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BSI Standards Publication

Information technology — Business Operational View

Part 9: Business transaction traceability framework for commitment exchange

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee IST/40, Data management and interchange.

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Information technology — Business Operational View —

Part 9: Business transaction traceability framework for commitment exchange

Technologies de l'information — Vue opérationnelle des affaires —

Partie 9: Cadre de traçabilité des transactions d'affaires pour l'échange d'engagements

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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).

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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.

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*

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

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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

Modelling of a business transaction through scenarios and scenario components is done through specifying the applicable constraints using explicitly stated rules. The Open-edi Reference Model identified two basic classes of constraints, namely, “internal constraints” and “external constraints”. External constraints apply to most business transactions.

Jurisdictional domains are the primary source of external constraints on a business transaction. Traceability requirements in turn are a common requirement of most jurisdictional domains, although they may result from explicit scenario demands from or on the parties to a business transaction, as well as the goal, i.e., nature of the business transaction.

In the actualization and post-actualization phases of a business transaction, traceability is needed for the movement of goods, services and/or rights from seller to buyer, and for the associated payment from buyer to seller. Depending on the nature of the business transaction, traceability may also be required by and involve an agent, a third party and/or a regulator (This may be a mandatory process invoked by the power of the regulator).

This Business Operational View (BOV) standard, i.e., this Part of ISO/IEC 15944, addresses the specific aspects of business semantic descriptive techniques needed in support of traceability requirements in Open-edi modelling of business transactions that support of internal constraints as well and especially those which are subject to external constraints.

0.2 ISO/IEC 14662 “Open-edi Reference Model”

The ISO/IEC 14662 Information technology - Open-edi Reference Model provides the conceptual architecture necessary for carrying out electronic business transactions among autonomous parties. That architecture identifies and describes the need to have two separate and related views of the business transaction. The first is the Business Operational View (BOV). The second is the Functional Service View (FSV). Figure 1 from ISO/IEC 14662 illustrates the Open-edi environment.

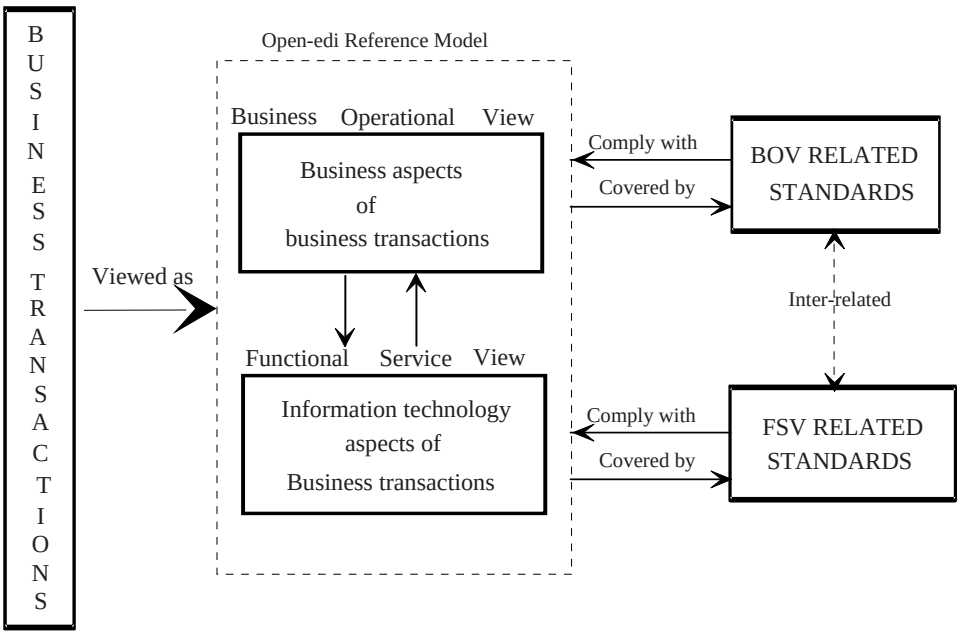

Figure 1 — Open-edi environment

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ISO/IEC 14662, Clause 5 contains the following text:

"*The intention is that the sending, by an Open-edi Party, of information from a scenario, conforming to Open-edi standards, shall allow the acceptance and processing of that information in the context of that scenario by one or more Open-edi Parties by reference to the scenario and without the need for agreement. However, the legal requirements and/or liabilities resulting from the engagement of an organization in any Open-edi transaction may be conditioned by the competent legal environment(s) of the formation of a legal interchange agreement among the participating organizations. Open-edi Parties need to observe rule-based behaviour and possess the ability to make commitments in Open-edi, (e.g., business, operational, technical, legal, and/or audit perspectives)*".

In addition, Annex A of the ISO/IEC 14662 "Open-edi Reference Model" contains a Figure A.1 *"Relationships of Open-edi standardization areas with other standards and import of the legal environment"*. This Part of ISO/IEC 15944 is a BOV standard which focuses on the business operational view (including internal constraints as well as external constraints) for the application of traceability from an Open-edi perspective, and, as required, follow-up standards development in support of the "Open-edi Reference Model".

