taken into account in ISO/IEC 15944.

0.2 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)² acting on behalf of “Persons”. “Persons” are the only entities able to make commitments³. Quoting from ISO/IEC 15944-1:2002, 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 first 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. (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, 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 could 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, an 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 broad 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 5.4 in ISO/IEC 15944-1:2002).

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 are 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”.

² See ISO/IEC 14662:2004, 5.2.

³ The text in this section is based on existing text in 0.3 in ISO/IEC 15944-1:2002 and ISO/IEC 14662:2004.

In this part of ISO/IEC 15944,

- 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 14662:2004 and ISO/IEC 15944-1. A “party” to a business transaction has the properties and behaviours of a “Person”.

0.3 Importance and role of terms and definitions⁴

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 5.3.2, 5.4, 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 (or 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.

This subclause is concluded 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 concepts”* [ISO 1087-1:2000 (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 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

⁴ This subclause is included in each part of ISO/IEC 15944 to emphasize that harmonized terms and definitions are essential to the understanding and continuity of ISO/IEC 15944.

a concept can result in the addition of a clarifying “Note(s)” or “Example(s)” in both the source language and its HIEs⁵.

0.4 Standard based on rules and guidelines⁶

This part of ISO/IEC 15944 is intended to be used within and outside of the ISO and IEC by diverse sets of users having different perspectives and needs. (See Figure 3 “Sources of Requirements on the Business Operational View (BOV)” in Clause 0.2 in Part 1 of ISO/IEC 15944.)

ISO states that a standard is a:⁷

“documented agreement⁸ containing technical specifications or other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose.”

This Business Operational View (BOV) standard focuses on “other precise criteria to be used consistently as rules, guidelines, or definitions of characteristics, to ensure that materials, products, processes and services are fit for their purpose”.

As stated in the Open-edi Reference Model and re-emphasized in ISO/IEC 15944-1, Open-edi is based on rules which are predefined and mutually agreed upon. They are of a precise criteria and are agreed upon requirements of business transactions representing common business operational practices and functional requirements.

Clause 5 “Characteristics of Open-edi” in ISO/IEC 15944-1:2002 makes it clear that the “Business Operational View (BOV)” type of Open-edi standards are “rule-based” standards⁹. Of particular relevance here is the first key characteristic of Open-edi as stated in 5.1 “Actions based upon following clear, predefined rules”. It is useful to quote some key normative text of ISO/IEC 15944-1 so that users of this part of ISO/IEC 15944 have a clear understanding of the nature and purpose of ISO/IEC 15944.

“Open-edi requires the use of clear and predefined rules, principles and guidelines. These rules formally specify the role(s) of the parties involved in Open-edi and the available expected behaviour(s) of the parties as seen by other parties engaging in Open-edi. Open-edi rules are applied to:

- *the content of information flows; and*
- *the order and behaviour of information flows themselves.*

⁵ For the normative elements here, see 5.3 “Essential elements of an entry in the controlled vocabulary”; and, in particular, 5.3.1 “Rules governing the development of a definition for a concept”.

⁶ This introductory clause is primarily based on text found in ISO/IEC 15944-1:2002, 6.1.2.

⁷ This is the generic definition of “standard” of the ISO and IEC (and stated in the ISO/IEC JTC 1 Directives, Part 2.5:1998), in turn based on ISO Guide 2:1996 (1.7). This definition for “standard” is used consistently in the development of all parts of this International Standard.

⁸ One can interpret “agreement” in a variety of ways. The ISO/IEC Guide 2, 1996, 1.7 uses the term “consensus”, which need not imply unanimity but rather “absence of sustained opposition to substantial issues.”

⁹ There are six key characteristics of Open-edi (as stated in ISO/IEC 15944-1:2002, Clause 5):

- actions are based on following predefined rules;
- there is commitment of the parties involved;
- communications among parties are automated;
- parties control and maintain their states;
- parties act autonomously; and,
- multiple transactions can be supported.

The six subclauses of Clause 5 in ISO/IEC 15944-1:2002 describe each of these six characteristics in more detail.

The combination of both of these provides a complete definition of the relationships among the parties since it requires them to achieve a common semantic understanding of the information exchanged. They must also have consistent generic procedural views on their interaction. Therefore, rule sets have to be agreed in advance and captured in Open-edi scenarios. This is a major component of the agreement required among parties.”

These rules also serve as a common set of understanding bridging the varied perspectives of the commercial framework, the legal framework, the information technology framework, standardizers, consumers, etc.¹⁰

In this part of ISO/IEC 15944, 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 font¹¹. 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 all the sources of requirements of the day-to-day world of commitment pertaining to the Business Operational View (BOV) of any eBusiness transaction (e.g. commercial, legal, public policy, cultural adaptability, sectoral, etc., frameworks of the day-to-day world of business) and, on the other hand, those pertaining to the Functional Services View (FSV) in support of BOV requirements (e.g. that of those providing information technology and communication services in support of commitment exchange of any kind and among all parties involved in a business transaction).

0.5 Use of “identifier” as “identifier (in business transactions)”

ISO/IEC 15944-1:2002, 6.1.4, focuses on the requirement for the unambiguous identification of entities in business transactions. “Unambiguous” is a key issue in business transactions 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 transactions require their unambiguous identification.

ISO/IEC 15944-1:2002 defined “unambiguous” as:

unambiguous: *the level of certainty and explicitness required in the completeness of the semantics of the **recorded information** interchanged appropriate to the goal of a **business transaction**. [ISO/IEC 15944-1:2002 (3.66)]*

and “identifier (in business transaction)” as:

identifier (in business transaction): *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 15944-1:2002 (3.27)]*

Thus users of this part of ISO/IEC 15944 should understand that the “identifier” in this part of ISO/IEC 15944 is used as a defined term as “identifier (in a business transaction)”.¹²

¹⁰ The working principle here is that of “coordinated autonomy”, i.e. all parties are autonomous. Therefore, the extent to which they cooperate, agree on common needs, business rules, constraints, practices, etc., and reach agreement on the same in the form of precise rules, terms and definitions, etc., is a key influence on the creation of necessary standards as well as common scenarios, scenario attributes and scenario components.

¹¹ For example, “Guideline 005G2” equals the second Guidelines under Rule 5.

¹² Identifiers in business transactions can be simple or composite identifiers. This is dependent on (1) the rules governing “identifiers” as a rule-based process and (2) the “registration schema” used (as well as any permitted combinations of the same).

Finally, in support of this eBusiness requirement, all the entries in the eBusiness vocabulary have unambiguous identifiers. See 5.3.1.

0.6 Organization and description of this part of ISO/IEC 15944

This part of ISO/IEC 15944 consolidates the key concepts, their definitions and associated terms for eBusiness in the International Standards environment (including legal requirements)¹³ generally, and specifically that within an ISO/IEC JTC 1 “Information technology” context, i.e. as found in ISO/IEC 14662 and ISO/IEC 15944.

Following the standard Clauses 0, 1, 2, 3 and 4, Clause 5 states the fundamental principles and rules governing a controlled vocabulary. These are based on existing International Standards and best practices applied in the development of ISO/IEC 14662 and the existing parts of ISO/IEC 15944.

Clause 6 provides the high level rules governing the development of multilingual equivalences for “eBusiness vocabulary” entries. It differentiates through separate subclauses between jurisdictional domains which are ISO/IEC JTC 1, ISO, IEC and/or ITU P-member-based and which are not.

The primary value and use of this part of ISO/IEC 15944 lies in its normative annexes. As such, Clause 7 provides the rules governing the structure and presentation of the eBusiness vocabulary in a human interface equivalent (HIE) context. These are applied to normative Annexes D, E, and F. In addition, Clause 8 presents the initial set of rules governing the maintenance of the “eBusiness vocabulary”.

This part of ISO/IEC 15944 also contains a number of normative annexes which represent a consolidation of normative elements of ISO/IEC 14662 and the existing parts of ISO/IEC 15944, including this part.

- Annex A provides a consolidated and integrated list of all the Normative references including their “Referenced Specifications”, i.e. those already stated in Clause 2 of ISO/IEC 14662 and the various parts of ISO/IEC 15944.
- Annex B provides a consolidated and integrated list of the symbols and abbreviations, already noted in Clause 4 of ISO/IEC 14662 and the various parts of ISO/IEC 15944.
- Annex C provides a list, in English alphabetical order, of the terms used, a consolidated summary list of the eBusiness vocabulary entries by the International Standards sources referenced, and notes in which International Standard (ISO/IEC 14662 or one of the various parts of ISO/IEC 15944) they were (1) first introduced and (2) then “re-used”.
- Annex D is the major element of this part of ISO/IEC 15944. It provides the consolidated and integrated set of all the eBusiness vocabulary entries as found in the existing ISO/IEC eBusiness standards; namely ISO/IEC 14662 and Parts 1, 2, 4, 5, 6, and 7 of ISO/IEC 15944. Each of these entries is provided with a unique internal eBusiness vocabulary ID number, i.e. in a “Dnnn” format, in addition to its source reference information for the International Standard referenced. As such, Annex D is the essential and most important element of this part of ISO/IEC 15944.
- Annex E provides the ISO Russian HIE equivalents for the entries of the eBusiness vocabulary, i.e. the terms and definitions in Russian for the entries in Annex D as provided by the ISO/IEC JTC 1 P-member (Russia).
- Annex F provides the ISO Chinese HIE equivalents for the entries of the eBusiness vocabulary, i.e. the terms and definitions in Chinese for the entries in Annex D as provided by the ISO/IEC JTC 1 P-member (China).

¹³ See Annex A (normative) “Consolidated list of normative references for the eBusiness vocabulary”. Annex A integrates into a single list all the ISO/IEC, ISO, IEC and ITU referenced International Standards as well as the “Referenced Specifications”, forming the foundation for the consolidated eBusiness vocabulary. See also Figure 3 in ISO/IEC 15944-1:2002, entitled “*Sources of Requirements on the Business Operational View (BOV) aspects of Open-edition which need to be taken into account and integrated*”.

Consistent with the overall approach in this part of ISO/IEC 15944, future annexes after Annex G are reserved for the addition of HIE eBusiness vocabularies in other languages of ISO/IEC JTC 1 P-members, and/or ISO, IEC and/or ITU members (as well as those jurisdictional domains which are not), i.e. in accordance with the rules stated in Clause 8 and Annex G.

A consolidated bibliography concludes this part of ISO/IEC 15944. It contains a list of all the bibliographic references found in ISO/IEC 14662 and existing parts of ISO/IEC 15944 (including those found in the footnotes in these documents).

Information technology — Business Operational View —

Part 7: eBusiness vocabulary

1 Scope

[A1] This document provides a consolidated vocabulary of eBusiness concepts as found and defined in the current editions of ISO/IEC 14662 and the existing parts of ISO/IEC 15944, namely, ISO/IEC 15944-1, ISO/IEC 15944-2, ISO/IEC 15944-4, ISO/IEC 15944-5, ISO/IEC 15944-6, ISO/IEC 15944-7, ISO/IEC 15944-8, ISO/IEC 15944-9, ISO/IEC 15944-10, ISO/IEC 15944-12, ISO/IEC 15944-16, ISO/IEC 15944-17, ISO/IEC 15944-20 and ISO/IEC 15944-21 along with their associated terms.

