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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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Foreword

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

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

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

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

Introduction

0.1 Purpose and overview

All parts of the ISO/IEC 15944 BOV series are based on the first and primary characteristic of Open-edi that states that all actions are based on following clear and predefined rules (see ISO/IEC 15944-1:2023, 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 document is first to bring all these rules and guidelines together in a single document, and second provide an IT-enabled BOV rulebase model to facilitate business applications. The BOV rulebase model can also be used to the construction of other custom rulebases of eBusiness application requirements (e.g. "a rulebase that provide instructions and requirements for implementing aspects of privacy protection").

In keeping also with a central approach and philosophy of the ISO/IEC 15944 series, all rules and associated guidelines will be referenced using eBusiness rule IDs.

The purpose, therefore, of this document 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 BOV rulebase model approach to capture and describe all BOV rulebases; and

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

0.2 IT systems environment neutrality

This document 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 document 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 document provides a consolidated set of rules and associated guidelines as found and defined in the existing parts of the ISO/IEC 15944 series.

NOTE Not all parts of the ISO/IEC 15944 series have rules, that is ISO/IEC 15944-6, ISO/IEC 15944-14 and ISO/IEC 15944-20.

2 Normative references

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

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

ISO/IEC 15944-7, *Information technology — Business operational view — Part 7: eBusiness vocabulary*

3 Terms and definitions

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

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

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

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

3.1
attribute
characteristic of an object or *entity* (3.21)

[SOURCE: ISO/IEC 15944-5:2008, 3.4]

3.2
business
series of processes, each having a clearly understood purpose, involving more than one *Person* (3.43), realized through the exchange of recorded information and directed towards some mutually agreed upon goal, extending over a period of time

[SOURCE: ISO/IEC 14662:2010, 3.2]

3.3
business operational view
perspective of *business transactions* (3.6) limited to those aspects regarding the making of *business* (3.2) decisions and *commitments* (3.11) among *Persons* (3.43), which are needed for the description of a *business transactions*

[SOURCE: ISO/IEC 14662:2010, 3.3]

3.4
BOV rulebase
rulebase (3.59) designed for the consolidated set of *rules* (3.57) and associated *guidelines* (3.24) identified in ISO/IEC 15944 *BOV* (3.3) *standards* (3.65)

3.5
BOV rulebase model
conceptual specification and description of the organization, and *relationship(s)* (3.53) within a *BOV rulebase* (3.4)

3.6
business transaction
predefined set of activities and/or processes of *Persons* (3.43) which is initiated by a *Person* to accomplish an explicitly shared *business* (3.2) goal and terminated upon recognition of one of the agreed conclusions by all the involved *Persons* although some of the recognition may be implicit

[SOURCE: ISO/IEC 14662:2010, 3.4]

3.7
buyer
Person (3.43) *w*ho aims to get possession of a good, service and/or right through providing an acceptable equivalent value, usually in money, to the *Person* providing such a good, service and/or right

[SOURCE: ISO/IEC 15944-1:2023, 3.8]

3.8
capability
user implementation condition stated in a *guideline* (3.24) to a *rule* (3.57) that conveys the ability, fitness, quality, necessary to comply with the *requirement* (3.55) in the rule

Note 1 to entry: Other implementation conditions that are found in guidelines include: permission, possibility and recommendation.

3.9
code
data (3.15) representation in different forms according to a pre-established set of *rules* (3.57)

Note 1 to entry: In this document, the "pre-established set of rules" are determined and enacted by a *Source Authority* (3.64) and shall be explicitly stated.

[SOURCE: ISO 639-2:1998, 3.1]

3.10
coded domain
domain for which (1) the boundaries are defined and explicitly stated as a *rulebase* (3.59) of a coded domain Source Authority; and, (2) each *entity* (3.21) which qualifies as a member of that domain is identified through the assignment of a unique *ID code* (3.27) in accordance with the applicable Registration Schema of that *Source Authority* (3.64)

Note 1 to entry: 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 to entry: Source Authorities which are jurisdictional domains are the primary source of coded domains.