The purpose of this Part of ISO/IEC 15944 includes identifying the means by which laws and regulations of a jurisdictional domain impact scenarios and scenario components as external constraints and how they are modelled and represented.

Finally it is noted that the approach taken in Part 1 of ISO/IEC 15944 in Clause 7 "Guidelines for scoping Open-edi Scenarios" is, as stated in 7.1 of Part 1 of ISO/IEC 15944:

"The approach taken is that of identifying the most primitive common components of a business transaction and then moving from the general to the more detailed, the simplest aspects to the more complex, from no external constraints on a business transaction to those which incorporate external constraints, from no special requirements on functional services to specific requirements, and so on".

This Part of ISO/IEC 15944 standard focuses on addressing generally definable aspects of both internal constraints relating to traceability which is mutually agreed to by parties to a business transaction, and external constraints for which the source is a jurisdictional domain. A useful characteristic of external constraints is that at the sector level, national and international levels, etc., focal points and recognized authorities often already exist. The rules and common business practices in many sectorial areas are already known. Use of ISO/IEC 15944 (and related standards) will facilitate the transformation of these external constraints as business rules[1] into specified, registered, and re-useable scenarios and scenario components.

0.3 Part 1 of ISO/IEC 15944 "Business Operational View (BOV) - Operational aspects of Open-edi for implementation"

Part 1 of ISO/IEC 15944 identifies and enumerates the many requirements of the BOV aspects of Open-edi in support of electronic business transactions. These requirements need to be taken into account in the development of business semantic descriptive techniques for modelling e-business transactions and components thereof as re-useable business objects. They include:

— commercial frameworks and associated requirements;

— legal frameworks and associated requirements;

— public policy requirements, particularly those of a generic nature such as consumer protection, privacy, and accommodation of handicapped/disabled;

— requirements arising from the need to support cultural adaptability. This includes meeting localization and multilingual requirements (e.g., as may be required by a particular jurisdictional domain or desired to provide a good, service and/or right in a particular market).

[1] See 0.5.

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— In specifying scenarios, scenario components, and their semantics in the context of making commitments, one needs to distinguish between:

a) 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,

b) their multiple human interface equivalent (HIE) expressions in a presentation form appropriate to the Persons involved in the making of the resulting commitments.[2]

Figure 2 provides an integrated view of these business operational requirements. Figure 2 is based on Figure 3 from Part 1 of ISO/IEC 15944. The focus of this Part of ISO/IEC 15944 is that of internal and external constraints, and those constraints about traceability may be either from legal requirements[3], commercial requirements[4], or public policy requirements[5], which are the shaded “clouds” in Figure 2, while other sources for external constraints than traceability is represented in Figure 2 as “clouds” not shaded.

[2] See further 5.4 in ISO/IEC 15944-10. It is the intention of this part of ISO/IEC 15944 that the modelling of scenario and its components about traceability takes the same approach.

[3] One example of the legal traceability requirement can be the EU EC N78/2002, which is obligatory and contains traceability requirement for the purpose of food safety.

[4] The commercial framework is mostly “for profit” activities among private companies and individuals, where features of traceability in a product may be required by or provide added benefit to the customer.

[5] One example of the traceability public policy requirement can be “The 12th Five Year Plan on National Food Safety Supervision System” issued by state council of China.