This document provides the rules, guidelines and procedures governing the formation of definitions for concepts relevant to eBusiness and choice of terms as a single, harmonized and integrated controlled vocabulary. This includes those governing multilingual expandability which incorporates and integrates cultural capability.

As such, This document facilitates the production of human interface equivalents (HIEs) of eBusiness terms and their definitions in the various official (and de facto) languages of ISO members in the form of additional annexes to this document.

This document identifies the essential elements of an entry in this controlled vocabulary as well as their rules and specifications. It also includes rules for ensuring quality and integrity control requirement for each entry and the interworking among the entries while doing so in an IT-enabled manner. It also addresses maintenance and update procedures. **[A1]**

2 Normative references

The following referenced documents are indispensable for the application 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 (E/F), *Codes for the representation of names of languages — Part 2: Alpha-3 code/Codes pour la représentation des noms de langue — Partie 2: Code alpha-3*

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*

[A1] ISO/IEC 15944-8:2012, *Information technology — Business operational view — Part 8: Identification of privacy protection requirements as external constraints on business transactions*

ISO/IEC 15944-9:2023, *Information technology — Business operational view — Part 9: Business transaction traceability framework for commitment exchange*

ISO/IEC 15944-10:2023, *Information technology — Business operational view — Part 10: IT-enabled coded domains as semantic components in business transactions*

ISO/IEC 15944-12:2020, *Information technology — Business operational view — Part 12: Privacy protection requirements on information life cycle management (ILCM) in EDI*

ISO/IEC 15944-16:2023, *Information technology — Business operational view — Part 16: Consolidated set of the rules and guidelines identified in ISO/IEC 15944 Business Operational View standards and their IT-enablement*

ISO/IEC 15944-17:2024, *Information technology — Business operational view — Part 17: Fundamental Principles and rules governing Privacy-by-Design (PbD) requirements in EDI and collaboration space context*

ISO/IEC 15944-20:2015, *Information technology — Business operational view — Part 20: Linking business operational view to functional service view*

ISO/IEC 15944-21:2023, *Information technology — Business operational view — Part 21: Application of Open-edi business transaction ontology in distributed business transaction repositories* ^{A1}

NOTE The complete set of all normative references (i.e. ISO/IEC, ISO, and ITU¹⁶ standards and “Referenced Specifications”) listed in ISO/IEC 14662 and ISO/IEC 15944-1, ISO/IEC 15944-2, ISO/IEC 15944-4, ISO/IEC 15944-5 and ISO/IEC 15944-6 are consolidated and given in A.1 and A.2.

3 Terms and definitions

For the purposes of this document, the terms and definitions given in Annex D and the following apply.

NOTE The terms and definitions given in this clause include only those which are introduced for the first time in Clauses 0-8 of this part of ISO/IEC 15944. Clauses 0-8 also use many terms and definitions which already are listed in Clause 3 of ISO/IEC 14662 and/or in one or more of the existing parts of ISO/IEC 15944. The terms and definitions found in existing documents (as referenced in Annex A) are given in Annex D. The use of **of bold** in the definitions below reflects the fact that they are terms and thus part of the set of the consolidated eBusiness vocabulary as found in the normative Annex D. As such, Annex D is the essential and most important normative element of this document.

3.1 abbreviation

^{A1} designation that is formed by omitting parts from its full form and that represents the same concept

Note 1 to entry: Abbreviations can be created by removing individual words, or can be acronyms, initial-isms, or clipped terms.

[SOURCE: ISO 1087:2019, 3.4.14] ^{A1}

3.2 acronym

abbreviation made up of the initial letters of the components of the full form of the **designation** or from syllables of the full form and pronounced syllabically

Note 1 to entry Examples of acronyms are: laser, DOS, GATT, UNESCO, UNICEF.

^{A1} [SOURCE: ISO 1087:2019, 3.4.15] ^{A1}

3.3 coined term

neologism especially created in a target language to express a **concept** which is denoted by an existing and recognized **term** in a source language, but which has not previously been expressed in the target language

[ISO 5964:1985 (3.1)]

3.4 concept

unit of knowledge created by a unique combination of **characteristics**

¹⁶ The reference here to ITU includes both the ITU-R (Radiocommunications) and ITU-T (Telecommunications) standardization sectors of the ITU. In the ITU context, it labels its international standards as “Recommendations”. The ITU makes all its Recommendations “freely available”.

[A1] Note 1 to entry: Concepts are not necessarily bound to particular natural languages. They are, however, influenced by the social or cultural background which often leads to different categorizations.

Note 2 to entry: This is the concept ‘concept’ as used and designated by the term “concept” in terminology work. It is a very different concept from that designated by other domains such as industrial automation or marketing.

[SOURCE: ISO 1087:2019, 3.2.7] **[A1]**

3.5 dictionary

list of words or a category of words from a **language** arranged alphabetically or systematically and explained in that **language** or translated into one or more other **languages**

[A1] [SOURCE: ISO 5127:2017, 3.5.5.03] **[A1]**

3.6 eBusiness

business transaction, involving the making of **commitments**, in a defined **collaboration space**, among **Persons** using their **IT systems**, according to **Open-edi standards**

Note 1 to entry eBusiness can be conducted on both a for-profit and not-for-profit basis.

Note 2 to entry A key distinguishing aspect of eBusiness is that it involves the making of commitment(s) of any kind among the Persons in support of a mutually agreed upon goal, involving their IT systems, and doing so through the use of ED(using a variety of communication networks including the Internet).

Note 3 to entry eBusiness includes various application areas such as e-commerce, e-administration, e-logistics, e-government, e-medicine, e-learning, etc.

Note 4 to entry The equivalent French language term for “eBusiness” is always presented in its plural form.

3.7 glossary

list of technical **terms** or of abstruse, obsolete or dialect words

Note to entry The definition differs considerably from that given in ISO 1087-1:2000.

[A1] [SOURCE: ISO 5127:2017, 3.5.5.04] **[A1]**

3.8 grammatical gender

grammatical category that indicates grammatical relationships between words in sentences

Note to entry The concept of gender varies from language to language and is not a universal feature of all languages.

EXAMPLE In French, *vie* (life) is feminine and is used with feminine articles such as *la*, the feminine pronoun *elle*, and feminine adjective endings, (e.g. *une longue vie*).

PERMISSIBLE INSTANCES Types of grammatical gender commonly documented in terminology databases include: (a) masculine; (b) feminine; (c) neuter; (d) other.

[A1] [SOURCE: ISO/IEC 15944-10:2023, 3.49] **[A1]**

3.9 homonymy

relation between **designations** and **concepts** in a given **language** in which one **designation** represents two or more unrelated **concepts**

Note 1 to entry An example of homonymy is: bark (1) “sound made by a dog”; (2) “outside covering of the stem of woody plants”; (3) “sailing vessel”.

Note 2 to entry The designations in the relation of homonymy are called *homonyms*.

 [SOURCE: ISO 1087:2019, 3.4.29] 

3.10

polysemy

relation between **designations** and **concepts** in a given **language** in which one **designation** represents two or more **concepts** sharing certain **characteristics**

Note 1 to entry An example of polysemy is: bridge (1) “structure to carry traffic over a gap”; (2) “part of a string instrument”; (3) “dental plate”.

Note 2 to entry The designations in the relation of polysemy are called *polysemes*.

 [SOURCE: ISO 1087:2019, 3.4.28] 

3.11

romanization

representation of non-Latin writing systems in the Latin alphabet by means of transliteration, transcription or both

 [SOURCE: ISO/IEC 15944-10:2023, 3.113] 

3.12

romanized form

form of a **term** resulting from an operation whereby non-Latin writing systems are converted to the Latin alphabet

Note to entry Romanization is a specific form of transcription.

EXAMPLE See example in A.2.1.10 and A.2.1.11 in ISO 12620:1999.

 [SOURCE: ISO/IEC 15944-10:2023, 3.114] 

3.13

set

assembly of **objects** or **concepts** considered as a whole

 [SOURCE: ISO 5127:2017, 3.1.1.09, modified - The Note 1 to entry has been removed] 

3.14

symbol

designation by means of letters, numerals, pictograms or any combination thereof

 [SOURCE: ISO 5127:2017, 3.1.4.17] 

4 Abbreviations

The complete set of symbols and abbreviations which are used in this part of ISO/IEC 15944 as well as in Parts 1, 2, 4, 5 and 6 of ISO/IEC 15944 and ISO/IEC 14662, i.e. the eBusiness vocabulary, are given in Annex B. The abbreviations given in this clause are used for the first time in this part of ISO/IEC 15944.

ITU-R International Telecommunications Union – Radiocommunications Sector

ITU-T International Telecommunications Union – Telecommunications Sector

5 Fundamental Principles and Rules

5.1 Introduction

Clause 5 states, in an eBusiness context, the principles and rules for:

- development of a definition for a concept and assignment of the associated term¹⁷
- the identification and specification of the essential elements, i.e., mandatory, for an entry in this controlled vocabulary
- an approach which is architecturally structured to be able to support multilingual expandability, Human Interface Equivalency (HIE) and IT-enablement;
- ensuring the identification of HIEs in “official language(s)”; or “de facto language”, and or a “legally recognized language (LRL)” in any jurisdictional domain, including categories and levels of jurisdictional domains¹⁸.

This part of ISO/IEC 15944, in common with the other parts of this International Standard, is focussed on the high level, i.e., common, primitive requirements.¹⁹

5.2 Principles and rules for the development of a definition for a concept and assignment of an appropriate term in a “controlled vocabulary”²⁰

eBusiness standards are rule-based and use an object-oriented approach. The identification and definition of eBusiness concepts takes a similar approach and are reflected in the following rules.

This approach which supports an object-oriented approach is very flexible and modular. It allows the use of any existing concept/definition, when and wherever appropriate. However, care shall be taken, and quality and integrity controls put in place, to ensure that the set of concepts and their definitions do form an integrated whole and have no tautologies, i.e., circularities. They should be dealt with as a holistic whole, and thus be built on each other. Care must therefore be taken in using existing terminology and definitions.

Rule 001:

The use of a rule-based and flexible object oriented approach for the eBusiness vocabulary requires rigorous quality and integrity control of the definitions to ensure that there is no tautology, i.e. circularity, in the full set of concepts defined in the international standard.

¹⁷ As such this Part 7 is based on best practices acquired in the development of the international standards for ISO/IEC 14662 and Parts 1, 2, 4, 5 and 6 of ISO/IEC 15944.

¹⁸ All HIEs of terms and definitions are to be based on international standards for character sets, scripts, transliteration, transcription, etc., for languages.

