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Information technology — Business Operational View —

Part 2: Registration of scenarios and their components as business objects

Technologies de l'information — Vue opérationnelle des affaires —

Partie 2: Enregistrement des scénarios et de leurs composants en tant qu'objets d'affaires

Reference number
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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

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).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This second edition cancels and replaces the first edition of ISO/IEC 15994-2:2006 which has been technically revised.

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, 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 of e-Business Modelling [Technical Report]*
- *Part 7: eBusiness vocabulary.*
- *Part 8: Identification of privacy protection requirements as external constraints on business transactions*
- *Part 9: Business transaction traceability framework for commitment exchange*

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

The following parts are under preparation:

– *Part 11: Descriptive Techniques for Foundational Modelling in Open-edi*

– *Part 12: Privacy protection requirements on information life cycle management (ILCM) in EDI*

– *Part 20: Linking business operational view to functional service view*

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0 Introduction

0.1 Purpose and overview

This part of ISO/IEC 15944 specifies procedures for the registration of Open-edi scenarios and scenario components as "business objects." ISO/IEC JTC 1 defines registration as the assignment of an unambiguous name to an object in a way that makes the assignment available to interested parties. Scenarios and scenario components that may be registered are members of object classes specified in technical standards such as those developed by ISO/IEC JTC 1/SC 32.

NOTE In this part of ISO/IEC 15944, the definition of registration has been changed so that registration is the assignment of linguistically independent identifiers, rather than names, to scenarios and scenario components.

Registration of scenarios and scenario components offers several benefits to the e-Business community. Registration

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

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

c) may provide a single mechanism to access information concerning items that are specified in different standards.

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

e) may be used to make sets of standardized tags available for encoding of registered items in data sets.

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

ISO/IEC 14662:2010[1)], 5.1.2 states:

"*Different user groups will generate Open-edi scenarios in accordance with the specification given in the BOV related standards. Open-edi shall be specified in conformity to the BOV related standards. Business communities can propose Open-edi scenarios as candidates for standardization and registration into (an) Open-edi scenario repository (ies). Procedures to be used for introducing new Open-edi scenarios in one or more repositories are specified in a BOV related standard*."

The objective of this part of ISO/IEC 15944 is the identification, registration, referencing and re-useability of common objects in a business transaction. As stated in ISO/IEC 15944-1, re-useability of scenarios and scenario components is an achievable objective because existing (global) business transactions, whether conducted on a for-profit or not for profit basis, already consist of reusable components unambiguously understood among participating parties. However, such existing "standard" components have not yet been formally specified and registered. The purpose of this part of ISO/IEC 15944 is to fill this gap.

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1) ISO/IEC 14662 *Information technology — Open-edi reference model/Technologies de l'information — Modèle de référence EDI-ouvert*. The English and French versions of this ISO/IEC standard are publicly available. See <http://www.jtc1.org>

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An open-edi scenario is expected to be generated among user groups in accordance with the specification given in ISO/IEC 15944-1, and to be submitted as a candidate for a new Open-edi scenario for reuse in the open world. User groups or parties will have a need to reuse an Open-edi scenario as a whole or some component, or to refer just for preliminary negotiation and further reuse purposes.

Open-edi scenario types will have specific or generic characteristics with different granularity, so that the registration scheme should meet those requirements.

Open-edi scenarios include the following components to be described using an Open-edi Description Technique (OeDT):

- Scenario attribute;
- Role;
- Information Bundle (IB);
- Semantic Component (SC).

This part of ISO/IEC 15944 specifies procedures to be followed in preparing and maintaining registers of scenarios and scenario components. Although any organization may choose to establish registers of such items that conform to this part of ISO/IEC 15944, this part of ISO/IEC 15944 is intended particularly to apply to registers established under the auspices of ISO/IEC/ JTC 1/SC 32.

A registration authority is an organization authorised by ISO to maintain a register. ISO discourages the proliferation of registers, but the maintenance of a single large register places a heavy burden on the registration authority. A goal of this International Standard is to achieve a balance between minimising the number of registers for scenarios and scenario components and minimising the burden on the registration authorities.