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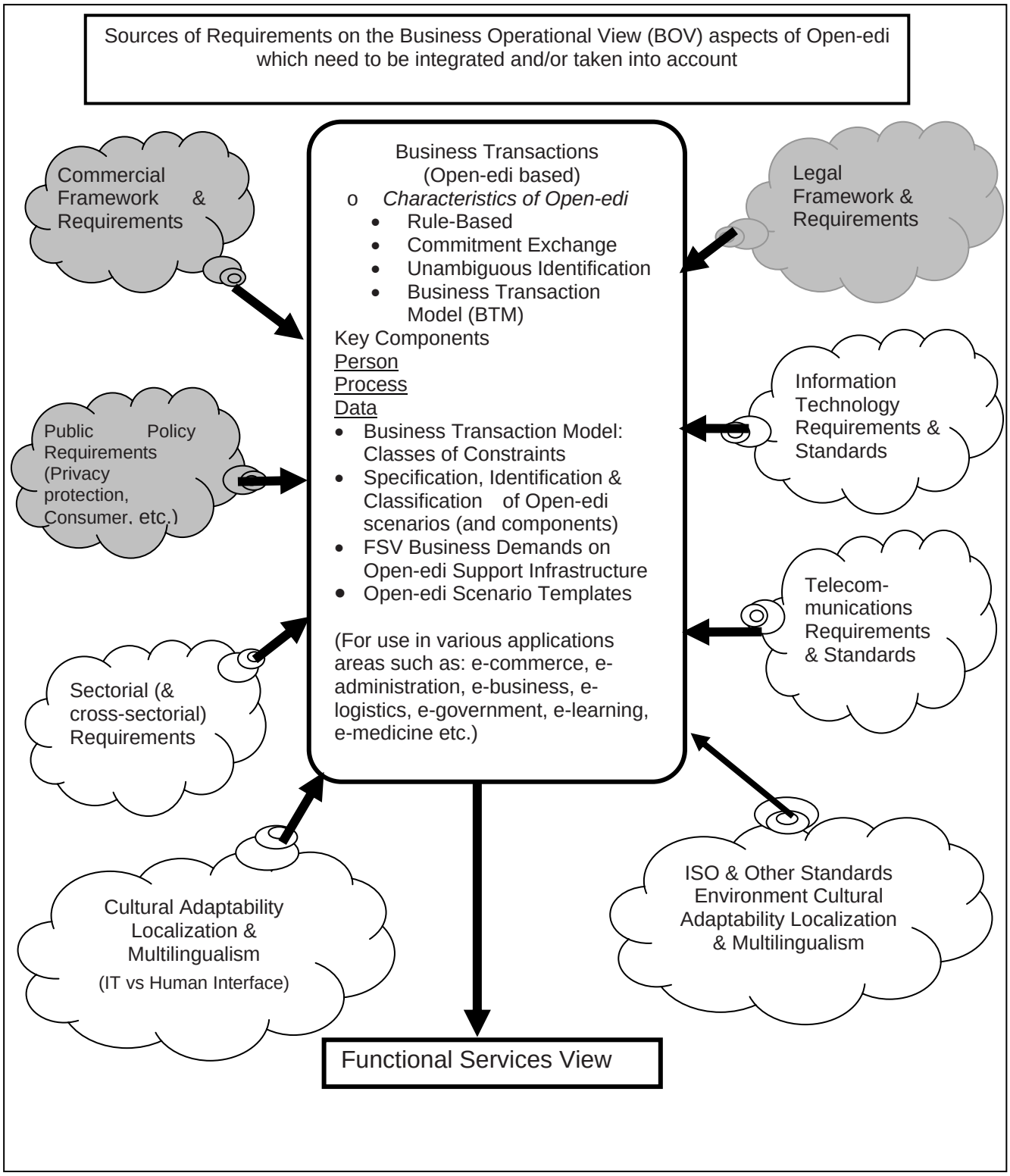

Figure 2 — Integrated view – Business Operational Requirements

0.4 "Traceability" in the context of business transaction and commitment exchange

Traceability in a business transaction originates from the (common) legal practices in jurisdictional domains that require the identification and verification of any non-conformance with applicable legal/regulatory requirements pertaining to the goal of the business transaction including the ability to withdraw and/or recall

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products, services and/or rights. The requirements for traceability in a business transaction to support constraints (internal & external) include the need:

a) to fulfil any local, regional national or international regulations or policies, as applicable;

b) to meet the requirement of reporting by the seller to the regulator;

c) to meet the labelling requirements of applicable regulators;

d) to support safety and/or quality objectives;

e) to determine the history or origin of the products;

f) to facilitate the withdrawal and/or recall of products;

g) to identify the responsible organizations in case of emergency;

h) to facilitate the verification of specific information about the product;

i) to meet consumer specification(s);

j) to meeting post-actualization requirements such as refund policy, product recall, warranty issue, etc.

k) to meet the requirements of mutual agreement among parties to a business transaction;

l) to communicate information to relevant stakeholders and consumers.

In the Open-edi context, commitment exchange is added to information exchange, and entities are unambiguously identified. With the requirements imposed internally or externally, the business transactions are automated based on Open-edi system. In order to model the business transactions that meet the requirements of traceability, considerations shall be given to the those specific requirements on traceability to a business transaction, including the principles, methodologies for information modelling, and requirements to components of a business transaction, etc.

This Part of ISO/IEC 15944 adopts a top-down approach for an Open-edi based traceability framework for commitment exchange, and associated accountabilities, among parties to a business transaction. As such, it will assist implementers and standards developers from a business operational perspective in considering or developing the framework, and/or strategies to support traceability requirements in e-commerce, e-logistics, e-learning, e-medicine, e-government, etc.

For example, business analyser(s) and/or system designer(s) should consider and/or incorporate the rules stated in this Part of ISO/IEC 15944 in developing the architecture of business transaction. The incorporation of these rules can be done either by understanding and adopting the requirements reflected in these rules, or by transforming these rules in IT-enabled format and integrating them in the system configuration.

0.5 Representation of rules and guidelines

As defined in 5.1 and 6.1.2 in Part 1 of ISO/IEC 15944, this Part 9 of ISO/IEC 15944 uses the “rule-based” approach, and the common rules are sequentially enumerated and presented in **bold** font, while guidelines which are provided for a rule are numbered sequentially after that rule and are shown in **bold** and ***italic*** font[6].The same approach is taken in this Part of ISO/IEC 15944.

Conformance to this Part of ISO/IEC 15944 is based on the conformance to the rules stated in this Part of ISO/IEC 15944.

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[6] For example, in ISO/IEC 15944-1 “Guideline 5G2” equals the second Guidelines under Rule 5.