With respect to identification, classification, categories, levels, etc., of jurisdictional domains, see further the applicable international standards of this nature which apply are found in Annex A and in particular in Clause 7 of Part 5 of ISO/IEC 15944.

¹⁹ There are more detailed aspects which can be addressed. This should be done in the 2nd edition based on feedback on use of this 1st edition.

²⁰ The principles and rules presented in Clause 5.2 integrate, from an eBusiness perspective, applicable normative elements stated in ISO 1087-1:2000 (E/F), ISO 5127:2001 and ISO/IEC 2382 (multipart) as well as applicable elements of the ISO/IEC JTC 1 Directives and Part 2 of the ISO/IEC Directives.

Rule 002:

In order to ensure a harmonized “system of concepts,” a definition for a concept shall be established as early as possible in the development of the standard.

Comments on any (draft) definition and its associated term should address the changes needed to avoid possible misinterpretation. Definitions may need to be amended/improved as part of the harmonization of the terms/definitions among various parts of ISO/IEC 15944.

Rule 003:

A concept may be totally atomic or may consist, i.e., inherit, one or more other concepts.

For example, the concept (and its definition) of “business transaction” forms part of many other concepts (and their definitions) including “agent”, “business event”, “business object”, “business transaction identifier (BTI)”, “constraint”, “consumer”, “vendor”, “unambiguous”, “third party”, “Open-edl scenario (OeS)”, etc.

Rule 004:

A concept may be part of one or more other concepts.

For the application of Rules 001 and 002 above, see 5.3.2 and 5.3.4.

Rule 005:

The presentation for a HIE eBusiness vocabulary shall be in a form and format as already provided in Annex D, E or F in this part of ISO/IEC 15944.

5.3 Essential elements of an entry in the controlled vocabulary²¹

The eBusiness vocabulary is of the nature of a “controlled vocabulary” which is defined as:

controlled vocabulary (CV): *vocabulary for which the entries, i.e., definition/term pairs, are controlled by a Source Authority based on a rulebase and process for addition/deletion of entries*

NOTE *In a controlled vocabulary, there is a one-to-one relationship of definition and term.*

EXAMPLE *The contents of "Clause 3 Definitions" in ISO/IEC standards are examples of controlled vocabularies with the entities being identified and referenced through their ID code, i.e., via their clause numbers.*

NOTE 2 *In a multilingual controlled vocabulary, the definition/term pairs in the languages used are deemed to be equivalent, i.e., with respect to their semantics.*

NOTE 3 *The rule base governing a controlled vocabulary may include a predefined concept system.*
[ISO/IEC 15944-5:2006 (3.34)]

²¹ As is noted in Clause 1.3 above, the identification of and rules for “non-essential” or optional elements is an aspect not currently addressed in this 1st edition.

The key characteristics of a controlled vocabulary are that:

- 1) it is a “vocabulary”, i.e., it is not a dictionary, glossary, etc.
- 2) its entries consist of definitions/term pairs for each concept forming part of the controlled vocabulary.
- 3) the aspects controlled as to the inclusion of entries rests with its Source Authority and is managed through a rulebase process by that Source Authority for the addition/deletion of entries.

With respect to this eBusiness vocabulary, the Source Authority is ISO/IEC JTC 1/SC32 “*Data Management and Interchange*”. The actual sources for the definition/term pairs are the normative references stated in Clause 2 of an ISO standard which in this part of ISO 15944 is consolidated in annex A (normative).

The rulebase and process governing the eBusiness vocabulary are a combination of those:

- 1) stated in Part 1 and Part 2 of the ISO/IEC Directives (which are general in nature, as well as ISO/IEC 2382 multipart standard. The rules in Clauses 5, 6, 7, and 8, in this Part 7 are harmonized with and support those found in the ISO/IEC JTC 1 Directives;
- 2) those of a specific and direct nature applicable to the eBusiness vocabulary as stated in Clauses 5, 6, 7, and 8 of this part of ISO/IEC 15944;
- 3) the inclusion of all the terms and definitions as stated in Clause 3 of ISO/IEC 14662 and the parts of the ISO/IEC 15944 eBusiness standard (in the form of normative Annexes in Part 7); and,
- 4) the process for the addition or deletion of entries in the eBusiness vocabulary is governed by the addition of definitions/terms for concepts added in existing or new Clause 3 entries in ISO/IEC 14662 and/or existing or new Parts of ISO/IEC 15944 eBusiness standard.

Rule 006:

The set of essential elements of each entry (or record) in the eBusiness vocabulary, for each defined concept, consists of:

- 1) **the definition (of the concept);**
- 2) **the term (representing the concept);**
- 3) **the abbreviation of the concept (as applicable);²²**
- 4) **the gender code for the term;**
- 5) **the composite identifier (for the concept)²³; and,**
- 6) **the internal eBusiness vocabulary identifier.**

²² It is necessary to decide whether or not a concept will have an abbreviation, i.e., in addition to its designated assigned term.

²³ The structure of this composite identifier must incorporate the source.

The sub-clauses which follow provide the rules governing each of these essential elements. (Those pertaining to the development of a definition for a concept are already stated above in 5.2).

Guideline 006G1:

In addition, it is recommended that for each entry in the eBusiness controlled vocabulary, one is able to reference the Clause or sub-clause of the international standard in which the concept was first introduced (and/or a specific contribution or “paper” which provides the rationale and process for the development of the definition and choice of term).

5.3.1 Rules governing the development of a definition for a concept

In the context of the international standards of the ISO, “concept” is defined as:

concept: *unit of knowledge created by a unique combination of characteristics*

NOTE Concepts are not necessarily bound to particular languages. They are, however, influenced by the social or cultural background which often leads to different categorizations

[ISO 1087-1:2000 (3.2.1)]

A “characteristic” in turn is defined as:

characteristic: *abstraction of a property of an object or of a set of objects*

NOTE Characteristics are used for describing concepts.

[ISO 1087-1:2000 (3.2.4)]²⁴

Consequently, the first principle (for the development of a definition of a concept) is the requirement of identifying the essential characteristics of the concept to be defined. Here, one or more of these characteristics may very well themselves be of the nature of concepts which are already defined²⁵. Application of this principle is also necessary to ensure and support interoperability among standards.

The second principle is that the use of concepts already defined in existing international standards must be maximized, i.e. when and wherever applicable or relevant²⁶.

²⁴ See further Annex D of ISO/IEC 15944-7 for the definitions for the concepts of “property” and “object”.

²⁵ For example, concept “NEW” may very well consist of (1) a unique combination of already defined concepts “A”, “E”, and “Q”, and/or, (2) “(1)” plus one or more added characteristics.

²⁶ The key objective here is that of “do not re-invent the wheel”, “use what exists”. It is also very unlikely that a new concept is totally new.

The third principle is that only after the unique combination of characteristics (especially as properties and behaviours) of a concept has been agreed to by those participating in the development of the standard, that one can (or should) start drafting a definition for that concept. It is noted that a set of objects having the same properties and behaviours following the same rules is known as an “object class”. See Annex D for its definition.

The fourth principle is the need to distinguish between the daily common (possibly multiple meanings) of a concept as found in a dictionary for a “word” versus that of a specific meaning in the context of the standard, i.e., as a “term”²⁷. This principle is of particular relevance to eBusiness standards which apply to many different sectors of economy, i.e., are cross-sectoral in nature.

Rule 007:

The characteristics (and their unique combination) of a (new) concept shall be identified and agreed to prior to the drafting of a definition for that concept.

It is advised that the above rule be implemented through the preparation of a short supporting document or working paper which provides such information.²⁸ Such documents also serve as useful references and provide a useful reference and provide a useful explanation of the formation of the definition of a concept, choice of the appropriate associated term, etc.

Rule 008:

In the identification of the unique combination of characteristics for a concept, one shall maximize use of those already defined in existing international standards, i.e., where and whenever applicable or relevant.

This applies particularly to those characteristics of the nature a unique combination of properties and behaviours forming essential elements of a concept. See Annex D for the definition of “object class”.

²⁷ The purpose of a dictionary is to capture in a single document and in alphabetical order all the meanings (one or more different meanings) associated with a character or unique combination of characters, i.e., “words” in that language. Consequently, where a “word” in a language has more than one (common use) meaning, one needs to specify in a standard, i.e., as an entry in its Clause 3, which of the multiple common use meanings of that concept apply in the context of that standard. This is done by having “term/definition pairs in Clause 3.

²⁸ For examples of how this rule has already been applied in the development of the multipart ISO/IEC 15944 eBusiness standard, see the following examples in JTC 1/SC32/WG1 documents:

Pereira, M.J.; Knoppers, J.V.Th. Languages and Jurisdiction: "Natural", "Special", "Official", "Artificial", "Indexing", "Programming," etc. Prepared for ISO/IEC JTC 1/SC32/WG1. February, 2002. [Document WG1N210R]

Knoppers, J.V.Th.; Pereira, M.J. What is a "Principle"? What is a "Rule"? Need for Definitions. Prepared for ISO/IEC JTC 1/SC32/WG1. February, 2002. [Document WG1N211R]

Knoppers, J.V. Th. Draft Definition for "Open-edi Business Transaction Ontology (OeBTO)". Prepared for ISO/IEC JTC 1/SC32/WG1, May, 2002. [Document WG1N0220R]

Rule 009:

Any concept requiring a definition for the clarity of the understanding and use of the ISO/IEC JTC 1 international eBusiness standards shall be included in that standard.

This means that the concept is: (1) central to the understanding of the standard; (2) is used at least twice in the standard; and, (3) is not self-explanatory²⁹.

An essential, if not most important, element of any standard is the identification of the concepts on which it is based. The primary purpose of a “definition” is to serve as a descriptive statement to differentiate one concept from another. Thus definitions capture the key concepts of a standard and form the foundation of any standard. As such, it is important that definitions be explicit, unambiguous with respect to the concept to which it pertains and the semantics to be conveyed.

An essential aspect of electronic data interchange in support of a business transaction is that it includes the making of commitments among autonomous Persons as parties to a business transaction means that the definition in the eBusiness vocabulary must integrate operational legal requirements.

Explicit and unambiguous definitions play a key role in ensuring an integrated and harmonized approach in specifying BOV aspects. They also serve as a bridge to standards in the field of information and communication technologies (ICT) as well as to other sectors.

The Directives of ISO/IEC JTC 1 place great emphasis on ensuring that definitions be as clear, explicit and unambiguous as possible. As such, the following rules apply.

Rule 010:

There must be 1) a business case and rationale for the need to introduce a (new) concept into an international standard with its resulting definition and assigned term³⁰; and, 2) such a business case and rationale must maximize re-use and integration of existing international standards, i.e. those of ISO, IEC, ISO/IEC and/or ITU³¹.

Rule 011:

The descriptive statement comprising a definition must be clear, explicit and unambiguous and stated in the form of a single sentence.