0.2 Use of “Person”, “person”, and “party” in the context of business transactions and commitment exchange

When ISO/IEC 14662 was first developed, the “Internet” and “WWW” were in their embryonic stage and their impact on private and public sector organizations was not fully understood. Consequently, in the first edition, ISO/IEC 14662:1997, the Business Operational View (BOV) was 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 ISO/IEC 6523:1984 definition of “organization” was used in the first edition of ISO/IEC 14662. ISO/IEC 6523 was changed in 1998 when it became a two-part standard. The fact that today Open-edi through the Internet and WWW also involves “individuals” has been taken into account in the revision of this standard. Further, ISO/IEC 14662 did not define “commitment”, nor the discrete properties and behaviors 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 15994-1 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 made between and among machines (automata or computer programs) 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 “artificial” persons such as corporate bodies could make commitment.

To address these extended requirements an additional term: Person, was created. 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.

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The reader should understand the following.

— 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" represent the three common subtypes of "Person". Definitions for these terms and their use are found in ISO/IEC 15944-1.

— The words "person(s)" and/or "party(ies)" are used in their generic contexts in this part of ISO/IEC 15944. A "party to a business transaction" has the properties and behaviours of a "Person". {See further ISO/IEC 15944-1:2011, Clause 6, and in particular 6.1.3 and 6.2}.

0.3 Importance and role of terms and definitions

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

A primary objective of this multipart standard on business semantic descriptive techniques is to ensure that there is a common understanding of the Business Operational View (BOV) from commercial, legal, ICT, public policy and cross-sectoral perspectives. It is therefore important to ascertain and confirm that what may be considered a "common understanding" in one of these domains is also so unambiguously understood and accepted in the others.

This subclause is included in each Part of ISO/IEC 15944 to emphasize that harmonized terms and definitions are essential to the continuity of the overall standard. Definitions and associated terms should be established as early as possible in the standards development process. Comments on any definition should address the question of changes needed to avoid possible misinterpretation. Definitions may need to be amended/improved as part of the harmonization of terms/definitions among the various Parts.

The consolidated list of terms and definitions with cultural adaptability: ISO English and ISO French language equivalency given in Annex A is derived from Clause 3 of each Part of ISO/IEC 15944. This Annex A reference file will insure the consistency of terms/definitions among the various Parts in the on-going harmonization effort. Annex A is repeated in each Part as a convenient reference.

0.4 Standard based on rules and guidelines[2)]

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.

2) This introductory clause is primarily based on that found in ISO/IEC 15944-1:2011, 6.1.2 titled "*Standard based on rules and guidelines*".

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ISO states that:[3)]

> "*standards are documented agreements 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*."[4)]

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 to. They are precise criteria and agreed upon requirements of business transactions representing common business operational practices and functional requirements.

Clause 5 "*Characteristics of Open-edi*" in ISO/IEC 15944-1:2011 makes it clear that the "Business Operational View (BOV)" type of Open-edi standards are "rule based" standards[5)]. Of particular relevance here is the first key characteristic of Open-edi as stated in Clause 5.1 "*Actions based upon following clear, predefined rules"*. It is useful to quote some key normative text from ISO/IEC 15944-1 so that users of this Part of ISO/IEC 15944 have a clear understanding of the nature and purpose of this BOV standard

> *"Open-edi requires the use of clear and pre-defined rules, principles and guidelines. These rules formally specify the role(s) of the parties involved in Open-edi and the available expected behavior(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 behavior of information flows themselves.*
>
> *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.

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3) This is the generic definition of "standards" of the ISO and IEC (and now found in the ISO/IEC JTC1 Directives) <http:www.iso.ch/infoe/intro.html> for the English language version and <http://www.iso.ch/infof.htm> for the French language version.

4) 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…"

5) The key characteristics of Open-edi are (as stated in Clause 5, ISO/IEC 15944-1:2011, pp.12-14) are six. They are as follows:

- actions based on following predefined rules;
- 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 sub-clauses of Clause 5 in ISO/IEC/15944-1:2011 describe each of these six characteristics in more detail.