Note 3 to entry: 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 to entry: Associated with a code in a coded domain can be: a) one and/or more equivalent codes; b) one and/or more equivalent representations especially those in the form of Human Interface Equivalent (HIE) (linguistic) expressions.

Note 5 to entry: In a coded domain the rules for assignment and structuring of the ID codes shall be specified.

Note 6 to entry: 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 shall be specified as the pivot ID code.

Note 7 to entry: 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 to entry: 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 provide for user extensions.

EXAMPLE 1 (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 to entry: In object methodology, entities which are members of a coded domain are referred to as instances of a class.

EXAMPLE 2 In UML modelling notation, an ID code is viewed as an instance of an object class.

[SOURCE: ISO/IEC 15944-2:2015, 3.13]

3.11
commitment
making or accepting of a right, obligation, liability or responsibility by a *Person* (3.43) that is capable of enforcement in the *jurisdictional domain* (3.33) in which the commitment is made

[SOURCE: ISO/IEC 14662:2010, 3.5]

3.12
composite identifier
identifier (3.29) (in a *business transaction* (3.6)) functioning as a single unique *identifier* consisting of one or more other *identifiers*, and/or one or more other *data elements* (3.16), 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.

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

3.13
concept
unit of knowledge created by a unique combination of characteristics

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

[SOURCE: ISO 1087:2019, 3.2.7]

3.14
controlled vocabulary
vocabulary whose entries, i.e., *definition* (3.17)/*term* (3.66) pairs, are controlled by a *Source Authority* (3.64) based on a *rulebase* (3.59) and process for addition/deletion of entries

Note 1 to entry: In a controlled vocabulary, there is a one-to-one relationship of definition and term.

EXAMPLE The contents of "Clause 3 Terms and 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 to entry: 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 to entry: The rulebase governing a controlled vocabulary may include a predefined concept system.

[SOURCE: ISO/IEC 15944-5:2008, 3.34]

3.15
data
reinterpretable representation of information in a formalized manner suitable for communication, interpretation, or processing

Note 1 to entry: Data can be processed by humans or by automatic means.

[SOURCE: ISO/IEC 2382:2015, 2121272]

3.16
data element
unit of *data* (3.15) for which the *definition* (3.17), *identification* (3.28), representation and permissible values are specified by means of a set of *attributes* (3.1)

[SOURCE: ISO/IEC 11179-1:2015, 3.3.8]

3.17
definition
representation of a *concept* (3.13) by an expression that describes it and differentiates it from related *concepts*

[SOURCE: ISO 1087:2019, 3.3.1]

3.18
eBusiness
business transaction (3.6), involving the making of *commitments* (3.11), in a defined collaboration space, among *Persons* (3.43) using their IT Systems, according to *Open-edi* (3.39) *standards* (3.65)

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 EDI (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”, “egovernment”, “e-medicine”, “e-learning”, etc.

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

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

3.19
eBusiness rule ID
unique alphanumeric character string that unambiguously identifies a *rule* (3.57) in the consolidated set of all *rules* and *guidelines* (3.24) identified in ISO/IEC 15944 *BOV* (3.3) *standards* (3.65)

3.20
Electronic Data Interchange
EDI
automated exchange of any predefined and structured *data* (3.15) for *business* (3.2) purposes among information systems of two or more *Persons* (3.43)

Note 1 to entry: This definition includes all categories of electronic business transactions.

[SOURCE: ISO/IEC 14662:2010, 3.8]

3.21
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 1 to entry: An entity exists whether data about it are available or not.

[SOURCE: ISO/IEC 2382:2015, 2121433]

3.22
external constraint
constraint which takes precedence over internal constraints in a *business transaction* (3.6), i.e., is external to those agreed upon by the parties to a *business transaction*

Note 1 to entry: Normally, external constraints are created by law, regulation, orders, treaties, conventions or similar instruments.

