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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

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Contents

Page

Figures

Tables

Foreword

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

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

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

0 Introduction

0.1 Purpose and overview

All parts of the multipart ISO/IEC 15944 BOV standards are based on the first and primary characteristic of Open-edi that states that all actions are based on following clear and predefined rules (ISO/IEC 15944-1:2011, 5.1).

This rule-based approach is central to all existing normative parts of ISO/IEC 15944 and is captured through a series of rules and (associated) guidelines. The main objective of this part is first to bring all these rules and guidelines together in a single document in addition to providing an IT-enabled rulebase metamodel to facilitate business applications.

In keeping also with a central approach and philosophy of ISO/IEC 15944 standards all rules and associated guidelines will be referenced using a unique ID number.

The purpose therefore of this part 16 is four-fold:

1) to provide a consolidation of all normative rules and associated guidelines;

2) to provide a unique ID number for each rule and associated guideline within the overall ISO/IEC 15944 context;

3) to use a data model approach to capture and describe all rules and associated guidelines; and

4) to provide a systematic approach enhancing the IT-enablement.

0.2 IT systems environment neutrality

This part of ISO/IEC 15944 does not assume or endorse any specific system environment, database management system, database design paradigm, system development methodology, data definition language, command language, system interface, user interface, syntax, computing platform, or any technology required for implementation, i.e. it is information technology neutral. At the same time, this part of ISO/IEC 15944 maximizes an IT-enabled approach to its implementation and maximizes semantic interoperability.

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

1 Scope

This part of ISO/IEC 15944 provides a consolidated list of rules and associated guidelines as found and defined in the existing parts of ISO/IEC 15944, namely, Parts 1, 2, 4, 5, 7, 8, 9, 10 and 12.[1]

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/IEC 15944-1 *Information technology — Business Operational View - Part 1: Operational aspects of Open-edi for implementation*

ISO/IEC 15944-2 *Information technology — Business Operational View - Part 2: Registration of scenarios and their components as business objects*

ISO/IEC 15944-4 *Information technology — Business Operational View - Part 4: Business transaction scenarios — Accounting and economic ontology*

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

ISO/IEC 15944-7 *Information technology — Business Operational View - Part 7: eBusiness vocabulary*

ISO/IEC 15944-8 *Information technology — Business Operational View - Part 8: Identification of privacy protection requirements as external constraints on business transactions*

ISO/IEC 15944-9 *Information technology — Business Operational View - Part 9: Business transaction traceability framework for commitment exchange*

ISO/IEC 15944-10 *Information technology — Business Operational View - Part 10: IT-enabled coded domains as Semantic Components in business transactions*

ISO/IEC 15944-12 *Information technology — Business operational view — Part 12: Privacy protection requirements (PPR) on information life cycle management (ILCM) and EDI of personal information (PI)*

[1] NOTE At the time of publication of this part of ISO/IEC 15944, Parts 1, 2, 4, 5, 7, 8, 9, 10 and 12 have been published. The development of Parts 17, 18, 19 and 21 are under preparation.

3 Terms and definitions

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

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

- ISO Online browsing platform: available at https://www.iso.org/obp
- IEC Electropedia: available at http://www.electropedia.org/

3.1
arity
number of roles that participate in the *relation* (3.49)

3.2
attribute
characteristic of an object or *entity* (3.19)

[ISO/IEC 11179-3:2003,3.1.3]

3.3
business
series of processes, each having a clearly understood purpose, involving more than one *Persons* (3.39), realised through the exchange of recorded information and directed towards some mutually agreed upon goal, extending over a period of time

[ISO/IEC 14662:2004,3.2]

3.4
Business Operational View
BOV

perspective of *business transactions* (3.5) limited to those aspects regarding the making of *business* (3.4) decisions and commitments among *Persons* (3.39), which are needed for the description of a *business transactions* (3.5)

[ISO/IEC 14662:2010, 3.3]

3.5
business transaction
predefined set of activities and/or processes of *Persons* (3.39) which is initiated by a *Persons* (3.39) to accomplish an explicitly shared *business* (3.4) goal and terminated upon recognition of one of the agreed conclusions by all the involved *Persons* (3.39) although some of the recognition may be implicit

