
**Information technology — Business
Operational View —**

Part 5:

**Identification and referencing of
requirements of jurisdictional domains as
sources of external constraints**

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Technologies de l'information — Vue opérationnelle d'affaires —

*Partie 5: Identification et référence des exigences de domaines
juridictionnels en tant que sources de contraintes externes*

ISO/IEC 15944-5:2008

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Foreword

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

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

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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

ISO/IEC 15944-5 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 32, *Data management and interchange*.

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

- *Part 1: Operational aspects of Open-edi for implementation*
- *Part 2: Registration of scenarios and their components as business objects*
- *Part 4: Business transaction scenarios — Accounting and economic ontology*
- *Part 5: Identification and referencing of requirements of jurisdictional domains as sources of external constraints*

The following parts are under preparation:

- *Part 6: Technical introduction of e-Business modelling*
- *Part 7: e-Business vocabulary*

0 Introduction

0.1 Purpose and overview

0.1.1 ISO/IEC 14662 "Open-edi Reference Model"

The ISO/IEC 14662 Open-edi Reference Model¹ provides the conceptual architecture necessary for carrying out electronic business transactions. That architecture 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, taken from ISO/IEC 14662:2004, illustrates the Open-edi environment. For definitions of the terms in Figure 1, see Clause 3.

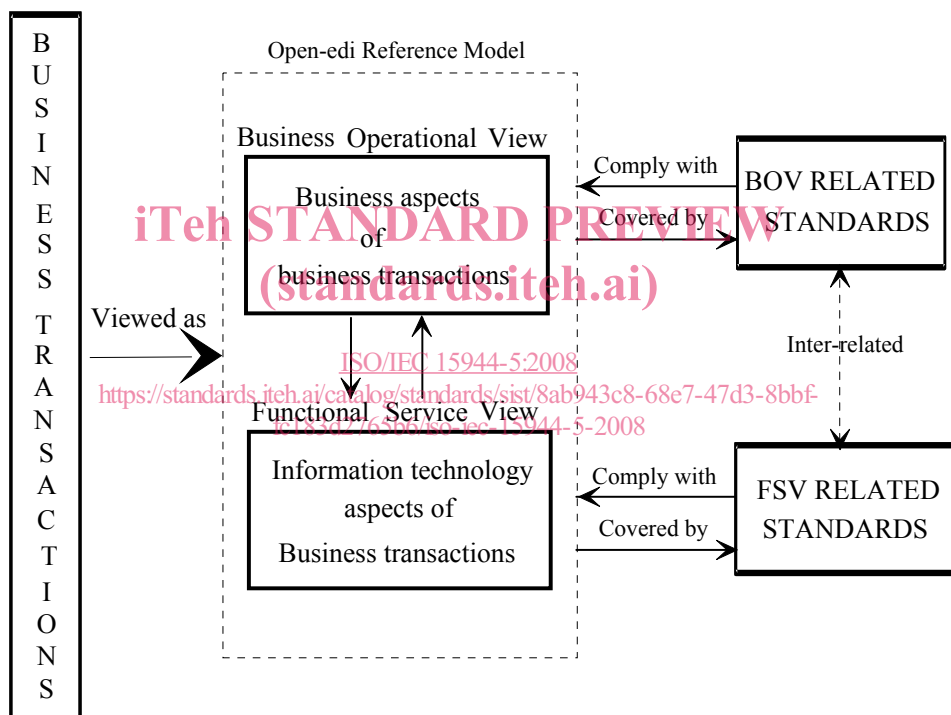


Figure 1 — Open-edi environment

ISO/IEC 14662:2004, 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)"

¹ ISO/IEC 14662:2004, *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> and go to "Freely Available Documents".)

of the formation of a legal interchange agreement between 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, ISO/IEC 14662:2004, Annex A 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 focuses on the legal environment from an Open-edi perspective and, as required, follow-up standards development in support of the “Open-edi Reference Model”.

This part of ISO/IEC 15944 is thus directed at being able to identify and reference laws and regulations impacting scenarios and scenario components as external constraints. The primary source of such external constraints is jurisdictional domains.

In ISO/IEC 15944-1, constant reference is made and many rules are stated pertaining to the specification of external constraints when modelling business transactions through scenarios, scenario attributes and scenario components. These are consolidated in Annex B of this part of ISO/IEC 15944.