Note 2 to entry: 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 to entry: External constraints can apply to the nature of the good, service and/or right provided in a business transaction.

Note 4 to entry: 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 to entry: 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 to entry: 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.

[SOURCE: ISO/IEC 15944-1:2023, 3.23]

3.23
Formal Description Technique
FDT
specification method based on a description *language* (3.35) using rigorous and unambiguous *rules* (3.57) both with respect to developing expressions in the *language* (formal syntax) and interpreting the meaning of these expressions (formal semantics)

[SOURCE: ISO/IEC 14662:2010, 3.9]

3.24
guideline
statement complementing a *rule* (3.57) which supports the implementation of that *rule* in specifying the user compliance conditions of a *recommendation* (3.51), a *permission* (3.42), a *possibility* (3.48), or a *capability* (3.8)

Note 1 to entry: The user compliance conditions of a requirement are only found in the rule statement alone.

3.25
guideline class
object class (3.37) where each instance models a *guideline* (3.24)

3.26
Human Interface Equivalent
HIE
representation of the unambiguous and IT-enabled semantics of an IT interface equivalent (in a *business transaction* (3.6)), often the *ID code* (3.27) of a *coded domain* (3.10) (or a *composite identifier* (3.12)), in a formalized manner, suitable for communication to and understanding by humans

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

Note 2 to entry: 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 to entry: 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.).

[SOURCE: ISO/IEC 15944-2:2015, 3.35]

3.27
ID code
identifier (3.29) assigned by the coded domain Source Authority (cdSA) to a member of a *coded domain* (3.10)

Note 1 to entry: ID codes shall be unique within the Registration Schema of that coded domain.

Note 2 to entry: Associated with an ID code in a coded domain can be: a) one or more equivalent codes; b) one or more equivalent representations, especially those in the form of human equivalent (linguistic) expressions.

Note 3 to entry: 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 to entry: 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 (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 preservation of a series or set of ID codes for use for “user extensions”.

Note 5 to entry: In UML modeling notation, an ID code is viewed as an instance of an object class.

[SOURCE: ISO/IEC 15944-2:2015, 3.37]

3.28
identification
rule-based process, explicitly stated, involving the use of one or more *attributes* (3.1), i.e. *data elements* (3.16), whose content value (or combination of values) are used to identify uniquely the occurrence or existence of a specified *entity* (3.21)

[SOURCE: ISO/IEC 15944-1:2023, 3.26]

3.29
identifier (in business transaction)
unambiguous, unique and a linguistically neutral value, resulting from the application of a rule-based *identification* (3.28) process

Note 1 to entry: Identifiers shall be unique within the identification scheme of the issuing authority.

Note 2 to entry: 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)}

[SOURCE: ISO/IEC 15944-1:2023, 3.27]

3.30
individual
Person (3.43) who is a human being, i.e. a natural person, who acts as a distinct indivisible *entity* (3.21) or is considered as such

[SOURCE: ISO/IEC 15944-1:2023, 3.28]

3.31
Information Bundle
IB
formal description of the semantics of the recorded information to be exchanged by *Open-edi* (3.39) Parties playing *roles* (3.56) in an *Open-edi scenario* (3.40)

[SOURCE: ISO/IEC 14662:2010, 3.11]

3.32
IT-enablement
transformation of a current *standard* (3.65) used in *business transactions* (3.6), (e.g., *coded domains* (3.10)), from a manual to computational perspective so as to be able to support *commitment* (3.11) exchange and computational integrity

[SOURCE: ISO/IEC 15944-5:2008, 3.65]

3.33
jurisdictional domain
jurisdiction, recognized in law as a distinct legal and/or regulatory framework, which is a source of *external constraints* (3.22) on *Persons* (3.43), their behaviour and the making of *commitments* (3.11) among *Persons* including any aspect of a *business transaction* (3.6)

Note 1 to entry: 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 to entry: 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 to entry: Several levels and categories of jurisdictional domains may exist within a jurisdictional domain.