The primary reason for the need for the descriptive statement comprising the definition of a concept to be “unambiguous” is because the use of the definition in an eBusiness context, of whatever nature and for whatever commonly agreed upon goal among the parties involved in a business transaction, is because the use of the concept and its definition pertains to the making of “commitments” among the parties involved and the resulting legal obligations (including those of the applicable jurisdictional domains).

²⁹ It is noted that often a commonly used word, (e.g., chip), has multiple definitions in a dictionary. eBusiness is cross-sectorial in nature. It includes both (1) the field of information and communication technologies (ICT), as well as, (2) the many other fields (or industry sectors) and public sector activities. As such, it is important not only to have any concept defined explicitly and unambiguously but also to choose a label as a “term” which meets the same criteria among all sectors. Consequently, “chip” as a term representing a concept is not self-explanatory. In addition, what may be considered as self-explanatory in one language may well not be in another, (e.g., what is “chip” in other languages?)

³⁰ For an insight into the rationale for the development of the definition for “principle” and “rule”, see JTC 1/SC32/WG1 document N211R “What is a “Principle”? What is a “Rule”? Need for Definitions”.

³¹ It is noted that at times, ISO/IEC JTC 1 and ITU work together to develop international standards which are assigned both ISO/IEC international standard document numbers as well as international standard ITU numbers, i.e., as ITU-R or ITU-T Recommendations.

Rule 012:

Only a concept with a single definition shall be included and both the definition and associated term shall be stated in the singular.

At times, a “NOTE” (or NOTES) is used to provide additional information, qualification, criteria, exceptions, to assist in the understanding and use of the concept. Also, at times EXAMPLE(S) is included where deemed useful.

Rule 013:

Any definition of an eBusiness concept must be developed with two or more human interface equivalencies (HIEs) in order to maximize its unambiguity and subsequent use in support of any and all commitments made among parties to a business transaction.

The development of two or more HIEs for each term and definition should be considered to be³² as a necessary quality and integrity control check. It is only in the development of the text of a definition of a concept into its equivalent text into one or more other HIEs that ambiguities in the source text are “ferreted” out, i.e., identified. The ISO/IEC 14662 and the parts of the ISO/IEC 15944 eBusiness standard all have two HIEs for each definition/term pair.

Rule 014:

As stated in 5.1, a concept can consist of, i.e. inherit, one or more other concepts. Consequently, where this occurs, the definition for a concept of this nature shall explicitly support this requirement.

Rule 015:

When a concept incorporates one or more other concepts, the terms representing these concepts shall be included in bold³³ in the definition for that concept.

For example, the concept of “business” incorporates, i.e., inherits³⁴, three other concepts (and thus their definitions) namely: (1) process; (2) Person; and, (3) recorded information.

³² For example the quality and management standards such as the ISO 9000 and ISO 14000 families of standards.

³³ Where in the writing system of a language the use of **bold** does not “visually” serve the intended purpose, i.e., indicate that use of a term, one may use a different font for the same purpose, (e.g., see Annex E in ISO/IEC 15944-7 here where for ISO Chinese a different font is used instead of bold).

³⁴ The concept of “inheritance” is a key construct in an object-oriented (OO) modelling approach. Others include “object” itself, “class”, “data abstraction”, “encapsulation” and “dynamic binding”. An object-oriented modelling approach is also rule-based consisting of “well-formed rules” which from an implantation (and programming perspective are often referred to as “statements”).

Basically inheritance refers to a full descriptor of an “object”, in our case a “concept”, based of the use of other objects and their full descriptors. In eBusiness modeling both single and multiple inheritances are supported and used. From a controlled vocabulary perspective, the notation used to indicate the use of the inheritance is that of representing in the definition of a concept, the terms (in bold) of the other concepts (thus “inheriting the definitions of those other concepts in the concept being defined).

This OO modelling approach is analogous to a lego-block-based approach where one or more existing unique lego-blocks are (re-)used to construct a new lego-block. {On “inheritance”, see further ISO/IEC 2382-15:1988 (E/F) (short title = “*Programming Languages/ Langues de programmation*”) and ISO/IEC 19501-1:2002 (E) (short title = UML – *Part 1: Specification*)}

The definition of “business” (in English and French), in order to support this approach, thus appears as:

business

series of **processes**, each having a clearly understood purpose, involving more than one **Person**, realised through the exchange of **recorded information** and directed towards some mutually agreed upon goal, extending over a period of time

affaires

série de **processus**, ayant chacun une finalité clairement définie, impliquant plus d'une **Personne**, réalisés par échange d'**information enregistrée** et tendant à l'accomplissement d'un objectif accepté par accord mutuel pour une certaine période de temps

[ISO/IEC 14662:2004 (3.2)]

There is no **bold** text in NOTES or EXAMPLES.

5.3.2 Rules governing the assignment of a term to a concept

It is important to ensure that the “label”, i.e., term, assigned to a concept being defined is not confused with a label, i.e. “term”, assigned to other related concepts that have a common meaning or many possible different meanings). Therefore international standards often introduce, i.e., invent, a new label as the term to be associated with the definition of a concept (known as a “coined term”).

In most languages, new words are invented on an on-going basis as new concepts are introduced. For example, according to the Oxford English Dictionary (OED), over 100 new concepts were added to the English language during the period December, 2006 to September, 2007, as reflected in the addition of new entries in the OED. Merriam-Webster also adds about 100 new words a year.

Here it is noted that the entries for the OED (or most other dictionaries) include all parts of speech, including proper names, while standards are limited to nouns and verbs. The entries also include new meanings to existing words/entries, (e.g., lawyer as a verb).

The concept of “word” is defined as:

word: *smallest linguistic unit conveying a specific meaning and capable of existing as a separate unit in a sentence.*

[ISO 5127:2001 (1.1.2.07)]

A key purpose of a dictionary is to provide all the meanings associated with a “word” in the use of that word in the language of that dictionary. A “term” on the other hand is defined as:

term: *designation of a defined concept in a special language by a linguistic expression*

NOTE A term may consist of one or more words, i.e., simple term, or complex term or even contain symbols.

[ISO 1087:2000 (5.3.1.2)]

This means that a “term”, as a single character string (or two or more character strings serving as a “complex term”), shall only be associated with a single concept.

Here each ISO standard, a multipart standard, or a family of standards such as ISO/IEC 14662 and ISO/IEC 15944, are of the nature of a special language

The same factors which lead to the creation of new concepts, words, etc., in a language also apply to standards development where new terms are often “invented” to ensure that a new or different concept is not confused with, and differentiated from, existing terms or labels for a related concept.

Given the fact that this multipart standard integrates operational and legal requirements³⁵, the definitions and their associated terms play a key role in ensuring an integrated and harmonized approach. However, an integrated and harmonized set of terms and definitions is essential to the continuity of this multipart standard³⁶.

It is noted that users of the English language have an inclination to use and re-use the same word as a “term” (or set of words as a “compound term”) to refer to and reference quite different concepts. This is known as the problem of “polysemy” and is one which must be avoided and especially in any standards used or support of the making of commitments (and resulting legal obligations), among the parties concerned).

Rule 016:

The issue of “polysemy” shall be avoided in international standards development.

Rule 017:

The term chosen to designate a concept and its definition shall be unambiguous and not easily confused with terms representing other concepts.

Guideline 017G1:

The term chosen to designate a defined concept should not be one which is a trademark, already copyrighted, or one which already is formally part of a registered intellectual property by a jurisdictional domain which is a signatory to the Berne Convention.

Rule 018:

The fact that the primary use of the eBusiness vocabulary is to support the making of commitments, it is important that the term chose to designate a concept and its definition, is unambiguous and not confused with other concepts (meanings).

This problem is identified and known as “homonymy” and must be avoided on its own and from a multilingual expandability requirements perspective.

Guideline 018G1:

In order to ensure that the label assigned to a (new) concept is not confused with other concepts, it is strongly recommended to coin or invent a new term, i.e., develop a neologism, to designate the defined concept.

Rather than using a word already existing and used with multiple meanings in a language as the term to be assigned a concept and its agreed upon definition, one should develop, i.e., invent, a new term to designate the new concept. This approach minimizes the problem of “polysemy” and supports the principle and need to maximize unambiguity in eBusiness standards.

For many of the concepts and their definitions developed as a result of eBusiness standards development, new terms were also developed to represent these new concepts. Further, most languages evolve in part due to the introduction of new concepts which are characterized and represented by the introduction and use of a new “character string(s)” as words or phrases in that language.

For example, often in illustrations (or figures) and in the use of FDTs (such as NIAM, PetriNets, UML, etc.), space constraints of a single page, there is no “room” for the complete term representing the concept

³⁵ See further Clause 0.12 ISO/IEC 15944-1:2002 “Business Agreement Semantic Descriptive Techniques”, and in particular it’s Figure 2 “Integrated View – Business Operational Requirements: External Constraints Focus”.

³⁶ The ISO/IEC 14662 “Open-edi Reference Model” and the ISO/IEC 15944 eBusiness standard purposely introduced new labels, i.e., as “terms” for its concepts and their definitions in order to ensure that these are unique and will not be confused with the various possible concepts/definitions and their terms which may currently be in use but with differing meanings, i.e., semantics.

referenced. Also, in the text of a standard, often the “short form” (as abbreviation or acronym) is used instead of the long form, i.e., the “complete term”.

Rule 019:

A term assigned to a definition of a concept is deemed to be a “noun” (or the gerundial form of a noun like “identification”).

5.3.3 Rules governing the assignment of an abbreviation (or acronym) for a concept

An abbreviation or acronym as a very short (and unique) character string serves as: (1) an “aide-memoire” (or shorthand) facilitating identification of a concept and its definition from a HIE perspective; (2) in communication and interchange among parties exchanging semantics; and, (3) in the use of modeling the identification and representation of concepts in illustrations and/or in the use of formal description techniques.

Rule 020:

In the development of a definition for a concept, the committee responsible shall decide as to whether or not an abbreviation or acronym needs to be assigned to the definition of a concept in addition to the term.

Guideline 020G1:

In the choice of an abbreviation, care should be taken not to devise an abbreviation which already exists, and especially one which is in widespread use.

Here non-existence of an abbreviation or acronym for a concept indicates that the committee responsible has decided not to have one for the defined concept, i.e., in addition to the term.

5.3.4 Rules governing the specification of the gender of a term³⁷

In order to be able to support multilingual expandability and HIE requirements, it is necessary to know the grammatical “gender” of the term. This is because in many languages “gender” is an essential aspect of their grammar and rules governing the use of that language. In such languages the gender must be specified in order to know and understand the meaning of a term (as a noun) in that language as well as ensuring the correct representation and use³⁸.

Rule 021:

The gender of each term, as a noun, in the eBusiness vocabulary shall be specified using Coded Domain ISO/IEC 15944-5:01 “Codes Representing Gender in a Natural Language”³⁹.

³⁷ See further Clause 6.2.6 Gender and official languages” in ISO/IEC 15944-5:2007.