Finally, it is noted that the approach taken in ISO/IEC 15944-1:2002 in Clause 7 “*Guidelines for scoping Open-edi Scenarios*” is as stated in 7.1:

“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 focuses on addressing the more simple, i.e. definable, aspects of external constraints for which the source is a jurisdictional domain. A useful characteristic of external constraints is that at the sectoral, national and international levels, etc. local points and recognized authorities often already exist. The rules and common business practices in many sectoral areas are already known. Use of this standard (and related standards) will facilitate the transformation of these external constraints (business rules) into specified, registered and re-useable scenarios and scenario components.

0.1.2 ISO/IEC 15944-1 “Business Agreement Semantic Descriptive Techniques”

ISO/IEC 15944-1:2002 is the first part of a multipart BOV standard which focuses on the many requirements of the business operational view aspects of Open-edi in support of electronic business transactions. These requirements need to be integrated and 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, 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. Here one needs the ability to distinguish the specification of scenarios, scenario components and their semantics in the context of making commitments between:
 - (1) the use of unique, unambiguous and linguistically neutral identifiers (often as composite identifiers) at the information technology (IT) interface level among the IT systems of participation parties on the one hand; and, on the other,
 - (2) their multiple human interface equivalent (HIE) expressions in a representation form appropriate to the Persons involved in the making of the resulting commitments.

Figure 2 provides an integrated view of these business operational requirements. Figure 2 is based on Figure 3 from ISO/IEC 15944-1:2002. Since the focus of this part of ISO/IEC 15944 is that of external constraints for which jurisdictional domains are the primary source, these have been highlighted here (in shaded form).