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0.6 Organization and description of document

This Part of ISO/IEC 15944 consists of nine clauses, one normative annex and five informative annexes. The first four clauses are normative to all standards, i.e., scope, normative references, terms and definitions, and symbols and abbreviations. The remaining five clauses of this document are normative and as follows:

— Clause 5 presents the principles and assumptions about traceability put in an Open-edi context. These principles are fundamental to the understanding of other clauses, and thus contain no rules or Guidelines. Also, a categorization of two types of practices of traceability is described in this clause as an assumption.

— Clause 6 provides the traceability framework as a reference model.

— Clause 7 states the requirements of traceability that affect different aspects of a business transaction.

— Clause 8 introduces aspects of Open-edi collaboration space that are affected by traceability requirements.

— Clause 9, as with other Parts of ISO/IEC 15944, provides a template of attributes for scenario and scenario components.

— Annex A (normative) provides the ISO English and ISO French language equivalents for terms and definitions found in Clause 3 which are introduced for the first time, i.e., are not found in the existing Parts of ISO/IEC 15944 as well as ISO/IEC 14662.

— Annex B (informative) introduces the GS1 glossary so that readers are able to understand the concept of interoperability of this Part of ISO/IEC 15944 and the GS1 traceability specifications.

— Annex C (informative) introduces date/time-based referencing on 6.6.4.5 in Part 5 of ISO/IEC 15944 that are used by Open-edi implementations in order to ensure that these traceability attributes are identified correctly.

— Annex D (informative) introduces codes for the identification of business locations by jurisdictional domains including their official (or de facto) languages. Annex D is based on and summarizes normative text found in Part 5 of ISO/IEC 15944 which includes country codes representing UN member states so that Open-edi implementations adhere to the traceability requirements of jurisdictional domain(s) for stating business locations.

— Annex E (informative) provides samples of other international standards or specifications that support traceability; namely: ISO 26324; ISO/IEC 15459, ITU-T X.660, UN/CPC, UN/SPSC and WCO/HS.

— Annex F (informative) provides a mapping of BTEs using identifiers in a traceability framework for the purposes of supporting the design of information systems and other necessary instrument enabling traceability.

— Annex G (informative) introduces samples of regulations as sources of traceability requirements.

The document concludes with a bibliography citing references to both ISO and ISO/IEC international standards (which are not used as Normative References in Clause 2), and other relevant documents.

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Information technology —Business Operational View — Part 9: Business transaction traceability framework for commitment exchange

1 Scope

1.1 Statement of scope

This Part of ISO/IEC 15944 presents a framework consisting of several models, including a reference model, a model of concepts, a content model, an information model, as well as rules, templates and other technical specifications for traceability requirements based on internal or external constraints as applicable to a business transaction. The internal constraints are imposed in Open-edi due to mutual agreements among parties to a business transaction and the external constraints are invoked by the nature of a business transaction due to applicable laws, regulations, policies, etc. of jurisdictional domains which need to be considered in Open-edi business transactions. All requirements in this Part of ISO/IEC 15944 originate from external constraints. However, parties to a business transaction may well by mutual agreement apply external constraints of this nature as internal constraints.

The focus therefore of this traceability framework standard is on commitment exchange among autonomous parties to a business transaction.

As such, this statement of scope includes the ability of the traceability framework to

— specify a group of structured and inter-related concepts pertaining to traceability as a legal or regulatory requirement in the Open-edi context, in addition to concepts that appear in other Parts of ISO/IEC 15944 these concepts having the characteristics of cultural adaptability through the use of multilingual terms and definitions;

— provide additional specifications for Open-edi scenarios and scenario components from the perspective of traceability as required by internal or external constraints in business transactions;

— provide a more detailed specification for business transactions regarding aspects of traceability, including refined models of Person, Data and Process in support of the ability for Open-edi to incorporate elements or characteristics of traceability in its information bundles (including their semantic components) and business processes;

— realize specifications and descriptions from the traceability requirements as rules and guidelines, to provide recommendations or guidance on Open-edi practices; and,

— provide revised primitive Open-edi scenario templates for traceability, integrating the modifications to the template from other existing Parts of ISO/IEC 15944.

This Part of ISO/IEC 15944 can be used by Open-edi implementers (including business modellers and system designers) and Open-edi standard developers in specifying Open-edi scenarios, developing Open-edi related standards, and implementing Open-edi rules and guidelines for Open-edi activities.

1.2 Exclusions

1.2.1 Functional Services View (FSV)

This standard focuses on the BOV aspects of a business transaction, especially commitment exchange and does not concern itself with the technical mechanisms needed to achieve the business requirements, i.e., the

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various Functional Services View (FSV) aspects, including the specification of requirements of an FSV nature which include security techniques and services, communication protocols, etc. This includes any existing standard (or standards development of an FSV nature) that have been ratified by existing ISO, IEC, UN/ECE and/or ITU standards. As such, this Part of ISO/IEC 15944 does not specify any FSV aspects about traceability, which shall be part of the implementation of BOV standards in an IT system.