[ISO/IEC 14662:2010,3.4]

3.6
buyer
Person who aims to get possession of a good, service and/or right through providing an acceptable equivalent value, usually in money, to the *Person* (3.39) providing such a good, service and/or right

[ISO/IEC 15944-1:2002,3.8]

3.7
capability
expression, in the content of a document, that conveys the ability, fitness, or quality necessary to do or achieve a specified thing

3.8
code
data representation in different forms according to a pre-established set of rules

NOTE In this part of ISO/IEC 15944 the "pre-established set of rules" are determined and enacted by a Source Authority and must be explicitly stated.

[ISO 639-2:1998,3.1]

3.9
coded domain
CD
domain for which (1) the boundaries are defined and explicitly stated as a *rulebase* (3.55) of a coded domain Source Authority; and, (2) each *entity* (3.19) which qualifies as a member of that domain is identified through the assignment of a unique ID *code* (3.24) in accordance with the applicable Registration Schema of that *Source Authority* (3.60)

NOTE 1 The rules governing the assignment of an ID code to members of a coded domain reside with its Source Authority and form part of the Coded Domain Registration Schema of the Source Authority.

NOTE 2 Source Authorities which are jurisdictional domains are the primary source of coded domains.

NOTE 3 A coded domain is a data set for which the contents of the data element values are predetermined and defined according to the rulebase of its Source Authority and as such have predefined semantics.

NOTE 4 Associated with a code in a coded domain can be:

- one and/or more equivalent codes;

- one and/or more equivalent representations especially those in the form of Human Interface Equivalent (HIE) (linguistic) expressions.

NOTE 5 In a coded domain the rules for assignment and structuring of the ID codes must be specified.

NOTE 6 Where an entity as member of a coded domain is allowed to have, i.e., assigned, more than one ID code, i.e., as equivalent ID codes (possibly including names), one of these must be specified as the pivot ID code.

NOTE 7 A coded domain in turn can consist of two or more coded domains, i.e., through the application of the inheritance principle of object classes.

NOTE 8 A coded domain may contain ID code which pertain to predefined conditions other than qualification of membership of entities in the coded domain. Further, the rules governing a coded domain may or may not provide for user extensions.

EXAMPLE Common examples include: (1) the use of ID Code "0" (or "00", etc.) for “Others, (2) the use of ID Code "9" (or "99", etc.) for “Not Applicable”; (3) the use of “8” (or “98”) for “Not Known”; and/or, if required, (4) the pre-reservation of a series of ID codes for use of “user extensions”.

NOTE 9 In object methodology, entities which are members of a coded domain are referred to as instances of a class.

EXAMPLE In UML modelling notation, an ID code is viewed as an instance of an object class.

[ISO/IEC 15944-2:2006,3.13]

3.10
commitment
making or accepting of a right, obligation, liability or responsibility by a *Person* (3.39) that is capable of enforcement in the *jurisdictional domain* (3.30) in which the commitment is made

[ISO/IEC 14662:2010,3.5]

3.11
composite identifier
identifier (3.26) (in a *business transaction* (3.5)) functioning as a single unique *identifier* (3.26) consisting of one or more other identifiers, and/or one or more other *data elements* (3.15), whose interworkings are rule-based

Note 1 to entry Identifiers (in business transactions) are for the most part composite identifiers.

Note 2 to entry The rules governing the structure and working of a composite identifier should be specified.

Note 3 to entry Most widely used composite identifiers consist of the combinations of: (a) the ID of the overall identification/numbering schema, (e.g., ISO/IEC 6532, ISO/IEC 7812, ISO/IEC 7506, UPC/EAN, ITU-T E.164, etc.), which is often assumed; (b) the ID of the issuing organization (often based on a block numeric numbering schema); and, (c) the ID of the entities forming part of members of the coded domain of each issuing organization.

[ISO/IEC 15944-2, 2015, 3.16]

3.12
concept
unit of knowledge created by a unique combination of characteristics.

NOTE Concepts are not necessary 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]

3.13
controlled vocabulary
CV
vocabulary whose entries, i.e., *definition* (3.17) /term pairs, are controlled by a *Source Authority* (3.60) based on a *rulebase* (3.55) and process for addition/deletion of entries

NOTE 1 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, with respect to their semantics.