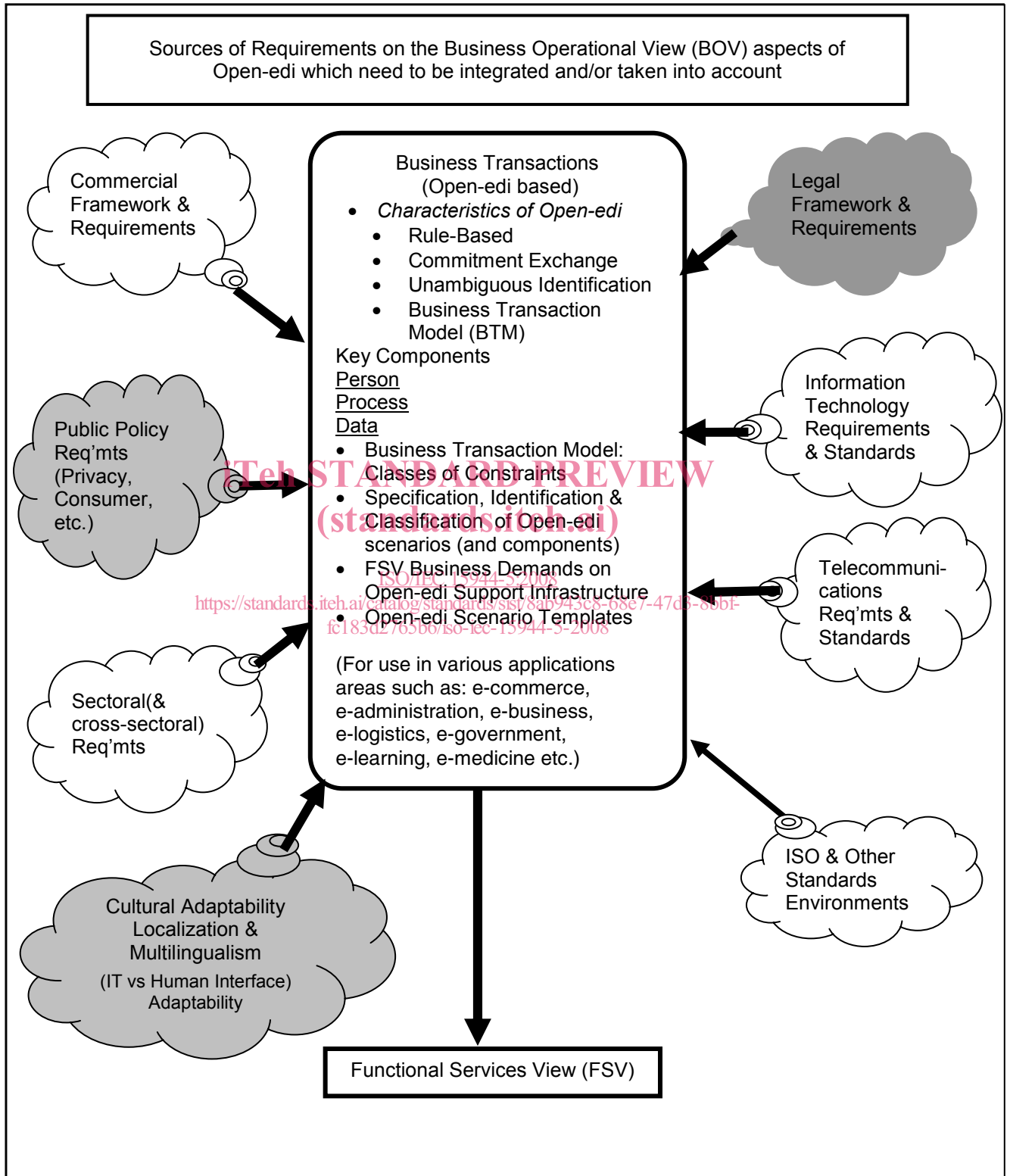


Figure 2 — Integrated View – Business Operational Requirements: External Constraints Focus

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

In electronic business transactions, whether undertaken on a for-profit or not-for-profit basis, the key element of any type of business transaction is commitment exchange among Persons made among the Decision Making Applications (DMAs) of the Information Technology Systems (IT Systems)² acting on behalf of “Persons”. “Persons” are the only entities able to make commitments³. Quoting from ISO/IEC 15944-1:2002, 0.4:

‘When the ISO/IEC 14662 Open-edi Reference Model standard was being developed, the “Internet” and “WWW” were at an embryonic stage and their impact on private and public sector organizations was not fully understood. The Business Operational View (BOV) was therefore initially defined as:

“a perspective of business transactions limited to those aspects regarding the making of business decisions and commitments among organizations which are needed for the description of a business transaction”.’

The existing and widely-used ISO/IEC 6523 definition of “organization” was used in ISO/IEC 14662. The fact that today Open-edi through the Internet and WWW also involves “individuals” has now been taken into account in this standard. Further, ISO/IEC 14662:1997 did not define “commitment”, nor the discrete properties and behaviours an entity must have to be capable of making a “commitment” as well as bridging legal and IT perspectives in the dematerialized world of the Internet.

During the development of ISO/IEC 15944-1, the term “commitment” was defined. At the same time it was recognized that in order to be able to make a commitment, the term “Open-edi Party” was not specific enough to satisfy scenario specifications when the legal aspects of commitment were considered. In many instances, commitments were noted as being actually among IT systems acting under the direction of those legally capable of making commitment, rather than the individuals in their own capacities. It was also recognized that in some jurisdictions a commitment could be made by “artificial” persons such as corporate bodies. Finally, it was recognized that there are occasions where agents act, either under the instruction of a principal or as a result of requirement(s) laid down by a jurisdiction, or where an individual is prevented by a relevant jurisdiction from being able to make a commitment.

To address these extended requirements an additional concept and term of “Person” was defined. The construct of Person has been defined in such a way that it is capable of having the potential legal and regulatory constraints applied to it.

There are three broad categories, i.e. sub-types, of Persons as players in Open-edi, namely:

- (1) the Person as “individual”,
- (2) the Person as “organization”; and
- (3) the Person as “public administration”.

There are also three basic (or primitive) roles of Persons in business transactions, namely “buyer”, “seller” and “regulator”.

In modelling business transactions, jurisdictional domains prescribe their external constraints in the role of “regulator” and execute them as “public administration”. See 5.4.

² See further 5.2 “Functional Services View” in ISO/IEC 14662:2004.

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

Very often the requirements of jurisdictional domains are specified through the use of sets of “Codes representing X...”. These sets of codes are created and maintained by Source Authorities via a rulebase with a resulting coded domain(s) in the form of a data element(s) whose permitted values represent predefined semantics and in a structured form, i.e. as a type of semantic component. As such, jurisdictional domains serve as Source Authorities for coded domains.

These three sub-types of Persons are also the possible Source Authorities for coded domains. On the whole, Source Authorities for coded domains are either “organizations” or “public administrations”.

Within this part of ISO/IEC 15944,

- the use of Person with a capital “P” represents Person as a defined term, i.e. as the entity within an Open-edi Party that carries the legal responsibility for making commitment(s);
- “individual”, “organization” and “public administration” are defined terms representing the three common sub-types of “Person”; and
- the words “person(s)” and/or “party(ies)” are used in their generic contexts independent of roles of “Person” as defined in ISO/IEC 14662:2004 and ISO/IEC 15944-1. A “party” to a business transaction has the properties and behaviours of a “Person”.