1.2.2 Internal behaviour of organizations (and public administration)

Although an organization, (e.g., an e-Business enterprise) may impose traceability requirements on business models and supporting IT systems, this Part and the other Parts of ISO/IEC 15944 focus on the external behaviour of parties to a business transaction. Therefore, excluded from the scope of this Part of ISO/IEC 15944 is the application of traceability requirements within an organization.

The Open-edi Reference Model does not specify these internal behaviours of an organization as not germane to business transactions (which focus on external behaviours pertaining to electronic data interchange among the autonomous parties to a business transaction). Therefore, excluded from the scope of this Part of ISO/IEC 15944 are:

a) internal use and management of recorded information pertaining to an identifiable individual by an organization (or public administration) within an organization; and,

b) implementation of internal information management controls, internal procedural controls or operational controls within an organization or public administration necessary for it to comply with applicable traceability requirements in observance of their lawful or contractual rights, duties and obligations as a legal entity in the jurisdictional domain(s) of which they are part.

However, the specifications for the external behaviour of an organization in this standard may well be used in the internal issues. But it is not the intent of this Part of ISO/IEC 15944 to specify the internal requirements of an organization.

1.2.3 Metrological traceability

In ISO/IEC Guide 99:2007[7], 2.41, the term “traceability” is defined as “property of a measurement result whereby the result can be related to a reference through a documented unbroken chain of calibrations, each contributing to the measurement uncertainty”. In this context, the word traceability is used as a metrological term. The word “traceability” as used in this Part of ISO/IEC 15944 does not relate to metrology and thus the specification of metrological traceability is not addressed in this Part of ISO/IEC 15944.

1.3 Aspects not currently addressed

During the development of this part of the standard, requirements specified by International Air Transport Association (IATA) were identified as an important source of traceability principles. However, due to the lack of resources or the technical input from IATA at the time of this standard, such requirements were not incorporated in the current version of this part of the standard.

Also, in the case of an individual acting as seller, where both external constraints of privacy protection and traceability apply, requirements on the provision of the personal information of that individual is not specified in this Part of ISO/IEC 15944-9.

The aspects are expected to be addressed in a future edition of this Part or another (new) Part of ISO/IEC 15944.

[7] ISO/IEC Guide 99:2007 International vocabulary of metrology – Basic and general concepts and associated terms (VIM)

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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 8601:2004, *Data elements and interchange formats - Information interchange - Representation of dates and times*

ISO 9000: 2005, *Quality management systems*

ISO/IEC 14662, *Information technology - Open-edi Reference Model*

ISO/IEC 15944-1:2011, *Information Technology - Business Agreement Semantic Descriptive Techniques - Part 1: Operational Aspects of Open-edi for Implementation*

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

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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 either 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).

[ISO/IEC 15944-2:2006, 3.1]

3.2

agent

Person acting for another **Person** in a clearly specified capacity in the context of a **business transaction**

NOTE Excluded here are agents as “automatons” (or robots, bobots, etc.). In ISO/IEC 14662, “automatons” are recognized and provided for but as part of the Functional Service View (FSV), where they are defined as “Information Processing Domain (IPD)”.

[ISO/IEC 15944-1:2011, 3.1]

3.3

attribute

characteristic of an **object** or **entity**

[ISO/IEC 11179-3:2013, 3.1.3]

3.4

authentication

provision of assurance of the claimed identity of an **entity**

[ISO/IEC 10181-2:1996, 3.3]

3.5

authenticity

property that ensures that the identity of a subject or resource is the one claimed

NOTE Authenticity applies to entities such as users, processes, systems and information.

[ISO/IEC TR 13335-1:21996, 3.3]

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3.6

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]

3.7

business event

occurrence in time that **partners** to a **business transaction** wish to monitor or control

NOTE 1 Business events are the workflow tasks that business partners need to accomplish to complete a business transaction among themselves. As business events occur, they cause a business transaction to move through its various phases of planning, identification, negotiation, actualization, and post-actualization.

NOTE 2 Occurrences in time can either be

(1) internal as mutually agreed to among the parties to a business transaction; and/or,

(2) reference some common publicly available and recognized date/time referencing schema, (e.g., one based on using the ISO 8601 and/or ISO 19135 standards).

[ISO/IEC 15944-4:2006, 3.5]

3.8

business location

geographic **site** where an **economic event** is deemed to occur with its attendant transfer of an **economic resource** from one **Person** to another

[ISO/IEC 15944-4:2007, 3.6]

3.9

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.

[ISO/IEC 15944-2:2006, 3.6]

3.10

Business Operational View (BOV)

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

[ISO/IEC 14662:2010, 3.3]

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3.11

business transaction

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

[ISO/IEC 14662:2010, 3.4]

3.12

business transaction entity (BTE)

computable representation of any real-world **entity** that participates, occurs or is materialized during a **business transaction**

[ISO/IEC 15944-4:2007, 3.9]

3.13

business transaction identifier (BTI)

identifier assigned by a **seller** or a **regulator** to an instantiated **business transaction** among the **Persons** involved

NOTE 1 The identifier assigned by the seller or regulator shall have the properties and behaviours of an “identifier (in a business transaction)”.