NOTE 3 The rulebase governing a controlled vocabulary may include a predefined concept system.

[ISO/IEC 15944-5:2015, 3.34]

3.14
data
reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing

NOTE Data can be processed by humans or by automatic means.

[ISO/IEC 2382-1:1993,01.01.02]

3.15
data element
unit of *data* (3.14) for which the *definition* (3.17), *identification* (3.25), representation and permissible values are specified by means of a set of *attributes* (3.2)

[ISO/IEC 11179-1:2004,3.3.8]

3.16
data model
description of the organization of *rulebase* (3.55) in the *eBusiness* (3.18) international standards

3.17
definition
representation of a *concept* (3.12) by a descriptive statement which serves to differentiate it from related *concepts* (3.12)

[ISO 1087-1:2000,3.3.1]

3.18
eBusiness
business transaction (3.5), involving the making of *commitments* (3.10), in a defined collaboration space, among *Persons* (3.39) using their IT systems, according to *Open-edi* (3.35) standards

NOTE 1 eBusiness can be conducted on both a for-profit and not-for-profit basis.

NOTE 2 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 EDI (using a variety of communication networks including the Internet).

NOTE 3 eBusiness includes various application areas such as “e-commerce”, “e-administration”, “e-logistics”, “egovernment”, “e-medicine”, “e-learning”, etc.

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

[ISO/IEC 15944-7:2007,3.06]

3.19
entity
any concrete or abstract thing that exists, did exist, or might exist, including associations among these things

EXAMPLE person, object, event, idea, process, etc.

NOTE An entity exists whether data about it are available or not.

[ISO/IEC 2382-17:1999,17.02.05]

3.20
external constraint
constraint which takes precedence over internal constraints in a *business transaction* (3.5), i.e. is external to those agreed upon by the parties to a *business transaction* (3.5)

NOTE 1 Normally, external constraints are created by law, regulation, orders, treaties, conventions or similar instruments.

NOTE 2 Other sources of external constraints are those of a sectoral nature, those which pertain to a particular jurisdictional domain or mutually agreed common business conventions (e.g., INCOTERMS, exchanges, etc.).

NOTE 3 External constraints can apply to the nature of the good, service and/or right provided in a business transaction.

NOTE 4 External constraints can demand that a party to a business transaction meet specific requirements of a particular role.

EXAMPLE 1 Only a qualified medical doctor may issue a prescription for a controlled drug.

EXAMPLE 2 Only an accredited share dealer may place transactions on the New York Stock Exchange.

EXAMPLE 3 Hazardous wastes may only be conveyed by a licensed enterprise.

NOTE 5 Where the Information Bundles (IBs), including their Semantic Components (SCs) of a business transaction are also to form the whole of a business transaction, (e.g., for legal or audit purposes), all constraints are required to be recorded.

EXAMPLE 4 There may be a legal or audit requirement to maintain the complete set of recorded information pertaining to a business transaction, i.e., as the Information Bundles exchanged, as a record.

NOTE 6 A minimum external constraint applicable to a business transaction often requires one to differentiate whether the Person that is a party to a business transaction is an individual, organization, or public administration. For example, privacy rights apply only to a Person as an individual.

[ISO/IEC 15944-1:2002,3.23]

3.21
guideline
statement added to a *rule* (3.53) which is of the nature of recommendation, *permission* (3.38), *possibility* (3.44), *capability* (3.7), etc. in support of the implementation of the *rule* (3.53) of which it forms part.

3.22
guideline class
a class each instance of which models a *guideline* (3.21)

3.23
Human Interface Equivalent
HIE
representation of the unambiguous and IT-enabled semantics of an IT interface equivalent (in a *business transaction* (3.5)), often the *ID code* (3.24) of a *coded domain* (3.9) (or a *composite identifier* (3.11)), in a formalized manner suitable for communication to and understanding by humans

NOTE 1 Human interface equivalents can be linguistic or non-linguistic in nature but their semantics remains the same although their representations may vary.