0.3 Importance and role of terms and 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, 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 ISO/IEC 15944 is to ensure that there is a common understanding of the Business Operational View (BOV) from commercial, legal, ITC, public policy and cross-sectoral perspectives. It is therefore important to ascertain and confirm that what is 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. Terms/definitions should be established as early as possible in the standards development process. Comments on any definition/term pair 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 of ISO/IEC 15944.

In order to minimize ambiguity in the terms and definitions introduced in Clause 3 of each part of ISO/IEC 15944, Canada has committed to develop French language equivalents for the same. Some terms and definitions may need to be amended/improved as part of developing the French language translation.

Annex A “*Consolidated list of terms and definitions with cultural adaptability: ISO English and ISO French language equivalency*” is derived from Clause 3 of each part of ISO/IEC 15944.⁴ Annex A is repeated in each part of ISO/IEC 15944 as a convenient reference.

⁴ Canada has committed to maintain this comprehensive list in a database as the reference file for Annex A. This Annex A reference file will ensure the consistency of terms and definitions among the various parts in the on-going harmonization effort.

0.4 Importance of the two classes of constraints of the Business Transaction Model (BTM)

The Business Transaction Model has two classes of constraints, namely:

- (1) those which are “self-imposed” and agreed to as commitments among the parties themselves, i.e. “internal constraints”; and
- (2) those which are imposed on the parties to a business transaction based on the nature of the good, service and/or rights exchanged, and the nature of the commitment made among the parties (including ability to make commitments, the location, etc.), i.e. “external constraints”.

The focus of this part of ISO/IEC 15944 is on external constraints. Jurisdictional domains are the primary source of external constraints.⁵

ISO/IEC 15944-1:2002, 6.1.6 provides normative text for these two classes of constraints. It is included in this part of ISO/IEC 15944 as Annex C. In addition, Annex G provides examples of various ontologies that result when modelling business scenarios with (1) internal constraints only and (2) external constraints.

0.5 Standard based on rules and guidelines⁶

This standard is intended to be used within and outside of the ISO and IEC by diverse sets of users having different perspectives and needs (see Figure 2).

ISO states that a standard is a⁷

“documented agreement 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”.⁸

This 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.

⁵ For business requirements of the Functional Service View and business demands on the Open-edi support infrastructure with respect to internal constraints, see further ISO/IEC 15944-1:2002, 6.5.2 “*Self-imposed constraints*”. ISO/IEC 15944-4:2006 focuses on accounting and economic aspects of business transactions from an “internal constraints” perspective.

⁶ This introductory clause is primarily based on that found in ISO/IEC 15944-1:2002, 6.1.2 titled “*Standard based on rules and guidelines*”.

⁷ This is the generic definition of “standard” of the ISO and IEC (and now found in the ISO/IEC JTC 1 Directives).

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

Clause 5 “*Characteristics of Open-edi*” in ISO/IEC 15944-1:2002 makes it clear that the BOV type of Open-edi standards are “rule-based” standards⁹. Of particular relevance here is the first key characteristic of Open-edi as stated in ISO/IEC 15944-1:2002, 5.1 “*Actions based upon following clear, predefined rules*”. It is useful to quote some key normative text of ISO/IEC 15944-1 so that users of this part of ISO/IEC 15944 have a clear understanding of the nature and purpose of 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.¹⁰

In this part of ISO/IEC 15944, the common rules are sequentially enumerated and presented in **bold** font. Where guidelines are provided for a rule they are numbered sequentially after that rule and are shown in an italic font¹¹. Choice of words in the rules, the guidelines, and the terms and definitions are governed by maximizing the ability to map, on the one hand, to all the sources of requirements of the day-to-day world of commitment pertaining to the 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 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).

<https://standards.iteh.ai/catalog/standards/sist/8ab943c8-68e7-47d3-8bbf-fc183d2765b6/iso-iec-15944-5-2008>

0.6 Use of “jurisdictional domain” and “jurisdiction” (and “country”) in the context of business transactions and commitment exchange

Multiple definitions are currently in use for “jurisdiction”. Some have legal status and others do not. Further, it is also a common practice to equate “jurisdiction” with “country”. Yet at the same time, it is also a common practice to refer to provinces, länder, cantons, territories, municipalities, etc. as “jurisdictions” or to a court of law or international body as having jurisdiction, etc. In summary, “jurisdiction” is commonly utilized with many

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

- 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 15944-1:2002 describe each of these six characteristics in more detail.

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

¹¹ For example, “*Guideline 5G2*” equals the second guideline under Rule 5.