NOTE 2 As an identifier (in a business transaction), a BTI serves as the unique common identifier for all Persons involved for the identification, referencing, retrieval of recorded information, etc., pertaining to the commitments made and the resulting actualization (and post-actualization) of the business transaction agreed to.

NOTE 3 A business transaction identifier can be assigned at any time during the planning, identification or negotiation phases but shall be assigned prior to the start or during the actualization phase.

NOTE 4 As and where required by the applicable jurisdictional domain(s), the recorded information associated with the business transaction identifier (BTI) may well require the seller to include other identifiers, (e.g., for a value-added good or service tax, etc.) as assigned by the applicable jurisdictional domain(s).

[ISO/IEC 15944-5:2008, 3.12]

3.14

business transaction traceability (BTT)

requirement to provide **set(s) of recorded information (SRIs)** on the status and/or nature of a good, service and/or right, which is the goal of the **business transaction,** in its transfer, transport, and/or **location(s)**, from a **seller** to a **buyer**, as either: (1) agreed to by the parties to a **business transaction** as part of **internal constraints**; and/or, (2) imposed by a **regulator(s)** as applicable **external constraints**, based on the nature of the good, service, and/or right, which is the goal of the **business transaction**

NOTE 1 Traceability requirements which are of an internal constraints nature need to be specified and agreed to by the parties to a business transaction as part of both the process and data components in an Open-edi scenario before or at the negotiation phase and include those which apply to the actualization phase, and where applicable, to the post-actualization phase.

NOTE 2 Traceability requirements which are of an external constraints nature shall be: (1) specified during the planning or identification phase of the process component; and, (2) be finalized during the negotiation phase. This may include

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obtaining sets of recorded information in the form of registrations, identifiers and/or approval from applicable regulatory authorities prior to the actualization of the instantiation of a business transaction.

NOTE 3 SRIs required to support traceability requirements manifest themselves as semantic components (SCs) as part of IBs in Open-edi scenarios.

NOTE 4 External constraints pertaining to traceability requirements may have state changes and record retention requirements which are unique to that external constraint.

NOTE: 5 There is a need to follow and have evidence in place to allow traceability to occur. The nature of Open-edi business transaction being based on rules, etc., ensures that evidence can be followed.

3.15

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** providing such a good, service and/or right

[ISO/IEC 15944-1:2011, 3.8]

3.16

coded domain

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

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 rule base of its Source Authority and as such have predefined semantics.

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

- one or more equivalent codes;

- one or more equivalent representations, especially 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., to be assigned, more than one ID code (possibly including names) as equivalent identifiers, one of these must be specified as the pivot ID code.

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

NOTE 8 A coded domain may contain ID codes that pertain to predefined conditions other than qualification of membership of entities in the coded domain. The rules governing a coded domain may 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 (4) the pre-reservation of a series of ID codes for use of “user extensions”.

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NOTE 9 In object methodology, entities that 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]

3.17

code (in coded domain)

identifier, i.e., an ID **code**, assigned to an **entity** as member of a **coded domain** according to the pre-established set of **rules** governing that **coded domain**

[ISO/IEC 15944-5:2008, 3:19]

3.18

collaboration space

business activity space where an **economic exchange** of valued resources is viewed independently and not from the perspective of any **business partner**

NOTE In collaboration space, an individual partner's view of economic phenomena is de-emphasized. Thus, commonly used business and accounting terms like purchase, sale, cash receipt, cash disbursement, raw materials, and finished goods are not allowed, because they view resource flows from a participant's perspective.

[ISO/IEC 15944-4:2008, 3.12]

3.19

commitment

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

[ISO/IEC 14662:2010, 3.5]

3.20

computational integrity

expression of a **standard** in a form that ensures precise description of behaviour and semantics in a manner that allows for automated processing to occur, and the managed evolution of such **standards** in a way that enables dynamic introduction by the next generation of information systems

NOTE Open-edi standards have been designed to be able to support computational integrity requirements especially from a registration and re-use of business objects perspectives.

[ISO/IEC 15944-2:2006, 3.18]

3.21

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.

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[ISO 1087-1:2000, 3.2.1]

3.22

constraint

rule, explicitly stated, that prescribes, limits, governs or specifies any aspect of a **business transaction**

NOTE 1 Constraints are specified as rules forming part of components of Open-edi scenarios, i.e., as scenario attributes, roles, and/or information bundles.

NOTE 2 For constraints to be registered for implementation in Open-edi, they must have unique and unambiguous identifiers.

NOTE 3 A constraint that is agreed to among parties (as a condition of contract) is considered an “internal constraint”, whereas a constraint imposed on parties by laws, regulations, etc., is considered an “external constraint”.