³⁸ The examples of how the gender for the same word (or term) determines its meaning, see further, Annex K (Informative) “Examples of the need for specifying gender of terms and nouns to ensure unambiguity in use of official languages” in ISO/IEC 15944-5:2007.

³⁹ Note: It is stated in ISO/IEC 15944-5, and also recognized here, that where the development of HIEs in other languages requires the addition of other grammatical gender forms that both ISO/IEC 15944-5 as well as ISO/IEC 15944-7 will be amended accordingly (as well as impacted eBusiness standards).

Table 1 — ISO/IEC 15944-5:01 Codes representing gender in natural languages

ISO/IEC 15944-5:01 Codes Representing Grammatical Gender in Natural Languages					
IT Interface			Human Interface Equivalent: Linguistic –Written Form		
Coded Domain ID	Table ID	ID Code	ISO English	ISO French	ISO Spanish
15944-5	01	00	unknown	inconnu	desconocido
15944-5	01	01	masculine	masculin	masculino
15944-5	01	02	feminine	féminin	feminino
15944-5	01	03	neuter	neutre	neutro
15944-5	01	99	not applicable	sans objet	no aplica

Guideline 021G1:

Where the grammar rules of a language do not include gender forms for nouns, this shall be explicitly stated.

It is noted that just as many languages do have “gender” as part of their grammar and rules governing the use of that language, many others do not, (e.g., English, Chinese, etc.). It is important that such a fact be explicitly declared and in such cases a code “99” (Not applicable) shall to be used.

5.3.5 Rules for ensuring a unique composite identifier for each concept and its definition

The rules which follow integrate existing rules of ISO/IEC (or ISO) which are stated explicitly or are implied. They are combined with best practices. They are also governed by the requirements for unambiguity in eBusiness standards including those stated in Part 2 of ISO/IEC 15944 pertaining to the establishment of unique, unambiguous and permanent identifiers for “business objects”.

Rule 022:

The identifier of any eBusiness vocabulary entry is of the nature of a composite identifier and shall meet the requirements of “identifier (in business transaction)”.

Conformance to this rule ensures that any identifier for an eBusiness vocabulary entry also has the properties and behaviours of an IT-interface equivalent”, a “semantic identifier”, and is structured to be able to support multiple HIEs.

Rule 023:

The eBusiness vocabulary composite identifiers are composed of a minimum set of four discrete and mandatory data elements, consisting of:

- 1) the source international standard reference for the vocabulary entry⁴⁰;
- 2) the unique identifier assigned by international standards organization for the standards document including part number where applicable;
- 3) the date of the standard document as applicable
- 4) the identifier of the Clause number in the standards document referenced.

Table 2 below provides an example of composite identifiers in the eBusiness vocabulary.

Table 2 — Examples of eBusiness vocabulary Identifiers – Structure and Representation Equivalent

Data Elements of Composite Identifier				Composite Identifier
Standard Source ID	Number ID of Source Standard	Date	Clause (or Part) within Standard	
ISO/IEC	15944-1	2002	3.2.2	[ISO/IEC 15944-1:2002 (3.2.2)]
ISO	5127	2001	1.1.2.19	[ISO 5127:2001 (1.1.2.19)]
ISO/IEC	15944-7	2008	nnn (as in Annex D)	[ISO/IEC15944-7::nnn]

Rule 024:

An eBusiness vocabulary identifier, as a composite identifier is deemed to be linguistically neutral and as such will have one or more Human Interface Equivalents (HIEs) for the definitions and terms they represent.

The HIEs here are of the nature of a term/definition pair in a language and the writing system(s) of that language.

5.3.6 Rules governing the assignment of an internal eBusiness vocabulary identifier

The focus of this sub-clause is to ensure that each entry in the eBusiness vocabulary has its own unique internal identifier for use in this part of ISO/IEC 15944 and especially its Annexes.

Rule 025:

Each eBusiness vocabulary identifier shall be assigned an internal unique identifier (as its common pivot code) as part of its entry in Annex D of ISO/IEC 15944-7, i.e., in the form of “Dnnn”. See Annex D.

⁴⁰ The use of the phrase “source international standard” here refers to any ISO, IEC, ITU and/or ISO/IEC standard as the ISO, IEC and ITU are the three recognized international standards bodies by the United Nations. The use of this phrase also includes any document which qualifies as a “Referenced Specification” and recognized and accepted as such in an international ISO standard.

The purpose of this part of ISO/IEC 15944 internal eBusiness vocabulary identifier is three-fold; namely:

- 1) to certify that an existing international standard definition of a concept and its associated term forms part of the eBusiness vocabulary; and,
- 2) to have its Normative Annex D and its Dnnn entry serve as a unique common internal pivot ID code among the various HIEs versions of the eBusiness vocabulary in Annexes E, F, and G+ in this and future editions of this part of ISO/IEC 15944; and,
- 3) to facilitate the use of “addendums” or “technical corrigenda” for new entries which may be required as a result of eBusiness standards development work on new standards or revisions to existing eBusiness standards (as identified in the “Foreword” to this part of ISO/IEC 15944).

Annex D (normative) in this part of ISO/IEC 15944 contains the consolidated set of eBusiness vocabulary entries.

The “Dnnn” numbers as internal identifiers have been assigned in ascending order for the entries in Annex D.4. They are of the nature of an internal sequence number (ISN).

Rule 026:

Any subsequent, i.e., new, entry to the eBusiness vocabulary shall be assigned the next available sequential “Dnnn” number.

Guidelines 026G01:

Where one desires to reference the eBusiness vocabulary directly, e.g. for external purposes, one should do so using the following composite identifier “ISO/IEC 15944-7::120” with “120” being the equivalent of the “nnn” of Dnnn in Annex D.

5.4 Rules governing maximization and harmonization of equal or similar concepts in different standards

The rules and text in this Clause focus on the most primitive, i.e., essential, aspects only.

Rule 027:

In the development of a controlled vocabulary for an international standard, or a family of international standards (e.g. as here in the field of eBusiness), one shall maximize use (re-use) of applicable concepts already defined in existing international standards.⁴¹

Guideline 027G1:

Where a definition of a concept as stated in an existing international standard, i.e., in an ISO, IEC, ISO/IEC or ITU document, cannot be used as is⁴² but the concept and its definition as a whole is relevant, one should consider: (1) adapting that concept and its definition in the context of eBusiness requirements; and, (2) using it with an adapted definition.

⁴¹ The definitions of concepts in the eBusiness family of standards as consolidated in this Part 7 includes over fifty-nine (59) concepts and their definitions taken from other existing international standards, i.e., out of a total of 258 concepts.

⁴² The use of the phrase “as is” indicates that the unique combination of characteristics of the concept apply but the context of use is not (exactly) the same. The convention in ISO/IEC standards is to indicate such adaptations by indicating the same in the term, (e.g., as in applicant (for an OeRI), “code (in coded domain)” “identifier (in business transaction)”, “information (in information processing), etc. {See also as examples in Annex D, entries for D057 and D107}

Rule 028:

Where the term assigned to a defined concept, essential to the identification and referencing of a concept is already in use, the term shall be accompanied by the qualification, (e.g., as for “identifier (in a business transaction)”.

Examples of the implementation of this Guideline in the eBusiness vocabulary include:

- D006 – applicant (for an OeRI);
- D036 – code (in coded domain);
- D060 – data (in business transaction);
- D062 – date element (in organization of data);
- D111 – identifier (in business transaction)

In an eBusiness context (or any context that involves the making of “commitments” among the parties involved unambiguous identification of all the types of entries in a business transaction is of paramount importance.⁴³

6 Rules governing development of multilingual equivalents for eBusiness vocabulary entries

6.1 Introduction

The purpose of this Clause is to facilitate the development of multilingual equivalents for controlled vocabulary entries from a HIE requirements perspective and doing so in support of commitment exchange among the parties engaged in eBusiness.

This Clause is placed in the context of international standards development. It is based on the principle that each P-member, i.e. ISO national body, of the committee responsible for the development of a standard will be responsible for the development of linguistic equivalents, as HIEs, of the eBusiness vocabulary entries and provide the same as part of their participation in international standards development⁴⁴. Here this Part 7 facilitates the production of human interface equivalents (HIEs) of eBusiness terms and definitions in the various official (and de facto) language(s) of ISO members.

⁴³ This is recognized and supported in ISO/IEC 15944-1:2002 which contains two Annexes which address and resolve these requirements. They and their titles are:

- Annex C (Informative) Unambiguous identification of entities in (electronic) business transactions;
- Annex D (Informative) Existing standards for the unambiguous identification of persons in business transactions (organizations and individuals) and some common policy and implementation considerations.

⁴⁴ For a successful application of this principle, see ISO/IEC 5218:2004(E/F) “Information technology – Codes for the Representation of the Human Sexes”/ «Technologies de l’information – Codes de représentation des sexes humains» whose Annex A provided human interface equivalents in 23 different languages representing the active P-members of ISO/IEC JTC 1/SC32. The E/F title of Annex A is “(Informative) Codes for the representation of human sexes supporting (linguistic) cultural adaptability”/(Informative) Codes pour la représentation des sexes humains supportant l’adaptabilité culturelle (linguistique).

6.2 Rules applicable to Jurisdictional Domains⁴⁵ which are ISO/IEC JTC 1, ISO, IEC and/or ITU P-Members

Rule 029:

The ISO/IEC JTC 1/SC32 P-member bodies working with and through their national body standards organization are responsible in their jurisdictional domains for developing the human interface equivalents (HIEs) of the term/definition of a concept into the official language(s) of that jurisdictional domain as an Annex to this part of ISO/IEC 15944.

This includes the development of Human Interface Equivalents (HIEs) of this eBusiness Vocabulary in other official languages of ISO/IEC JTC 1/SC32 P-members or other representation forms of their jurisdictional domains, (e.g., Braille, Bliss, etc.).

This means that such Annexes are included:

- 1) in the 1st edition of this part of ISO/IEC 15944 (as submitted as part of FCD ballot comments);
- 2) as “Amendments” to the 1st edition of this part of ISO/IEC 15944, i.e., when submitted by the ISO/IEC JTC 1/SC32 (or ISO, IEC and/or ITU P-members); and/or,
- 3) as part of the development of a 2nd or 3rd edition of this part of ISO/IEC 15944.

Guideline 029G1:

Where the jurisdictional domain of the P-member has no official language, it should develop the HIEs in the de facto language of that jurisdictional domain⁴⁶.

Guideline 029G2:

Jurisdictional domains which are not P-members of ISO/IEC JTC 1/SC32 but are P-members in good standing of ISO/IEC JTC 1, ISO, IEC, and/or the ITU may: (1) prepare the HIEs for eBusiness vocabulary in the official language(s) of their jurisdictional domain; and, (2) submit the resulting document in the required format to ISO/IEC JTC 1/SC32/WG1 eBusiness for consideration as addition, i.e. as an Annex to be added to Part 7.

Rule 030:

Any submission by an ISO/IEC, ISO, IEC and/or ITU P-member body of an Annex of HIEs to this part of ISO/IEC 15944 shall use the template of Clause 9 to specify the criteria governing the presentation of the eBusiness vocabulary in that language.