NOTE 2 In most cases there will be multiple Human Interface Equivalent representations as required to meet localization requirements, i.e. those of a linguistic nature, jurisdictional nature, and/or sectoral nature.

NOTE 3 Human Interface Equivalents include representations in various forms or formats, (e.g., in addition to written text those of an audio, symbol (and icon) nature, glyphs, image, etc.).

[ISO/IEC 15944-2:2006,3.35]

3.24
ID code
identifier (3.26) assigned by the coded domain Source Authority (cdSA) to a member of a *coded domain* (3.9)

NOTE 1 ID codes must be unique within the Registration Schema of that coded domain.

NOTE 2 Associated with an ID code in a coded domain can be:

- one or more equivalent codes;

- one or more equivalent representations, especially those in the form of human equivalent (linguistic) expressions.

NOTE 3 Where an entity as a member of a coded domain is allowed to have more than one ID code, i.e., as equivalent codes (possibly including names), one of these must be specified as the pivot ID code.

NOTE 4 A coded domain may contain ID codes pertaining to entities which are not members as peer entities, i.e., have the same properties and behaviours, such as ID codes which pertain to predefined conditions other than member entities. If this is the case, the rules governing such exceptions must be predefined and explicitly stated.

EXAMPLE Common examples include: (1) the use of an ID code "0" (or "00", etc.), for "Other"; (2) the use of an ID code "9" (or "99") for "Not Applicable"; (3) the use of "8" (or "98") for "Not Known"; and/or, if required, (4) the prereservation of a series or set of ID codes for use for "user extensions".

NOTE 5 In UML modeling notation, an ID code is viewed as an instance of an object class.

[ISO/IEC 15944-2:2006,3.37]

3.25
identification
rule-based process, explicitly stated, involving the use of one or more *attributes* (3.2), i.e., *data elements* (3.15), whose value (or combination of values) are used to identify uniquely the occurrence or existence of a specified *entity* (3.19)

[ISO/IEC 15944-1:2002,3.26]

3.26
identifier (in business transaction)
unambiguous, unique and a linguistically neutral value, resulting from the application of a rule-based *identification* (3.25) process

NOTE 1 Identifiers are required to be unique within the identification scheme of the issuing authority.
NOTE 2 An identifier is a linguistically independent sequence of characters capable of uniquely and permanently identifying that with which it is associated. {See ISO 19135:2005 (4.1.5)}

[ISO/IEC 15944-1:2002,3.27]

3.27
Individual
Person who is a human being, i.e., a natural person, who acts as a distinct indivisible *entity* (3.19) or is considered as such

[ISO/IEC 15944-1:2002,3.28]

3.28
Information Bundle
IB
formal description of the semantics of the recorded information to be exchanged by *Open-edi* (3.35) Parties playing *roles* (3.52) in an *Open-edi scenario* (3.36)

[ISO/IEC 14662:2010,3.11]

3.29
internal identifier
a unique alphanumeric character string that unambiguously identifies a sequence record in a database

3.30
jurisdictional domain
jurisdiction, recognized in law as a distinct legal and/or regulatory framework, which is a source of *external constraints* (3.20) on *Persons* (3.39), their behaviour and the making of *commitments* (3.10) among *Persons* (3.39) including any aspect of a *business transaction* (3.5)

NOTE 1 The pivot jurisdictional domain is a United Nations (UN) recognized member state. From a legal and sovereignty perspective they are considered "peer" entities. Each UN member state (a.k.a. country) may have sub-administrative divisions as recognized jurisdictional domains, (e.g., provinces, territories, cantons, länder, etc.), as decided by that UN member state.

NOTE 2 Jurisdictional domains can combine to form new jurisdictional domains, (e.g. through bilateral, multilateral and/or international treaties).

EXAMPLE The European Union (EU), NAFTA, WTO, WCO, ICAO, WHO, Red Cross, the ISO, the IEC, the ITU, etc.

NOTE 3 Several levels and categories of jurisdictional domains may exist within a jurisdictional domain.

NOTE 4 A jurisdictional domain may impact aspects of the commitment(s) made as part of a business transaction including those pertaining to the making, selling, transfer of goods, services and/or rights (and resulting liabilities) and associated information. This is independent of whether such an interchange of commitments is conducted on a for-profit or not-for-profit basis and/or includes monetary values.