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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 font[6)]. 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 e-business 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 Organization and description of the document

This Part of ISO/IEC 15944 describes the procedure by which Open-edi Scenarios and scenario components can be registered, starting with requirements in Clause 5 for reusability and the ability to support cultural adaptability, as well as requirements of a jurisdictional nature as are applicable to the nature and goal of the business transaction. Registration principles are then stated in Clause 6, including:

- the federation of registration authorities,
- internationally unique identification of Open-edi registry entries,
- responsibilities of registration authorities,
- registry operation,
- registration status,
- state of a register,
- information required for registering scenarios and scenario components,
- formal specification of scenarios and scenario components using an Open-edi Descriptive Technique

The composite Open-edi registry item identifier is described in Clause 7. Clause 8 describes roles and responsibilities in the management of Open-edi registers. Clause 9 describes the registration authority and operations in the management of an Open-edi register. Clause 10 is an overview of the ISO 19135:2005 register and its adaptation to the Open-edi register schema.

Normative Annex A is a consolidated list of terms and definitions as described in 0.3. Information required for registration of Open-edi registry entries includes attributes for administration, scenario scoping and specification, and scenario classification. All Open-edi registration administration attributes are listed in normative Annex B. Normative Annex C provides a convenient reference to Open-edi scoping and specification attributes. Informative Annex D provides information on two classes of constraints, i.e., internal and external, as part of the business transaction model.

6) For example, “Guideline 5G2” equals the second Guidelines under Rule5.

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Information technology — Business Operational View —

Part 2:
Registration of scenarios and their components as business objects

1 Scope

This part of ISO/IEC 15944 specifies procedures to be followed in establishing, maintaining, and publishing registers of unique, unambiguous and permanent identifiers and meanings that are assigned to Open-edi scenarios and scenario components. In order to accomplish this purpose, part of ISO/IEC 15944 specifies elements of information that are necessary to provide identification and meaning to the registered items and to manage the registration of these items.

This part of ISO/IEC 15944 defines the procedures to be applied by qualified JTC1 Registration Authority(ies) appointed by the ISO and IEC council to maintain a register(s) of Open-edi scenarios and/or scenario components for the purpose of their reusability.

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 Directives, Part 1, *Consolidated ISO Supplement — Procedures specific to ISO, 5th edition 2014*

ISO/IEC Directives, Part 1, *Consolidated JTC1 Supplement 2015 – Procedures specific to JTC1*

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

ISO/IEC 6523-1:1998 *Information technology — Structure for the identification of organizations and organization parts — Part 1: Identification of organization identification schemes*

ISO/IEC 6523-2:1998 *Information technology — Structure for the identification of organizations and organization parts — Part 2: Registration of organization identification schemes*

ISO/IEC 7812-2:2007, *Identification cards — Identification of issuers — Part 2: Application and registration procedures*

ISO/IEC 11179-3:2003 *Information technology — Metadata registries (MDR) — Part 3: Registry metamodel and basic attributes*)

ISO/IEC 11179-6:2005 *Information technology — Metadata registries (MDR) — Part 6: Registration*

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

ISO/IEC 15944-1:2011 *Information technology — Business Operational View — Part 1: Operational aspects of Open-edi for implementation*

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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*

ISO 19135:2005, *Geographic information — Procedures for item registration*

3 Terms and definitions

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

3.1
address
set of **data elements** that specifies a **location** to which a **recorded information** item(s), a **business object**(s), a material object(s) and/or a person(s) can be sent or from which it can be received

NOTE 1 An address can be specified as a physical address and/or electronic address.

NOTE 2 In the identification, referencing and retrieving of registered business objects, it is necessary to state whether the pertinent recorded information is available in both physical and virtual forms.

NOTE 3 In the context of Open-edi, a "recorded information item" is modelled and registered as an Open-edi scenario (OeS), Information Bundle (IB) or Semantic Component (SC).

3.2
administrative note
general note about the **OeRI**

3.3
applicant (for an OeRI)
Person which requests the assignment of an **OeRI** and an associated **entry label**

NOTE An applicant can be an individual, organization, or public administration.

3.4
attribute
characteristic of an object or entity

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

3.5
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

[ISO/IEC 14662:2010, (3.2)]

3.6
business object
unambiguously identified, specified, referenceable, registered and re-useable **Open-edi scenario** or **scenario component** of a **business transaction**

NOTE As an "object", a "business object" exists only in the context of a business transaction.

3.7
business object identifier
unique **identifier** of a **business object** in an **OeRI** within an **Open-edi Registration Organization (OeRO)**

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