6.3 Rules applicable to Jurisdictional Domains which either are not (1) ISO/IEC JTC 1, ISO, IEC and/or ITU P-members; or either categories

Not all UN member states are participating members, i.e., P-members. However, if a UN member state decides to develop and submit the HIE eBusiness vocabulary via its national standards body in this official languages this international standard is structured to be able to support such (legal) requirements of the submitting jurisdictional domain.

⁴⁵ The concept/term “jurisdictional domain” is used instead of “country” as the latter is a not precise and often misused term. For example, ISO 3166-1:1997 (E/F) “Codes for the representation of countries and their subdivisions – Part 1: Country codes” contains 52 “country codes” for entities which are not “countries”, i.e. are not UN member states. {For a listing of these 52 geo-political entities, see further Annex I, in ISO/IEC 15944-5:2008}

⁴⁶ Note: for example, the USA, as ISO/IEC JTC 1 P-member, does not have an “official language”. Its “de facto” language is English (ISO 639-2/T code = eng). However, its use of the English language in grammar and spelling, choice of labels (or “terms”) for concepts is at times quite different from other jurisdictional domains where the English is the “official” (or de facto) language in that jurisdictional domain.

Rule 031:

Any UN member may submit, via its National Standards body, a new Annex to this part of ISO/IEC 15944 of the eBusiness vocabulary in the official language(s) of its jurisdictional domain.

Guideline 031G1:

Any UN member state, which does not have a National Standards body, may submit, via its UN Ambassador, a new Annex of the eBusiness vocabulary in the official language(s) of that jurisdictional domain.

It is noted that, where a jurisdictional domain is of the nature of an administrative sub-division of a UN member state, (e.g., province, state, länder, territory, etc.), that such a jurisdictional domain may have its own official language(s). Jurisdictional domains of this nature can also develop a HIE of the eBusiness vocabulary in their official language(s).

6.4 Establishing and developing HIEs for definitions of concepts and their assigned terms as well as abbreviations

It is noted that a concept which exists in the language(s) of one jurisdictional domain may well not exist in whole or in part in the language(s) of another jurisdictional domain.

By their very nature international standards often introduce new concepts which do not exist in any language. This means that those working in other jurisdictional domains in their own (official) language(s) will have to:

- 1) develop the definition for the concept in their own language(s)
- 2) decide whether or not to:
 - i) develop equivalent designated term in its own language(s)

For example in development of the ISO/IEC 14662 standard, the ISO French term introduced the concept of “faisceaux d’information” for the definition of this concept. The resulting HIE term in English was the introduction of the new term “information bundle (IB)”. was used to introduced the HIE in English as “information bundle (IB)”, i.e. as a neologism;

- ii) use a transliteration form of the term assigned;

Rule 032:

It is up to each ISO/IEC JTC 1 P-member (or UN member state working via its national standards body), to develop and decide on the development of the HIE definition and assignment of the associated term for each ISO concept.

Guideline 032G1:

It is up to each ISO/IEC JTC 1 P-member (or UN member state) to decide whether or not it wishes to import, i.e., use, the term which already exists of the label for a concept or create a new term in its language(s).

Rule 033:

For the definition of a concept, the ISO/IEC JTC 1 P-member body (or UN member state) may use (1) a transliteration of the ISO English (or ISO French) term for that concept in one’s language(s); or, (2) one can coin a new term for that concept.

Rule 034:

Where a concept also has an abbreviation for the term in ISO English (or ISO French⁴⁷), the ISO/IEC JTC 1 P-member (or UN member state), may (1) use an existing ISO English (or ISO French) abbreviation; or (2) develop a new abbreviation in its language(s).

The following matrix provides examples in international standards of the use of:

- 1) the same abbreviations for both the ISO English and ISO French terms; and,
- 2) differing abbreviations in ISO English and ISO French for the same term".

Table 3 — Examples of Abbreviations which remain the same or are different in ISO English and ISO French

ISO English		ISO French	
Term	Abbreviation	Term	Abbreviation
Application Programme Interface	API	Interface programme d'application	API
Business Transaction Identifier	BTI	identificateur de transaction d'affaires	BTI
controlled vocabulary	CV	vocabulaire contrôlé	CV
human interface equivalent	HIE	équivalent d'interface humaine	ÉIH
Information Technology System	IT system	système de l'information	IT system
legally recognized name	LRN	nom légalement reconnu	NRL

7 Rules governing the structure and presentation of the eBusiness vocabulary in a HIE context as additional Annexes to this part of ISO/IEC 15944

It is recognized that each ISO/IEC JTC 1 P-member (and UN member state) should be provided with a flexible approach to the structure and presentation of their HIE eBusiness vocabulary for the official language(s) of their jurisdictional domain. Key aspects here which are incorporated and integrated include:

- the use of the official language(s) of the jurisdictional domain of the P-member (or UN member state);
- the ability to be able to support more than one writing system for the official language(s). For example, Russian, Serbian, Inuktitut, etc., have both a syllabic and romanized form as official writing systems;
- supporting an ISO/IEC JTC 1 P-member (or UN member state) to provide a HIE eBusiness vocabulary containing both the (1) HIEs in its official language(s) and its writing system(s); and/or, (2) containing both the HIE term and definition equivalent of its official language(s) in its romanized equivalents of its non-romanized form.

It is recognized that ISO/IEC JTC 1 P-members (and UN member states) representing their respective jurisdictional domains require a flexible approach to their development of the structure and presentation of the HIE eBusiness vocabulary for application in their jurisdictional domains.

⁴⁷ For example, with respect to existing terms and their abbreviations in ISO English and ISO French, there are terms for which the ISO English and ISO French abbreviations are: (1) not the same; and, (2) are the same. Examples of both are provided in the following matrix. The inclusion here of ISO Russian is to respect the fact that Russian is an official language of ISO. It is up to the Russian as a P-member body of ISO/IEC JTC 1 to decide whether or not to provide an HIE eBusiness vocabulary in ISO Russian. {See further Annex E below}

The purpose of the rules, guidelines and text in this Clause 7 is to:

- support such a flexible approach; and,
- do so in a systematic, unambiguous and IT-enabled manner.

Rule 035:

The structure and presentation of any eBusiness vocabulary to be added in other languages, i.e., as an Annex to this part of ISO/IEC 15944, shall be considered to be a set of HIE equivalent(s) in the official language(s) of the jurisdictional domain submitting such a new Annex to this part of ISO/IEC 15944.

Rule 036:

The submission of such a set of eBusiness vocabulary entries as a new Annex to this part of ISO/IEC 15944 shall be done in conformance with the rules stated in Clause 6.

Rule 037:

The structure and representation of any additional eBusiness vocabulary as an HIE Annex to this part of ISO/IEC 15944 shall conform to one or more of the following options (or combinations thereof):

- 1) be only in the official language(s) of the submitting ISO/IEC JTC 1 P-member body (or UN member state);
- 2) include an ISO official language, i.e., English, French or Russian, as part of its submission for an Annex, the equivalent language(s) of the jurisdictional domain of the ISO/IEC P-member (or UN member state);
- 3) where there is more than one writing system for the official language(s) of that jurisdictional domain specify the applicable writing systems.⁴⁸

Rule 038:

In support of the above rules, any submission of the addition of a HIE version of an eBusiness vocabulary, i.e., as an Annex to this part of ISO/IEC 15944 shall be in one of the following formats: (1) the format as presented in Annex D of this Part 7 (with either unilingual, bilingual or multilingual HIEs); or, (2) the format as per Clause 3 in this Part 7 (with either unilingual, bilingual, or multilingual HIEs).

Rule 039:

Where the official language(s) of an ISO/IEC JTC 1 P-member (or UN member state), or any jurisdictional domain includes the use of more than one writing system⁴⁹ for the official language(s) of that jurisdictional domain, the submitting ISO/IEC JTC 1 P-member or submitting jurisdictional domain shall state in its submission, as a new Annex to ISO/IEC 15944-7 whether it: (a) submits such in only one writing system of its official language; or, (b) submits such an Annex in two (or more) writing systems for representation of its language.

⁴⁸ For example, See Annex E below where Annex E.2 and Annex E.3 use the Cyrillic writing system for the Russian language and Annex E.4 uses the Romanized form and writing system for the Russian alphabet.

⁴⁹ Examples of official languages which include more than one writing system include Russian, Serbian, Inuktitut, etc. On the whole, these have both syllabic and romanized versions of their writing systems. Other and different examples may exist as well, (e.g., that of romanized alphabet based equivalents for syllabic or glyph based languages).

Rule 040:

Any structure and presentation of a HIE version of the eBusiness vocabulary shall contain the mandatory essential elements of such a “controlled vocabulary” as stated in 5.3.

Rule 041⁵⁰:

In addition, any eBusiness vocabulary of a HIE nature, submitted as an added Annex, to this part of ISO/IEC 15944 shall include

- 1) its UN member 3 digit ID code for which the UN is the coded domain Source Authority (cdSA). (This 3 digit code is also repeated in ISO 3166-1);
- 2) the 3 alpha code(s) of its official language(s) used in the HIE version of the eBusiness vocabulary provided. The 3 alpha code shall be one based on the ISO 639-2/T set of codes; and,
- 3) the Annex D entry ID number, (e.g. D125) which serves as the pivot ID code.

8 RULES GOVERNING THE MAINTENANCE OF THE eBUSINESS VOCABULARY IN A HIE CONTEXT⁵¹

8.1 Introduction

Amendments and additions to the definitions and terms in the ISO family of eBusiness standards will inevitably necessitate amendments to this Part 7. Such amendments when required will be made to this Part 7 in accordance with ISO/IEC JTC 1 Directives⁵².

Rule 042:

The source for any amendments or additions to the entries in the eBusiness vocabulary as stated in Annex D of this part of ISO/IEC 15944 shall be either:

- 1) this part of ISO/IEC 15944 itself;
- 2) amendments or additions to existing eBusiness standards namely ISO/IEC 14662 or current parts of ISO/IEC 15944 which are already international standards, i.e., Parts 1,2 4, 5 6 and 7; and/or,
- 3) new Parts of ISO/IEC 15944 which are under development, namely: Part 3 and 8.⁵³

⁵⁰ Elements “1)” and “2)” of this rule are based on the standard default convention #1 for the unambiguous identification and referencing of combinations of codes representing countries languages and currencies as stated in Annex D (Normative) of ISO/IEC 15944-5:2007.

⁵¹ See also Annex G below.

⁵² See further Clause 15.5 “amendment” in ISO/IEC JTC 1 Directives, 5th edition, Version 3.0, 2007-04-05

⁵³ Note: Should any new parts of the multipart ISO/IEC 15944 eBusiness standard be proposed and approved, the resulting added definitions and associated terms will be incorporated in future editions of this part of ISO/IEC 15944.