NOTE 5 Laws, regulations, directives, etc., issued by a jurisdictional domain are considered as parts of that jurisdictional domain and are the primary sources of external constraints on business transactions.

[ISO/IEC 15944-5:2008,3.67]

3.31
keyword
significant word in the text of rule statement to represent all or part of the content, which is used for retrieval of *rules* (3.53)

Note 1 to entry Set of keywords is a vocabulary in a coded domain

Note 1 to entry Set of keywords defined in Annex D is the subset of all the ISO/IEC 15944 terms.

3.32
language
system of signs for communication, usually consisting of a vocabulary and rules

NOTE In this part of ISO/IEC 15944, language refers to natural languages or special languages, but not "programming languages" or "artificial languages".

[ISO 5127-1:2001,1.1.2.01]

3.33
name
designation of an object by a linguistic expression

[ISO 5217:2000,1.1.2.13]

3.34
official language
external constraint (3.20) in the form of a natural language specified by a *jurisdictional domain* (3.30) for official use by *Persons* (3.39) forming part of and/or subject to that j*urisdictional domain* (3.30) for use in communication(s): (a) within that *jurisdictional domain* (3.30); and/or, (b) among such *Persons* (3.39), where such communications are recorded information involving *commitment(s)* (3.10)

NOTE 1 Unless official language requirements state otherwise, Persons are free to choose their mutually acceptable natural language and/or special language for communications as well as exchange of commitments.

NOTE 2 A jurisdictional domain decides whether or not it has an official language. If not, it will have a de facto language.

NOTE 3 An official language(s) can be mandated for formal communications as well as provision of goods and services to Persons subject to that jurisdictional domain and for use in the legal and other conflict resolution system(s) of that jurisdictional domain, etc.

NOTE 4 Where applicable, use of an official language may be required in the exercise of rights and obligations of individuals in that jurisdictional domain.

NOTE 5 Where an official language of a jurisdictional domain has a controlled vocabulary of the nature of a terminology, it may well have the characteristics of a special language. In such cases, the terminology to be used is required to be specified.

NOTE 6 For an official language, the writing system(s) to be used must be specified, where the spoken use of a natural language has more than one writing system.

EXAMPLE 1 The spoken language of use of an official language may at times have more than one writing system. For example, three writing systems exist for the Inuktitut language. Canada uses two of these writing systems, namely, a Latin-1 based (Roman), the other is syllabic-based. The third is used in Russia and is Cyrillic-based.

EXAMPLE 2 Norway has two official writing systems, both Latin-1 based, namely, Bokmål (Dano-Norwegian) and Nynorsk (New Norwegian).

NOTE 7 A jurisdictional domain may have more than one official language but these may or may not have equal status.

EXAMPLE 3 Canada has two official languages, Switzerland has three, while the Union of South Africa has eleven official languages.

NOTE 8 The BOV requirement of the use of a specified language will place that requirement on any FSV supporting service.

EXAMPLE 4 A BOV requirement of Arabic, Chinese, Russian, Japanese, Korean, etc., as an official language requires the FSV support service to be able to handle the associated character sets.

[ISO/IEC 15944-5:2008,3.87]

3.35
Open-edi
Electronic Data Interchange (EDI) among multiple autonomous *Persons* (3.39) to accomplish an explicit shared *business* (3.3) goal according to Open-edi standards

[ISO/IEC 14662:2010, 3.14]

3.36
Open-edi scenario
OeS
formal specification of a class of *business transactions* (3.5) having the same *business* (3.3) goal

[ISO/IEC 14662:2010,3.18]

3.37
organization
unique framework of authority within which a person or persons act, or are designated to act, towards some purpose

NOTE The kinds of organizations covered by this International Standard include the following examples:

EXAMPLE 1 An organization incorporated under law.

EXAMPLE 2 An unincorporated organization or activity providing goods and/or services including:

1) partnerships;

2) social or other non-profit organizations or similar bodies in which ownership or control is vested in a group of individuals;

3) sole proprietorships

4) governmental bodies.