[ISO/IEC 15944-1:2011, 3.11]

3.23

consumer

Buyer who is an **individual** to whom **consumer protection** requirements are applied as a set of **external constraints** on a **business transaction**

NOTE 1 Consumer protection is a set of explicitly defined rights and obligations applicable as external constraints on a business transaction.

NOTE 2 The assumption is that consumer protection applies only where a buyer in a business transaction is an individual. If this is not the case in a particular jurisdiction, such external constraints should be specified as part of scenario components as applicable.

NOTE 3 It is recognized that external consumer protection constraints on a buyer may be peculiar to a specified jurisdictional domain.

[ISO/IEC 15944-1:2002, 3.11]

3.24

consumer protection

set of **external constraints** of a **jurisdictional domain** as rights of a **consumer** and thus as obligations (and possible liabilities) of a **vendor** in a **business transaction** which apply to the good, service and/or right forming the **object** of the **business transaction** (including associated information management and interchange requirements including applicable (**sets of) recorded information**)

NOTE 1 Jurisdictional domains may restrict the application of their consumer protection requirements as applicable only to individuals engaged in a business transaction of a commercial activity undertaken for personal, family or household purposes, i.e., they do not apply to natural persons in their role as "organization" or "organization Person".

NOTE 2 Jurisdictional domains may have particular consumer protection requirements which apply specifically to individuals who are considered to be a "child" or a “minor”, (e.g., those individuals who have not reached their thirteenth birthday).

NOTE 3 Some jurisdictional domains may have consumer protection requirements which are particular to the nature of the good, service and/or right being part of the goal of a business transaction.

[ISO/IEC 15944-5:2008, 3.33]

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3.25

contact

instance of a **role** of a **Person** to whom a **recorded information** item(s), a material **object**(s), a **business object**(s), can be sent to or received from in a specified context

NOTE 1 A Person here as a Contact can be an individual, an organization (or organization part or organization Person).

NOTE 2 Contact is capitalized to distinguish it from the many ordinary uses of the term.

NOTE 3 Harmonized with ISO/IEC 11179-3:2013 and Cor.1:2004 but from an eBusiness perspective

[ISO/IEC 11179-3:2013, 3.3.26]

3.26

creation date

date the **OeRI** for a **business object** was created

[ISO/IEC 15944-2:2006, 3.24]

3.27

custody

association between a **Person** and an **economic resource** where the **Person** has physical control only over the resource or controls access

NOTE Having custody of a good, service and/or right does not imply and is differentiated from having economic control of the same, (e.g., a Person may have economic control of a good even though it is not under its custody).

[ISO/IEC 15944-4:2007, 3.15]

3.28

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]

3.29

data (in a business transaction)

representations of **recorded information** that are being prepared or have been prepared in a form suitable for use in a computer system

[ISO/IEC 15944-1:2011, 3.14]

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3.30

data element

unit of **data** for which the definition, **identification**, representation and permissible values are specified by means of a set of **attributes**

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

3.31

data element (in organization of data)

unit of **data** that is considered in context to be indivisible

EXAMPLE The data element “age of a person” with possible values consisting of all combinations of 3 decimal digits.

NOTE Differs from the entry 17.06.02 in ISO/IEC 2382-17.

[ISO/IEC 2382-4:1999, 04.07.01]

3.32

date

ISO 8601 compliant representation of a date in an YYYY-MM-DD format using the Gregorian calendar

[ISO/IEC 15944-2:2006, 3.26]

3.33

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 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”, “e-government”, “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]

3.34

effective date

date an **OeRI** became/becomes available to registry users

[ISO/IEC 15944-2:2006, 3.31]

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3.35

electronic address

address used in a recognized electronic addressing scheme, (e.g., telephone, telex, IP, etc.), to which **recorded information** item(s) and/or **business object**(s) can be sent to or received from a **Contact**

[ISO/IEC 15944-2:2006, 3.32]

3.36

entity

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

EXAMPLE A 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]

3.37

(entity) authentication

method of using one or more **attributes** whose **attribute** values uniquely identify each occurrence of a specified **entity**

[ISO/IEC 2382-17:1999, 17.02.14]

3.38

(entity) identification

method of using one or more **attributes** whose values uniquely identify each occurrence of a specified **entity**

[ISO/IEC 2382-17:1999, 17.02.14]

3.39

external constraint

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

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 sectorial nature, those which pertain to a particular jurisdictional domain or mutually agreed to 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.

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

NOTE 5 Where the information bundles (IBs) of a business transaction, including their Semantic Components (SCs), form the whole of a business transaction (e.g., for legal or audit purposes), all constraints must be recorded.

EXAMPLE There may be a legal or audit requirement to maintain the complete recorded information pertaining to a business transaction, i.e., 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 15944-1:2011, 3.23]

3.40

Formal Description Technique (FDT)

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

[ISO/IEC 14662:2010, 3.9]

3.41

Functional Service View (FSV)

perspective of **business transactions** limited to those information technology interoperability aspects of **IT Systems** needed to support the execution of **Open-edi transactions**

[ISO/IEC 14662:2010, 3.10]

3.42

ID Code

identifier assigned by the coded domain Source Authority (cdSA) to a member of a **coded domain**

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 (4) the pre-reservation of a series or set of ID codes for “user extensions”.