8.2 eBusiness vocabulary Repository⁵⁴

Rule 043:

A repository of the eBusiness vocabulary, as an integrated and harmonized controlled vocabulary, shall be maintained for ISO eBusiness standards. Currently, these include ISO/IEC 14662, Parts 1, 2, 4, 5, 6 and 7 of ISO/IEC 15944 eBusiness standard (and Parts 3 and 8 – which are currently under development).

Rule 044:

The eBusiness vocabulary shall also be maintained in the form of an online computer database.⁵⁵

8.3 Rules governing the representation and referencing of the internal eBusiness vocabulary identifiers

The “Dnnn” number in Annex D serves as the permanent internal identifier of an entry in the eBusiness vocabulary. However, it is important to be able to reference or cite eBusiness vocabulary entries for use in the development of scenarios and scenario components (and registration of the same in accordance with Part 2 of ISO/IEC 15944).

It is also necessary to be able to reference eBusiness vocabulary entries in an IT-enabled manner for their use in implementation in an IT system.

The representation or coding convention agreed upon here is in the form and format of ISO/IEC 15944-7::nnn where the nnn is that stated as the Dnnn in Annex D for that entry.

Rule 045:

The form and format for referencing an eBusiness vocabulary entry is that of “ISO/IEC 15944-7::nnn” where the “nnn” is that of the “nnn” in the “Dnnn” entry in Annex D of ISO/IEC 15944-7.

8.4 Rules governing the maintenance of individual entries in the eBusiness vocabulary

The purpose of this sub-clause is to provide a limited number of high level rules for the maintenance of individual entries in the eBusiness vocabulary. These rules are based on the principle that (currently) the only source for any change to the eBusiness vocabulary is that of a change in their use in the eBusiness standards, i.e., ISO/IEC 14662 or one or more of the applicable Parts of ISO/IEC 15944.

Here Annex C provides a consolidated list of all the eBusiness vocabulary entries not only by sources referenced but also in which of the eBusiness standards the definition is (1) introduced; and, (2) re-used in one or more of the other eBusiness standards.

Rule 046:

The overall approach to the maintenance of entries in the eBusiness vocabulary shall be based on and harmonized with the rules governing the maintenance of “business objects” as stated in Part 2 of ISO/IEC 15944.

⁵⁴ Additional rules pertaining to the operation of an eBusiness vocabulary Repository and a Registration Authority are to be addressed in the next edition of this part of ISO/IEC 15944.

⁵⁵ As the ISO/IEC 14662 and the ISO/IEC 15944 multipart standard are freely available standards, the “eBusiness vocabulary” will also be freely available, in hard-copy or electronic form.

Rule 047:

An eBusiness vocabulary Dnnn once assigned is deemed to be permanent and if retired shall not be re-assigned.

Rule 048:

The definition in an eBusiness vocabulary entry, in a Clause 3, which is part of more than one eBusiness standard, shall not be changed without taking into consideration the other standards in which it is also a sub-clause in Clause 3.

Guideline 048G1:

Where the change is of the nature of an added NOTE or EXAMPLE, i.e., not the definition itself, one has some discretion.

9 List of Annexes

Table 4 — Annexes

Annex A	(Normative) Consolidated list of normative references for the eBusiness vocabulary
Annex B	(Normative) Consolidated list of symbols and abbreviations
Annex C	(Normative) Consolidated summary list of eBusiness Vocabulary entries by source referenced
Annex D	(Normative) Consolidated eBusiness vocabulary: ISO English and ISO French
Annex E	(Normative) Consolidated Matrix of eBusiness Terms and Definitions in ISO English and ISO Russian
Annex F	(Normative) Consolidated Matrix of eBusiness Terms and Definitions in ISO English and ISO Chinese
Annex G	(Normative) Rules Governing Addition of HIE eBusiness Vocabularies in other Languages

Annex A (normative)

Consolidated list of normative references for the eBusiness vocabulary

The Normative References included in this Annex represent a consolidated list of all the standards listed as normative references in Clause 2 of one or more of ISO/IEC 14662 and/or parts of ISO/IEC 15944. Annex A takes a similar approach as that of Annex D and as such facilitates users of the eBusiness vocabulary in finding the titles of the standards referenced in the Annex D entries.

The Normative References in this Annex are divided into two parts; namely:

- ISO/IEC and ISO
- Referenced Specifications ⁵⁶

A.1 ISO/IE, ISO and ITU⁵⁷

A1 ISO 639:2023, *Code for individual languages and language groups*

ISO 704:2022, *Terminology work — Principles and methods*

ISO 1087:2019, *Terminology work and terminology science — Vocabulary*

ISO/IEC 2382:2015, *Information technology — Vocabulary*

ISO 3166-1:2020, *Codes for the representation of names of countries and their subdivisions — Part 1: Country codes*

ISO 3166-2:2020 (E/F), *Codes for the representation of names of countries and their subdivisions — Part 2: Country subdivision code*

ISO 3166-3:2020, *Codes for the representation of names of countries and their subdivisions — Part 3: Code for formerly used names of countries*

ISO 4217:2015, *Codes for the representation of currencies*

⁵⁶ ISO Directives allow for normative referencing of non-ISO/IEC "documents" as "Referenced Specifications" (RS). {See further, ISO/IEC JTC 1 N 4046 "The Normative Referencing of Specifications other than International Standards in JTC 1 International Standards - Guidelines for JTC 1 SCs" (1996-03-13)}. These have been amended as per JTC 1/SC32 Santa Fe (2003) Plenary Resolution 30. {See 32N0978}.

⁵⁷ For standards referenced for which both English and French versions are available both the English and French language titles are provided. This is independent of whether the English and French language versions of the standard are published as a single document or as separate documents. For those standards which are available in English only, only the English language title is provided.

Further, the reference to "ISO/IEC" here refers to international standards issued jointly by the ISO and the IEC via its Joint Technical Committee 1 – Information Technology, commonly known as "ISO/IEC JTC 1" or just "JTC 1". Also, the reference here to the ITU is to those international standards issued by the "ITU-T" (International Telecommunications Union – Telecommunication Standardization sector). and the "ITU-R" (International Telecommunications Union – Radiocommunication Standardization Sector). Note in the field of information and telecommunications technologies, the ITU-T and "ISO/IEC JTC 1" often jointly develop and issue international standards.

ISO 5127:2017, *Information and documentation – Foundation and vocabulary*

ISO/IEC 5218:2022, *Information technology – Codes for the representation of human sexes*

ISO/IEC 6523-1:2023, *Information technology – Structure for the identification of organizations and organization parts – Part 1: Identification of organization identification schemes*

ISO/IEC 6523-2:1998 (E/F), *Information technology – Structure for the identification of organizations and organization parts – Part 2: Registration of organizations identification schemes/Technologies de l'information – Structure pour l'identification des organisations et des parties d'organisations – Partie 2: Enregistrement des systèmes d'identification d'organisations*

ISO/IEC 7501-1:2008, *Identification cards – Machine readable travel documents – Part 1: Machine readable passport*

ISO/IEC 7501-2:1997, *Identification cards – Machine readable travel documents – Part 2: Machine readable visa*

ISO/IEC 7501-3:2005, *Identification cards – Machine readable travel documents – Part 3: Machine readable official travel documents*

ISO/IEC 7812-1:2017, *Identification cards – Identification of issuers – Part 1: Numbering system*

ISO/IEC 7812-2:2017, *Identification cards – Identification of issuers – Part 2: Application and registration procedures*

ISO 8583:2023, *Financial-transaction-card-originated messages – Interchange message specifications*

ISO 8601-1:2019, *Date and time – Representations for information interchange – Part 1: Basic rules*

ISO 9000: 2015, *Quality management systems*

ISO/IEC 9541-1:2012, *Information technology – Font information interchange – Part 1: Architecture*

ISO/IEC 9594.1-11:2020, *Information technology – Open Systems Interconnection – The Directory*

ISO 9735-1:2002, *Electronic data interchange for administration, commerce and transport (EDIFACT) – Application level syntax rules (Syntax version number:4) – Part 1: Syntax rules common to all parts, together with syntax service directories for each of the parts*

ISO/IEC TR 9789:1994, *Information technology – Guidelines for the organization and representation of data elements for data interchange – Coding methods and principles*

ISO/IEC 9798-1:2010, *Information technology – Security techniques – Entity authentication – Part 1: General*

ISO/IEC 10164-15:2001, *Information technology – Open Systems Interconnection – Systems Management: Scheduling function*

ISO/IEC 10181-2:1996, *Information technology – Open System, Interconnection – Security frameworks for open systems – Part 2: Authentication framework*

ISO 10241-1:2011, *Terminological entries in standards – Part 1: General requirements and examples of presentation*

ISO 10241-2:2012, *Terminological entries in standards – Part 2: Adoption of standardized terminological entries*

ISO/IEC 10646:2020, *Information technology – Universal coded character set (UCS)*

ISO/IEC 11179-1:2023, *Information technology – Metadata registries (MDR) – Part 1: Framework*

ISO/IEC 11179-3:2023, *Information technology – Metadata Registries (MDR) – Part 3: Registry metamodel and basic attributes*

ISO/IEC 11179-5:2015, *Information technology – Metadata registries (MDR) – Part 5: Naming principles*

ISO 12620-1:2022, *Management of terminology resources – Data categories – Part 1: Specifications*

ISO 12620-2:2022, *Management of terminology resources – Data categories – Part 2: Repositories*

ISO 13008:2022, *Information and documentation – Digital records conversion and migration process*

ISO/TS 15000-5:2014, *Electronic Business Extensible Markup Language (ebXML) – Part 5: Core Components Specification (CCS)*

ISO 15489-1:2016 (E/F), *Information and documentation – Records management – Part 1: Concepts and principles* / *Information et documentation – Records management – Partie 1: Concepts et principes*

ISO/IEC 15938-5:2003, *Information technology – Multimedia content description interface – Part 5: Multimedia description schemes*

ISO 19108:2002, *Geographic information – Temporal schema*

ISO 19115-1:2014, *Geographic information – Metadata – Part 1: Fundamentals*

ISO 19135-1:2015, *Geographic information – Procedures for item registration – Part 1: Fundamentals*

ISO/IEC 19501:2005, *Information technology – Open Distributed Processing – Unified Modelling Language (UML) Version 1.4.2*

ISO/IEC 19757-2:2008, *Information technology – Document Schema Definition Language (DSDL) – Part 2: Regular-grammar-based validation – RELAX NG*

ISO 22857:2013, *Health informatics – Guidelines on data protection to facilitate trans-border flows of personal health data*

ISO/IEC 29187-1:2013, *Information technology – Identification of privacy protection requirements pertaining to learning, education and training (LET) – Part 1: Framework and reference model*

ITU-R TF.460-6, *Standard-frequency and time-signal emissions*, International Telecommunication Union, Radiocommunications (ITU-R)

ITU-R TF.686, *Glossary*, International Telecommunication Union, Radiocommunications (ITU-R) 

A.2 Referenced specifications⁵⁹

Basel Convention on the Control of Transborder Movement of Hazardous Wastes, (1989+), United Nations (UN)

Charter of the United Nations (as signed 1945 and Amended 1965, 1968, and 1973+), United Nation (UN).

Constitution of the World Health Organization (WHO) International Health Regulations (1969)

Convention on the Law of the Sea (1982) (UNCLOS or LOS), United Nations(UN)

Convention for the Unification of Certain Rules for International Carriage by Air (Warsaw Convention) (1929+), International Civil Aviation Organization (ICAO)

General Agreement on Tariffs and Trade (GATT) (1947,1994+) Council for Trade in Goods (Goods Council), World Trade Organization (WTO)

Harmonized Commodity Description and Coding System (Harmonized System or HS System, 1983, and subsequent amendments), World Customs Council (WCO)

International Commercial Terms (INCOTERMS®), (200), International Chamber of Commerce (ICC)

International Covenant on Economic, Social and Cultural Rights 1966, United Nations (UN)

International Convention for the Safety of Life at Sea (SOLAS), 1974, International Maritime Organization (IMO)

International Maritime Dangerous Goods (IMDG) Code (1974), International Maritime Organization, (IMO)

International Labour Standards⁶⁰ (1919+), International Labour Organization (ILO)

International Patent Classification (IPC) (Strasbourg Agreement of 1971), World Intellectual Property Organization (WIPO)

TRIPS — Agreement on Trade-Related Aspects of Intellectual Property Rights (1994), World Trade Organization (WTO)

Vienna Convention of the Law of Treaties (1969), United Nation (UN)

⁵⁹ This set of referenced specifications is not exhaustive but includes only those referenced in the ISO/IEC eBusiness standards, namely ISO/IEC 14662 and Parts 1, 2, 4, 5, 6, and 7 of ISO/IEC 15944. The first or earliest date when these referenced specifications are published is provided. Many have had subsequent amendments. The Source Authority is also noted. Information on these referenced specification, if not their full text (at times in several languages) is available from the Source Authority noted (often for free). One can use the titles provided as the basis for an Internet-based (Google) search to obtain these documents.

⁶⁰ The International Labour Standards are also known as ILO Conventions which have the status of international treaties.

Annex B (normative)

Consolidated list of abbreviations

The abbreviations in this annex represent a consolidated list of all the abbreviations listed in one or more of the current editions of ISO/IEC 14662 and/or Parts 1, 2, 4, 5, and 6 of the ISO/IEC 15944. As such, this annex takes an approach similar as that of Annex D⁶¹.

A1	API	Application Programming Interface
	ATI	Access to Information
	B2B	Business-to-Business
	B2G	Business-to-Government
	BOV	Business Operational View
	BTE	Business Transaction Entity
	BTI	Business Transaction Identifier
	BTM	Business Transaction Model
	BTN	Business Transaction Number
	cdRS	coded domain Registration Schema
	cdSA	coded domain Source Authority
	CIP	consumer information profile
	CGSB	Canadian General Standards Board
	CRPD	(UN) Convention on Rights of Persons with Disabilities
	CV	(2006) controlled vocabulary
	D-I-M	Defined Immediate Mediated

⁶¹ One the whole the acronyms are the same in English and in French (and also in Russian and in Chinese). In a few instances the is a different acronym in French. Where this is the case, they have been added, in parantheses, in this Annex B.

DMA	Decision Making Application
DMA Interface	Decision Making Application
DOI	Interface Digital Object Identifier
D-S-B	Defined Separate Bilateral
D-S-M	Defined Separate Mediated
EC	European Community
EDI	Electronic Data Interchange
EU	European Union
FDT	Formal Description Technique
FOI	Freedom of Information
FSV	Functional Service View
FTC	(USA) Federal Trade Commission
G4B	Government-for-Business
HIE	Human Interface Equivalent
HS	Harmonized Commodity Description and Coding System (Harmonized Subsystem or HS System) of the World Customs Organization (WCO)
HTML	Hypertext Markup Language
HTTP	Hypertext Transfer Protocol
IAEA	International Atomic Energy Authority
IATA	International Air Transport Association
IB	Information Bundle
ICAO	International Civil Aviation Organization
ICC	International Chamber of Commerce
ICT	Information communication technologies
ID	Identifier
IEC	International Electrotechnical Commission
li	individual identity
ILCM	information lifecycle management
ILO	International Labour Organization
IMO	International Maritime Organization
INCOTERMS	International Commercial Terms (of the ICC)
IPD	Information Processing Domain

ipRS	individual persona Registration Schema
IRBOI	International Registration Business Object Identifier
ISO	International Organization for Standardization
IT	Information technology
IT System	Information Technology System
ITU	International Telecommunications Union
ITU-R	International Telecommunications Union – Radiocommunications Sector
ITU-T	International Telecommunications Union – Telecommunications Sector
JTC 1	Joint Technical Committee 1 “Information Technology” (of the ISO and
LipRS	IEC) legally recognized individual persona Registration Schema
LRII	legally recognized individual identity
LRL	Legally Recognized Language
LRN	legally recognized name
LSP	language for special purposes
md-rii	mutually-defined recognized individual identity
NAFTA	North American Free Trade Agreement
OeBTO	Open-edi Business Transaction Ontology
OeCI	Open-edi Control Information
OeDT	Open-edi Descriptive Technique
OeP	Open-edi Party
OeR	Open-edi Registry
OeRA	Open-edi Registration Authority
OeRI	Open-edi Registry Item
OeRO	Open-edi Registration Organization
OeROI	Open-edi Registration Organization Identifier
OeRR	Open-edi Records Retention
Oe-RRDS	Open-edi records retention and disposal schedule
OeS	Open-edi scenario
OeSE	Open-edi Support Entity
OeSEP	Open-edi Support Entity Protocol
OeSI	Open-edi Support Infrastructure

OeSO	Open-edi Support Organization
OeUD	Open-edi User Data
OID	Object Identifier
OVN	Open Value Network
PAPI	publicly available personal information
PCS	privacy collaboration space
PbD	Privacy-by-Design
Pi	Person identity
PI	personal information
PIC	personal information controller
PIP	personal information profile
PIPEDA	Personal Information Protection and Electronic Documents Act
PPO	(Canada) privacy protection officer
PPR	privacy protection requirement(s)
PPTI	privacy protection transactional integrity
pRS	persona Registration Schema
RA	Registration Authority
RAI	Registration Authority Identifier
RBT	regulatory business transaction
rii	recognized individual identity
RIN	recognized individual name
rPi	recognized Person identity
RRDS	records retention and disposal schedule(s)
RS	Registration Schema
RS-rii	Registration Schema (based)-recognized individual identity Returnable
RTI	Transport Item
SA	Source Authority
SC	Semantic Component
SI	Semantic Identifier
SPI	set of personal information
SRI	set of recorded information

TBT	Technical Barriers to Trade
TI	Transfer Infrastructure
TR	Technical Report
TRN	truncated recognized name
TS	Technical Specification
U-I-B	Undefined Immediate Bilateral
U-I-M	Undefined Immediate Mediated
UML	Unified Modelling Language
UN	United Nations
UN/CPC	United Nations/Central Product Classification
UN/ECE	UN Economic Commission for Europe
UNGA	United Nations General Assembly
UPC/EAN	Uniform Product Code/European Article Numbering
U-S-B	Undefined Separate Bilateral
U-S-M	Undefined Separate Mediated
VAT	Value Added Tax
VIM	International Vocabulary of Metrology
WCO	World Customs Organization
WCO/HS	World Customs Organization/Harmonized System
WIPO	World Intellectual Property Organization
WHO	World Health Organization
WTO	World Trade Organization 

Annex C (normative)

Consolidated summary list of eBusiness vocabulary entries by source referenced

The purpose of this annex is three-fold:

- 1) to provide a consolidated list of all the eBusiness vocabulary entries ordered by their normative source;
- 2) to note where in the family of eBusiness standards, (1) the concept with its definition and term is first introduced and serves as its source; and, (2) which of the other parts of this family of eBusiness standard also use and reference the term/definition;
- 3) to serve as a control document for the management of the eBusiness vocabulary as well as an easy-to-use reference,

With regards to (1) above, the purpose is to identify each of the normative references cited as the source of an entry in the eBusiness vocabulary, i.e., as stated in Annex D below.

This is important information for users of this part of ISO/IEC 15944 to have. It is also an important tool in facilitating a collaborative approach among the international standardization committees responsible for each of these standards and also is one which supports coordination and harmonization in the development and use of international standards.

Annex C is presented in matrix form as follows:

Table C.1 — eBusiness vocabulary entries by source referenced

Category	Description
Identification	
1 eBusiness vocabulary ID	The eBusiness vocabulary identifier in the form of “Dnnn” as stated in each of the entries in Annex D
2 Source Reference ID	The Source Reference ID for the eBusiness vocabulary entry in the form of a composite identifier consisting of the following components: <ol style="list-style-type: none"> a) the source international standard reference for the vocabulary entry; b) the unique identifier assigned by international standards organization for the standards document including part number where applicable; c) the date of the standard document as applicable; and, d) the identifier of the Clause number in the standards document referenced
Human Interface Equivalent (E/F)	
3 English Term	The English language term for the entry
4 French Term	The French language term for the entry

Category	Description
Use in eBusiness Standards	Indicates use as a Clause 3 Definition in one or more of the following eBusiness standards
5	ISO/IEC 14662, 3 rd edition, 2010
6	ISO/IEC 15944-1, 3 rd edition, 2025
7	ISO/IEC 15944-2, 2 nd edition, 2015
8	ISO/IEC 15944-4, 2 nd edition, 2015
9	ISO/IEC 15944-5, 1 st edition, 2008
10	ISO/IEC TR 15944-6, 2 nd edition, 2015
11	ISO/IEC 15944-7, 1 st edition, 2009
12	ISO/IEC 15944-8, 2 nd edition, 2024
13	ISO/IEC 15944-9, 2 nd edition, 2023
14	ISO/IEC 15944-10, 2 nd edition, 2023
15	ISO/IEC 15944-12, 1 st edition, 2017
16	ISO/IEC 15944-16, 1 st edition, 2023
17	ISO/IEC 15944-17, 1 st edition, 2024
18	ISO/IEC 15944-20, 2 nd edition, 2015
19	ISO/IEC 15944-21, 1 st edition, 2023
20	<i>Reserved</i>

With regards to the above, the following coding scheme is used in Columns 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20.

Table C.2 — Coding scheme used in columns in Table C.3

Code	Description
1	indicates eBusiness standard in which the term/definition is introduced
2	indicates re-use of the term/definition by one or more other eBusiness standards 

The primary reason for organizing the columns in this order is to facilitate the look-up of the source document for the appropriate term, in English and French. One should note that:

- 1) where a standard has more than one Part, the entries are presented per Part number in ascending order; and,
- 2) where there are two or more entries taken from a particular standard, the entries are presented per their Clause 3 sub-clause number (or equivalent) in ascending order.