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

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

3.43

identification

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

[ISO/IEC 15944-1:2011, 3.26]

3.44

Identifier (in business transaction)

unambiguous, unique and linguistically neutral value resulting from the application of a **rule**-based **identification process**

NOTE 1 Identifiers must 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 15944-1:2011, 3.27]

3.45

individual

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

[ISO/IEC 15944-1:2011, 3.28]

3.46

individual accessibility

set of **external constraints** of a **jurisdictional domain** as rights of an **individual** with disabilities to be able to use **IT Systems** at the human, i.e., user, interface and the concomitant obligation of a **seller** to provide such adaptive technologies

NOTE Although “accessibility” typically addresses users who have a disability, the concept is not limited to disability issues.

EXAMPLES Disabilities in the form of functional and cognitive limitations include: (a) people who are blind; (b) people with low vision; (c) people with colour blindness; (d) people who are hard of hearing or deaf, i.e., are hearing impaired; (e) people with physical disabilities; and, (f) - people with language or cognitive disabilities.

[ISO/IEC 15944-5:2008, 3.60]

3.47

Information (in information processing)

knowledge concerning **objects**, such as facts, events, things, **processes**, or ideas, including **concepts**, which within a certain context has a particular meaning

[ISO/IEC 2382-1:1993, 01.01.01]

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3.48

Information Bundle (IB)

formal description of the semantics of the **recorded information** to be exchanged by **Open-edi Parties** playing **roles** in an **Open-edi scenario**

[ISO/IEC 14662:2010, 3.11]

3.49

internal constraints

constraint which forms part of the **commitment**(s) mutually agreed to among the parties to a **business transaction**

NOTE Internal constraints are self-imposed. They provide a simplified view for modelling and re-use of scenario components of a business transaction for which there are no external constraints or restrictions to the nature of the conduct of a business transaction other than those mutually agreed to by the buyer and seller.

[ISO/IEC 15944-1:2011, 3.33]

3.50

jurisdictional domain

jurisdiction, recognized in law as a distinct legal and/or regulatory framework which is a source of **external constraints** on **Persons** and their behaviour and the making of **commitments** among **Persons,** including any aspect of a **business transaction**

NOTE 1 The pivot jurisdictional domain is a United Nations (UN) recognized member state. From a legal and sovereignty perspective UN states are considered “peer” entities. Each UN member state (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 Included here, for example, are the European Union (EU), NAFTA, WTO, WCO, ICAO, WHO, Red Cross, 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, or transfer of goods, services and/or rights (and resulting liabilities) and associated information. This is independent of whether such interchange of commitments is conducted on a for-profit or not-for-profit basis and whether it 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]

3.51

list

ordered **set** of **data elements**

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[ISO/IEC 2382-4:1999, 04.08.01]

3.52

location

place, either physical or electronic, that can be referenced by an **address**

[ISO/IEC 15944-2:2006, 3.50]

3.53

master data (in a business transaction)

set(s) of recorded information (SRIs) held by a **Person** that describes the **entities** (and **business objects**) that are both independent and fundamental for that **Person** and that it needs to reference in order to perform its **business transaction** (and/or **commitments**)

NOTE 1 Master data is defined as set(s) of recorded information (SRIs) as having the following characteristics: (a) permanent or lasting nature; (b) relatively constant across time, not being subject to frequent change, (c) access/use by multiple business process and IT system(s) applications ; (d) required to track and verify exchanges of commitments (of whatever nature) pertaining to a commitment exchange aspects of a business transaction; (e) can either be neutral or relationship dependent.

3.54

medium

physical material which serves as a functional unit, in or on which information or **data** is normally recorded, in which information or **data** can be retained and carried, from which information or **data** can be retrieved, and which is non-volatile in nature

NOTE 1 This definition is independent of the material nature on which the information is recorded and/or technology used to record the information, (e.g., paper, photographic, (chemical), magnetic, optical, ICs (integrated circuits), as well as other categories no longer in common use such as vellum, parchment (and other animal skins), plastics, (e.g., bakelite or vinyl), textiles, (e.g., linen, canvas), metals, etc.).

NOTE 2 The inclusion of the "non-volatile in nature" attribute is to cover latency and records retention requirements.

NOTE 3 This definition of "medium" is independent of: (a) form or format of recorded information; (b) physical dimension and/or size; and, (c) any container or housing that is physically separate from material being housed and without which the medium can remain a functional unit.

NOTE 4 This definition of "medium" also captures and integrates the following key properties: (a) the property of medium as a material in or on which information or data can be recorded and retrieved; (b) the property of storage; (c) the property of physical carrier; (d) the property of physical manifestation, i.e., material; (e) the property of a functional unit; and, (f) the property of (some degree of) stability of the material in or on which the information or data is recorded.

[ISO/IEC 15944-1:2011, 3.34]

3.55

model

abstraction of some aspect of reality

[ISO 19115:2003, 4.9]

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